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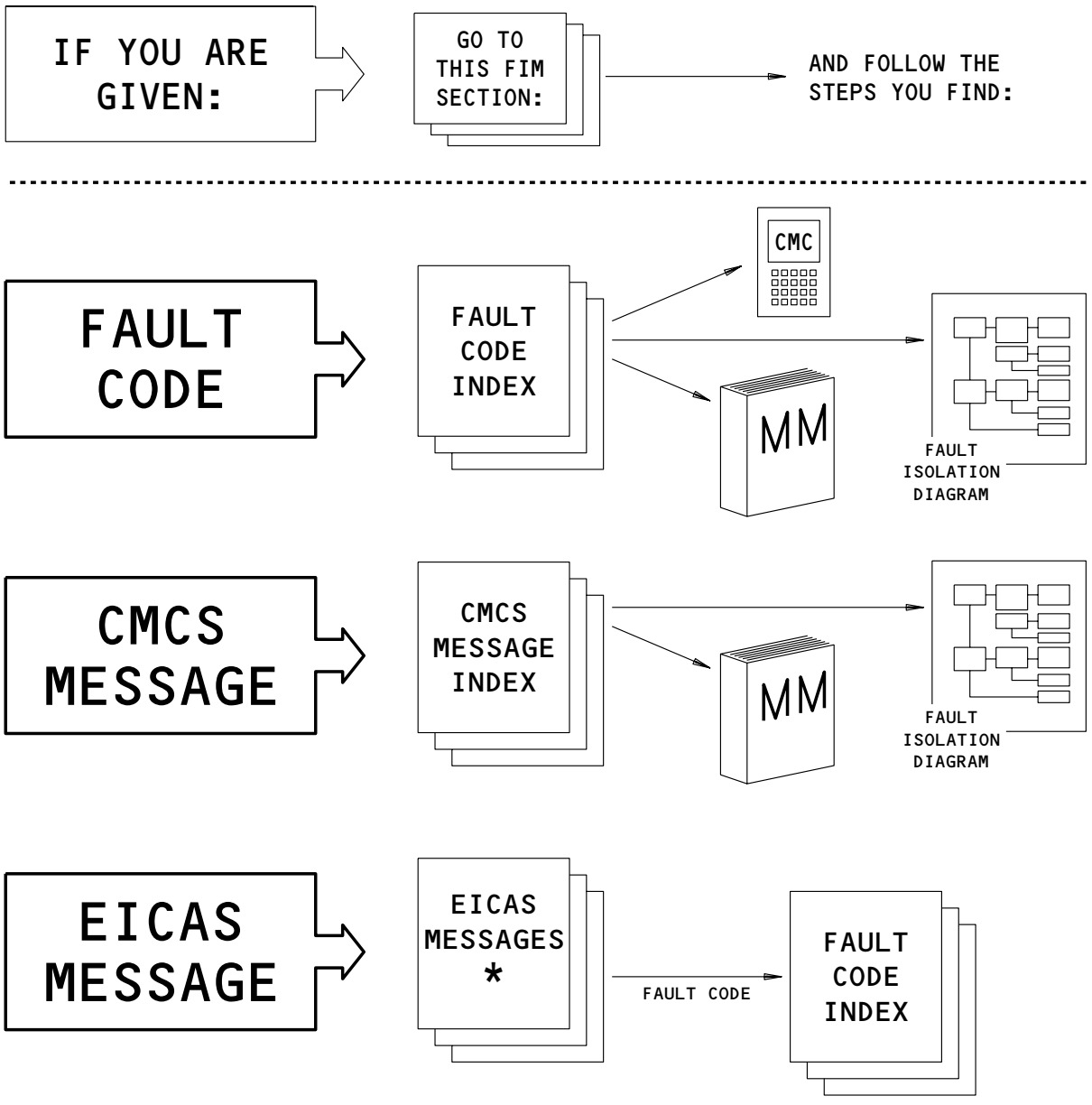
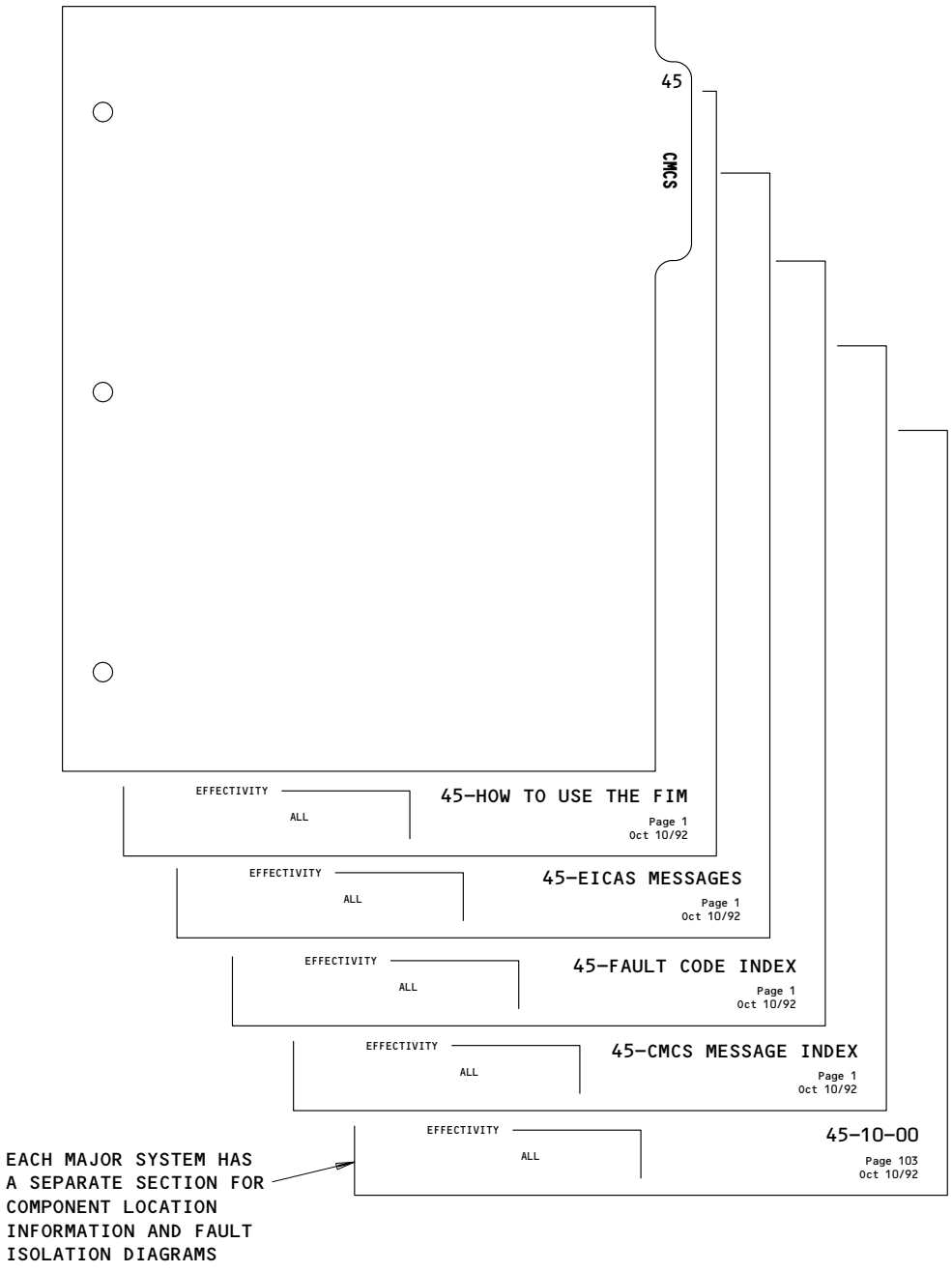



* THERE IS ALSO A MASTER LIST OF ALL EICAS MESSAGES AT THE FRONT OF THE FIM

How to Use the FIM
Figure 1

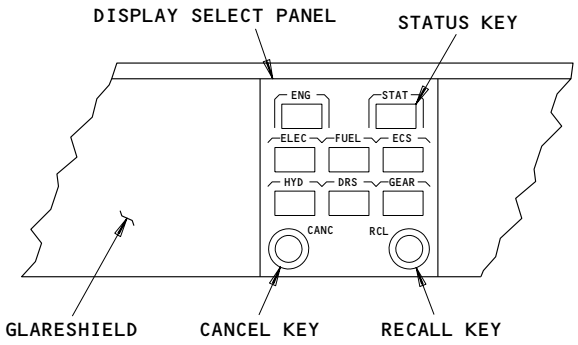


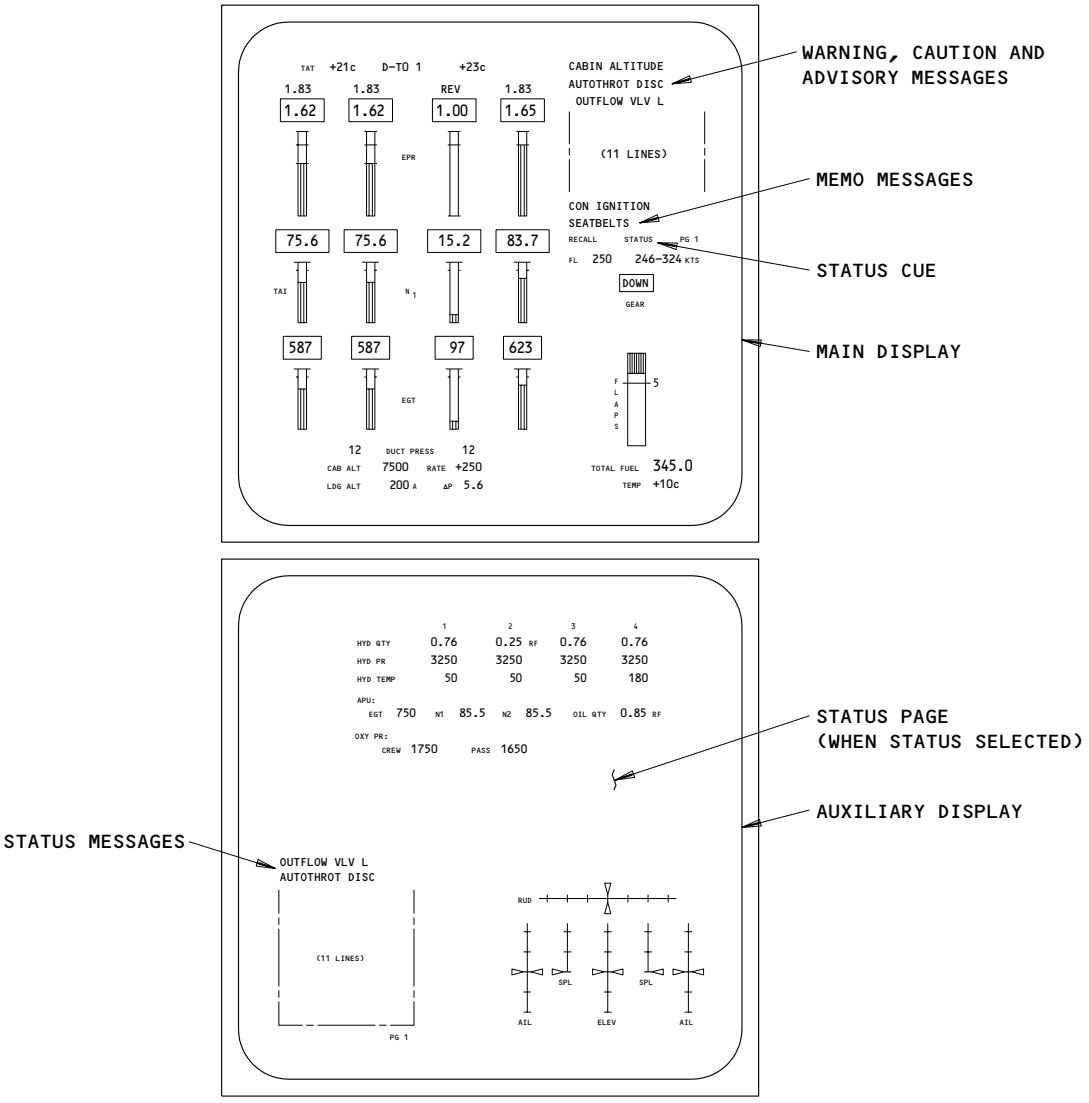

Subjects in this FIM Chapter
Figure 2

EFFECTIVITY
ALL

# 45-HOW TO USE THE FIM

A91425




EICAS DISPLAYS

EFFECTIVITY

ALL

# 45-EICAS MESSAGES

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Oct 10/88

324853

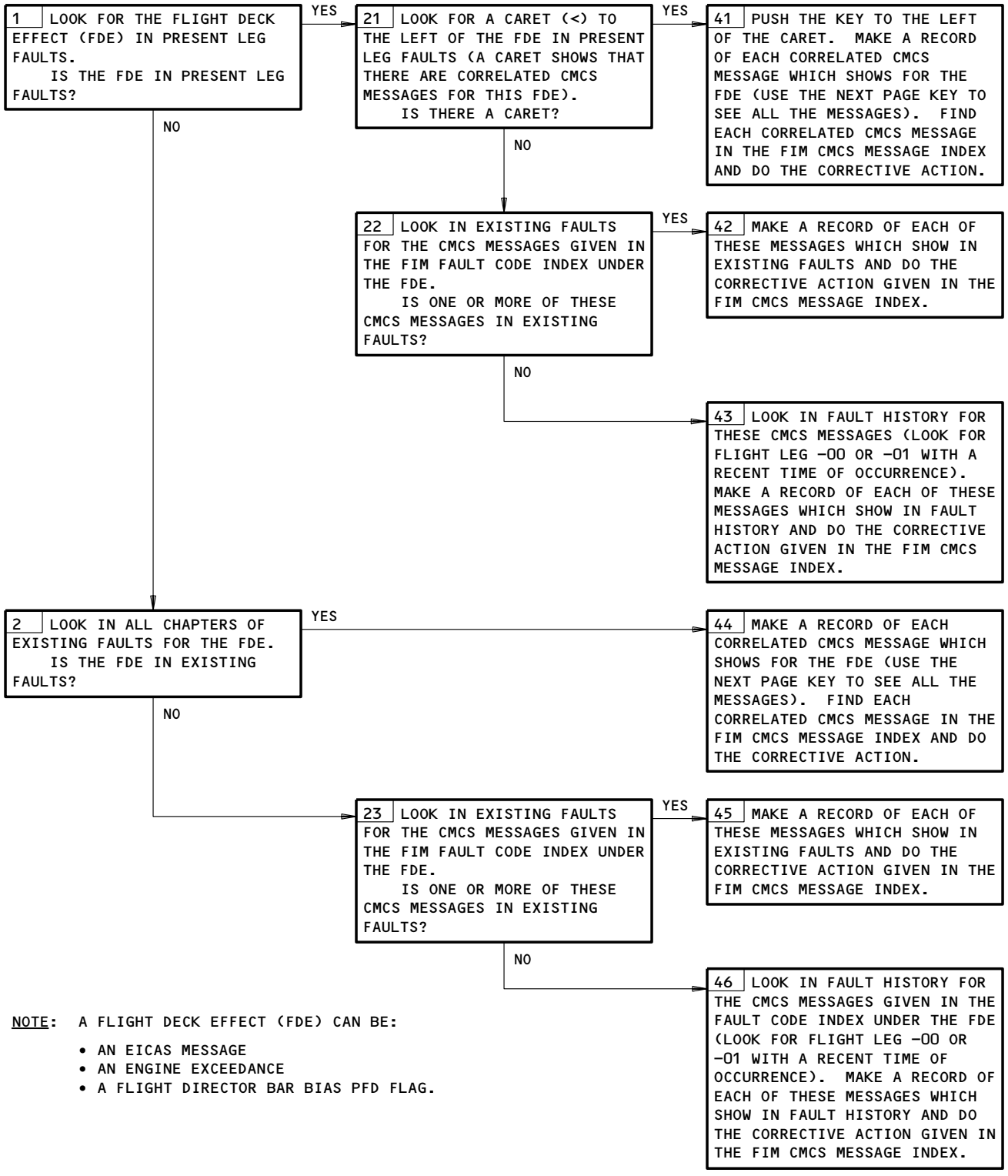
| EICAS MESSAGE | LEVEL | DESCRIPTION | FAULT CODE |
|---|---|---|---|
| GND TESTS ENABLE | (STATUS) | GND TESTS ENABLE SWITCH ENABLED OR "FAILED" | 45 45 01 00 |
| PRINTER MESSAGE | (MEMO) | AN UPLINKED MESSAGE IS BEING ROUTED TO THE PRINTER | 45 ME 01 00 |

# FAULT CODE INDEX

1. General
   A. The Fault Code Index includes fault isolation or corrective action for each fault code in the Fault Reporting Manual (FRM). The fault codes for each chapter are in numerical order.
      (1) The first paragraph given with each fault code is the log book report from the FRM. The log book report is a short description of the fault.
      (2) The numbered paragraphs after the log book report contain the fault isolation or the corrective action.
   B. The fault isolation for most EICAS messages, engine exceedances, or PFD flags includes a list of one or more possible correlated CMCS messages.
      (1) For each CMCS message in the list, there is the message number and an ATA number. The ATA number is the prompt under which you can find the message in Existing Faults or Fault History on the CDU.
      (2) The corrective action refers to the procedure in Figure 1 of this section. Figure 1 shows how to use the Present Leg Faults, Existing Faults, and Fault History functions of the CMC to isolate the fault to a specific CMCS message.
   C. For those EICAS status messages which latch into EIU memory when they occur, this index includes the letters NVM, NVM-A, or NVM-G to the right of the log book report.
      (1) NVM indicates that the message latches if it occurs in the air or on the ground.
      (2) NVM-A indicates that the message latches only if it occurs in the air.
      (3) NVM-G indicates that the message latches only if it occurs on the ground.
      (4) To remove the latched message from the EICAS after you correct the fault, you must use the ERASE function of the CMC.

          NOTE: Do not erase a latched EICAS message until you are sure that you have corrected the fault.

D. When the CDU shows a large number of Flight Deck Effects (FDEs) or CMCS messages, it is possible that there is a bus failure. Do these steps to isolate the cause of the bus failure:
   (1) Look at the CMCS messages to determine which system or LRU is related to all the messages.
   (2) Look at the wiring diagram for each system and determine if the suspect LRUs are on a common bus.
   (3) Do a check of the wiring between each of the suspect LRUs and the common bus.
   (4) Repair any problems that you find.
   (5) If the problem continues, remove each LRU individually to determine which LRU is the cause of the fault.
   (6) Replace the LRU which caused the fault.




Fault Isolation Procedure with the CMCS
Figure 1

| FAULT CODE | LOG BOOK REPORT/ CORRECTIVE ACTION |
|---|---|

45 45 XA 00 The flight crew found a multiple-input printer problem that is not on the fault code diagram in the FRM. See the entry that the flight crew wrote in the log book.
1. AMM 45-10-00/501.

45 45 01 00 The EICAS message GND TESTS ENABLE (STATUS) shows.
1. If EIU DISAGREE (Status) also shows, first do the corrective action for EIU DISAGREE (FIM 31-61-00/101).
2. If GND TESTS ENABLE (STATUS) stays, make sure that the two GND TESTS switches are set to NORM. (One switch is on the overhead maintenance panel, P461; the other switch is on the aft side of the STA 400 bulkhead.)
3. If GND TESTS ENABLE (STATUS) stays, look for one or more of these CMCS messages (Fig. 1):

   24728 (24-60) 45950 (45-45) 45951 (45-45) 45952 (45-45)
   45953 (45-45) 45954 (45-45) 45955 (45-45) 45960 (45-45)

45 45 02 00 KLM 001-034;
Printer FAIL lgt illuminated.

NOTE: KLM 035-099;
This fault code is not used.

1. Replace the printer, B7064 (AMM 45-10-02/401).

45 45 03 00 KLM 001-034;
Printer SLEW sw inop. Paper will not advance.

NOTE: KLM 035-099;
This fault code is not used.

1. If the printer is in operation, wait until the printout is completed and then push the SLEW switch again.
2. If the problem continues, make sure there is paper in the printer (AMM 45-10-02/301).
3. If the problem continues, make sure the paper is not caught in the printer.
4. If the problem continues, replace the printer, B7064 (AMM 45-10-02/401).

| FAULT CODE | LOG BOOK REPORT/ CORRECTIVE ACTION |
|---|---|

45 45 04 00 Printer TEST sw inop. No test pattern printed.

1. If the printer is in operation, wait until the printout is completed and then push the TEST switch again.
2. If the problem continues, make sure the printer door is closed.
3. If the problem continues, make sure there is paper in the printer (AMM 45-10-02/301).
4. If the problem continues, make sure the paper is not caught in the printer.
5. KLM 001-034;
   If the problem continues, replace the printer, B7064 (AMM 45-10-02/401).
6. KLM 035-099;
   If the problem continues, replace the printer, B8641 (AMM 45-10-02/401).

45 45 05 00 KLM 001-034;
Printer MSG lgt failed to illum after a print was made.

NOTE: KLM 035-099;
This fault code is not used.

1. Replace the printer, B7064 (AMM 45-10-02/401).

45 45 06 00 Printer is low on paper.

1. Install a new roll of printer paper (AMM 45-10-02/301).

45 45 07 00 Printer is out of paper.

1. Install a new roll of printer paper (AMM 45-10-02/301).

45 45 08 00 KLM 001-034;
Printer RESET sw inop. MSG lgt will not extinguish.

NOTE: KLM 035-099;
This fault code is not used.

1. Replace the printer, B7064 (AMM 45-10-02/401).

45 45 09 00 KLM 001-034;
Printer PAPER lgt inop.

NOTE: KLM 035-099;
This fault code is not used.

1. Replace the printer, B7064 (AMM 45-10-02/401).

45 45 10 00 Not Used.

| FAULT CODE | LOG BOOK REPORT/ CORRECTIVE ACTION |
|---|---|

45 45 11 00 KLM 035-099;
Printer ALRT RST sw inop.

NOTE: KLM 001-034;
This fault code is not used.

1. No corrective action is necessary. The ALRT RST switch is not connected.

45 45 12 00 KLM 035-099;
Printer FAULT lgt illuminated.

NOTE: KLM 001-034;
This fault code is not used.

1. Make sure the printer door is closed.
2. If the problem continues, make sure the OFF light is off.
3. If the problem continues, make sure the paper is correctly installed (AMM 45-10-02/301).
4. If the problem continues, replace the printer, B8641 (AMM 45-10-02/401).

45 45 13 00 KLM 035-099;
PPR ADV sw will not advance paper.

NOTE: KLM 001-034;
This fault code is not used.

1. Make sure there is paper in the printer (AMM 45-10-02/301).
2. If the problem continues, make sure the paper is not caught in the printer.
3. If the problem continues, replace the printer, B8641 (AMM 45-10-02/401).

45 ME 01 00 The EICAS message PRINTER MESSAGE (MEMO) shows.
1. No action is required.

NOTE: This EICAS message is not a failure indication. It shows that data from the ground (such as a weather report or gate information) was sent to the printer through ACARS.

All CMCS messages have a four digit ATA number along with the five digit CMCS message number displayed on the CDU. The first two digits of each number represent the ATA chapter where the message is covered. For the CMCS messages listed below, the first two digits of the ATA number are different from the first two digits of the CMCS message number. These CMCS messages are covered in more than one chapter. They are included in this chapter to be in agreement with the first two digits of the ATA number:

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 34855<br>CMC-L FAIL OR<br>RCDU>CMC-L BUS FAIL | |

CORRECTIVE ACTION:

A. If CMC message 34870 (CMC-R FAIL OR RCDU>CMC-R BUS FAIL) also shows, replace the remote CDU, M6711 (AMM 45-10-03/401).

B. If the problem continues, and if CMC message 34870 also shows, examine the circuit between the RCDU circuit breaker, C10474, and the RCDU, M6711, connector DM6711A, pin 40 (WDM 45-45-19). Repair the problems that you find.

C. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).

D. If the problem continues, examine the circuit between the RCDU, M6711, connector DM6711A, pins 27 and 28, and the left CMC, M7373, connector DM7373CA, pins E15 and F15 (WDM 45-45-19). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 34858<br>RCDU FAIL | |

CORRECTIVE ACTION:

A. Replace the remote CDU, M6711 (AMM 45-10-03/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 34859<br>RCDU FAIL OR<br>RCDU OUTPUT BUS FAIL | |

CORRECTIVE ACTION:
A. Replace the remote CDU, M6711 (AMM 45-10-03/401).
B. If the problem continues, examine the circuit between the remote CDU, M6711, connector DM6711A, pins 27 and 28, and the left CMC, M7373, connector DM7373CA, pins E15 and F15, and the right CMC, M7374, connector DM7374CA, pins E15 and F15 (WDM 45-45-19). Repair the problems that you find.
C. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
D. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 34866<br>RCDU FAIL OR<br>CMC>RCDU BUS FAIL | |

CORRECTIVE ACTION:
A. Replace the remote CDU, M6711 (AMM 45-10-03/401).
B. If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373CA, pins A13 and B13, and the RCDU, M6711, connector DM6711A, pins 17 and 18 (WDM 45-45-19, and WDM 45-45-16). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 34870<br>CMC-R FAIL OR<br>RCDU>CMC-R BUS FAIL | |

CORRECTIVE ACTION:
A. If CMC message 34855 (CMC-L FAIL OR RCDU>CMC-L BUS FAIL) also shows, replace the remote CDU, M6711 (AMM 45-10-03/401).
B. If the problem continues, and if CMC message 34855 also shows, examine the circuit between the RCDU circuit breaker, C10474, and the RCDU, M6711, connector DM6711A, pin 40 (WDM 45-45-19). Repair the problems that you find.
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

D. If the problem continues, examine the circuit between the RCDU, M6711, connector DM6711A, pins 27 and 28, and the right CMC, M7374, connector DM7374CA, pins E15 and F15 (WDM 45-45-19). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45005<br>CMC-L>CMC-R BUS FAIL | |

CORRECTIVE ACTION:
A. Replace the left CMC, M7373 (AMM 45-10-01/401).
B. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).
C. If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373BA, pins A13 and B13, and the right CMC, M7374, connector DM7374CA, pins J15 and K15 (WDM 45-45-12). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45006<br>CMC-R>CMC-L BUS FAIL | |

CORRECTIVE ACTION:
A. Replace the right CMC, M7374 (AMM 45-10-01/401).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, examine the circuit between the right CMC, M7374, connector DM7374BA, pins A13 and B13, and the left CMC, M7373, connector DM7373CA, pins J15 and K15 (WDM 45-45-12). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45012<br>CAPT CLOCK NOT SET | |

CORRECTIVE ACTION:
A. Reset the captain's clock, N143.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45013<br>CMC-L FAIL OR<br>CAPT CLOCK>CMC-L BUS FAIL | |

CORRECTIVE ACTION:
A. Replace the left CMC, M7373 (AMM 45-10-01/401).

B. If the problem continues, examine the circuit between the captain's clock, N143, connector DN143, pins 24 and 23 and the left CMC, M7373, connector DM7373BA, pins E3 and F3 (WDM 45-45-18). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45014<br>CMC-R FAIL OR<br>CAPT CLOCK>CMC-R BUS FAIL | |

CORRECTIVE ACTION:
A. Replace the right CMC, M7374 (AMM 45-10-01/401).
B. If the problem continues, examine the circuit between the captain's clock, N143, connector DN143, pins 24 and 23, and the right CMC, M7374, connector DM7374BA, pins E3 and F3 (WDM 45-45-18). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45015<br>CAPT CLOCK FAIL OR<br>CAPT CLOCK OUTPUT BUS FAIL | |

CORRECTIVE ACTION:
A. Replace the captain's clock, N143.
B. If the problem continues, examine the circuit between the captain's clock, N143, connector DN143, pins 24 and 23 and the left CMC, M7373, connector DM7373BA, pins E3 and F3 (WDM 45-45-18). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45017<br>CMC-R FAIL<br>(NO BUS OUTPUTS) | |

CORRECTIVE ACTION:
A. Replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45018<br>EIU-L FAIL OR<br>CMC>EIU-L BUS FAIL | EIU DISAGREE<br>(STATUS) |

CORRECTIVE ACTION:
A. Replace the left EIU, M7353 (AMM 31-61-01/401).
B. If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373BA, pins A4 and B4, and the left EIU, M7353, connector DM7353FA, pins K11 and J11 (WDM 45-45-13, and WDM 45-31-11). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45019<br>EIU-C FAIL OR<br>CMC>EIU-C BUS FAIL | EIU DISAGREE<br>(STATUS) |

CORRECTIVE ACTION:
A. Replace the center EIU, M7352 (AMM 31-61-01/401).
B. If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373BA, pins A9 and B9, and the center EIU, M7352, connector DM7352FA, pins K11 and J11 (WDM 45-45-14, and WDM 45-31-11). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45020<br>EIU-R FAIL OR<br>CMC>EIU-R BUS FAIL | EIU DISAGREE<br>(STATUS) |

CORRECTIVE ACTION:
A. Replace the right EIU, M7351 (AMM 31-61-01/401).
B. If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373CA, pins A4 and B4, and the right EIU, M7351, connector DM7351FA, pins K11 and J11 (WDM 45-31-11, and WDM 45-45-15). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45021<br>CMC-L FAIL<br>(NO BUS OUTPUTS) | |

CORRECTIVE ACTION:
A. Replace the left CMC, M7373 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45022<br>CMC FAIL OR<br>CMC OUTPUT BUS 1 FAIL | |

CORRECTIVE ACTION:
A. Replace the left CMC, M7373 (AMM 45-10-01/401).
B. If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373BA, pins A4 and B4, and the left EIU, M7353, connector DM7353FA, pins K11 and J11 (WDM 45-45-13, and WDM 45-31-11). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45023<br>CMC FAIL OR<br>CMC OUTPUT BUS 2 FAIL | |

CORRECTIVE ACTION:
A. Replace the left CMC, M7373 (AMM 45-10-01/401).
B. If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373BA, pins A9 and B9, and the center EIU, M7352, connector DM7352FA, pins K11 and J11 (WDM 45-45-14, and WDM 45-31-11). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45024<br>CMC FAIL OR<br>CMC OUTPUT BUS 3 FAIL | |

CORRECTIVE ACTION:
A. Replace the left CMC, M7373 (AMM 45-10-01/401).

B. If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373CA, pins A4 and B4, and the right EIU, M7351, connector DM7351FA, pins K11 and J11 (WDM 45-45-15, and WDM 45-31-11). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45025<br>CMC FAIL OR<br>CMC OUTPUT BUS 4 FAIL | |

CORRECTIVE ACTION:
A. Replace the left CMC, M7373 (AMM 45-10-01/401).
B. If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373CA, pins A9 and B9, and the left HF transceiver, B1, connector DB1CA, pins A4 and B5 (WDM 45-45-16, and WDM 45-23-21). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45026<br>CMC FAIL OR<br>CMC OUTPUT BUS 5 FAIL | |

CORRECTIVE ACTION:
A. Replace the left CMC, M7373 (AMM 45-10-01/401).
B. If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373CA, pins A11 and B11, and the MAWEA card file, M7952, connector DW3422A, pins A3 and A4 (WDM 45-45-16, and WDM 45-31-11). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45027<br>CMC FAIL OR<br>CMC OUTPUT BUS 6 FAIL | |

CORRECTIVE ACTION:
A. Replace the left CMC, M7373 (AMM 45-10-01/401).
B. If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373CA, pins A13 and B13, and the right HF transceiver, B4, connector DB4CA, pins A4 and B4 (WDM 45-45-16, and WDM 45-23-21). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45029<br>CMC FAIL OR<br>CMC FLIGHT DECK<br>OUTPUT BUS FAIL | |

CORRECTIVE ACTION:

A. Replace the left CMC, M7373 (AMM 45-10-01/401).

B. If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373CA, pins A1 and B1, and the right CDU, M7440, connector DM7440A, pins 17 and 18 (WDM 45-45-16, and WDM 45-34-31). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45030<br>CMC-L FAIL | |

CORRECTIVE ACTION:

A. Replace the left CMC, M7373 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45031<br>CMC-L AIRLINE DATA<br>BASE FAIL | |

CORRECTIVE ACTION:

NOTE: This is a failure of the left CMC to read the airline data base.

A. Replace the left CMC, M7373 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45032<br>CMC-EIU INITIALIZATION FAIL | |

CORRECTIVE ACTION:

A. Look in existing faults for these CMCS messages and do the corrective action for those that show:

31074 (31-61) 31075 (31-61) 31076 (31-61) 31077 (31-61)
31402 (31-61) 45018 (45-45) 45019 (45-45) 45020 (45-45)
45022 (45-45) 45023 (45-45) 45024 (45-45) 45030 (45-45)
45040 (45-45)

B. If the problem continues, do these steps:
   (1) Open the CMC RIGHT circuit breaker (415L39).
   (2) Open and close the CMC LEFT circuit breaker (414L8).
   (3) Wait for the <CMC prompt to show on the CDU MENU.
   (4) Show the CONFIG maintenance page on the auxiliary EICAS:
      (a) Push the line select key (LSK) that is adjacent to <CMC.
      (b) Push the LSK that is adjacent to <EICAS MAINT PAGES.
      (c) Push the NEXT PAGE key.
      (d) Push the LSK that is adjacent to <31 CONFIG.
      (e) Push the LSK that is adjacent to <DISPLAY.
      (f) Find the EIU software part number on the CONFIG page.
   (5) Show the CMC-L CONFIGURATION DATA page on the CDU:
      (a) Push the LSK that is adjacent to <RETURN until the CMC-L MENU shows.
      (b) Push the NEXT PAGE key.
      (c) Push the LSK that is adjacent to <OTHER FUNCTIONS.
      (d) Push the LSK that is adjacent to <CONFIGURATION.
      (e) Push the LSK that is adjacent to <45 CENTRAL MAINTENANCE.
      (f) Push the LSK that is adjacent to <CMC-L.

(6) Make sure that the three numbers adjacent to EIU on the CMC-L CONFIGURATION DATA page agree with the last three digits of the IDS software part number on the CONFIG page on the auxiliary EICAS.
  (a) If the correct IDS software part number does not show on the CMC-L CONFIGURATION DATA page, replace the left CMC, M7373 (AMM 45-10-01/401).
(7) Open the CMC LEFT circuit breaker (414L8).
(8) Close the CMC RIGHT circuit breaker (415L39).
(9) Wait for the <CMC prompt to show on the CDU MENU.
(10) Show the CMC-R CONFIGURATION DATA page on the CDU:
  (a) Push the LSK that is adjacent to <CMC.
  (b) Push the NEXT PAGE key.
  (c) Push the LSK that is adjacent to <OTHER FUNCTIONS.
  (d) Push the LSK that is adjacent to <CONFIGURATION.
  (e) Push the LSK that is adjacent to <45 CENTRAL MAINTENANCE.
  (f) Push the LSK that is adjacent to <CMC-R.
(11) Make sure that the three numbers adjacent to EIU on the CMC-R CONFIGURATION DATA page agree with the last three digits of the IDS software part number on the CONFIG page on the auxiliary EICAS.
  (a) If the correct IDS software part number does not show on the CMC-R CONFIGURATION DATA page, replace the right CMC, M7374 (AMM 45-10-01/401).
(12) Close the CMC LEFT circuit breaker (414L8).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45033<br>CMC-L AND CMC-R<br>FAULT HISTORY<br>SYNCHRONIZATION FAIL | |

CORRECTIVE ACTION:
A. Look in existing faults for these CMCS messages and do the corrective action for those that show: 45005, 45006, 45030, 45040.
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45034<br>CMC-L AND CMC-R<br>EIU DATABASES DISAGREE | |

CORRECTIVE ACTION:

A. Look in existing faults for these CMCS messages and do the corrective action for those that show:

31074 (31-61) 31075 (31-61) 31076 (31-61) 31077 (31-61)
31402 (31-61) 45018 (45-45) 45019 (45-45) 45020 (45-45)
45022 (45-45) 45023 (45-45) 45024 (45-45) 45030 (45-45)
45040 (45-45)

B. If the problem continues, do these steps to initialize the left and right CMC to an EIU:
   (1) Open the CMC RIGHT circuit breaker (415L39).
   (2) Open and close the CMC LEFT circuit breaker (414L8).
   (3) Wait for the <CMC prompt to show on the CDU MENU.
   (4) Show the CONFIG maintenance page on the auxiliary EICAS:
      (a) Push the line select key (LSK) that is adjacent to <CMC.
      (b) Push the LSK that is adjacent to <EICAS MAINT PAGES.
      (c) Push the NEXT PAGE key.
      (d) Push the LSK that is adjacent to <31 CONFIG.
      (e) Push the LSK that is adjacent to <DISPLAY.
      (f) Find the EIU software part number on the CONFIG page.
   (5) Show the CMC-L CONFIGURATION DATA page on the CDU:
      (a) Push the LSK that is adjacent to <RETURN until the CMC-L MENU shows.
      (b) Push the NEXT PAGE key.
      (c) Push the LSK that is adjacent to <OTHER FUNCTIONS.
      (d) Push the LSK that is adjacent to <CONFIGURATION.
      (e) Push the LSK that is adjacent to <45 CENTRAL MAINTENANCE.
      (f) Push the LSK that is adjacent to <CMC-L.
   (6) Make sure that the three numbers adjacent to EIU on the CMC-L CONFIGURATION DATA page agree with the last three digits of the IDS software part number on the CONFIG page on the auxiliary EICAS.
      (a) If the correct IDS software part number does not show on the CMC-L CONFIGURATION DATA page, replace the left CMC, M7373 (AMM 45-10-01/401).
   (7) Open the CMC LEFT circuit breaker (414L8).
   (8) Close the CMC RIGHT circuit breaker (415L39).
   (9) Wait for the <CMC prompt to show on the CDU MENU.
   (10) Show the CMC-R CONFIGURATION DATA page on the CDU:
      (a) Push the LSK that is adjacent to <CMC.
      (b) Push the NEXT PAGE key.
      (c) Push the LSK that is adjacent to <OTHER FUNCTIONS.
      (d) Push the LSK that is adjacent to <CONFIGURATION.
      (e) Push the LSK that is adjacent to <45 CENTRAL MAINTENANCE.

(f) Push the LSK that is adjacent to <CMC-R.
(11) Make sure that the three numbers adjacent to EIU on the CMC-R CONFIGURATION DATA page agree with the last three digits of the IDS software part number on the CONFIG page on the auxiliary EICAS.
(a) If the correct IDS software part number does not show on the CMC-R CONFIGURATION DATA page, replace the right CMC, M7374 (AMM 45-10-01/401).
(12) Close the CMC LEFT circuit breaker (414L8).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45035<br>CMC-L AND CMC-R<br>'REAL TIME ACARS'<br>PROGRAM PIN DISAGREE | |

CORRECTIVE ACTION:
A. Do the steps that follow:
(1) Make sure that the left CMC, M7373, connector DM7373BA, pin K4, and the right CMC, M7374, connector DM7374, pin K4, are not grounded (WDM 45-45-17).
(2) If the problem continues, show the CMC-L CONFIGURATION DATA page on a CDU and make sure that this indication shows adjacent to PROG PINS: 4. (Make these selections on a CDU to show the CMC-L CONFIGURATION DATA page: <CMC on the CDU MENU, NEXT PAGE key, <OTHER FUNCTIONS, <CONFIGURATION, <45 CENTRAL MAINTENANCE, <CMC-L.)
(a) If the indication adjacent to PROG PINS is incorrect, replace the left CMC, M7373 (AMM 45-10-01/401).
(3) If the problem continues, show the CMC-R CONFIGURATION DATA page and make sure that this indication shows adjacent to PROG PINS: 8. (Make these selections on the CDU to show the CMC-R CONFIGURATION DATA page: <RETURN, <CMC-R.)
(a) If the indication adjacent to PROG PINS is incorrect, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45036<br>CMC-L PROGRAM PINS<br>PARITY ERROR | |

CORRECTIVE ACTION:

A. Do the steps that follow:

(1) Make sure that these four pins on the left CMC, M7373, are grounded or not grounded, as specified below (WDM 45-45-17). Repair the problems that you find.

(a) Connector DM7373CA, pin K12: Not grounded.

(b) Connector DM7373CA, pin K4: Grounded.

(c) Connector DM7373BA, pin K12: Not grounded.

(d) Connector DM7373BA, pin K4: Not grounded.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45037<br>CMC-L AND CMC-R<br>'SPARE' PROGRAM PIN<br>DISAGREE | |

CORRECTIVE ACTION:

A. Make sure that the left CMC, M7373, connector DB7373BA, pin K12, and the right CMC, M7374, connector DB7374BA, pin K12, are not grounded (WDM 45-45-17). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45038<br>CMC PROGRAM PINS<br>DISAGREE | |

CORRECTIVE ACTION:

A. Do the steps that follow:

(1) Show the CMC-L CONFIGURATION DATA page on a CDU and make sure that this indication shows adjacent to PROG PINS: 4. (Make these selections on a CDU to show the CMC-L CONFIGURATION DATA page: <CMC on the CDU MENU, NEXT PAGE key, <OTHER FUNCTIONS, <CONFIGURATION, <45 CENTRAL MAINTENANCE, <CMC-L.)

(a) If the indication adjacent to PROG PINS is incorrect, make sure that these four pins on the left CMC, M7373, are grounded or not grounded, as specified below (WDM 45-45-17). Repair the problems that you find.

1) Connector DM7373CA, pin K12: Not grounded.
2) Connector DM7373CA, pin K4: Grounded.
3) Connector DM7373BA, pin K12: Not grounded.
4) Connector DM7373BA, pin K4: Not grounded.

(2) If the problem continues, show the CMC-R CONFIGURATION DATA page and make sure that this indication shows adjacent to PROG PINS: 8. (Make these selections on the CDU to show the CMC-R CONFIGURATION DATA page: <RETURN, <CMC-R.)

(a) If the indication adjacent to PROG PINS is incorrect, make sure that these four pins on the right CMC, M7374, are grounded or not grounded, as specified below (WDM 45-45-17). Repair the problems that you find.

1) Connector DM7374CA, pin K12: Grounded.
2) Connector DM7374CA, pin K4: Not grounded.
3) Connector DM7374BA, pin K12: Not grounded.
4) Connector DM7374BA, pin K4: Not grounded.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45040<br>CMC-R FAIL | |

CORRECTIVE ACTION:

A. Replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45041<br>CMC-R AIRLINE DATA<br>BASE FAIL | |

CORRECTIVE ACTION:

NOTE: This is a failure of the right CMC to read the airline data base.

A. Replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45046<br>CMC-R PROGRAM PINS<br>PARITY ERROR | |

CORRECTIVE ACTION:

A. Do the steps that follow:

(1) Make sure that these four pins on the right CMC, M7374, are grounded or not grounded, as specified below (WDM 45-45-17). Repair the problems that you find.

(a) Connector DM7374CA, pin K12: Grounded.
(b) Connector DM7374CA, pin K4: Not grounded.
(c) Connector DM7374BA, pin K12: Not grounded.
(d) Connector DM7374BA, pin K4: Not grounded.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45050<br>CMC-EIU RECONFIGURED<br>--IF GND TEST FAILED--<br>-- THEN RERUN TEST -- | |

CORRECTIVE ACTION:

A. If the CMCS message is a ground test result, do this:

(1) Ignore the other CMCS messages that show as results of the same ground test.

(2) Look for the CMCS message in Existing Faults.

(a) If the message does not show, then do the ground test again.

(b) If the message shows in Existing Faults and is active (has an asterisk), then do this:

1) Make sure that these circuit breakers are closed:

a) 7F9 EIU L
b) 7F10 EIU C
c) 7F15 EIU R

2) Open these circuit breakers:
a) 415L39 CMC RIGHT
b) 414L8 CMC LEFT
3) Close this circuit breaker:
a) 415L39 CMC RIGHT
4) Then close this circuit breaker:
a) 414L8 CMC LEFT
5) Do the ground test again.

B. If the CMCS message is not a ground test result, do this:
(1) If the CMCS message is not active (has no asterisk), then no corrective active action is necessary.
(2) If the CMCS message is active (has an asterisk), then do this:
(a) Make sure that these circuit breakers are closed:
1) 7F9 EIU L
2) 7F10 EIU C
3) 7F15 EIU R
(b) Open these circuit breakers:
1) 415L39 CMC RIGHT
2) 414L8 CMC LEFT
(c) Close this circuit breaker:
1) 415L39 CMC RIGHT
(d) Then close this circuit breaker:
1) 414L8 CMC LEFT

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45120<br>CMC-L&R INPUT DISAGREE<br>'LEFT PROBE HEAT TEST'<br>(PIN # DM7373BA-B2) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373BA, pin B2, and the right CMC, M7374, connector DM7374BA, pin B2 (WDM 45-30-21).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45121<br>CMC-L&R INPUT DISAGREE<br>'R PROBE HEAT TEST'<br>(PIN # DM7373BA-C10) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373BA, pin C10, and the right CMC, M7374, connector DM7374BA, pin C10 (WDM 45-30-21).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45128<br>CMC-L&R INPUT DISAGREE<br>'PSM 1L VALID'<br>(PIN # DM7373BA-D3) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373BA, pin D3, and the right CMC, M7374, connector DM7374BA, pin D3 (WDM 27-09-15).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45129<br>CMC-L&R INPUT DISAGREE<br>'PSM 1R VALID'<br>(PIN # DM7373BA-D11) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373BA, pin D11, and the right CMC, M7374, connector DM7374BA, pin D11 (WDM 27-09-25).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45130<br>CMC-L&R INPUT DISAGREE<br>'PSM 2L VALID'<br>(PIN # DM7373CA-D3) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373CA, pin D3, and the right CMC, M7374, connector DM7374CA, pin D3 (WDM 27-09-15).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45131<br>CMC-L&R INPUT DISAGREE<br>'PSM 1L FAIL'<br>(PIN # DM7373CA-D11) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373CA, pin D11, and the right CMC, M7374, connector DM7374CA, pin D11 (WDM 27-09-15).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45132<br>CMC-L&R INPUT DISAGREE<br>'PSM 2L FAIL'<br>(PIN # DM7373BA-G01) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373BA, pin G1, and the right CMC, M7374, connector DM7374BA, pin G1 (WDM 27-09-15).

B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45133<br>CMC-L&R INPUT DISAGREE<br>'PSM 1R FAIL'<br>(PIN # DM7373BA-F11) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373BA, pin F11, and the right CMC, M7374, connector DM7374BA, pin F11 (WDM 27-09-25).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45134<br>CMC-L&R INPUT DISAGREE<br>'PSM 2R VALID'<br>(PIN # DM7373CA-H9) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373CA, pin H9, and the right CMC, M7374, connector DM7374CA, pin H9 (WDM 27-09-25).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45135<br>CMC-L&R INPUT DISAGREE<br>'PSM 2R FAIL'<br>(PIN # DM7373BA-K10) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373BA, pin K10, and the right CMC, M7374, connector DM7374BA, pin K10 (WDM 27-09-25).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45136<br>CMC-L&R INPUT DISAGREE<br>'RCP-L FAULT'<br>(PIN # DM7373BA-H1) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373BA, pin H1, and the right CMC, M7374, connector DM7374BA, pin H1 (WDM 23-11-11).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45137<br>CMC-L&R INPUT DISAGREE<br>'RCP-C FAULT'<br>(PIN # DM7373BA-H9) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373BA, pin H9, and the right CMC, M7374, connector DM7374BA, pin H9 (WDM 23-11-11).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45138<br>CMC-L&R INPUT DISAGREE<br>'RCP-R FAULT'<br>(PIN # DM7373CA-H1) | |

CORRECTIVE ACTION:

A. Make sure that there is continuity between the left CMC, M7373, connector DM7373CA, pin H1, and the right CMC, M7374, connector DM7374CA, pin H1 (WDM 23-11-21).

B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).

C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45139<br>CMC-L OR -R S/W LOAD<br>DISC INPUT GROUNDED<br>(PIN # DM7373BA-K2) | |

CORRECTIVE ACTION:

A. Examine the circuit from the data loader panel, M7996, connector DM7996B, pin 15, to the left CMC, M7373, connector DM7373BA, pin K2 (WDM 45-45-18). Repair the problems that you find.

B. If the problem continues, examine the circuit from the data loader panel, M7996, connector DM7996D, pin 18, to the right CMC, M7374, connector DM7374BA, pin K2 (WDM 45-45-18). Repair the problems that you find.

C. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).

D. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45140<br>CMC-L&R INPUT DISAGREE<br>'ICE TEST INHIBIT'<br>(PIN # DM7373CA-K10) | |

CORRECTIVE ACTION:
A. Make sure that there is continuity between the left CMC, M7373, connector DM7373CA, pin K10, and the right CMC, M7374, connector DM7374CA, pin K10 (WDM 30-11-11).
B. If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
C. If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45350<br>NO ACTION REQUIRED<br>'CMC-L ASSUMED<br>CONTROL' | |

CORRECTIVE ACTION:
A. No corrective action is necessary.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45351<br>NO ACTION REQUIRED<br>'CMC-R ASSUMED<br>CONTROL' | |

CORRECTIVE ACTION:
A. No corrective action is necessary.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45352<br>NO ACTION REQUIRED<br>'CMC-L REVERTED<br>CONTROL' | |

CORRECTIVE ACTION:
A. No corrective action is necessary.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45353<br>NO ACTION REQUIRED<br>'CMC-R REVERTED<br>CONTROL' | |

CORRECTIVE ACTION:
A. No corrective action is necessary.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45501<br>CMC>PRINTER BUS FAIL | |

CORRECTIVE ACTION:
A. KLM 001-034;
Do the steps that follow:
(1) Replace the left CMC, M7373 (AMM 45-10-01/401).
(2) If the problem continues, replace the printer, B7064 (AMM 45-10-02/401).
(3) If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373CA, pins A7 and B7, and the printer, B7064, connector DB7064, pins J and X (WDM 45-45-16, and WDM 45-34-31). Repair the problems that you find.

B. KLM 035-099;
Do the steps that follow:
(1) Replace the left CMC, M7373 (AMM 45-10-01/401).
(2) If the problem continues, replace the printer, B8641 (AMM 45-10-02/401).
(3) If the problem continues, examine the circuit between the left CMC, M7373, connector DM7373CA, pins A7 and B7, and the printer, B8641, connector DB8641, pins W and X (WDM 45-45-16, and WDM 45-34-31). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45502<br>CMC-L FAIL OR<br>PRINTER>CMC-L BUS FAIL | |

CORRECTIVE ACTION:
A. KLM 001-034;
Do the steps that follow:

(1) Replace the left CMC, M7373 (AMM 45-10-01/401).
(2) If the problem continues, examine the circuit between the printer, B7064, connector DB7064, pins E and F, and the left CMC, M7373, connector DM7373CA, pins C6 and D6 (WDM 45-45-21). Repair the problems that you find.

B. KLM 035-099;
Do the steps that follow:
(1) Replace the left CMC, M7373 (AMM 45-10-01/401).
(2) If the problem continues, examine the circuit between the printer, B8641, connector DB8641, pins KK and LL, and the left CMC, M7373, connector DM7373CA, pins C6 and D6 (WDM 45-45-22). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45503<br>PRINTER<br>NO TEST RESPONSE | |

CORRECTIVE ACTION:

A. KLM 001-034;
Do the steps that follow:
(1) Make sure this circuit breaker is closed: 415L37 PRINTER.
(2) If the problem continues, push the TEST button on the front of the printer.
(a) If a page of characters does not come out of the printer, replace the printer, B7064 (AMM 45-10-02/401).
(3) If the problem continues, examine the circuit between the printer, B7064, connector DB7064, pin D, and the left CMC, M7373, connector DM7373CA, pin B14 (WDM 45-34-21, and WDM 45-34-31). Repair the problems that you find.
(4) If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).

B. KLM 035-099;
Do the steps that follow:

(1) Make sure this circuit breaker is closed: 415L37 PRINTER.
(2) If the problem continues, push the TEST button on the front of the printer.
    (a) If a page of characters does not come out of the printer, replace the printer, B8641 (AMM 45-10-02/401).
(3) If the problem continues, examine the circuit between the printer, B8641, connector DB8641, pin N, and the left CMC, M7373, connector DM7373CA, pin B14 (WDM 45-34-21, and WDM 45-34-31). Repair the problems that you find.
(4) If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45505<br>PRINTER FAIL | PRINTER<br>(STATUS) |

CORRECTIVE ACTION:
A. KLM 001-034;
Replace the printer, B7064 (AMM 45-10-02/401).
B. KLM 035-099;
Replace the printer, B8641 (AMM 45-10-02/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45506<br>PRINTER<br>OUT OF PAPER | |

CORRECTIVE ACTION:
A. Install a roll of paper in the printer (AMM 45-10-02/301).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45507<br>PRINTER FAIL OR<br>ACARS>PRINTER BUS<br>FAIL | |

CORRECTIVE ACTION:
A. KLM 001-034;
Do the steps that follow:

(1) Replace the printer, B7064 (AMM 45-10-02/401).
(2) If the problem continues, examine the circuit between the ACARS management unit, B7062, connector DB7062CA, pins E15 and F15, and the printer, B7064, connector DB7064, pins A and B (WDM 23-22-11, and WDM 23-22-12). Repair the problems that you find.

B. KLM 035-099;
Do the steps that follow:
(1) Replace the printer, B8641 (AMM 45-10-02/401).
(2) If the problem continues, examine the circuit between the ACARS management unit, B7062, connector DB7062CA, pins E15 and F15, and the printer, B8641, connector DB8641, pins AA and BB (WDM 23-22-16). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45508<br>DMU>PRINTER BUS FAIL | |

CORRECTIVE ACTION:
A. KLM 001-034;
Do the steps that follow:
(1) Replace the DMU, B584 (AMM 31-35-01/401).
(2) Replace the printer, B7064 (AMM 45-10-02/401).
(3) If the problem continues, examine the circuit between the DMU, B584, connector DB584CA, pins E15 and F15, and the printer, B7064, connector DB7064, pins C and D (WDM 31-35-13). Repair the problems that you find.

B. KLM 035-099;
Do the steps that follow:
(1) Replace the DMU, B584 (AMM 31-35-01/401).
(2) Replace the printer, B8641 (AMM 45-10-02/401).
(3) If the problem continues, examine the circuit between the DMU, B584, connector DB584CA, pins E15 and F15, and the printer, B8641, connector DB8641, pins EE and FF (WDM 31-35-13). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45509<br>CMC-R FAIL OR<br>PRINTER>CMC-R BUS FAIL | |

CORRECTIVE ACTION:

A. KLM 001-034;
Do the steps that follow:
(1) Replace the right CMC, M7374 (AMM 45-10-01/401).
(2) If the problem continues, examine the circuit between the printer, B7064, connector DB7064, pins E and F, and the right CMC, M7374, connector DM7374CA, pins C6 and D6 (WDM 45-45-21). Repair the problems that you find.

B. KLM 035-099;
Do the steps that follow:
(1) Replace the right CMC, M7374 (AMM 45-10-01/401).
(2) If the problem continues, examine the circuit between the printer, B8641, connector DB8641, pins KK and LL, and the right CMC, M7374, connector DM7374CA, pins C6 and D6 (WDM 45-45-22). Repair the problems that you find.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45510<br>PRINTER FAIL OR<br>PRINTER OUTPUT BUS<br>FAIL | |

CORRECTIVE ACTION:

A. KLM 001-034;
Do the steps that follow:
(1) Replace the printer, B7064 (AMM 45-10-02/401).

(2) If the problem continues, examine the circuit between the PRINTER circuit breaker, C10242, and the printer, B7064, connector DB7064, pin R (WDM 45-45-21). Repair the problems that you find.
(3) If the problem continues, examine the circuit between the printer, B7064, connector DB7064, pins E and F, and the left CMC, M7373, connector DM7373CA, pins C6 and D6, and the right CMC, M7374, connector DM7374CA, pins C6 and D6 (WDM 45-45-21). Repair the problems that you find.
(4) If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
(5) If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

B. KLM 035-099;
Do the steps that follow:
(1) Replace the printer, B8641 (AMM 45-10-02/401).
(2) If the problem continues, examine the circuit between the PRINTER circuit breaker, C10242, and the printer, B8641, connector DB8641, pin B (WDM 45-45-22). Repair the problems that you find.
(3) If the problem continues, examine the circuit between the printer, B8641, connector DB8641, pins KK and LL, and the left CMC, M7373, connector DM7373CA, pins C6 and D6, and the right CMC, M7374, connector DM7374CA, pins C6 and D6 (WDM 45-45-22). Repair the problems that you find.
(4) If the problem continues, replace the left CMC, M7373 (AMM 45-10-01/401).
(5) If the problem continues, replace the right CMC, M7374 (AMM 45-10-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45950<br>TEST ENABLE RELAY-1<br>FAIL<br>(BSCU) | GND TESTS ENABLE<br>(STATUS) |

CORRECTIVE ACTION:
A. Replace test enable relay 1, R8053 (WDM 45-32-21).

B. If the problem continues, examine the circuit between the BSCU, M80, connector DM80BA, pins C4 and C6, and test enable relay 1, R8053, connector DR8053, pins 10 and 11 (WDM 32-42-11). Repair the problems that you find.
C. If the problem continues, do these steps:
(1) Set the remote ground test enable switch to the ENABLE position.
(2) Do a check for 28 VDC between pins 6 and 12 of connector DR8053 on test enable relay 1, R8053 (WDM 45-32-21). If there is not 28 VDC between pins 6 and 12, examine the circuit and repair the problems that you find.
(3) Set the remote ground test enable switch to the NORM position.
D. If the problem continues, replace the BSCU, M80 (AMM 32-42-01/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45951<br>TEST ENABLE RELAY-2<br>FAIL<br>(PSEU) | GND TESTS ENABLE<br>(STATUS) |

CORRECTIVE ACTION:
A. Look in existing faults for this CMCS message: 32877 (PSEU FAIL). If the message shows, do the corrective action for that message.
B. If the problem continues, replace test enable relay 2, R8054 (WDM 45-32-21).
C. If the problem continues, examine the circuit between the PSEU, M7838, connector DM7838BA, pin F15, and test enable relay 2, R8054, connector DR8054, pin 11 (WDM 32-61-11). Repair the problems that you find.
D. If the problem continues, do these steps:
(1) Set the remote ground test enable switch to the ENABLE position.
(2) Do a check for 28 VDC between pins 6 and 12 of connector DR8054 on test enable relay 2, R8054 (WDM 45-32-21). If there is not 28 VDC between pins 6 and 12, examine the circuit and repair the problems that you find.
(3) Set the remote ground test enable switch to the NORM position.
E. If the problem continues, replace the PSEU, M7838 (AMM 32-09-03/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45952<br>TEST ENABLE RELAY-3<br>FAIL<br>(WHCU) | GND TESTS ENABLE<br>(STATUS) |

CORRECTIVE ACTION:
A. Look in existing faults for these CMCS messages, and if a message shows, do the corrective action for that message:
(1) 30102, 30112 (WHCU FAIL)

(2) 30108, 30109, 30110, 30126, 30127, 30128 (EIU FAIL OR WHCU>EIU BUS FAIL)
(3) 30129, 30130 (WHCU FAIL OR WHCU OUTPUT BUS FAIL)

B. If the problem continues, replace test enable relay 3, R8055 (WDM 45-32-21).

C. If the problem continues, examine the circuit between WHCU 1L, M73, connector DM73BA, pin 10, and test enable relay 3, R8055, connector DR8055, pins 10 (WDM 30-41-11). Repair the problems that you find.

D. If the problem continues, examine the circuit between WHCU 1R, M237, connector DM237BA, pin 10, and test enable relay 3, R8055, connector DR8055, pins 8 (WDM 30-41-12). Repair the problems that you find.

E. If the problem continues, do these steps:
(1) Set the remote ground test enable switch to the ENABLE position.
(2) Do a check for 28 VDC between pins 6 and 12 of connector DR8055 on test enable relay 3, R8055 (WDM 45-32-21). If there is not 28 VDC between pins 6 and 12, examine the circuit and repair the problems that you find.
(3) Set the remote ground test enable switch to the NORM position.

F. If the problem continues, do these steps:
(1) Open this circuit breaker: 18OH26 WINDOW HEAT CONT 1L.
(2) Open and then close this circuit breaker: 414L8 CMC LEFT.
(3) Look in existing faults for CMCS message 45952. If the message does not show in existing faults, replace WHCU 1L, M73 (AMM 30-41-01/401).
(4) Close this circuit breaker: 18OH26 WINDOW HEAT CONT 1L.

G. If the problem continues, do these steps:
(1) Open this circuit breaker: 18OH12 WINDOW HEAT CONT 1R.
(2) Open and then close this circuit breaker: 414L8 CMC LEFT.
(3) Look in existing faults for CMCS message 45952. If the message does not show in existing faults, replace WHCU 1R, M237 (AMM 30-41-01/401).
(4) Close this circuit breaker: 18OH12 WINDOW HEAT CONT 1R.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45953<br>TEST ENABLE RELAY<br>4, 6, OR 7 FAIL<br>(EIU) | GND TESTS ENABLE<br>(STATUS) |

CORRECTIVE ACTION:

A. Look in existing faults for this CMCS message: 31328 (EIU DISCRETE DISAGREE CONNECTOR DM735X DA PIN A08). If the message shows, do the corrective action for that message.

B. If the problem continues, look for the EIU DISAGREE (STATUS) message. If EIU DISAGREE (STATUS) shows, do the corrective action for EIU DISAGREE (FIM 31-61-00/101).

C. If the problem continues, replace test enable relay 4, R8056 (WDM 45-32-21).

D. If the problem continues, replace test enable relay 6, R8058 (WDM 45-32-21).
E. If the problem continues, replace test enable relay 7, R8059 (WDM 45-32-21).
F. If the problem continues, examine the circuit between the left (center, right) EIU, M7353 (M7352, M7351), connector DM7353DA (DM7352DA, DM7351DA), pin A8, and the pins that follow. Repair the problems that you find (WDM 31-61-12):
   (1) Test enable relay 4, R8056, connector DR8056, pin 11.
   (2) Test enable relay 6, R8058, connector DR8058, pin 11.
   (3) Test enable relay 7, R8059, connector DR8059, pin 11.
G. If the problem continues, do these steps:
   (1) Set the remote ground test enable switch to the ENABLE position.
   (2) Do a check for 28 VDC between pins 6 and 12 of these connectors (WDM 45-32-21):
      (a) Connector DR8056 on test enable relay 4, R8056.
      (b) Connector DR8058 on test enable relay 6, R8058.
      (c) Connector DR8059 on test enable relay 7, R8059.
   (3) If there is not 28 VDC between pins 6 and 12, examine the circuit and repair the problems that you find (WDM 45-32-21).
   (4) Set the remote ground test enable switch to the NORM position.

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45954<br>TEST ENABLE RELAY-5<br>FAIL<br>(SRM) | GND TESTS ENABLE<br>(STATUS) |

CORRECTIVE ACTION:
A. Look in existing faults for these CMCS messages, and if a message shows, do the corrective action for that message:
   (1) 27001, 27002, 27201, 27202 (SRM FAIL)
   (2) 27385, 27386, 27387, 27389, 27390, 27391 (EIU FAIL OR SRM>EIU BUS FAIL)
   (3) 27393, 27394 (SRM FAIL OR SRM OUTPUT BUS FAIL)
B. If the problem continues, replace test enable relay 5, R8057 (WDM 45-32-21).
C. If the problem continues, examine the circuit between test enable relay 5, R8057, connector DR8057, pin 10 and these pins (WDM 27-09-19), and repair the problems that you find:
   (1) Left SRM, M3136, connector DM3136CA, pin F8.
   (2) Right SRM, M3137, connector DM3137CA, pin F8.
D. If the problem continues, do these steps:
   (1) Set the remote ground test enable switch to the ENABLE position.
   (2) Do a check for 28 VDC between pins 6 and 12 of connector DR8057 on test enable relay 5, R8057 (WDM 45-32-21). If there is not 28 VDC between pins 6 and 12, examine the circuit and repair the problems that you find.
   (3) Set the remote ground test enable switch to the NORM position.

E. If the problem continues, do these steps:
   (1) Open these circuit breakers:
      (a) 7C10 FLT CONT ELEC 2L AC
      (b) 7C12 FLT CONT ELEC 1L AC
   (2) Open and then close this circuit breaker: 414L8 CMC LEFT.
   (3) Look in existing faults for CMCS message 45954. If the message does not show in existing faults, replace left SRM, M3136 (AMM 27-41-01/401).
   (4) Close these circuit breakers:
      (a) 7C10 FLT CONT ELEC 2L AC
      (b) 7C12 FLT CONT ELEC 1L AC
F. If the problem continues, do these steps:
   (1) Open these circuit breakers:
      (a) 7C14 FLT CONT ELEC 1R AC
      (b) 7C16 FLT CONT ELEC 2R AC
   (2) Open and then close this circuit breaker: 414L8 CMC LEFT.
   (3) Look in existing faults for CMCS message 45954. If the message does not show in existing faults, replace right SRM, M3137 (AMM 27-41-01/401).
   (4) Close these circuit breakers:
      (a) 7C14 FLT CONT ELEC 1R AC
      (b) 7C16 FLT CONT ELEC 2R AC

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45955<br>TEST ENABLE RELAY-8<br>FAIL<br>(PSEU) | GND TESTS ENABLE<br>(STATUS) |

CORRECTIVE ACTION:
A. Look in existing faults for CMCS message 32877. If the message shows, do the corrective action for that message.
B. If the problem continues, replace test enable relay 8, R8087 (WDM 45-32-21).
C. If the problem continues, examine the circuit between the PSEU, M7838, connector DM7838EA, pin E15, and test enable relay 8, R8087, connector DR8087, pin 5 (WDM 32-61-21). Repair the problems that you find.
D. If the problem continues, do these steps:
   (1) Set the remote ground test enable switch to the ENABLE position.
   (2) Do a check for 28 VDC between pins 6 and 12 of connector DR8087 on test enable relay 8, R8087 (WDM 45-32-21). If there is not 28 VDC between pins 6 and 12, examine the circuit and repair the problems that you find.
   (3) Set the remote ground test enable switch to the NORM position.
E. If the problem continues, replace the PSEU, M7838 (AMM 32-09-03/401).

| CMCS MESSAGE | POSSIBLE FLIGHT DECK EFFECT |
|---|---|
| 45960<br>GROUND TEST ENABLE<br>SYSTEM FAIL<br>'2 OR MORE RELAYS' | GND TESTS ENABLE<br>(STATUS) |

CORRECTIVE ACTION:

A. Do input monitoring on each relay:

(1) Set the GND TESTS switch on the overhead maintenance panel, P461, to the ENABLE position.

(2) Do input monitoring as specified in the table as follows:

(a) Select OTHER FUNCTIONS from page 2 of the CMC MENU.

(b) Select INPUT MONITORING from the other functions menu.

(c) Use the CDU keypad to type the first input monitoring string that shows in the table.

(d) Push the top left key on the CDU to see the input monitoring data.

(e) Look at the bit specified in the table in the ENABLE column and make sure the bit on the input monitoring display is correct.

NOTE: Three samples show on the display. Each sample is two lines of 1's and 0's. Bit 32 is the left bit of the first line. Bit 1 is the right bit of the second line.

(f) If the bit is incorrect, replace the relay specified in the table.

(g) Push the NEXT PAGE key on the CDU and type another input monitoring string (You can have up to eight pages of input monitoring data at one time).

(3) Set the GND TESTS switch to the NORM position.

(4) Look at each page of input monitoring data again (push the NEXT PAGE or PREV PAGE key to move from page to page).

(a) Look at the bit specified in the table in the NORM column and make sure the bit on the input monitoring display is correct.

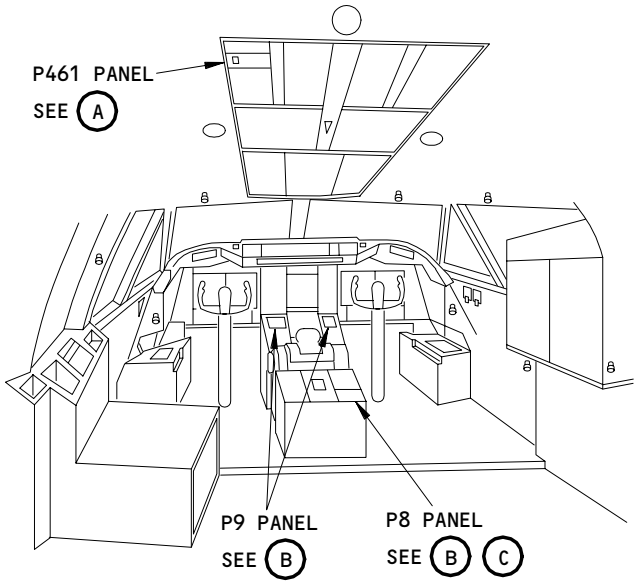
(b) If the bit is incorrect, replace the relay specified in the table.

| INPUT MONITORING STRING | GND TESTS SWITCH POSITION | | TEST ENABLE RELAY |
|---|---|---|---|
| | ENABLE | NORM | |
| E/60/351/01 | BIT 27 = 0 | BIT 27 = 1 | R8053 (1) |
| E/70/157/00 | BIT 11 = 1 | BIT 11 = 0 | R8054 (2) |
| | BIT 12 = 1 | BIT 12 = 0 | R8087 (8) |
| E/105/350/00 | BIT 26 = 1 | BIT 26 = 0 | R8055 (3) |
| E/74/350/00 | BIT 26 = 1 | BIT 26 = 0 | R8055 (3) |
| C/26/2/10 | BIT 24 = 1 | BIT 24 = 0 | R8056 (4)<br>R8058 (6)<br>R8059 (7) |
| E/53/272/00 | BIT 27 = 1 | BIT 27 = 0 | R8057 (5) |
| E/26/272/00 | BIT 27 = 1 | BIT 27 = 0 | R8057 (5) |

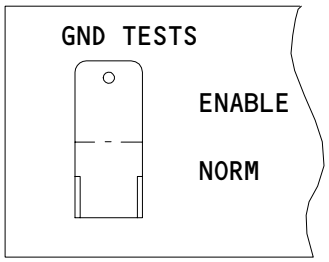
B. If the problem continues, do the corrective actions for these CMCS messages: 45950, 45951, 45952, 45953, 45954, and 45955 (TEST ENABLE RELAY-X FAIL).

## CENTRAL MAINTENANCE COMPUTER SYSTEM - DESCRIPTION AND OPERATION

1. General
   A. The CMCS collects, stores, and displays maintenance information generated by line replaceable units (LRUs). The CMCS also provides a central location to initiate system BITE tests. The Central Maintenance Computer System (CMCS) interfaces with all major avionics, electrical, and mechanical systems installed on the airplane.
   B. The CMCS provides fault consolidation to combine multiple fault indications when a single fault is reported by multiple subsystems. Approximately 6500 CMCS fault messages can be generated, and up to 500 of these messages can be stored in CMCS memory.
   C. The CMCS consists of two central maintenance computers (CMCs), two ground test switches, eight enable relays, and one multiple-input printer (Fig. 1).
   D. The primary crew interface with the CMCS is through the control display units (CDUs) which are part of the Flight Management Computer System (FMCS) (Ref 34-61-00/001). The CMCS also works in close conjunction with the IDS Integrated Display System (IDS) (Ref 31-61-00/001). (Fig. 2)
   E. The data loader is used to load the CMC software and the CMCS airline data base (AMM 45-10-10/201). The data loader can also be used to download CMC fault data onto a diskette for analysis at a later time (AMM 45-10-11/201).
   F. Electrical power is supplied by the Electrical Power System (Ref 24-00-00/001). (Fig. 3)
   G. The CMCS interface with most airplane systems consists of test initiation commands being sent to the individual LRUs, and test results being sent back to the CMCS for storage and display. In addition, the CMCS receives fault data detected by continuous BITE monitoring within LRUs.
   H. The CMC interface with airplane systems is classified as either direct or indirect. In the direct interface, the CMCs send test initiation commands to the airplane system LRUs, and the test results are transmitted directly back to the CMCs. In the indirect interface, the LRUs send test results through the EIUs, which then pass the appropriate data to the CMCs (Fig. 2). The same types of interface (direct or indirect) are used to transmit results of continuous fault monitoring performed by airplane LRUs.
   I. The CMC incorporates an option code feature which enables functions in the CMC that are required for the various airplane options. The option code is entered with the CDU keyboard. An option code must be installed in the CMC to allow CMCS operation.

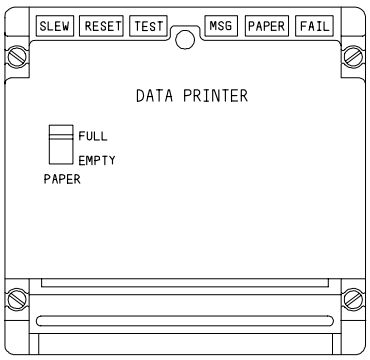



FLIGHT COMPARTMENT



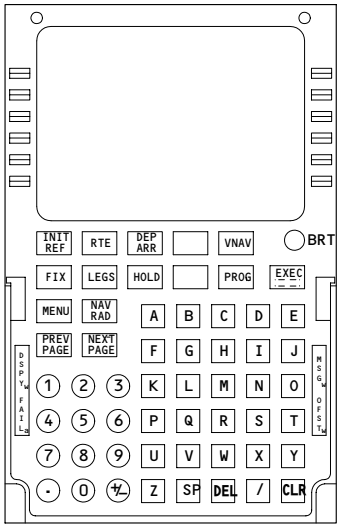

GROUND TEST SWITCH

A



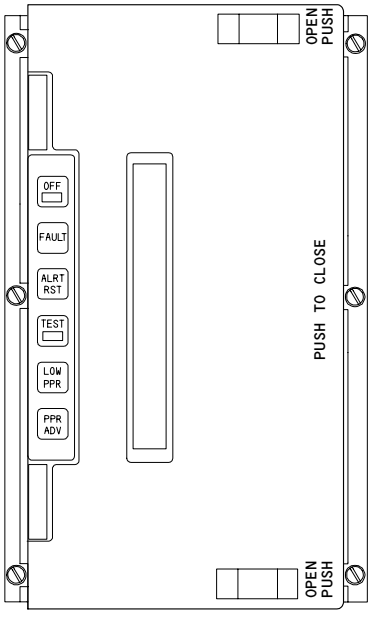

MULTIPLE-INPUT PRINTER

C 1




LEFT, RIGHT, OR CENTER
CONTROL DISPLAY UNIT

B

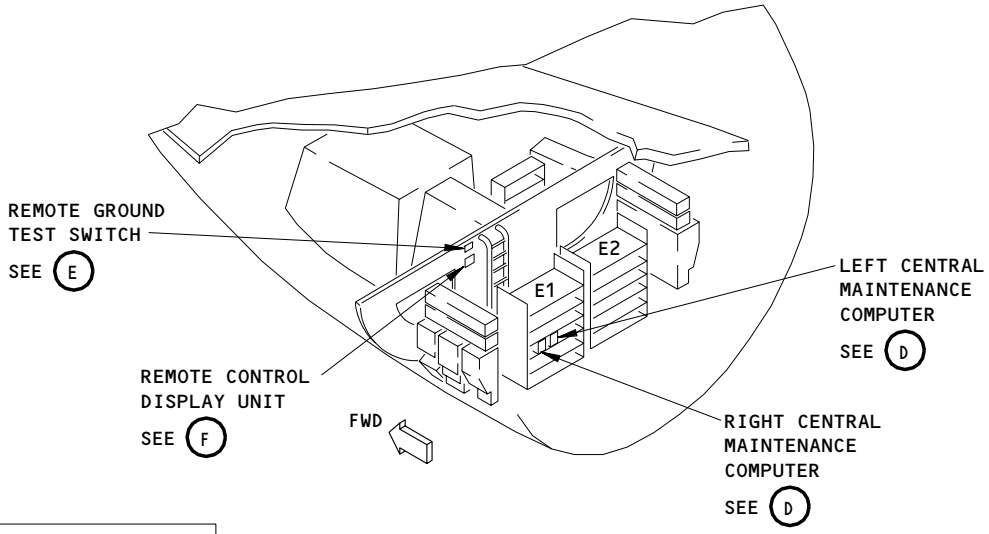



FULL-FORMAT PRINTER

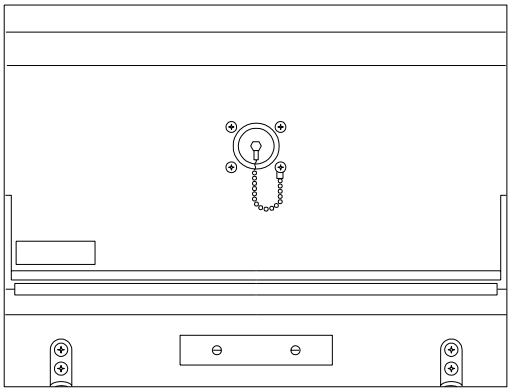
C 2

1 KLM 001-034
2 KLM 035-999

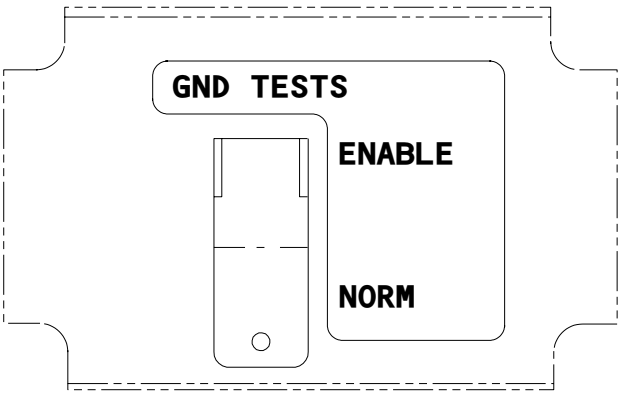
Central Maintenance Computer System - Component Location
Figure 1 (Sheet 1)



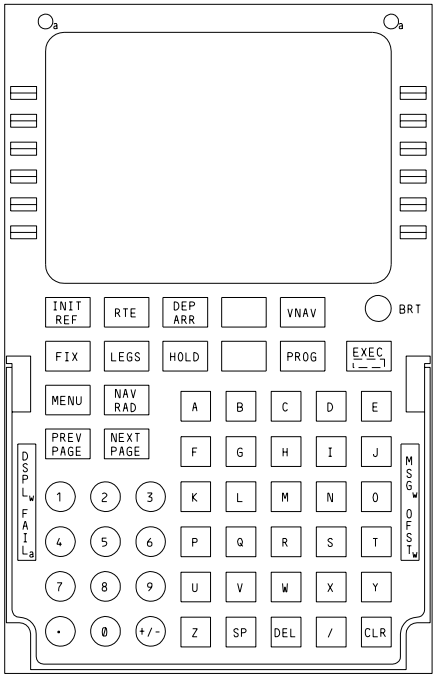

MAIN EQUIPMENT CENTER



LEFT OR RIGHT CENTRAL
MAINTENANCE COMPUTER
D



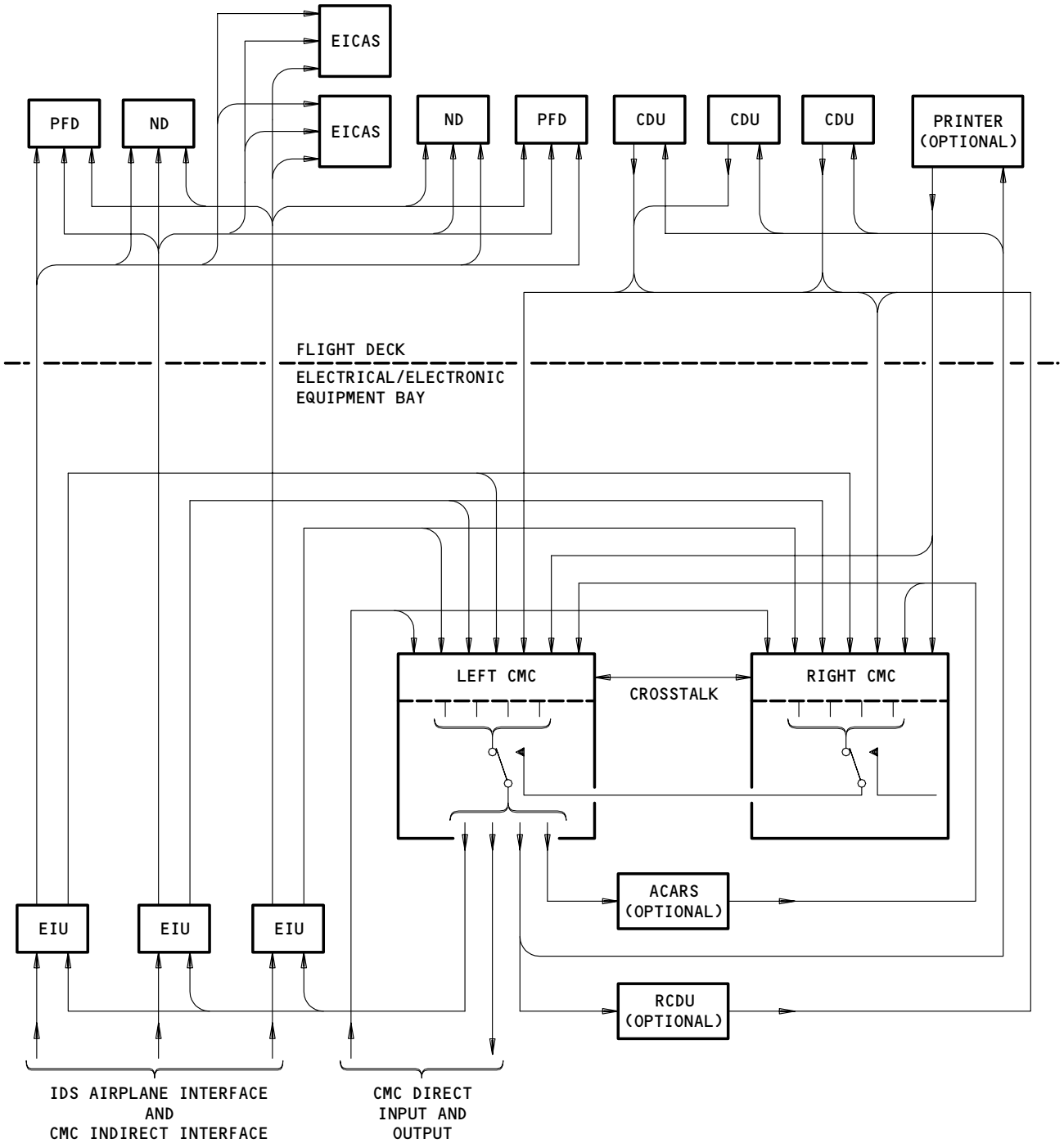

REMOTE GROUND TEST SWITCH
E




REMOTE CONTROL DISPLAY UNIT
F

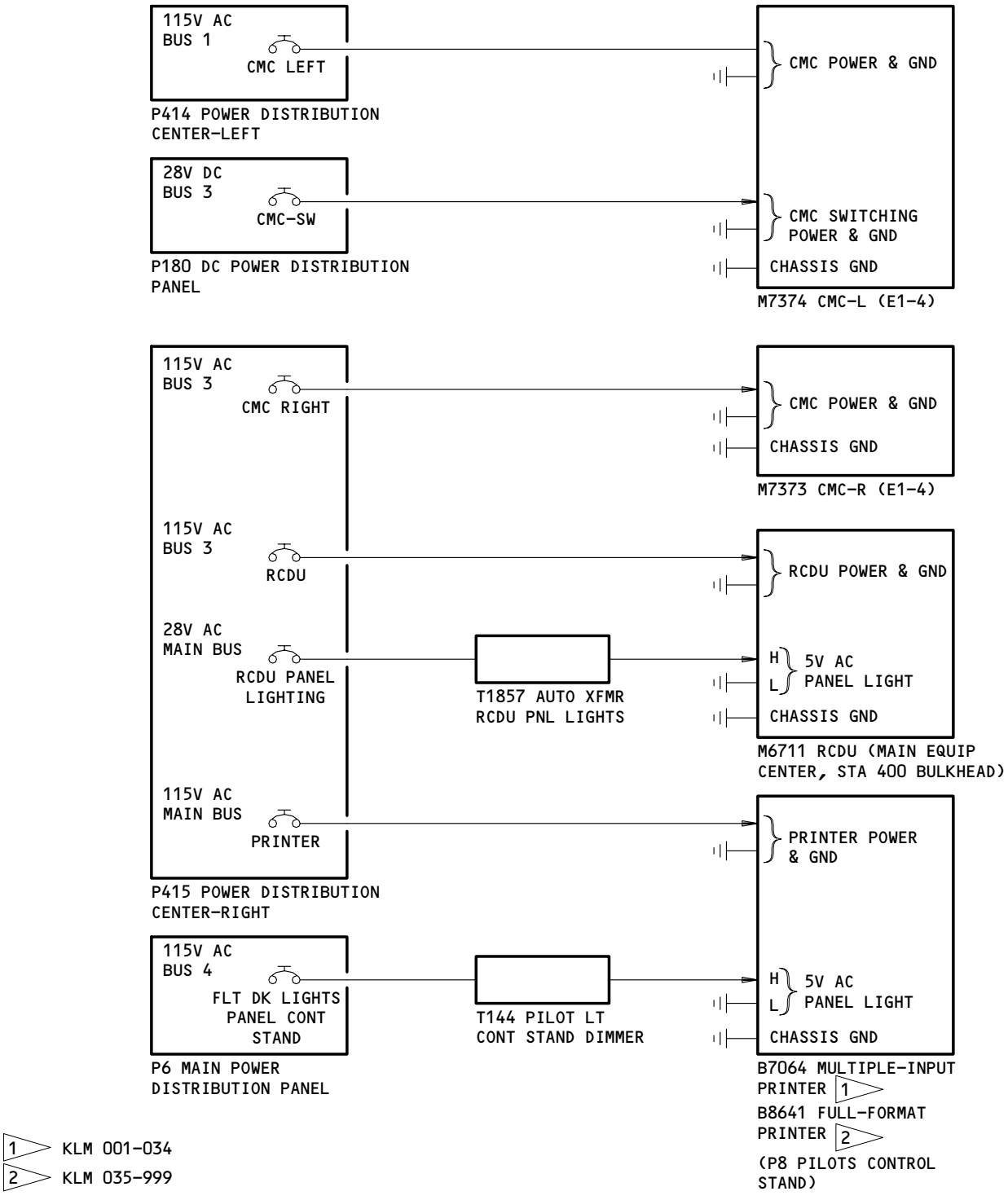
Central Maintenance Computer System - Component Location
Figure 1 (Sheet 2)

2. Central Maintenance Computer (Fig. 1)
   A. Two identical central maintenance computers (CMCs) are installed in the main equipment center. Both CMCs are powered in normal operation and both simultaneously process fault messages. All system inputs to the CMCs are connected in parallel to both CMCs. Discrete outputs from both CMCs are spliced together in airplane wiring. Digital output buses are switched by relays within the CMC installed in the left position so that only one CMC transmits digital output information at any given time. In normal operation, digital output information is provided by the left CMC. If the left CMC fails, automatic switching occurs so that the right CMC provides the outputs. The CMCS can be fully operational with only one CMC installed. However, this single CMC must be installed in the left CMC position.
3. Ground Test Switches and Relays (Fig. 1,5)
   A. The ground test switches, together with the enable relays permit or prohibit the transmission of test initiation signals from the CMC to the LRUs.
   B. Ground Test Switches
      (1) One ground test switch is installed in the flight compartment. A remote ground test switch is installed in the main equipment center.
      (2) When both switches are in the NORM position, initiation of some ground tests by the CMC is inhibited. This inhibit is in addition to the inhibit features of the specific LRUs. When at least one switch is in the ENABLE position, ground test initiation is permitted.
   C. Enable Relays
      (1) Eight relays are installed in the main equipment center.
      (2) The relays are controlled by the ground test switches. When both switches are in the NORM position, the eight relays are open and test initiation signals from the CMCs cannot get through to the LRUs. When at least one switch is in the ENABLE position, the relays are closed and CMC test initiation signals can get through to the LRUs.
4. Multiple-Input Printer (Fig. 1)
   A. The multiple-input printer is used to generate reports of fault data shown on the CDU. The printer is installed in the flight compartment. A <REPORT prompt on the CDU is provided when a printer report can be made of the display.
5. Control Display Unit (Fig. 1)
   A. The control display unit (CDU) is the primary crew interface for the CMCS. The CDU is also the primary crew interface for several other systems and is actually part of the Flight Management Computer System (AMM 34-61-00/001). The CMCS uses the CDU to display maintenance information. When the CMCS is the active system on the CDU, everything on the display is generated entirely by the CMCS.

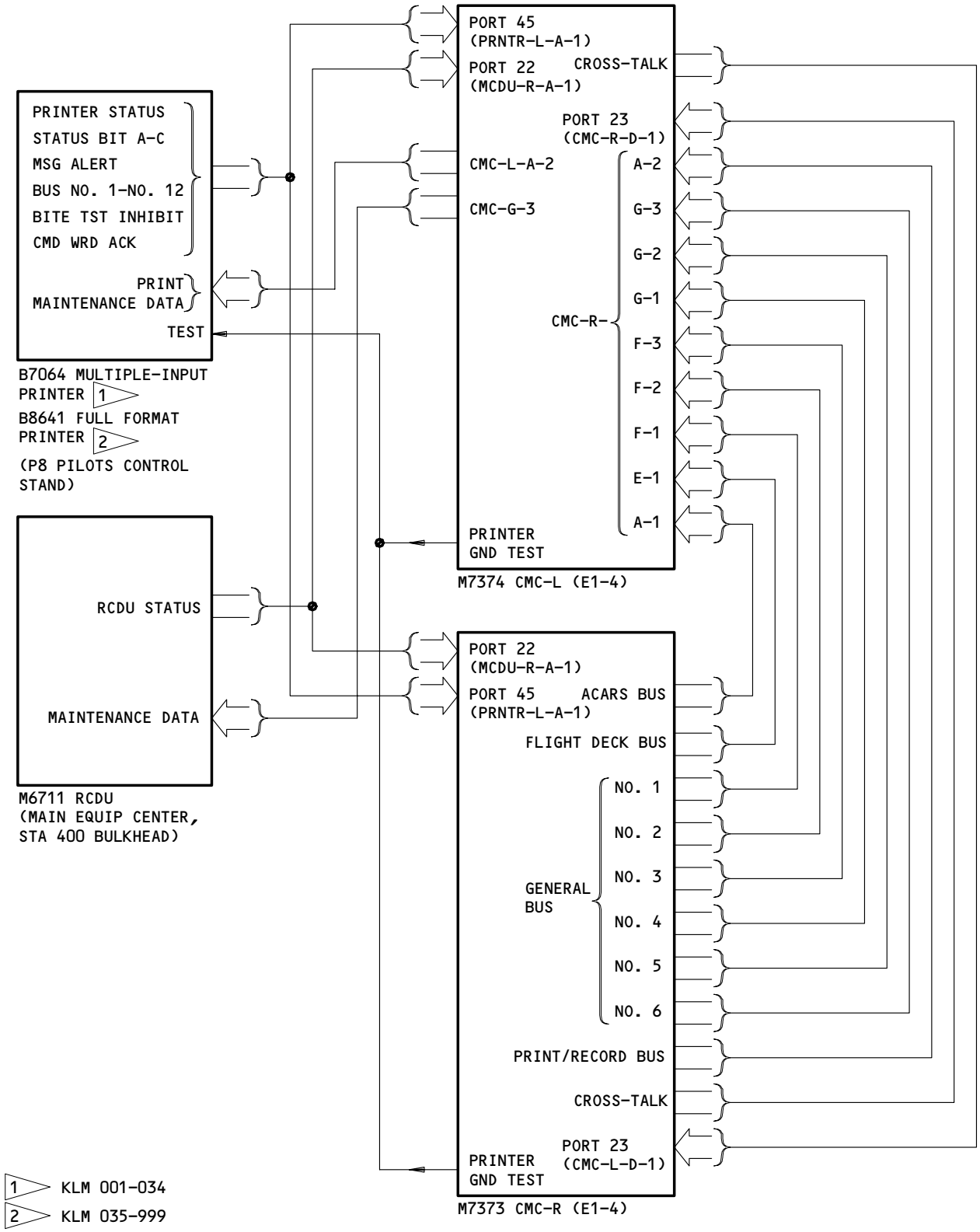



CMC - IDS Interface
Figure 2

826039



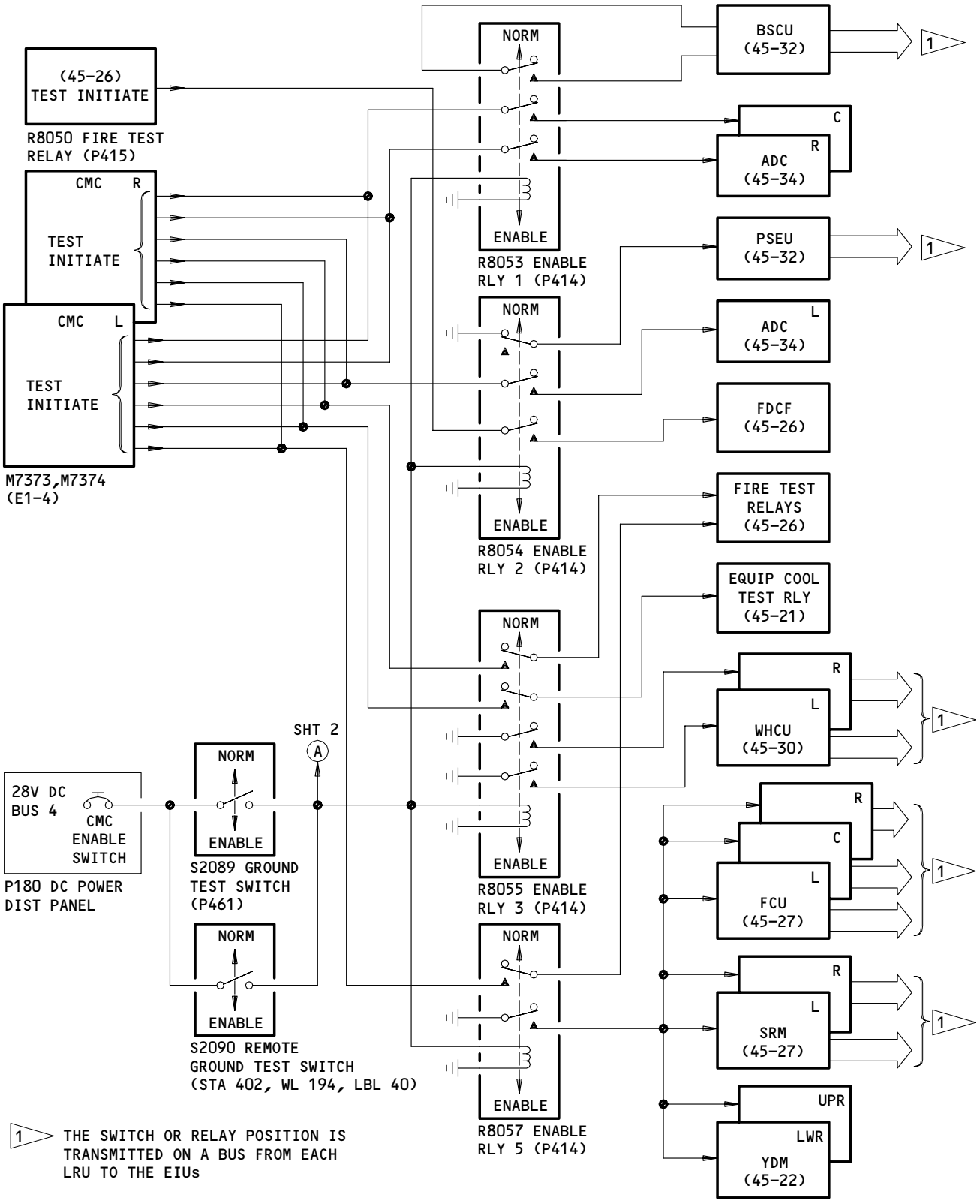

Central Maintenance Computer System - Power Distribution
Figure 3




CMC - Printer - RCDU Interface
Figure 4



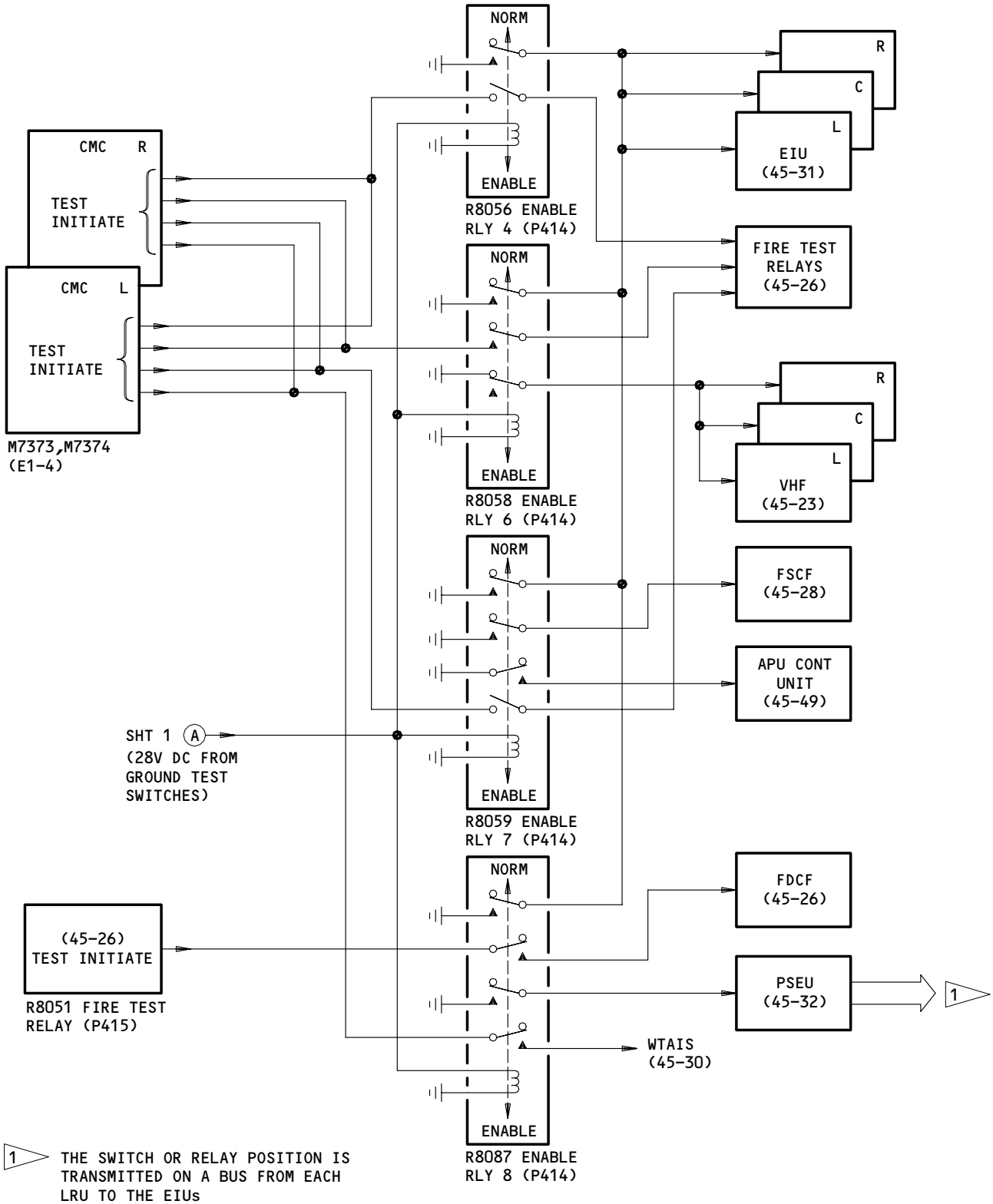
C81053




CMC - Ground Test Switch Interface
Figure 5 (Sheet 1)



826397




CMC - Ground Test Switch Interface
Figure 5 (Sheet 2)

B. Three CDUs are installed in the flight compartment and one remote CDU is installed in the main equipment center.
   (1) All CDUs can be used to access the CMCS at the same time. The same or different CMC functions are available simultaneously. Inhibits are provided automatically for ground test and shop fault selections that could interfere with one another. (Refer to Table II - Ground Test Interference, MM 45-10-00/201, for a list of the ground tests that cannot operate at the same time.)

C. The CDU keys used in connection with the CMCS include the MENU, NEXT PAGE, and PREV PAGE keys, the line select keys (LSKs), the alpha-numeric keys, the CLR key, and the LEGS key.
   (1) The MENU key is used to display the CDU MENU. The CDU MENU provides access to all systems which use the CDU for control and display.
   (2) The NEXT PAGE key causes the CDU to display the next higher page number of multiple page displays. Selecting NEXT PAGE when the last page is displayed will cause the first page to be displayed.
   (3) The PREV PAGE key causes the CDU to display the next lower page number of multiple page displays. Selecting PREV PAGE when the first page is displayed will cause the last page to be displayed.
   (4) The line select keys (LSKs) allow navigation through the menus and data displays. The CMC will provide access to data or functions only when there is an caret (< or >) adjacent to the key.
   (5) The alpha-numeric keys are used to type letters and numbers into the CDU scratchpad (the bottom line of the CDU display).
   (6) When the CLR key is pushed for less than 1 second, the last manually entered character on the right of the scratchpad will be erased. When the CLR key is pushed for more than 1 second, the entire manually entered scratchpad entry will be erased.
   (7) The LEGS key on the left, right, and remote CDU can be used to log the CDU off of the CMC. (A CDU that shows CMC data is logged on to the CMC.)

6. Integrated Display System
   A. The Integrated Display System (IDS) (Ref. 31-61-00/001) annunciates all fault information that requires flight crew awareness or action in the form of flight deck effects (FDEs). FDEs and other fault data can be collected using either the Fault Reporting Manual (FRM) procedures, or by direct access of the CMC with the CDU. This data can be provided once the airplane lands, or can be transmitted ahead while in flight using ACARS or voice radio communication.
   B. Each FDE is correlated to a CMCS fault message whenever possible. With these correlations, the flight crew or maintenance persons may interrogate the CMCS to investigate the cause of the FDE. In this way, the CMCS helps to isolate faults within the airplane systems. In addition, EICAS maintenance page displays on the auxiliary EICAS display can be controlled by a CMCS function on the CDUs.

7. Operation
   A. Functional Description
      (1) The CMCS displays its maintenance information on the CDU. The information is organized within a menu structure. Each menu and display page is described below.
      (2) CDU MENU (Fig. 6)
         (a) The CDU MENU provides access to the page displays of each system that uses the CDU for crew control and display interface.
         (b) The CDU MENU is accessed by pushing the MENU key on the CDU.
      (3) CMC MENU (Fig. 7)
         (a) All CMC functions and data pages are accessible through the two pages of the CMC MENU.
            1) The functions on the first page (present leg faults, confidence tests, EICAS maintenance pages, and ground tests) are intended to support line maintenance and airplane turnaround.
            2) The functions on the second page (existing faults, fault history, and other functions) are intended to support extended maintenance and troubleshooting.
         (b) The header of the menu shows which CMC is in control. If the header is CMC-L MENU, the left CMC is in control; if the header is CMC-R MENU, the right CMC is in control.
         (c) Access to the CMC MENU is inhibited when the inertial ground speed is greater than 50 knots.
      (4) NOTES and HELP
         (a) The NOTES and HELP functions are accessible from the CMC MENU as well as from many other menus and display pages.
            1) The NOTES function can be used to record more data related to LRU failures. The NOTES> prompt is shown on a display only if there is data in the airline data base for that display.
            2) Selection of the HELP> prompt from a page will provide information on the use of that page.
      (5) Page Numbers
         (a) The page number indication in the top right corner of each page shows the page number and the total number of pages. For example, the indication 2/3 is shown on the second of three pages. The NEXT PAGE and PREV PAGE keys are used to move from one page to a higher or lower numbered page.
         (b) There can be a maximum of five characters in the page indication. If the total number of pages is 100 or larger, the indication will be shown incorrectly on all pages after page 9. For example, if the total number of pages is 145, the indication on page 3 is shown correctly as 3/145; but the indication on page 52 is shown incorrectly as 52/14. To prevent errors, the total number of pages should be read from pages 1 through 9.

(6) Message Pages (Fig. 8)

(a) Most of the fault data provided by the CMCS is shown on the message (MSG) pages. There are message pages for the present leg faults function, the existing faults function, the fault history function, and the test results pages. These pages provide essentially the same type of fault data except for the minor differences noted below and on Figure 8.

(b) The data that follows is shown on one or more message pages, as indicated in parentheses:

1) A CMCS fault message (all message pages)
2) The number of the CMCS fault message (all message pages)
3) The ATA chapter associated with the CMCS fault message (all message pages)
4) The date and time (GMT) of the occurrence of the CMCS fault message (present leg and fault history message pages)
5) The flight leg during which the fault became active (fault history message page)
6) The equipment number, if there is one, associated with the CMCS fault message (all message pages)
7) A indication of whether the fault is active (present leg and existing faults message pages)
8) The flight phase during which the fault first became active (present leg and fault history message pages)
9) An indication of whether the fault is hard, intermittent, non-determined, or N/A for non-applicable (present leg and fault history message pages)
10) A FDE, if there is one, that is correlated to the CMCS fault message (all message pages that show a FDE)
11) An indication of whether the FDE, if there is one, is shown on the EICAS display (all message pages that show a FDE)
12) The <READ SNAPSHOT prompt, if there is a maintenance page snapshot that is related to the flight deck effect (all pages that show a FDE)
13) The <DIAG CODE prompt, if the CMCS message is from the flight control computer (FCC). When you push the adjacent key, the FCC diagnostic codes show. The L, C, or R of the diagnostic code shows which FCC (left, center, or right) sent the code. An A after the diagnostic code shows that the fault is an avalanche fault. An avalanche fault is one step away from a fault that will cause the autopilot to disconnect.

(c) Flight Leg (Fig. 9)

1) A flight leg normally starts with the airplane on the ground when the first engine starts. But if the engines are not shut down from the previous flight, the next flight leg starts when the last door goes from open to closed. When one flight leg ends and the next flight leg starts, a flight leg transition occurs. There is no time gap between flight legs.

2) The first engine start is when the engine start switch is pulled, and the fuel control switch is set to RUN (and the engine fire handle is not pulled).
3) The left and right IRU or the left and center IRU must be on before the flight leg transition can occur. A flight leg transition is also referred to as a flight leg roll.
4) The next flight leg cannot start until it is enabled in one of these two ways:
   a) The next flight leg is automatically enabled when the CMC gets the engine take-off thrust discrete with the parking brake released, or
   b) The next flight leg is manually enabled with the ENABLE FLT LEG ROLL selection on the OTHER FUNCTIONS menu.

   NOTE: Leaving the following circuit breakers on the P6 panel open for at least 5 minutes simulates the logic for engines running. If these circuit breakers are open for 5 minutes and the IRUs are on, a flight leg transition can occur when the last door closes.

   6L10 ENG 1 FUEL CONT VALVE
   6L11 ENG 2 FUEL CONT VALVE
   6L12 ENG 3 FUEL CONT VALVE
   6L13 ENG 4 FUEL CONT VALVE

5) The CMCS numbers the present flight leg -00. Previous flight legs are numbered -01, -02, -03, etc., counting backwards in time from the present flight leg.

(d) Flight Phase
1) The flight phase in which a fault occurred is shown on two types of message pages: the PRESENT LEG FAULTS page and the FAULT HISTORY MSG page. The flight phase is shown as a code. The corresponding flight phase names are shown in Table 1.

| FLIGHT PHASE CODE | FLIGHT PHASE NAME |
|---|---|
| PO | POWER ON |
| PF | PRE FLIGHT |
| ES | ENGINE START |
| TA | TAXI-OUT |
| TO | TAKEOFF |
| IC | INITIAL CLIMB |
| CL | CLIMB |
| ER | ENROUTE CRUISE |
| DC | DESCENT |
| AL | APPROACH LAND |
| RO | ROLLOUT |
| TI | TAXI-IN |
| GA | GO AROUND |
| SD | ENG SHUTDOWN |
| LT | LEG TRANSITION |

Table 1
Flight Phases

2) Leg Transition (LT)
   a) If a fault is active at flight leg transition, and it stays active until a flight phase when it can be stored, the fault message is stored in present leg faults and in fault history with the LT flight phase code and the date and time of the flight leg transition.
3) Maintenance phases
   a) The flight phases during which maintenance is usually done are defined as the maintenance phases. The maintenance phases for most systems include these flight phases: ENG SHUTDOWN (SD), POWER ON (PO), and PRE FLIGHT (PF).
4) Operational period
   a) The flight phases during which maintenance on a particular system is not usually done are defined as the operational period of the system.

(e) Hard Faults
1) The message page shows the indication HRD for a hard fault.
2) The fault that caused a CMCS fault message is defined as hard if these conditions are true about the fault:
   a) It occurs during a flight phase when it can be stored in non-volatile memory (NVM)
   b) And it is generated before the maintenance phases

c) And it stays active constantly until the maintenance phases start.

(f) Intermittent Faults

1) The message page shows the indication INT for an intermittent fault.

2) The fault that caused a CMCS fault message is defined as intermittent if these conditions are true about the fault:

a) It occurs during a flight phase when it can be stored in NVM

b) And it occurs before the maintenance phases

c) And it does not stay active constantly until the maintenance phases start.

(g) Non-determined Faults

1) The message page shows no indication for a non-determined fault.

2) The fault that caused a CMCS fault message is defined as non-determined if these conditions are true about the fault:

a) It occurs during the maintenance phases

b) And it can be kept in NVM during the maintenance phases.

(h) N/A Faults

1) For engine messages, N/A (for non-applicable) is used instead of hard, intermittent, or non-determined regardless of when or how often the messages occur. Because of the "Engine Shutdown" flight phase doesn't begin until the last engine shuts down, active latched HRD faults from engines shut down prior to the last engine would have shown INT even though they were latched HRD faults.

(i) Correlated FDE

1) A FDE is defined to be correlated to a CMCS fault message if they are generated within a certain time period of each other and they are related to the same airplane system.

(j) Latched EICAS Status Messages

1) Some EICAS status messages are latched into EIU memory when they occur. They show on the CDU with an ERASE> prompt. When the fault is corrected, the message must be erased to remove it from the auxiliary EICAS display.

(k) Snapshots

1) A snapshot of an EICAS maintenance page is maintenance page data, stored in the EIU, that can be selected for display on the auxiliary EICAS. The CDU must be used to select a snapshot for display. Snapshots are made either manually or automatically.

2) Manual snapshots are made in two ways:

a) Push the EVENT RCD switch on the EICAS control panel to make snapshots of all maintenance pages at the same time.

b) Select the <RECORD prompt on the EICAS PAGE CONTROL menu on the CDU to make a snapshot of a selected maintenance page.

3) Automatic snapshots are triggered by a system fault or engine exceedance. (For more information on snapshots, refer to AMM 31-61-00/001.)

(7) Present Leg Faults (Fig. 10)

(a) The present leg faults function provides information on flight deck effects (FDEs) and CMCS fault messages that were recorded during the present flight leg, whether or not they are still active. Present leg faults include these:

1) CMCS fault messages recorded during the present flight leg.
2) FDEs that are correlated to the recorded CMCS fault messages.
3) Latched EICAS status messages (correlated or not).
4) CMCS fault messages that are correlated to latched EICAS status messages.

(b) CMCS fault messages are recorded (stored in non-volatile memory (NVM)) only when the fault occurs during a flight phase that is in the operational period for that fault or system. In this way, nuisance fault indications that occur due to normal maintenance procedures are not included.

(c) PRESENT LEG FAULTS page

1) The PRESENT LEG FAULTS page provides a list of FDEs (flight deck effects) that occurred during the present flight leg. The FDEs are shown in sequence of occurrence; the last to occur is shown first. A list of more than four FDEs continues on subsequent pages.
2) The level of the FDE (such as status or caution) and the fault code are shown above each FDE.
3) Each FDE with an asterisk (*) above it is also shown on the EICAS display. EICAS status messages can be erased from the EICAS display with the ERASE> and <ERASE STATUS prompts.
4) The ERASE> prompt shown adjacent to a latched EICAS status message is used to remove that EICAS message from the EICAS display. If the fault which caused the message is not active and you push the ERASE> prompt, the EICAS message is erased from the EICAS display. The asterisk (*) and the ERASE> prompt adjacent to the FDE are erased from the CDU display. If the fault is still active when you push the ERASE> prompt, the message stays on the EICAS display. Up to 10 seconds can be necessary to erase an EICAS message.
5) The <ERASE STATUS prompt is used to remove EICAS status messages from the EICAS display all at one time. When you push the LSK adjacent to the <ERASE STATUS prompt, all EICAS messages caused by faults that are no longer active are erased from the EICAS display. The asterisk (*) and the ERASE> prompt adjacent to the corresponding FDEs are erased from the CDU display. The messages that correspond to faults that are still active stay on the EICAS display. Up to 10 seconds can be necessary to erase the EICAS messages.

6) Each FDE with an adjacent caret (<) has at least one CMCS message correlated to it. These CMCS messages are shown on the PRESENT LEG MSG pages. There is a PRESENT LEG MSG page for each FDE that has an adjacent caret (<).

(d) PRESENT LEG MSG page

1) Most PRESENT LEG MSG pages show a FDE and the CMCS fault message that is correlated to that FDE.
2) An asterisk adjacent to the CMCS fault message shows that the fault that caused the CMCS message is active.
3) An asterisk (*) above the FDE indicates that the FDE is active and is shown on the EICAS display.
4) A caret (<) adjacent to the FDE shows that there are more FDEs correlated to the CMCS fault message.
5) The <READ SNAPSHOT prompt shows when there is a maintenance page snapshot that is related to the flight deck effect.
6) The total number of pages in the page indication shows the number of CMCS fault messages that are correlated to the FDE.

(e) NON-FDE FAULTS

1) The NON-FDE FAULTS prompt on the last PRESENT LEG FAULTS page allows the display of all CMCS fault messages that are not correlated to a FDE.
2) On the PRESENT LEG MSG page for a non-FDE fault, the area where the FDE is usually shown is blank.

(8) Confidence Tests (Fig. 11)

(a) Confidence tests are used to make sure specific systems are functioning properly. Confidence tests are system ground tests that the flight crew traditionally has access to. They can be performed in flight unless the internal logic of the system inhibits the test.

(b) CONFIDENCE TESTS page

1) The CONFIDENCE TESTS page allows tests to be run and shows the test results. When an INHIBITED indication is shown above the test name, the test cannot operate. (The caret (<) is not shown adjacent to a test that cannot operate.)
2) When a selection is made from the CONFIDENCE TESTS page, the test will start. During the test, the IN PROGRESS indication is shown. (The caret (<) adjacent to the test name is not shown at this time.)
3) When the test is completed, the IN PROGRESS indication disappears (and the caret (<) appears). A test result (DONE, PASS, or FAIL) is shown adjacent to the name of the completed test.
   a) A DONE indication is shown if the operator is required to monitor the test. (This type of test causes system operation on the flight deck.) Failure information is available using the existing faults function.

b) A PASS or FAIL indication is shown if the CMC monitored the test. If a PASS indication is shown, no failures occurred during the test. If a FAIL> prompt is shown, failure information is available on the CONFIDENCE TEST MSG page.

(c) CONFIDENCE TEST MSG page

1) The CONFIDENCE TESTS MSG page shows data related to the failure of the confidence test.

(9) EICAS Maintenance Pages (Fig. 12)

(a) The EICAS maintenance pages function provides an alternate way to show an EICAS maintenance page on the lower EICAS display. For a complete description of EICAS maintenance pages and maintenance page snapshots, refer to 31-61-00/001.

(b) EICAS MAINT PAGES menu

1) The EICAS MAINT PAGES menu shows all systems that have EICAS maintenance pages. The list is in ATA chapter sequence.

2) Selection of a system from the menu causes the EICAS PAGE CONTROL menu to be shown. The ATA chapter and name of the selected system shows on the menu.

(c) EICAS PAGE CONTROL menu

1) The EICAS PAGE CONTROL menu provides control over the display of EICAS maintenance pages. This menu provides the four prompts described below:

2) Selection of <DISPLAY causes the maintenance page for the selected system to show on the lower EICAS display.

3) Selection of <RECORD makes a manual snapshot of the maintenance page for the selected system.

4) Selection of <MANUAL SNAPSHOT causes a list of manual snapshots for the selected system to show on the CDU. From the list, you can select a snapshot to look at on the auxiliary EICAS.

5) Selection of <AUTO SNAPSHOT causes a list of automatic snapshots for the selected system to show on the CDU. From the list, you can select a snapshot to look at on the auxiliary EICAS.

(10) Ground Tests (Fig. 13)

(a) The ground tests function provides a way to start BITE tests of airplane systems and LRUs. The CMC transmits a signal to an LRU to start the BITE test. When the test is completed, the LRU sends the test results to the CMC. The CMC shows the test result on the CDU.

(b) GROUND TESTS menus

1) The first GROUND TESTS menu is a list of all systems which have ground tests. The list is in ATA chapter sequence. Selection of a system causes the second GROUND TESTS menu to be shown.

2) The second GROUND TESTS menu is a list of all LRUs in the selected system that have ground tests.

3) Two general types of ground tests are available, BITE and interactive BITE. BITE tests run automatically when selected. Interactive BITE tests require operator action. The second GROUND TESTS menu lists both types of tests and does not differentiate between them.
4) The second GROUND TESTS menu allows tests to be selected and shows the test results. When an INHIBITED indication is shown above the test name, the test cannot operate. (The caret (<) is not shown adjacent to a test that cannot operate.) A test is said to be inhibited if it cannot operate.

(c) TO ENABLE TEST page
1) Selection of an inhibited test causes a page of instructions with the words TO ENABLE TEST at the top to be shown. Completion of these instructions will allow the test to operate.

(d) TEST PRECONDITIONS page
1) Selection of some tests causes a TEST PRECONDITIONS page to be shown. This page lists all the initial conditions which must be met before the test will operate safely and satisfactorily. There can be more than one page of initial conditions.

(e) Test operation and results
1) During a regular BITE test, the IN PROGRESS indication is shown. During an interactive BITE test, operator instructions will be shown on the CDU.
2) When the test is completed, the IN PROGRESS indication disappears. The test result (DONE, PASS, or FAIL) is shown adjacent to the name of the completed test.
a) A DONE indication is shown if the operator is required to monitor the test. Failure information for most tests is available using the existing faults function. For some tests, the operator determines the test result by watching the tested system operate.
b) A PASS or FAIL indication is shown if the CMC monitored the test. If a PASS indication is shown, no failures occurred during the test. If a FAIL> prompt is shown, failure information is available on the GROUND TEST MSG page.

(f) GROUND TEST MSG page
1) The GROUND TESTS MSG page shows data related to the failure of the ground test.

(11) Existing Faults (Fig. 14)

(a) EXISTING FAULTS page
1) When <EXISTING FAULTS is selected, the EXISTING FAULTS page shows the systems, in ATA chapter sequence, that have active CMCS fault messages. CMCS messages for faults in any ATA chapter are then accumulated until you return to the CMC MENU. New ATA chapter prompts can appear, but a prompt stays in the list even if all faults in that system become inactive.

2) A list of more than four systems continues on subsequent pages.
3) If there are no active CMCS fault messages in any system, the indication NO ACTIVE FAULTS is shown.

(b) EXISTING FAULTS MSG page
1) Each EXISTING FAULTS MSG page shows a CMCS fault message. There may or may not be a FDE correlated to the CMCS fault message.
2) An asterisk adjacent to the CMCS fault message shows that the fault that caused the CMCS message is active.
3) If a FDE is shown, an asterisk (*) above the FDE indicates that the FDE is shown on the EICAS display. A caret (<) adjacent to the FDE shows that there are more FDEs correlated to the CMCS fault message.
4) The total number of pages in the page indication shows the number of CMCS fault messages in the selected system that can be shown. The messages are not always shown in the sequence of occurrence.
5) When a fault becomes active while the existing faults function is in use, an EXISTING FAULTS MSG page is added for the fault. When a fault becomes inactive while the existing faults function is in use, the message page is retained without the asterisk (which indicates an active fault) on the CMCS fault message.
6) The <READ SNAPSHOT prompt shows when there is a maintenance page snapshot that is related to the flight deck effect.

(12) Fault History (Fig. 15)
(a) The fault history function provides information about CMCS fault messages that are stored in the non-volatile memory (NVM) of the CMC. This information includes the date and time (GMT) that the CMCS fault message was stored.
(b) The CMC can store a maximum of 500 CMCS fault messages in its NVM. A CMCS fault message is stored for a maximum of 99 flight legs or until 500 CMCS fault message are in the NVM. When the NVM is full, the first CMCS fault message to be stored is automatically erased.

(c) CMCS fault messages are only stored when the fault occurs during a flight phase that is in the operational period for that fault or system. In this way, nuisance fault indications that occur due to normal maintenance procedures are not included.

(d) FAULT HISTORY menu

1) The FAULT HISTORY menu provides a list of systems that have CMCS fault messages stored in NVM. The list is in ATA chapter sequence. A list of more than five systems continues on subsequent pages.

2) Selection of a system from the menu causes the FAULT HISTORY SUMMARY to be shown.

(e) FAULT HIST SUMMARY

1) The FAULT HISTORY SUMMARY shows a CMCS fault message and a list of flight legs during which the CMCS fault message was stored.

2) The total number of pages shows the number of different CMCS fault messages in the same ATA chapter.

(f) FAULT HISTORY MSG page

1) There is one FAULT HISTORY MSG page for each flight leg during which the CMCS message occurred. The total number of pages shows the number of occurrences of the CMCS fault message. The date and time that the CMCS fault message occurred is shown.

2) A caret (<) adjacent to the FDE shows that there are more FDEs correlated to the CMCS fault message.

3) The <READ SNAPSHOT prompt shows when there is a maintenance page snapshot that is related to the flight deck effect.

(13) Other Functions

(a) Three additional functions are available on the OTHER FUNCTIONS menu: Shop Faults, Input Monitoring, and Configuration. These functions are not usually necessary for line maintenance.

(b) Also on the OTHER FUNCTIONS menu are these prompts which are used to enable or inhibit a flight leg transition: ENABLE FLT LEG ROLL and INHIBIT FLT LEG ROLL. Only one prompt shows at a time. Selection of one prompt causes the other prompt to show.

1) Selection of INHIBIT FLT LEG ROLL makes sure the flight leg does not change.

2) Selection of ENABLE FLT LEG ROLL allows the flight leg to change the next time the first engine is started (or, if the engines are running, when the last door is closed). Selection of ENABLE FLT LEG ROLL is the same to the CMC as the engines reaching take-off thrust with the parking brake released.
3) Selection of INHIBIT FLT LEG ROLL or ENABLE FLT LEG ROLL must be for only one CMC. The command is automatically sent to the other CMC so that the flight leg numbers stay the same in the two CMCs.

(14) Shop Faults (Fig. 16)
(a) The shop faults function supplies shop relevant fault (SRF) data for a selected LRU. The CMCS transmits a signal to an LRU to cause the LRU to transmit SRF data to the CMC. The SRF data is shown on a CDU.
(b) SHOP FAULTS page
1) The SHOP FAULTS page shows a list of all systems that have LRUs with SRF data. The list is in ATA chapter sequence.
(c) SHOP FAULTS LRUS page
1) The SHOP FAULTS LRUS page shows the LRUs in the selected system that have available SRF data.
(d) SHOP FAULTS DATA page
1) The SHOP FAULTS DATA page shows SRF data that the LRU transmits to the CMC.

(15) Input Monitoring (Fig. 17)
(a) The input monitoring function permits monitoring of inputs to the CMCs or the EIUs. Eight different inputs to the EIUs can be monitored at the same time. Only one input to the CMC can be monitored at a time.
(b) INPUT MONITORING pages
1) The INPUT MONITORING page is first shown without data. The CDU keyboard is used to select the location to monitor.
2) The page then shows three data samples. The newest sample is shown above the other two samples. A new data sample is shown each 0.5 seconds.
3) Selection of the <FREEZE prompt stops the display of new data samples. Selection of the <RESUME prompt starts the display of new samples.
4) The data can be shown in binary or hexadecimal numbers. Some data can also be shown in decimal numbers.
5) Eight pages can be shown. Each page shows data from a different input.

6) Only one page of CMC input data can be shown at a time.

(16) Configuration (Fig. 18)

(a) The configuration function allows the display of the configuration data for an LRU. CMC configuration data, for example, includes hardware and software part numbers and option codes.

(b) CONFIGURATION menu

1) The CONFIGURATION menu shows a list of the systems that have LRUs with available configuration data. The list is in ATA chapter sequence.

(c) CONFIGURATION page

1) The CONFIGURATION page shows a list of the LRUs in the system that have available configuration data.

(d) CONFIGURATION DATA page

1) The CONFIGURATION DATA page shows the configuration of the selected LRU.

(17) Option Codes (Fig. 19)

(a) The CMCS has the capability to select optional or alternate CMC functions. The functions are listed in Figure 19. The CMC uses an option code to select the functions. These functions enable or disable CMC options, the interface between the CMC and a system, and the display of certain maintenance messages.

(b) The option code is a hexadecimal number. The option code contains 28 characters and is divided in half. The first 14 characters are identified as OC-A, and the second 14 characters are identified as OC-B. Together the two halves make up the CMC option code.

(c) The two characters on the right end of each half of the option code are made up of validity check bits. The validity check bits prevent the CMC from accepting an invalid option code.

(d) When the option code is written in binary it shows the functions that are enabled. In binary, a 1 indicates that the function is enabled and a 0 indicates that the function is not enabled. Each bit is a software program pin (SWPP). The software program pins are numbered (left to right) from SWPP048 to SWPP001 for OC-A and SWPP096 to SWPP049 for OC-B. SWPP048 is the most significant bit and SWPP001 is the least significant bit for OC-A. SWPP096 is the most significant bit and SWPP049 is the least significant bit for OC-B.

(e) Figure 19 provides a list of the functions controlled by the option code. With the option code written in binary, the figure allows you to determine which functions are enabled. The figure shows the software program pin of each function, a function description, and the example option code in binary and in hexadecimal.

(f) Example option code:

1) This is the example option code that is shown in Figure 19:

A92000000012XX (OC-A)
000000200004XX (OC-B)

2) This is the binary expansion of the example option code:

```
binary bit:  1010|1001|0010| ......... |0001|0010|XX  (OC-A)
      SWPP: 48 46 44 41  38               5   2

binary bit:  ................ |0010| ...... |0100|XX  (OC-B)
      SWPP:                    70          51
```

3) In this example, the functions of software program pins 2, 5, 38, 41, 44, 46, 48, 51, and 70 are enabled by the option code.

(g) The CMC option code is entered into the CMC from the configuration data page for the left and right CMC. The option code must be entered into each CMC. The CDU keyboard is used to enter the option code. Each half of the option code is entered separately. The CDU scratchpad must be clear before you can enter an option code.

(h) The CMC will not operate if it does not contain an option code or if the option code is invalid. The option code is set invalid when CMC software is installed or when the CMC detects a new airplane tail number from the MAWEA.

(i) If the CMC contains an invalid option code, the CMC will not process messages, will terminate all report requests it is servicing, and will not allow use of any other function except for help. When the CMC finds the option code to be invalid, the CMC will only show the Configuration Data page on the CDU.

(18) CMC Output to Multiple-Input Printer (Fig. 20-22)

(a) If a CDU display has a REPORT> prompt on it, a printer report can be made of that display.

(b) REPORT menu

1) Selection of the printer is made from the REPORT menu. The printout will show a representation of the page that was shown on the CDU at the time the REPORT> prompt was selected.

(19) ACARS Reports of CMC Data (Fig. 23-30)

(a) Reports of CMC data can be received by a ground station through ACARS. An ACARS transmission from the airplane to a ground station is a downlink. An ACARS transmission from a ground station to the airplane is an uplink. These are the possible ACARS reports:

1) Manual ACARS downlink from a CDU

2) ACARS report by uplink request

| REPORT | SELECT REPORT> ON THIS CDU DISPLAY |
|---|---|
| One present leg fault message | PRESENT LEG MSG |
| One existing fault message | EXISTING FAULTS MSG |
| One fault history message | FAULT HISTORY MSG |
| One ground test message | GROUND TEST MSG |
| One confidence test message | CONFIDENCE TEST MSG |
| All present leg faults data | PRESENT LEG FAULTS |
| All existing faults data | EXISTING FAULTS |
| All fault history data | FAULT HISTORY |
| Fault history data for one system | FAULT HIST SUMMARY |
| One input monitoring display | INPUT MONITORING |
| Any realtime EICAS maintenance page | EICAS PAGE CONTROL |
| One automatic snapshot | AUTO SNAPSHOTS |
| One manual snapshot | MANUAL SNAPSHOTS |

Table A - Reports by Manual ACARS Downlink from a CDU

(b) Manual ACARS downlink from a CDU:
1) You can select a report from a CDU display that has a REPORT> prompt.
2) Table A shows the reports that you can make by manual ACARS downlink. The table also shows which CDU display has the REPORT> prompt that you select to make each report.

(c) ACARS report by uplink request:
1) You can send report request codes from the ground station to the airplane to get a report of CMC data.
2) Table B shows the reports that you can get by ACARS uplink request. The table also shows the uplink request codes that you send to the airplane to get the ACARS reports.

| REPORT | UPLINK REQUEST CODE |
|---|---|
| All Present Leg Faults | PL |
| All Existing Faults | EF |
| Fault History Summary of one chapter-section | FH-CH-SC |
| Environmental Control System (ECS) Maintenance Page | EM-ECS-XXXX<br>EM-ECS-XXXX-Y |
| Electrical Maintenance Page | EM-ELEC-XXXX<br>EM-ELEC-XXXX-Y |
| Flight Controls Maintenance Page | EM-FLCN-XXXX<br>EM-FLCN-XXXX-Y |
| Fuel Maintenance Page | EM-FUEL-XXXX<br>EM-FUEL-XXXX-Y |
| Hydraulic (HYD) Maintenance Page | EM-HYD-XXXX<br>EM-HYD-XXXX-Y |
| Landing Gear (GEAR) Maintenance Page | EM-GEAR-XXXX<br>EM-GEAR-XXXX-Y |
| APU Maintenance Page | EM-APU-XXXX<br>EM-APU-XXXX-Y |
| Engine Propulsion Control System (EPCS) Maintenance Page | EM-EPCS-XXXX<br>EM-EPCS-XXXX-Y |
| Engine Performance (PERF) Maintenance Page | EM-PERF-XXXX<br>EM-PERF-XXXX-Y |
| Engine Exceedance (ENG EXCD) Maintenance Page | EM-ENEX-REAL |
| Configuration (CONFIG) Maintenance Page | EM-CONF-REAL |
| Summary Log of Automatic Snapshots | EM-SUMLOG-AUTO |
| Summary Log of Manual Snapshots | EM-SUMLOG-MAN |
| NOTE: For CH-SC, see Table C.<br>XXXX can be REAL, AUTO, or MAN.<br>Y can be 1, 2, 3, 4, or 5 to specify the snapshot sequence number<br>(omit -Y to get all snapshots). | |

Table B - Reports by ACARS Uplink Request

CH-SC
Table C - ATA Chapter-Sections
for Fault History Summary Report by ACARS Uplink Request

| ATA Chapter-Sections | ATA TEXT |
|---|---|
| 21-23 | ECS MISC CARD FAIL/Interfaces, CARGO AC FANS AND VLVS |
| 21-24 | GASPER FAN FAIL (21457) |
| 21-25 | UPPER and LOWER RECIRCULATION FAN |
| 21-26 | LAV GALLEY VENT FANS, FWD OBD VALVE, BULK CARGO FAN |
| 21-28 | CARGO AIR CONDITIONING CARD and VALVES |
| 21-31 | CABIN PRESSURE, CARGO AC EXHAUST FAN and VLV Interface |
| 21-32 | UPPER and LOWER PRESSURE RELIEF VALVE OPEN |
| 21-41 | ZONE B CREW REST (OPTION) |
| 21-43 | FWD CARGO HEATERS and CACC Interface |
| 21-44 | BULK CARGO HEATER, AFT and BULK CARGO HEAT CONTROL VLV, AFT CARGO OVRD VLV |
| 21-51 | PTC-A, PTC-B, PACK 1, PACK 2 and PACK 3 |
| 21-58 | E/E COOLING |
| 21-61 | ZONE TEMP |
| 21-62 | PACK OUTLET TEMP SENSOR, RAM AIR INLET and EXIT DOOR, TURB BYPASS VALVE |

| CH-SC<br>Table C - ATA Chapter-Sections<br>for Fault History Summary Report by ACARS Uplink Request | |
|---|---|
| ATA Chapter-Sections | ATA TEXT |
| 21-71 | HUMIDIFIERS (OPTION) |
| 21-72 | FWD sand AFT AUTO DISINSECTION |
| 22-11 | AUTOPILOT |
| 22-12 | GO AROUND SWITCHES (GROUND TEST RESULTS ONLY) |
| 22-21 | UPPER and LOWER YAW DAMPER |
| 23-11 | HF RADIOS |
| 23-12 | VHF RADIOS and RADIO CONTROL PANELS |
| 23-24 | EMERGENCY LOCATOR TRANSMITTER ON (23600, OPTION) |
| 23-25 | SATCOM (OPTION) |
| 23-27 | ACARS (OPTION) |
| 23-30 | ACESS CCTM Fail (23123) |
| 23-31 | ACESS PASSENGER ADDRESS, LAC'S and ACESS/CSS INBOARD OEU'S |
| 23-32 | PASSENGER FLIGHT INFO DISPLAY SYSTEM (OPTION) |
| 23-33 | ACESS LAC/CSM/PSC and ACESS/CSS OUTBOARD OEU |
| 23-34 | ACESS PASSENGER ENTERTAINMENT and SEU'S |
| 23-42 | ACESS CABIN INTERPHONE and PILOTS CALL PANEL |
| 23-51 | AUDIO MANAGEMENT |
| 24-11 | GEN DRIVE 1-4, AC/DC/CAPTAINS/FIRST OFFICERS BUSSES, ELEC FILTERS |
| 24-21 | GEN 1-4 and APU GENERATOR CONTROL/REGULATION, GCU GST/BITE MONITOR |
| 24-22 | GCB/APB/BTB/SSB CONTROL, UTILITY POWER, GND SERV, FIRE SW, GCU POWER INPUTS |

CH-SC
Table C - ATA Chapter-Sections
for Fault History Summary Report by ACARS Uplink Request

| ATA Chapter-Sections | ATA TEXT |
|---|---|
| 24-23 | SYSTEM PROTECTION: DIFF FAULT, OF/UF, OE/UE, DIFF CURRENT, OPEN PHASE |
| 24-27 | BCU/GCU/CMC/EIU DATA BUS COMMUNICATIONS |
| 24-29 | MAIN STANDBY TRANSFER RELAY/WIRING FAIL (24723) |
| 24-31 | UTILITY and GALLEY ELCU |
| 24-32 | DCIR-1 and MAIN TRU |
| 24-33 | MAIN, APU STATIC INVERTER and DC CURRENT SENSOR |
| 24-34 | BATTERY CHARGER, DC CURRENT SENSOR, DC ISOLATION RELAY |
| 24-41 | EXT POWER PROTECTION, BCU GST/BITE MONITOR, BCU POWER INPUTS, GCU FREQ REF |
| 24-51 | GROUND HANDLING RELAYS, CAPTAINS and FIRST OFFICERS TRANSFER RELAYS |
| 24-60 | REMOTE CONTROL CIRCUIT BREAKERS |
| 26-11 | ENGINE FIRE LOOPS, NAC OVERHET LOOPS, TURB OVHT LOOPS, NAC TAMP DETECTOR |
| 26-12 | ENGINE STRUT OVERHEAT LOOPS |
| 26-15 | APU FIRE LOOP A and B |
| 26-16 | CARGO LOOPS, CARGO SMOKE DETECTION EJECTORS |
| 26-17 | WHEEL WELL (GROUND TEST ONLY) |
| 26-18 | BLEED DUCT LEAK LOOPS |
| 26-21 | ENGINE BOTTLES LOW PRESSURE |
| 26-22 | APU BOTTLE LOW PRESSURE (26043) |
| 26-23 | CARGO BOTTLES LOW PRESSURE |
| 27-09 | FLIGHT CONTROLS POWER SUPPLY MODULE (PSM), CONTROL SPD |

CH-SC
Table C - ATA Chapter-Sections
for Fault History Summary Report by ACARS Uplink Request

| ATA Chapter-Sections | ATA TEXT |
|---|---|
| 27-11 | AILERON LOCKOUT |
| 27-18 | FORWARD SPD |
| 27-21 | UPPER and LOWER RUDDER RATIO CHANGER |
| 27-28 | UPPER and LOWER RUDDER SYNCHRO (AFT SPD) |
| 27-30 | ELEVATOR FEEL COMPUTER FAIL (27401) |
| 27-32 | LEFT and RIGHT STALL WARNING |
| 27-38 | AFT SPD |
| 27-41 | SRM'S |
| 27-51 | FLAP CONTROL |
| 27-58 | FCU INTERFACE |
| 27-62 | AUTO SPEEDBRAKE SYSTEM FAIL (27965) |
| 27-68 | #4 and #12 SPOILER SYNCHRO FAIL, FWD SPD PROGRAM PIN/PARITY |
| 27-81 | GROUP B PNEUMATIC DISABLE RELAY FAULT (27873) |
| 27-88 | LE LX and RX (X = 1-4) |
| 28-15 | SCAVENGE PUMP FAIL (28620) |
| 28-16 | RESERVE TANK TRANSFER VALVES, MAIN TANK 1 and 4 JETT GRAVITY TRANSFER VLV |
| 28-21 | HORZ STAB PUMPS AND VLV, CENTER WING REFUEL and ISOLATION VLV |
| 28-22 | FSMC'S, ENGINE FUEL, SHUTOFF VALVES (SPAR), CROSSFEED VALVES, BOOST PUMPS, BALLAST |
| 28-25 | APU PUMPS AND VALVES |
| 28-31 | FJCC'S, JETTISON TRANSFER VALVES, OVERRIDE/JETT PUMPS |

CH-SC
Table C - ATA Chapter-Sections
for Fault History Summary Report by ACARS Uplink Request

| ATA Chapter-Sections | ATA TEXT |
|---|---|
| 28-41 | FUEL QUANTITY INDICATING SYSTEM (FQIS) |
| 28-42 | FSMC CENTER WING PUMPS LOW PRESSURE DUAL INPUTS DISAGREE |
| 28-43 | FSEIC |
| 28-44 | SINGLE POINT SENSORS (GROUND TEST RESULTS ONLY) |
| 29-11 | HYDIM 1-4 |
| 29-21 | HYD AUXILIARY PUMPS |
| 29-31 | HYD-X SYSTEM PRESSURE TRANSMITTER FAIL (X = 1-4) |
| 29-32 | HYD-X TEMPERATURE TRANSMITTER 1 FAIL (X = 1-4) |
| 29-33 | HYQUIM |
| 29-34 | HYD-X DEMAND and ENGINE PUMP INDICATING CIRCUITS (X = 1-4) |
| 30-11 | WING ANTI-ICE |
| 30-21 | ENGINE COWL OVERHEAT and THERMAL ANTI-ICE VALVE DISAGREE |
| 30-31 | PROBE HEAT |
| 30-32 | AOA HEAT (GROUND TEST ONLY) |
| 30-41 | WINDOW HEAT |
| 30-71 | DRAIN MAST HEATERS |
| 30-81 | ICE DETECTOR(S) |
| 31-25 | CAPTAINS CLOCK |
| 31-31 | FLIGHT RECORDER and DFDAC |
| 31-35 | ACMS DMU |
| 31-41 | WEIGHT BALANCE |

CH-SC
Table C - ATA Chapter-Sections
for Fault History Summary Report by ACARS Uplink Request

| ATA Chapter-Sections | ATA TEXT |
|---|---|
| 31-51 | MAWEA CARDS |
| 31-61 | INTEGRATED DISPLAY SYSTEM (IDS) |
| 32-42 | BRAKES (BSCU and ANTISKID) |
| 32-44 | PARKING BRAKE VALVE/HANDLE DISAGREE (32893) |
| 32-45 | TIRE PRESSURE (OPTION) |
| 32-46 | BRAKE TEMPERATURE |
| 32-53 | BODY GEAR STEERING |
| 32-61 | PSEU |
| 34-12 | AIR DATA SYSTEM |
| 34-21 | INERTIAL REFERENCE SYSTEM |
| 34-31 | ILS/MMR/MMR-GNSS |
| 34-33 | RADIO ALTIMETERS |
| 34-34 | MLS (FUTURE OPTION) |
| 34-35 | PARA-VISUAL DISPLAY (PVD) |
| 34-43 | WEATHER RADAR (WXR) |
| 34-45 | TCAS |
| 34-46 | GROUND PROXIMITY WARNING COMPUTER (GPWC) |
| 34-51 | VOR-L/MARKER BEACON, VOR-R |
| 34-53 | ATC |
| 34-55 | DME |
| 34-57 | ADF |
| 34-58 | GPSSU (STANDALONE GPS SENSOR UNIT) |

CH-SC
Table C - ATA Chapter-Sections
for Fault History Summary Report by ACARS Uplink Request

| ATA Chapter-Sections | ATA TEXT |
|---|---|
| 34-61 | FLIGHT MANAGEMENT (FMC/CDU) |
| 35-11 | CREW OXYGEN |
| 35-21 | PASSENGER, CREW REST, SUPERNUMERARY OXYGEN |
| 36-11 | BLEED SYSTEM |
| 36-12 | FAN AIR MODULATING VALVE and TEMP CONTROL SENSOR |
| 36-21 | PRESSURE SENSORS |
| 36-22 | BLEED-X TEMP SENSOR, OVERTEMP SWITCH and OVERPRESSURE SWITCH |
| 38-32 | WASTE TANK LEVEL SENSORS |
| 45-45 | CENTRAL MAINTENANCE SYSTEM (CMC and TEST RELAYS) |
| 49-11 | APU |
| 49-15 | APU INLET DOOR ACTUATOR FAIL (49005) |
| 52-31 | NOSE CARGO DOOR (FREIGHTER ONLY) |
| 52-32 | SIDE CARGO DOOR |
| 52-34 | AFT and FWD CARGO DOOR |
| 52-71 | ENTRY DOORS |
| 71-00 | POWER PLANT (ENGINES, REVERSERS, AUTOSTART, AVM) |

3) Table C shows the ATA chapter-sections (CH-SC) that you can put into the uplink request code for fault history summary (See Table B).

(d) ACARS reports look similar to printer reports except that the data is in a compressed format (Fig. 23-30).

B. Control

(1) Show the CMC MENU on the CDU:

(a) Push the MENU key on the CDU to show the MENU (Fig. 6).

(b) Push the line select key (LSK) that is adjacent to <CMC to show the CMC MENU (Fig. 7).

(c) If <RETURN shows after you push LSK, push the LSK that is adjacent to <RETURN until you see the CMC MENU.

(2) Use the present leg faults function (Fig. 10):

(a) Push the LSK that is adjacent to <PRESENT LEG FAULTS to show the first page of a list of FDEs.

(b) Push the NEXT PAGE key to see more FDEs.

(c) Push the LSK that is adjacent to an FDE that has a < symbol adjacent to it to show the first PRESENT LEG MSG page for the FDE.

NOTE: If the FDE does not have a < symbol adjacent to it, there is no CMCS fault message correlated to the FDE. Thus, there is no PRESENT LEG MSG page for that FDE.

(d) If the page indication shows that there is more than one page, push the NEXT PAGE key to see a different CMCS fault message that is correlated to the same FDE.

NOTE: Each time you push the NEXT PAGE key you will see a different CMCS fault message. When you see the last CMCS fault message (the two numbers in the page indication are the same), push the NEXT PAGE key to see the first message again.

(e) If the FDE (on the MSG page) has a < symbol adjacent to it, push the LSK that is adjacent to the FDE to see a different FDE that is correlated to the same CMCS fault message.

NOTE: 1. If you push the LSK that is adjacent to the FDE when you see the last FDE, you will see the first FDE again.

2. If there is no < symbol adjacent to the FDE (on the MSG page), then there is only one CMCS message correlated to the FDE.

(f) Push the LSK that is adjacent to <RETURN to show the PRESENT LEG FAULTS page.
(g) Push the NEXT PAGE or PREV PAGE key until you find <NON-FDE FAULTS.
(h) Push the LSK that is adjacent to <NON-FDE FAULTS to show a PRESENT LEG MSG page for a CMCS fault message that is not correlated to a FDE.
(i) Push the NEXT PAGE key to show each CMCS fault message that is not correlated to a FDE.
(j) When you have sufficient data, push the LSK that is adjacent to <RETURN until the CDU shows the CMC MENU.

(3) Use the confidence tests function (Fig. 11):
(a) Push the LSK that is adjacent to <CONFIDENCE TESTS to show the CONFIDENCE TESTS menu.
(b) Push the LSK that is adjacent to the name of a test.

NOTE: The CDU shows IN PROGRESS during the test.

(c) When IN PROGRESS goes out of view, find DONE, PASS, or FAIL> adjacent to the test prompt.

NOTE: If PASS shows, no failures occurred during the test.

1) If the DONE indication shows, use the existing faults function to look for a failure.

2) If FAIL> shows, find the corrective action for the failure.

(d) When the test is satisfactorily completed, push the LSK that is adjacent to <RETURN until the CDU shows the CMC MENU.

(4) Show an EICAS maintenance page (Fig. 12):

(a) Push the LSK that is adjacent to <EICAS MAINT PAGES to show the menu of systems that have EICAS maintenance pages.

NOTE: It can be necessary to push the NEXT PAGE key to see all the systems that have EICAS maintenance pages.

(b) Push the LSK that is adjacent to the applicable system to show the EICAS PAGE CONTROL menu for that system.

(c) Push the LSK that is adjacent to <DISPLAY to show the EICAS maintenance page on the auxiliary EICAS display.

(5) Show a snapshot of an EICAS maintenance page (Figure 12, sheet 3):

(a) Push the LSK that is adjacent to <MANUAL SNAPSHOTS or <AUTO SNAPSHOTS to see a list of the manual or automatic snapshots for the selected system.

(b) Push the LSK that is adjacent to one of the prompts to show the snapshot on the auxiliary EICAS.

(c) When you have sufficient data, push the LSK that is adjacent to <RETURN until the CDU shows the CMC MENU.

(6) Use the ground tests function (Fig. 13):

(a) Push the LSK that is adjacent to <GROUND TESTS to show the GROUND TESTS menu.

(b) Push the NEXT PAGE key if it is necessary until you find the correct ground test prompt.

(c) Push the LSK that is adjacent to the applicable system prompt to show the GROUND TESTS menu for that system.

(d) Push the NEXT PAGE key if it is necessary until you find the applicable test prompt.

NOTE: If INHIBITED shows above the test prompt, the test will not operate.

(e) If INHIBITED shows above the test prompt:
1) Push the LSK that is adjacent to the test prompt.
2) Do the steps shown on the CDU.
3) Push the LSK that is adjacent to <RETURN to show the ground test menu again.

CAUTION: REFER TO THE APPLICABLE ADJUSTMENT/TEST PROCEDURE TO DO THE GROUND TEST. A FAILURE TO PUT THE SYSTEM IN ITS CORRECT INITIAL CONDITION CAN CAUSE DAMAGE TO THE EQUIPMENT.

(f) Push the LSK that is adjacent to the applicable prompt.
(g) If a TEST PRECONDITIONS display shows, make sure the instructions are completed (push the NEXT PAGE key to see subsequent instruction pages) and then push the LSK that is adjacent to START TEST>.

NOTE: IN PROGRESS shows during the test.

(h) When IN PROGRESS goes out of view, find PASS, DONE, or FAIL> adjacent to the test prompt.

NOTE: If a PASS indication shows, no failures occurred during the test. If a DONE indication shows and the test result was not obvious from observing the test, you must use the existing faults function to look for a failure.

(i) If FAIL> shows, push the LSK that is adjacent to FAIL> to see the GROUND TEST MSG page for the failure.
(j) When the test is satisfactorily completed, push the LSK that is adjacent to <RETURN until the CDU shows the CMC MENU.

(7) Use the existing faults function (Fig. 14):
(a) Push the NEXT PAGE key to show page 2 of the CMC MENU.
(b) Push the LSK that is adjacent to <EXISTING FAULTS to show the EXISTING FAULTS menu.

NOTE: It can be necessary to push the NEXT PAGE key to see all the systems that have existing faults.

(c) Push the LSK that is adjacent to a system prompt to show the first EXISTING FAULTS MSG page for the system.
(d) If the page indication shows that there is more than one page, push the NEXT PAGE key to see a different CMCS fault message, and, possibly, a FDE that is correlated to it.

NOTE: Each time you push the NEXT PAGE key you will see a different CMCS fault message in the same system. When you see the last CMCS fault message (the two numbers in the page indication are the same), push the NEXT PAGE key to see the first message again.

(e) If there is a FDE and the FDE has a < symbol adjacent to it, push the LSK adjacent to the FDE to see a different FDE correlated to the same CMCS fault message.

NOTE: 1. If you push the FDE LSK when you see the last FDE, you will see the first FDE again.

2. If there is no < symbol adjacent to the FDE, then there is only one CMCS message correlated to the FDE.

(f) When you have sufficient data, push the LSK that is adjacent to <RETURN until the CDU shows the CMC MENU.

(8) Show the fault history data for a system:
(a) Push the LSK that is adjacent to <FAULT HISTORY to show a list of the systems that have data in fault history.

NOTE: It can be necessary to push the NEXT PAGE key to see all the systems that have fault history data.

(b) Push the LSK that is adjacent to a system prompt to show the FAULT HIST SUMMARY page for that system.
(c) Push the NEXT PAGE key to see FAULT HIST SUMMARY pages for other CMCS fault messages related to the same system.

(d) Push the LSK that is adjacent to the CMCS fault message to show the FAULT HISTORY MSG page for the first flight leg shown on the SUMMARY page.
(e) Push the NEXT PAGE key to see the message page for a different flight leg.

NOTE: Each time you push the NEXT PAGE key you will see the message page for a different flight leg. The pages are in sequence from the newest to the oldest flight leg. When you see the oldest message page, push the NEXT PAGE key to see the newest message page again.

(f) If the FDE has a < symbol adjacent to it, push the LSK that is adjacent to the FDE to see a different FDE that is correlated to the CMCS fault message.

NOTE: 1. If you push the LSK that is adjacent to the FDE when you see the last FDE, you will see the first FDE again.

2. If there is no < symbol adjacent to the FDE, then there is only one CMCS message correlated to the FDE.

(g) When you have sufficient data, push the LSK that is adjacent to <RETURN until the CDU shows the CMC MENU.

(9) Show the SRF data for an LRU:
(a) Push the LSK that is adjacent to <OTHER FUNCTIONS to show the OTHER FUNCTIONS menu.
(b) Push the LSK that is adjacent to <SHOP FAULTS to show the SHOP FAULTS menu.
(c) Push the LSK that is adjacent to a system prompt to show the SHOP FAULTS LRUS menu.
(d) Push the LSK that is adjacent to the applicable LRU prompt to cause the LRU to transmit SRF data to the CMCs.

NOTE: The CDU shows the IN PROGRESS indication while the LRU transmits data to the CMC. When the IN PROGRESS indication goes out of view, the CDU shows the SRF data for the applicable LRU.

(e) When you have sufficient data, push the LSK that is adjacent to <RETURN until the CDU shows the CMC MENU.

(10) Do input monitoring (Fig. 17):
  (a) Push the LSK that is adjacent to <OTHER FUNCTIONS to show the OTHER FUNCTIONS menu.
  (b) Push the LSK that is adjacent to <INPUT MONITORING to show an empty INPUT MONITORING page on the CDU.
  (c) Use the CDU keyboard to put the port location, port number, word label, and SDI into the CDU scratchpad area.

      NOTE: It is not necessary to include initial zeros in the port number or the word label.

  (d) Push the top left LSK to replace the adjacent symbols (-/---/---/---) with the location you put into the CDU scratchpad.
  (e) Set the type of input monitoring display:
    1) To see the data in binary numbers, push the LSK that is adjacent to the BIN> prompt.
    2) To see the data in hexadecimal numbers, push the LSK that is adjacent to the HEX> prompt.
    3) To see the data with engineering units, push the LSK that is adjacent to the ENGR> prompt (if it is shown).
  (f) Push the LSK that is adjacent to <INPUT MONITORING to show an empty INPUT MONITORING page on the CDU.
  (g) Use the CDU keyboard to put the port location, port number, word label, and SDI into the CDU scratchpad area.
  (h) Push the top left LSK to replace the adjacent symbols (-/---/---/---) with the location you put into the CDU scratchpad.
  (i) When you have sufficient data, push the LSK that is adjacent to <RETURN until the CDU shows the CMC MENU.
(11) Show the CONFIGURATION DATA page for an LRU:
  (a) Push the LSK that is adjacent to <OTHER FUNCTIONS to show the OTHER FUNCTIONS menu.
  (b) Push the LSK that is adjacent to <CONFIGURATION to show the systems that have CONFIGURATION DATA pages.

(c) Push the LSK that is adjacent to a system prompt to show the LRUs that have CONFIGURATION DATA pages.
(d) Push the LSK that is adjacent to an LRU prompt to see the CONFIGURATION DATA page for that LRU.
(e) When you have sufficient data, push the LSK that is adjacent to <RETURN until the CDU shows the CMC MENU.

(12) Create a separate flight leg for engine runs (Fig. 9, Sheet 2):
(a) Let the first engine run start a new flight leg.
(b) When the engine runs are completed, push the line select key (LSK) adjacent to ENABLE FLT LEG ROLL> on the OTHER FUNCTIONS menu.

NOTE: *FLT LEG ROLL ENABLED shows on the OTHER FUNCTIONS menu. A new flight leg will start when the flight crew starts the engines for the next flight.

(13) Disable flight leg transition during maintenance (Fig. 9, Sheet 2):
(a) Push the line select key (LSK) adjacent to INHIBIT FLT LEG ROLL> on the OTHER FUNCTIONS menu.

NOTE: *FLT LEG ROLL INHIBITED shows on the OTHER FUNCTIONS menu. Maintenance can now be done and the flight leg will not change.

(b) When maintenance is completed, push the LSK that is adjacent to ENABLE FLT LEG ROLL>.

NOTE: *FLT LEG ROLL ENABLED shows on the OTHER FUNCTIONS menu. A new flight leg will start when the flight crew starts the engines for the next flight.

(14) Make a printer report of a CDU display:
(a) Push the LSK that is adjacent to <PRESENT LEG FAULTS to show the PRESENT LEG FAULTS page.
(b) Push the LSK that is adjacent to REPORT> to show the REPORT menu on the CDU.

(c) Push the LSK that is adjacent to <PRINTER to start the report.

NOTE: The IN PROGRESS indication is shown while the CMC transmits data to the printer.

(d) When the REPORT COMPLETE indication is shown, remove the report from the printer.

(15) Make an ACARS downlink report of the CDU display:

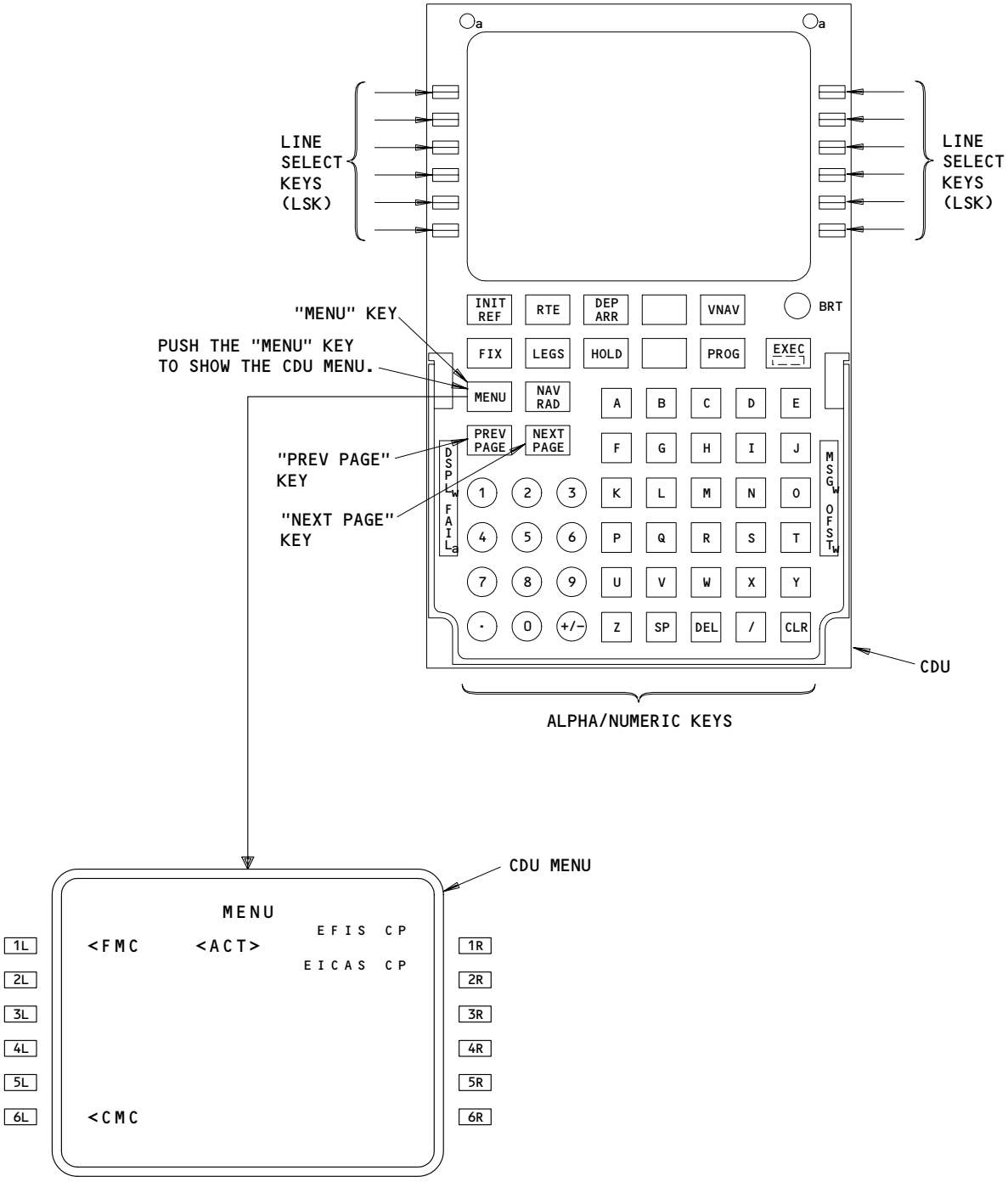
(a) Push the LSK that is adjacent to <RETURN to show the PRESENT LEG FAULTS page again.

(b) Push the LSK that is adjacent to REPORT> to show the REPORT menu on the CDU.

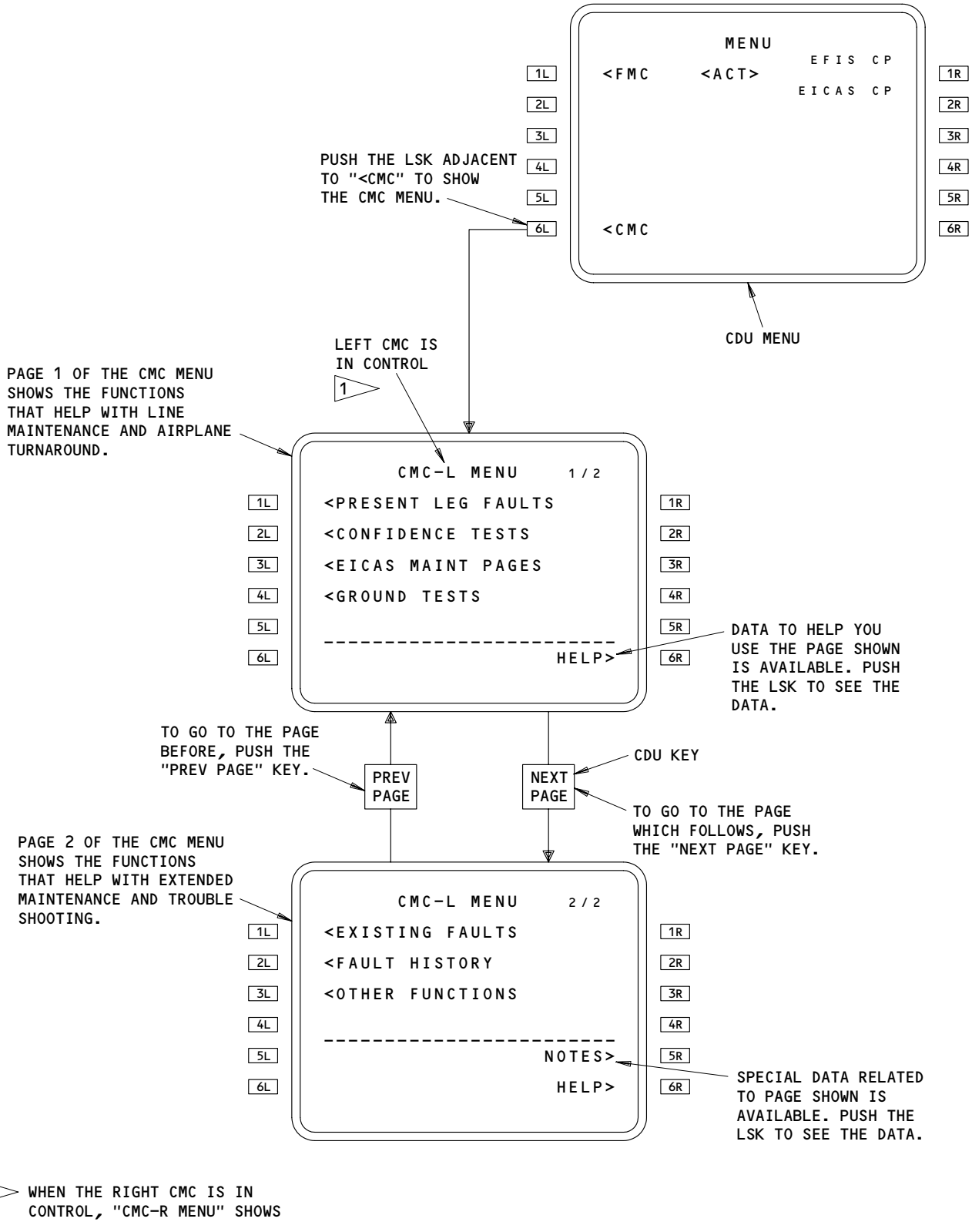
(c) Push the LSK that is adjacent to <ACARS to start the report.

NOTE: The IN PROGRESS indication is shown while the CMC transmits data to the ACARS management unit (MU). The COMPLETE TO MU indication shows that the data was transmitted to the ACARS MU. The COMPLETE TO GROUND indication shows that the data was transmitted to the ground station.

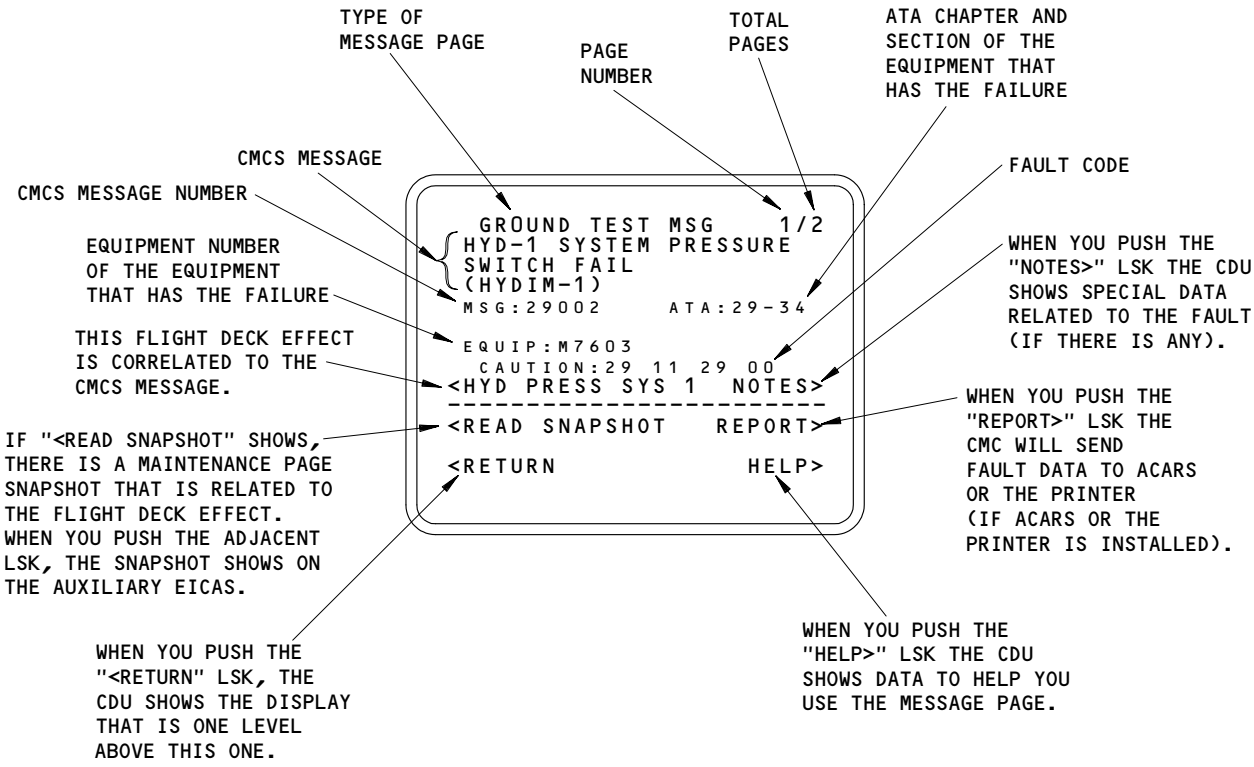
(d) Make sure the COMPLETE TO GROUND indication is shown.

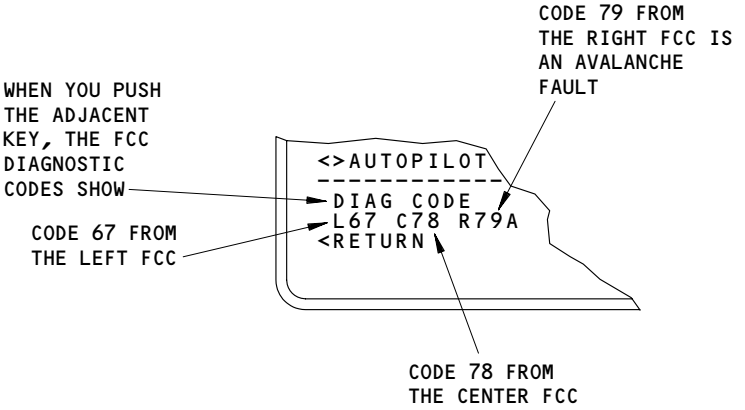



CDU Menu
Figure 6

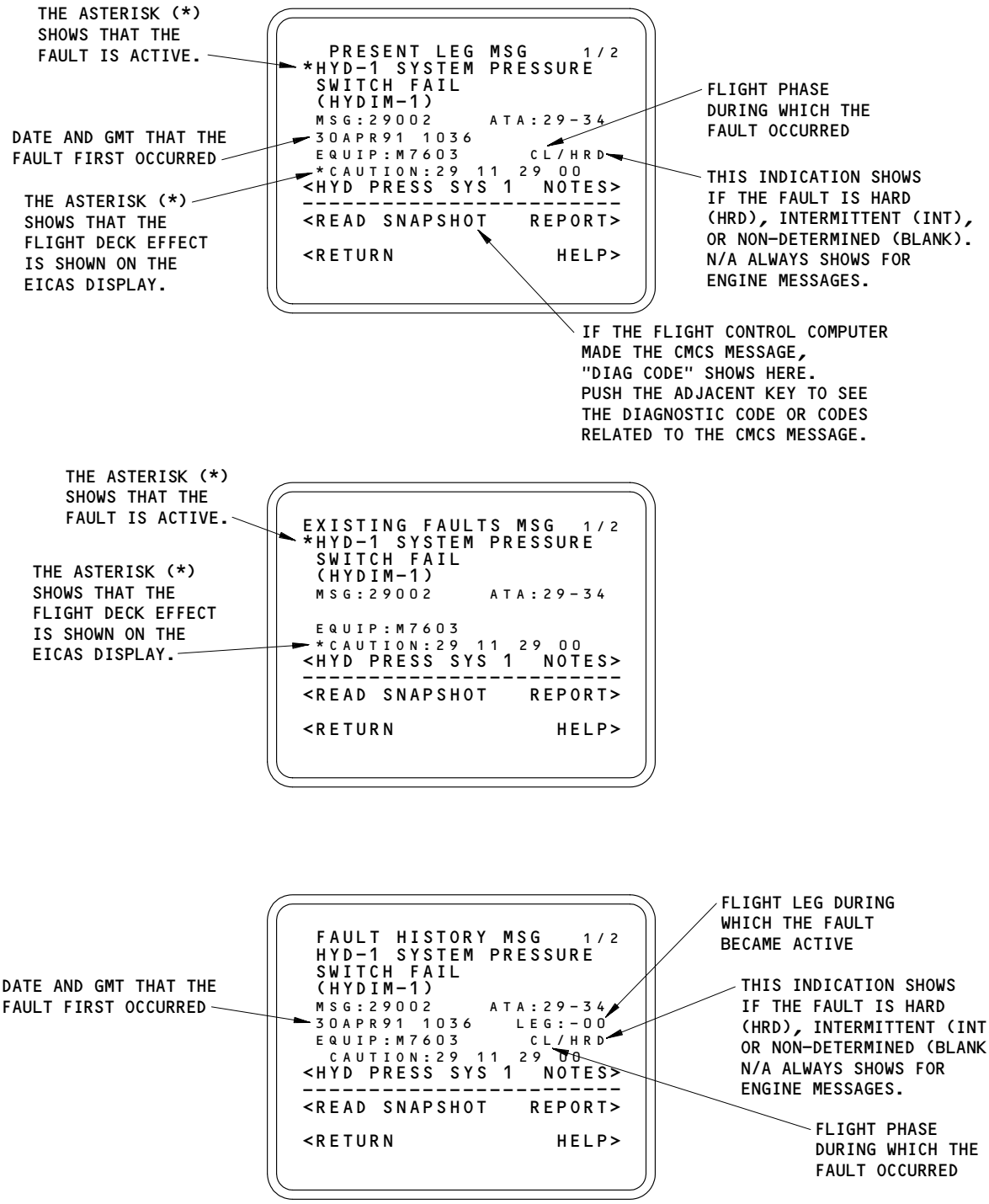



CMC Menu
Figure 7



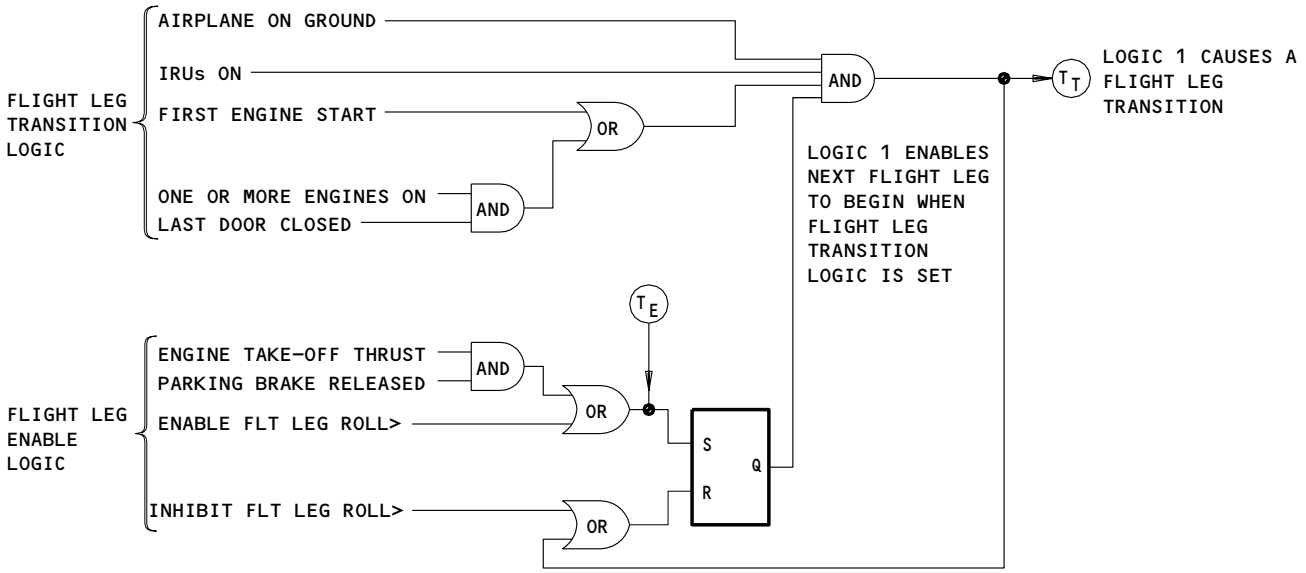




Message Page
Figure 8 (Sheet 1)

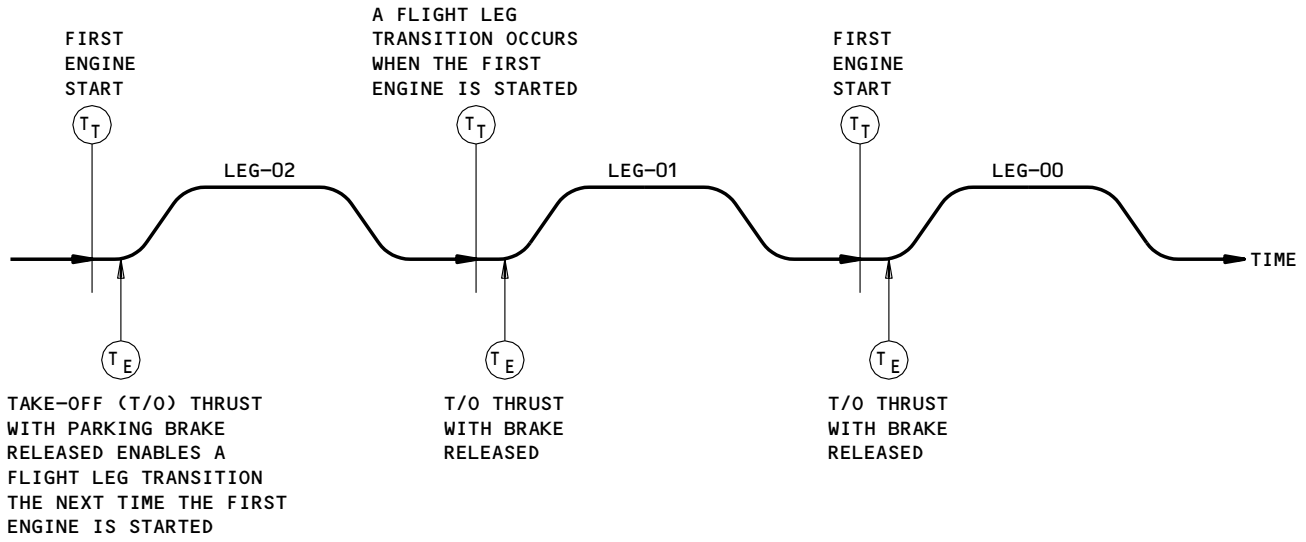



NOTE: THE MESSAGE PAGES FOR PRESENT LEG FAULTS, EXISTING FAULTS, AND FAULT HISTORY ARE DIFFERENT FROM THE MESSAGE PAGE FOR GROUND TESTS AS SHOWN.

Message Page
Figure 8 (Sheet 2)



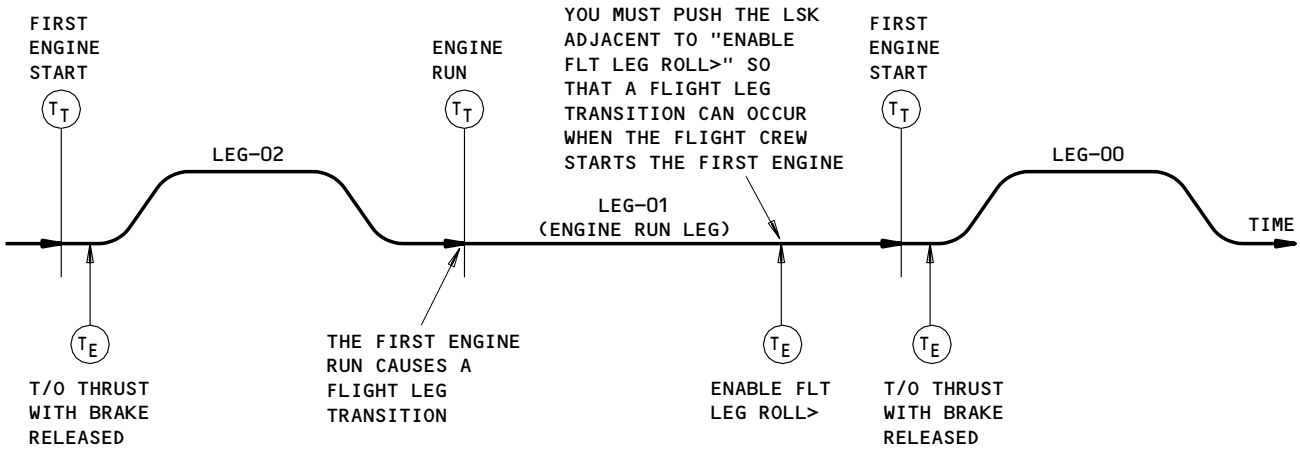

FLIGHT LEG TRANSITION LOGIC



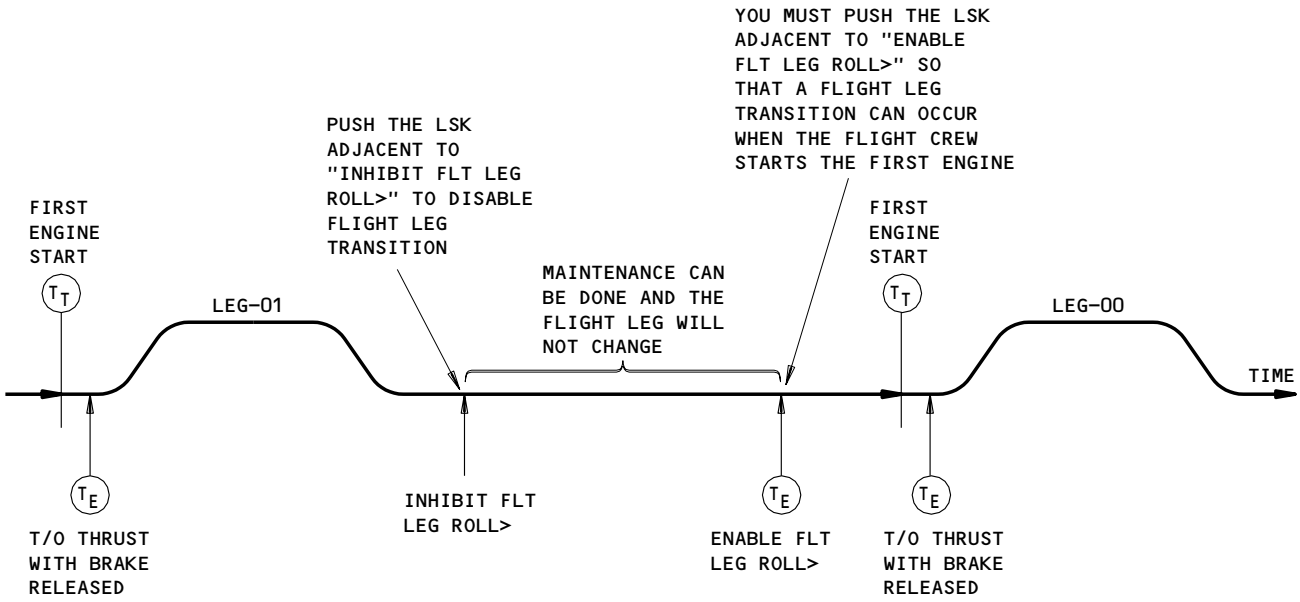

NORMAL FLIGHT LEG TRANSITION

NOTE: $T_T$ = TRANSITION TIME
$T_E$ = ENABLE TIME

Flight Leg Logic
Figure 9 (Sheet 1)

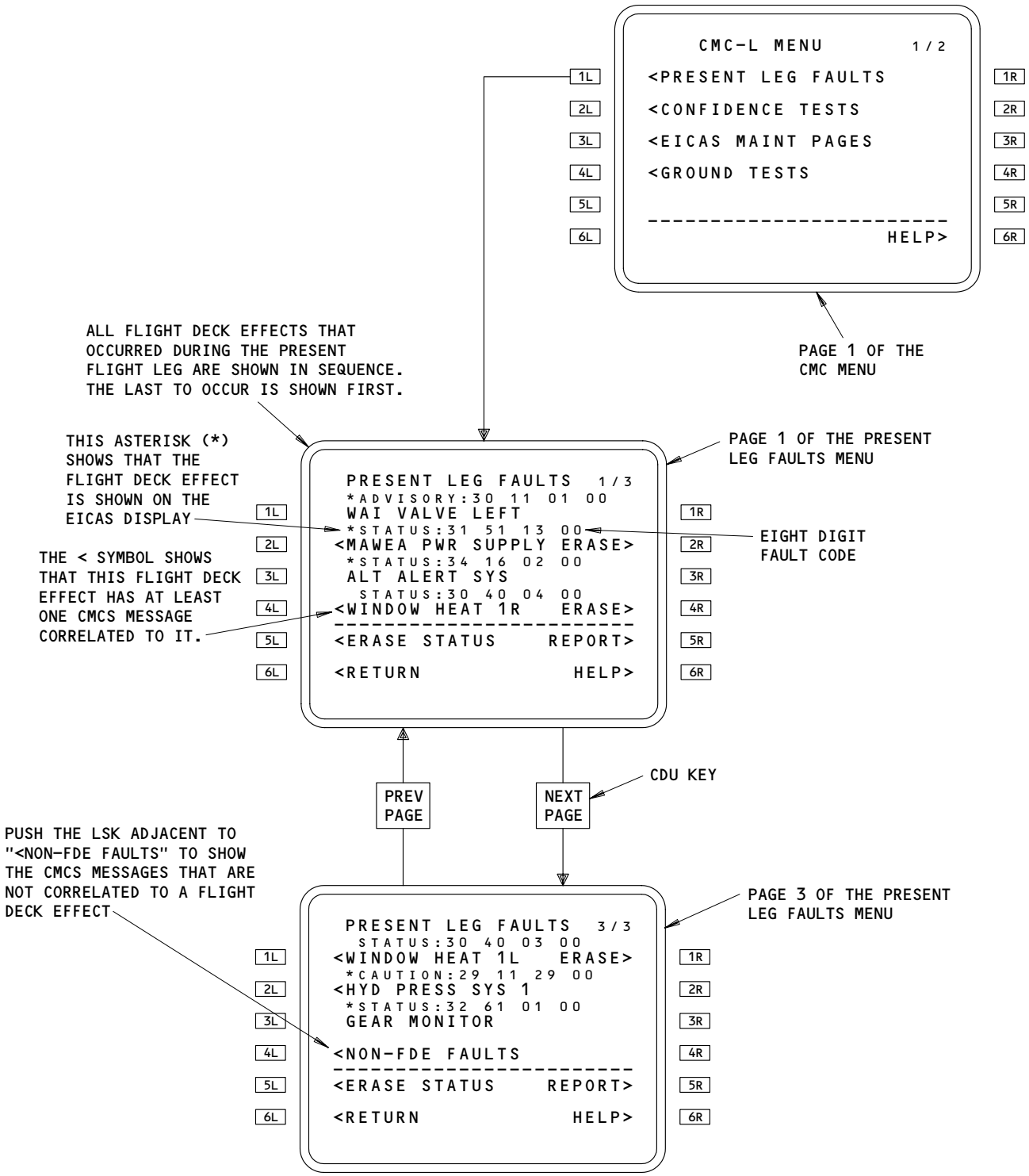



ENGINE RUN LEG

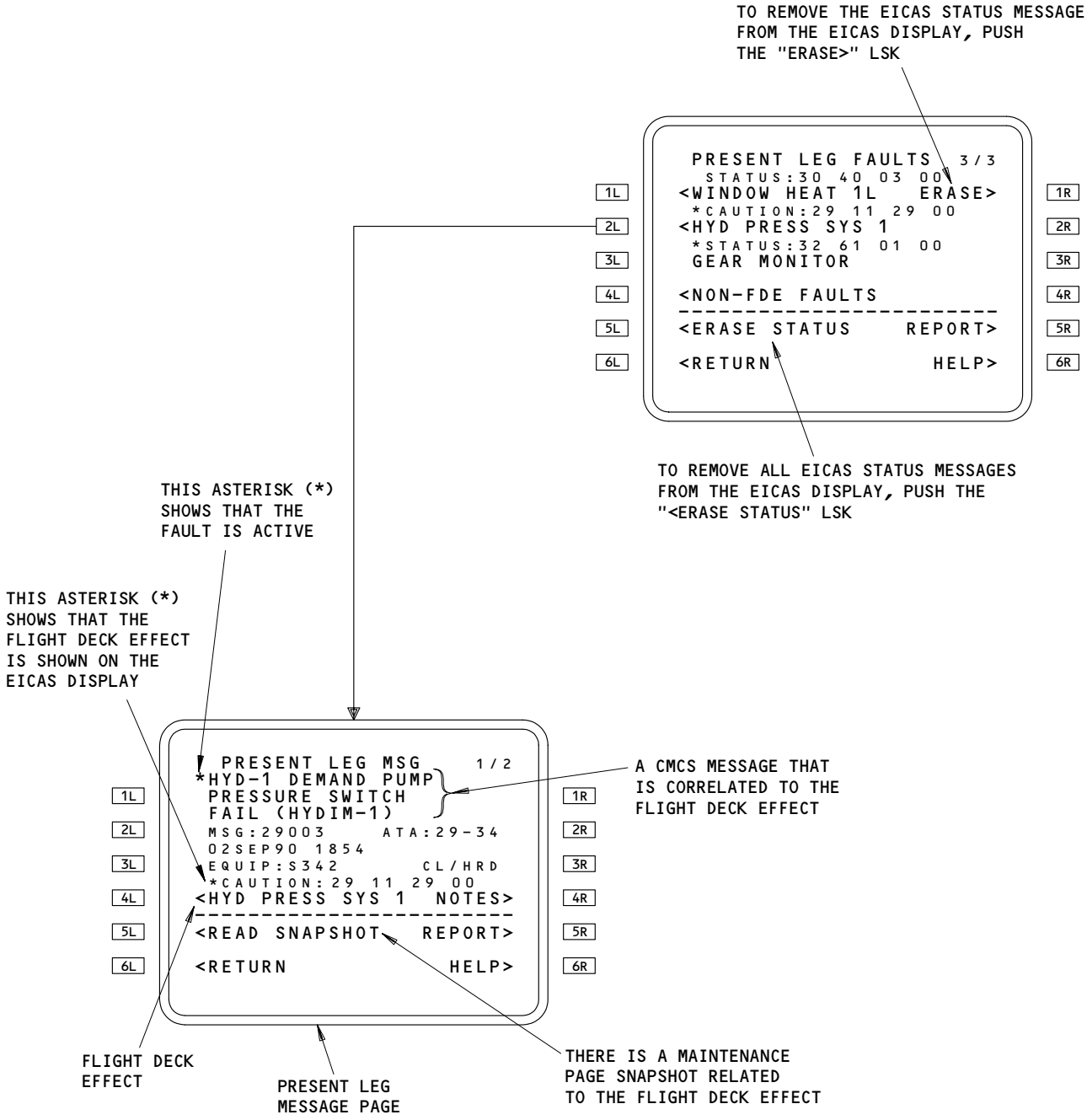



FLIGHT LEG TRANSITION DISABLED FOR MAINTENENCE

Flight Leg Logic
Figure 9 (Sheet 2)

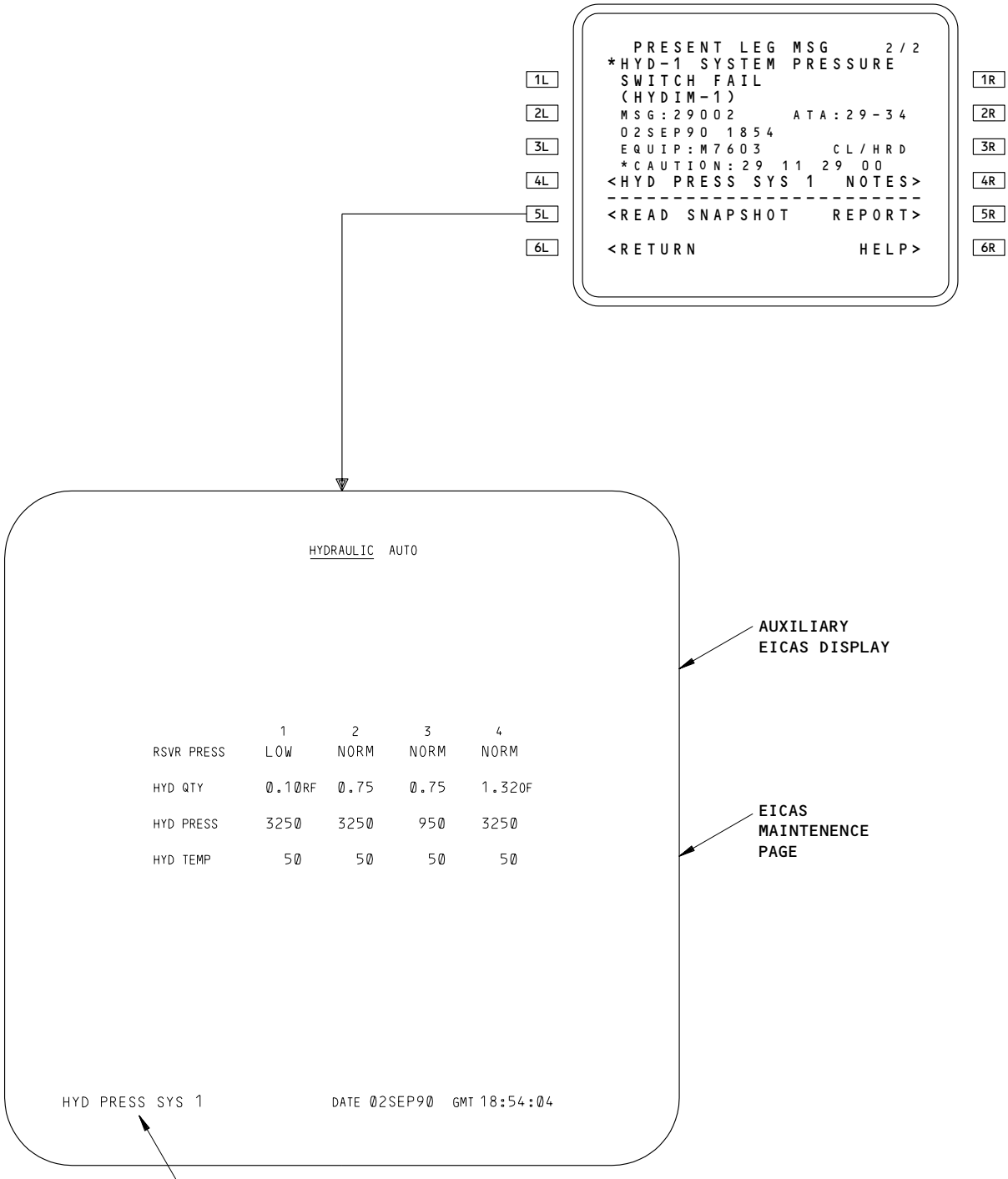



Present Leg Faults
Figure 10 (Sheet 1)

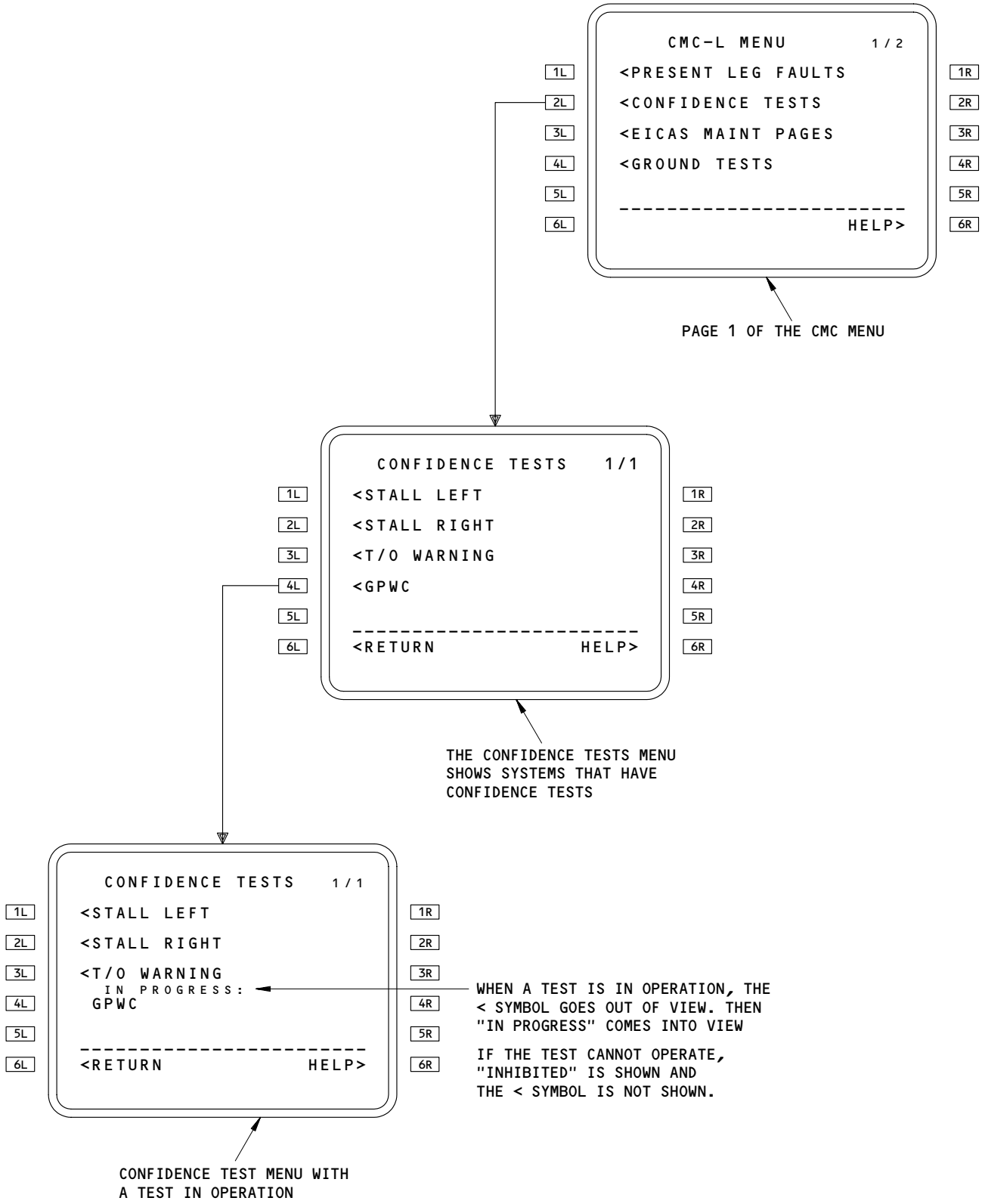



Present Leg Faults
Figure 10 (Sheet 2)

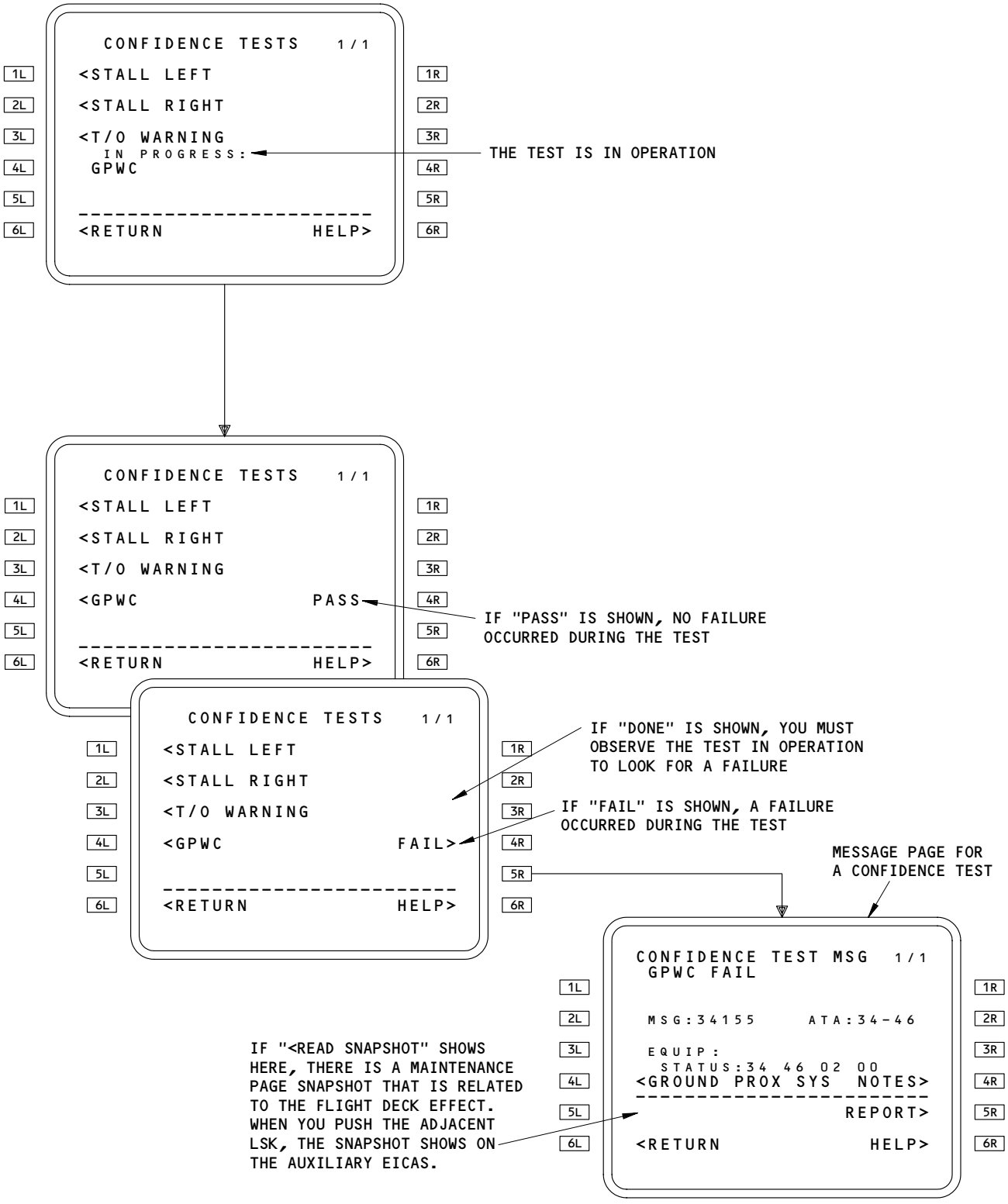

Present Leg Faults
Figure 10 (Sheet 3)



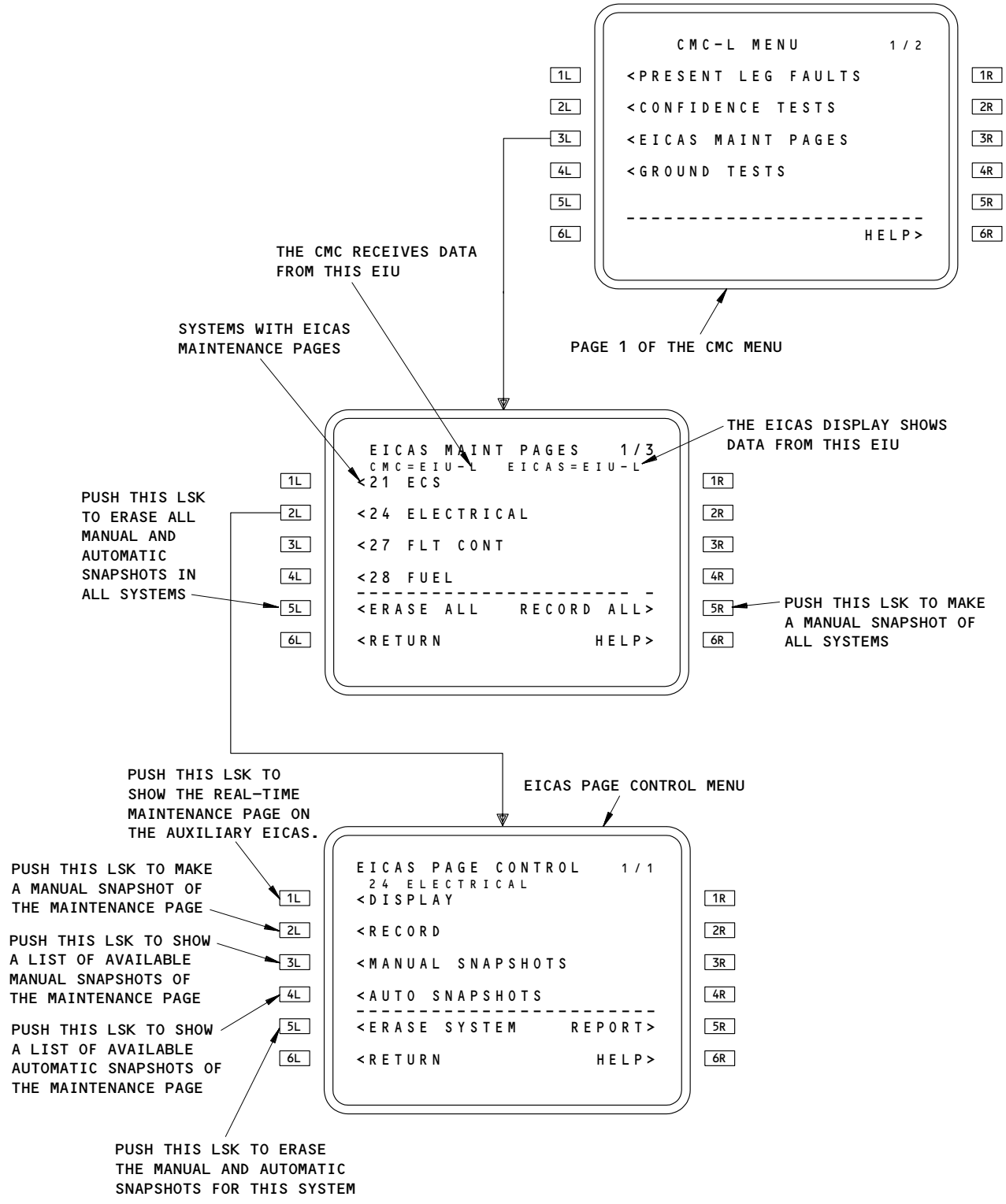

Present Leg Faults
Figure 10 (Sheet 4)



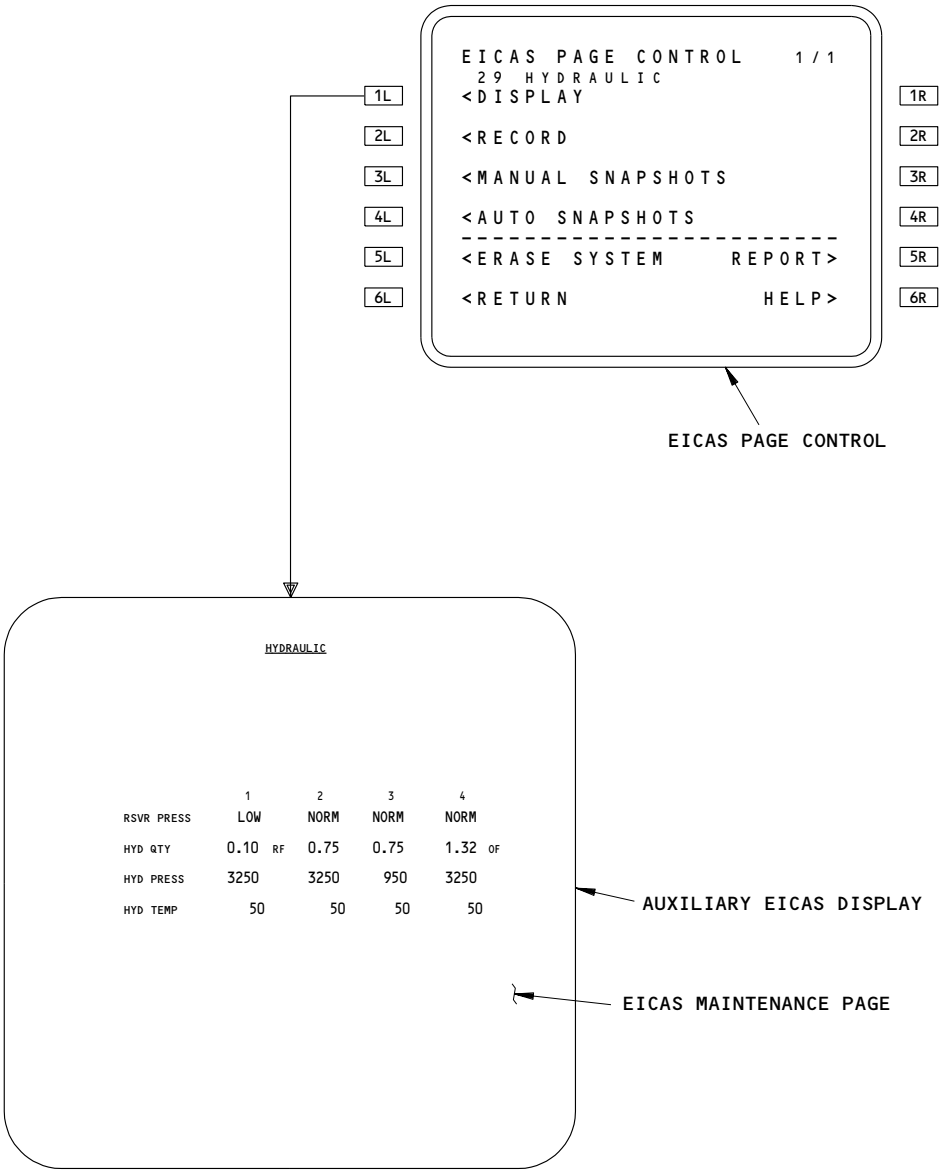

Confidence Tests
Figure 11 (Sheet 1)



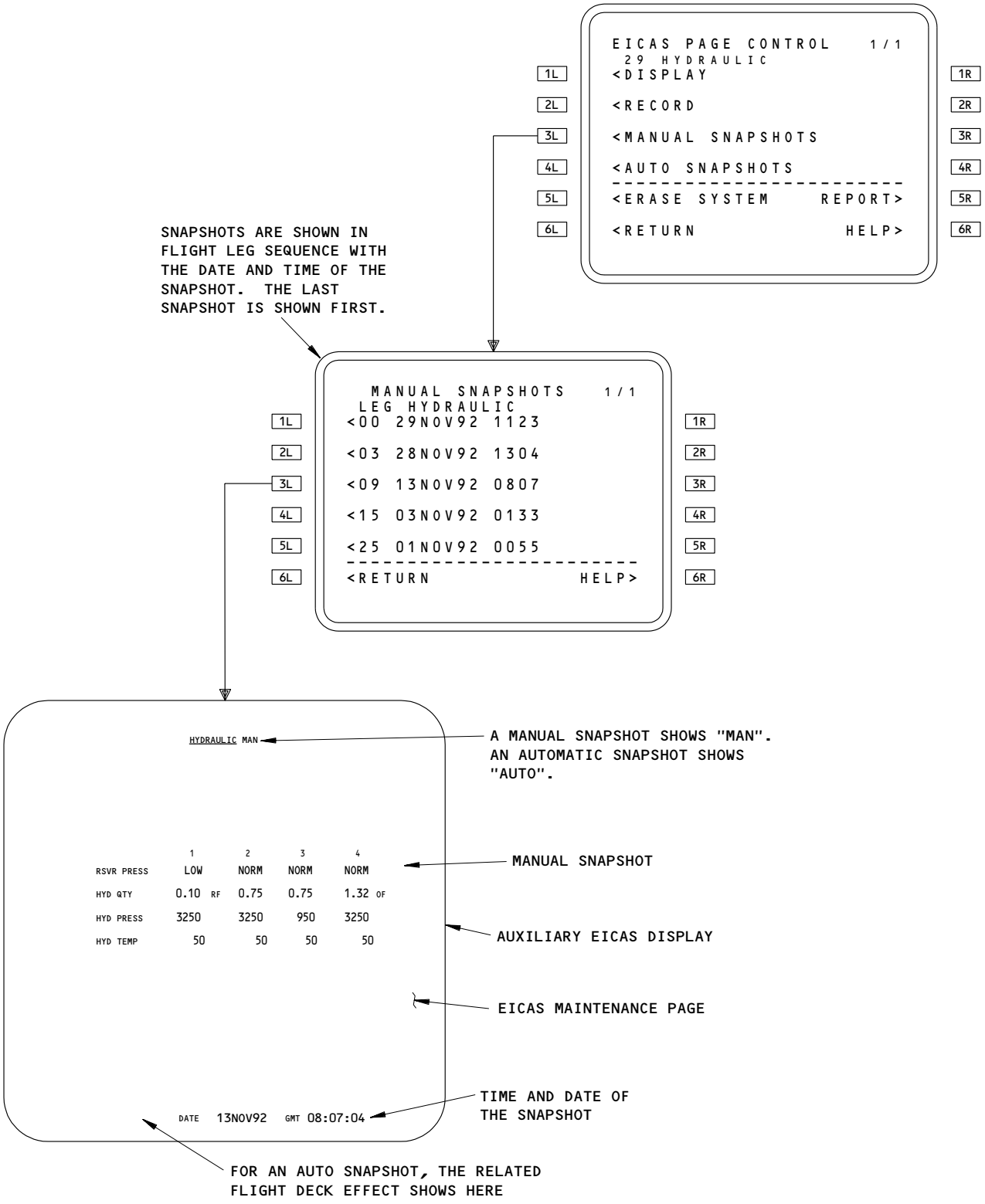

Confidence Tests
Figure 11 (Sheet 2)



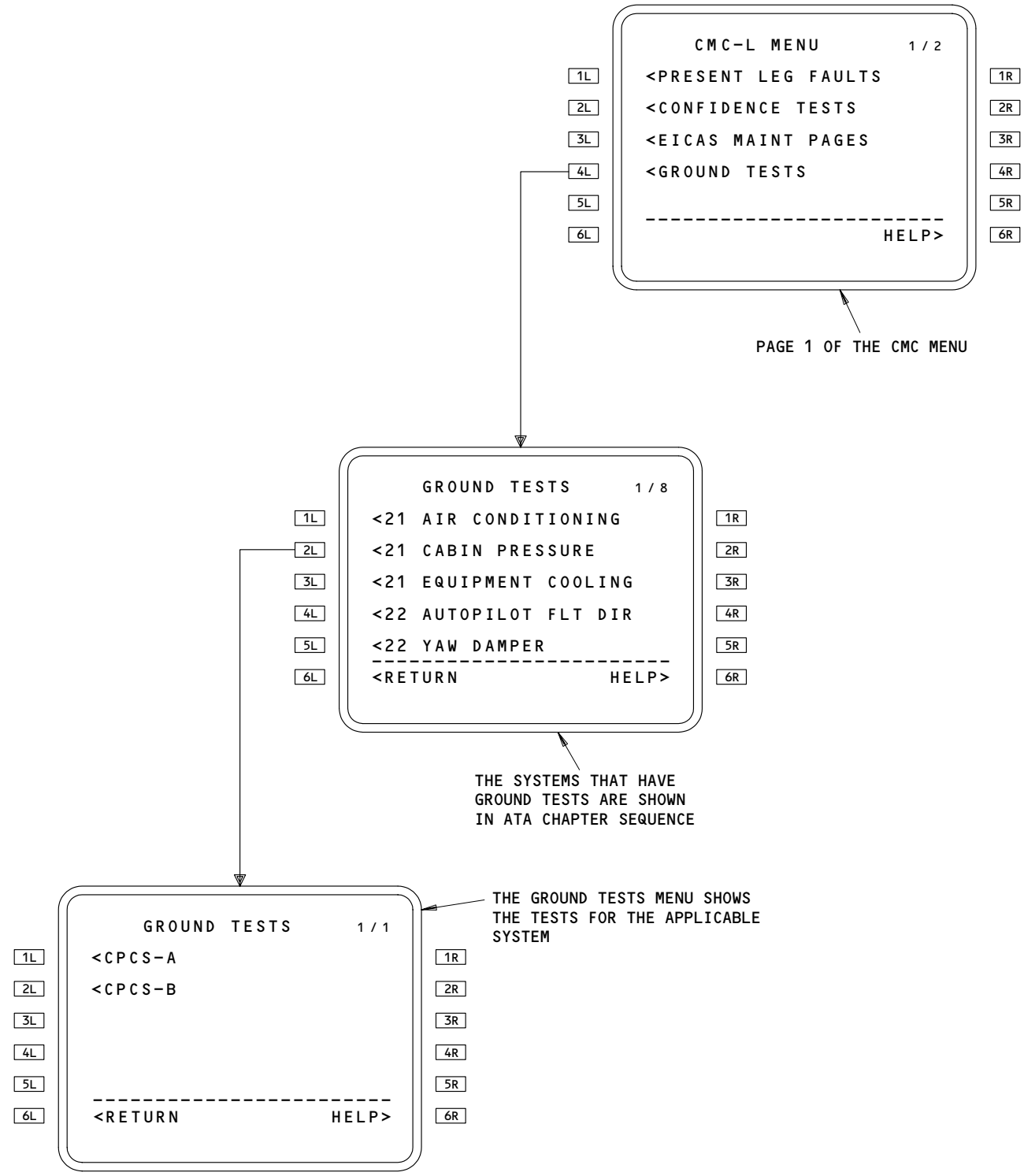

EICAS Maintenance Pages
Figure 12 (Sheet 1)



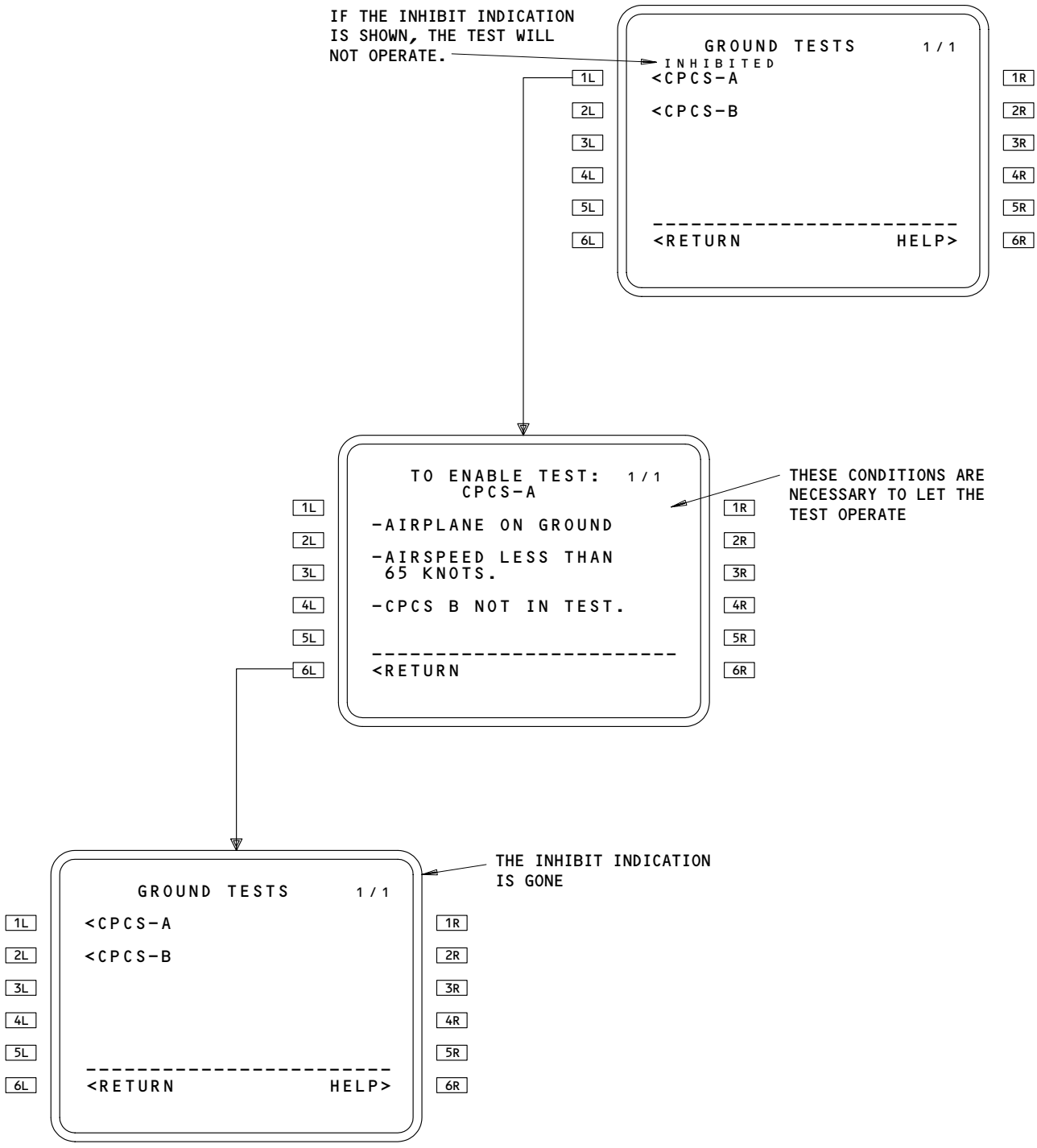

EICAS Maintenance Pages
Figure 12 (Sheet 2)



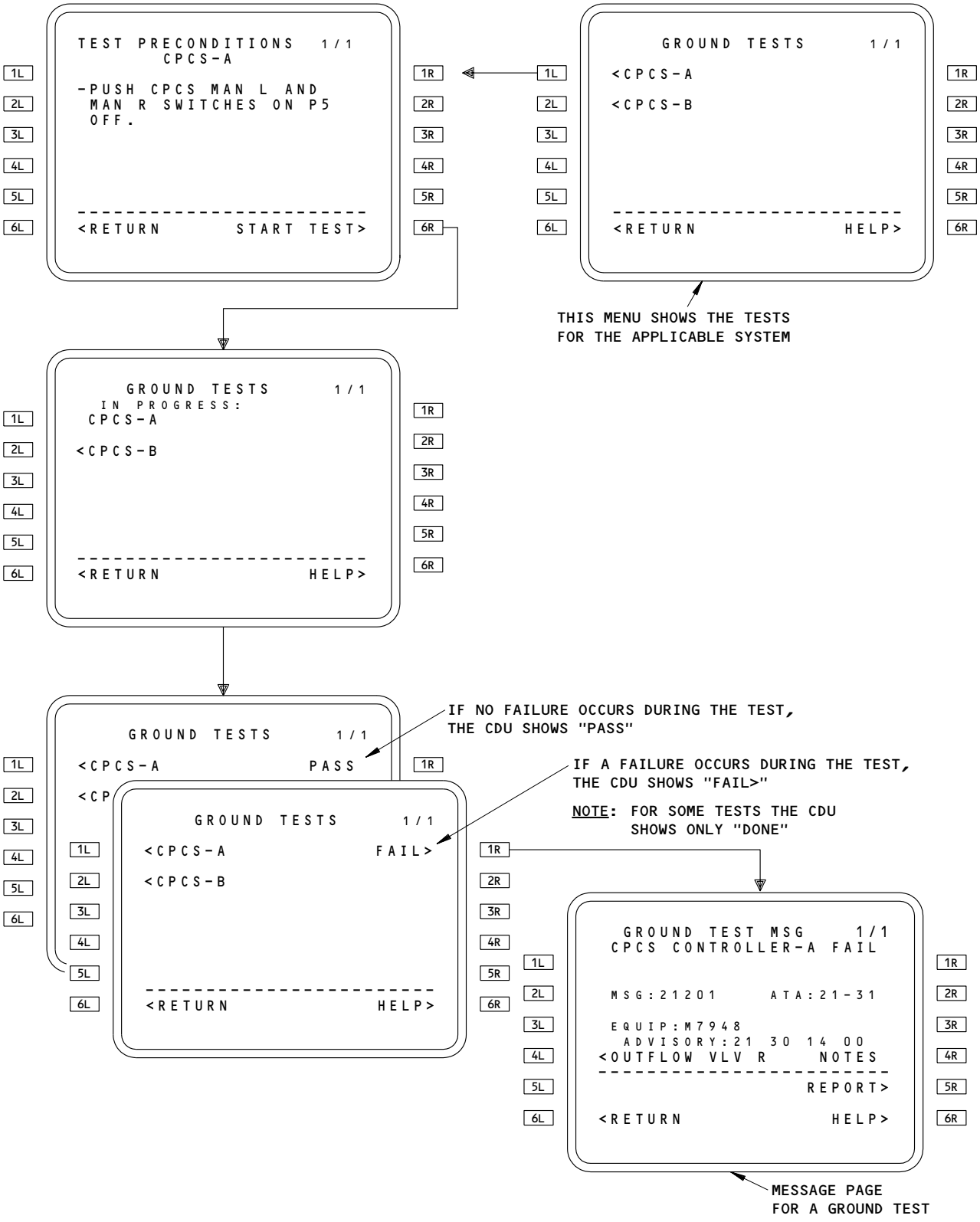

EICAS Maintenance Pages
Figure 12 (Sheet 3)



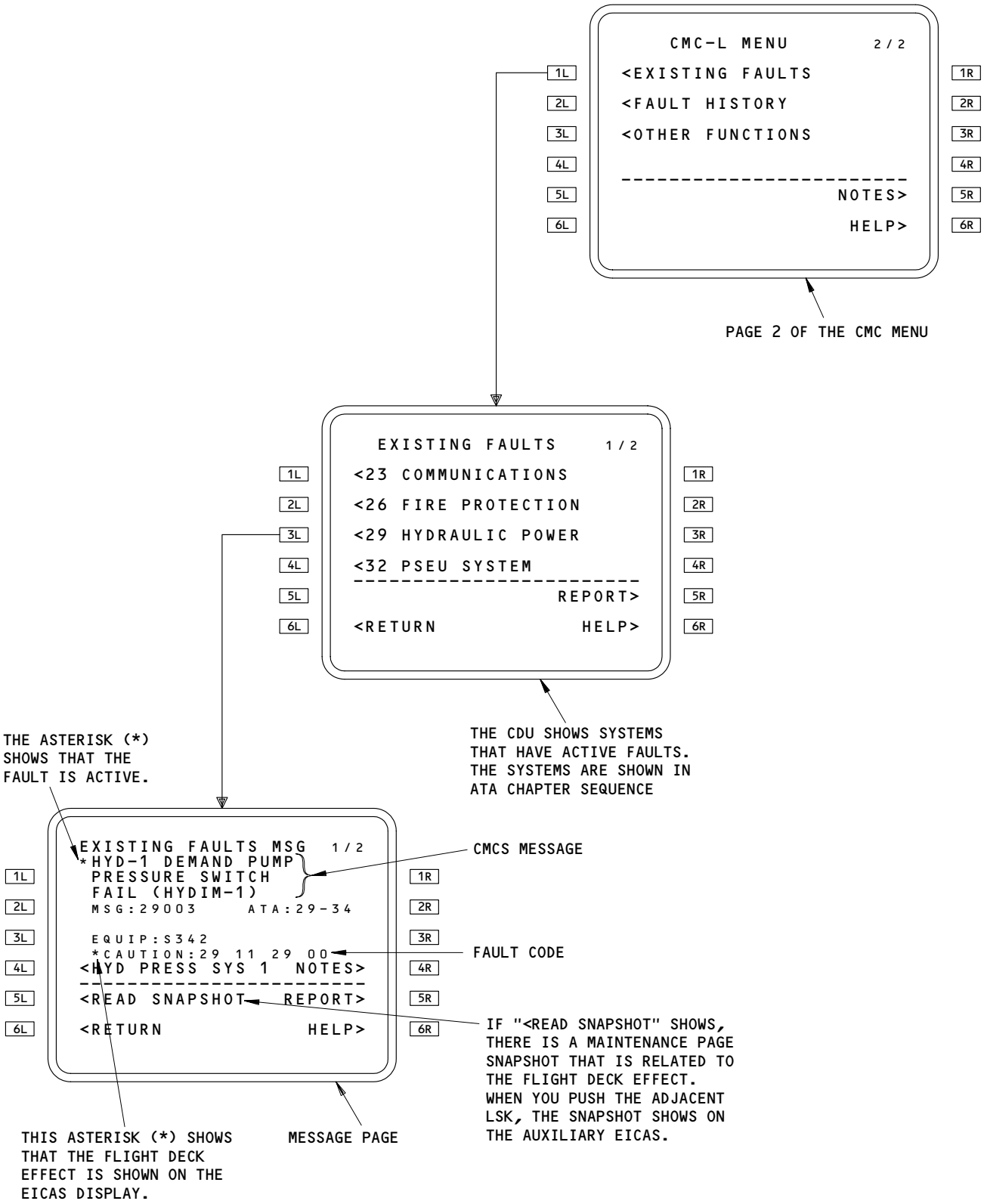

Ground Tests - BITE
Figure 13 (Sheet 1)



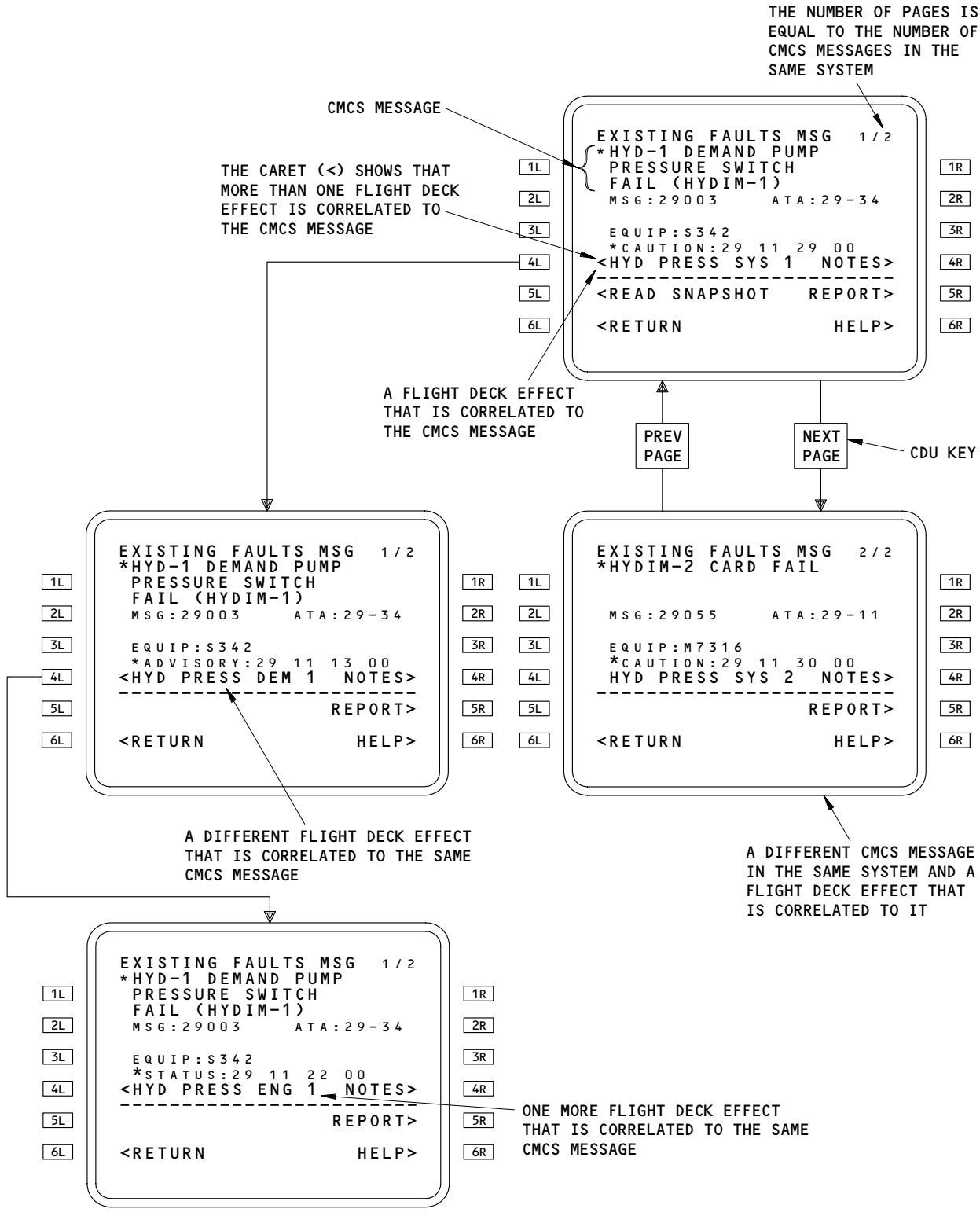

Ground Tests - BITE
Figure 13 (Sheet 2)



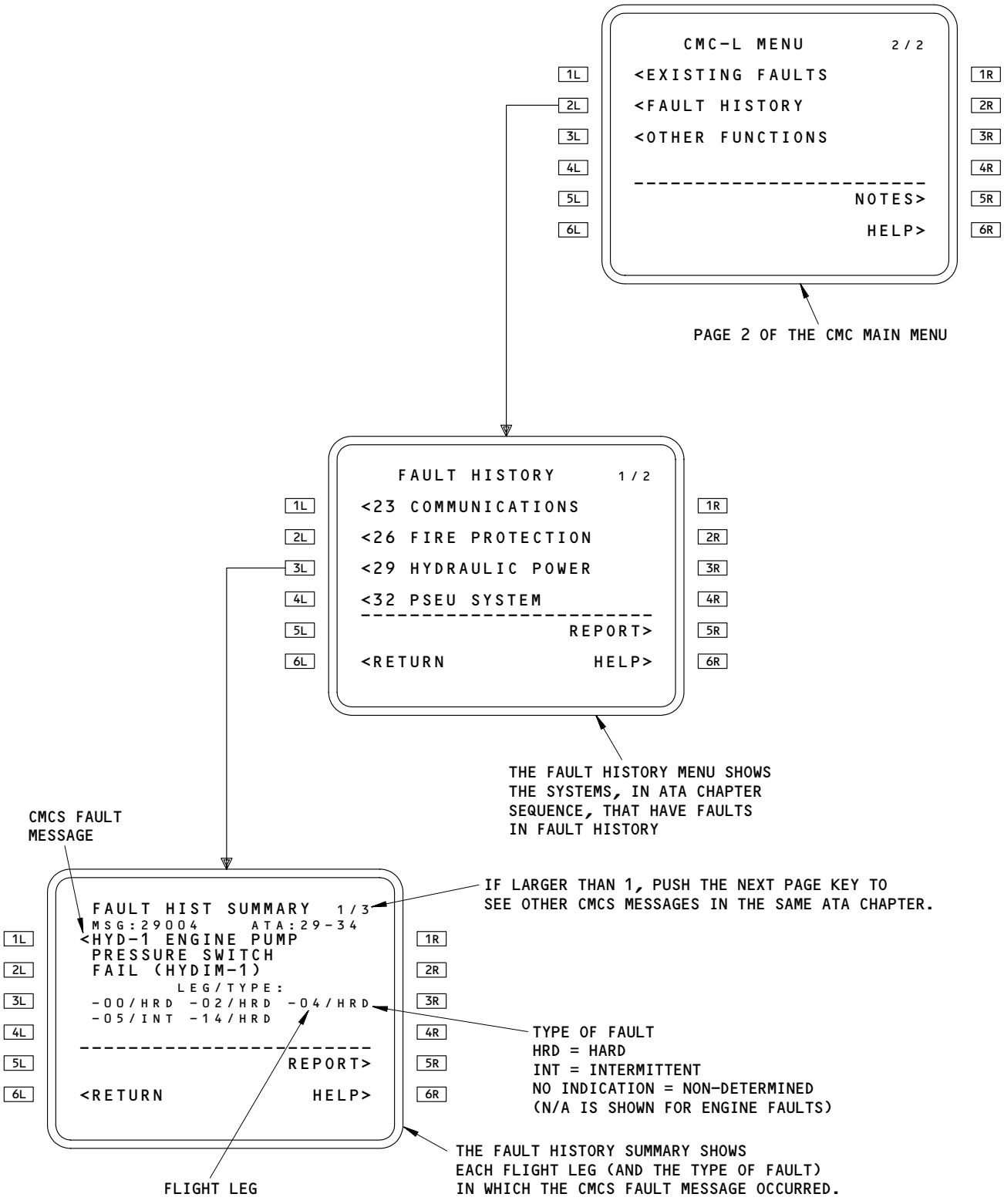

Ground Tests - BITE
Figure 13 (Sheet 3)



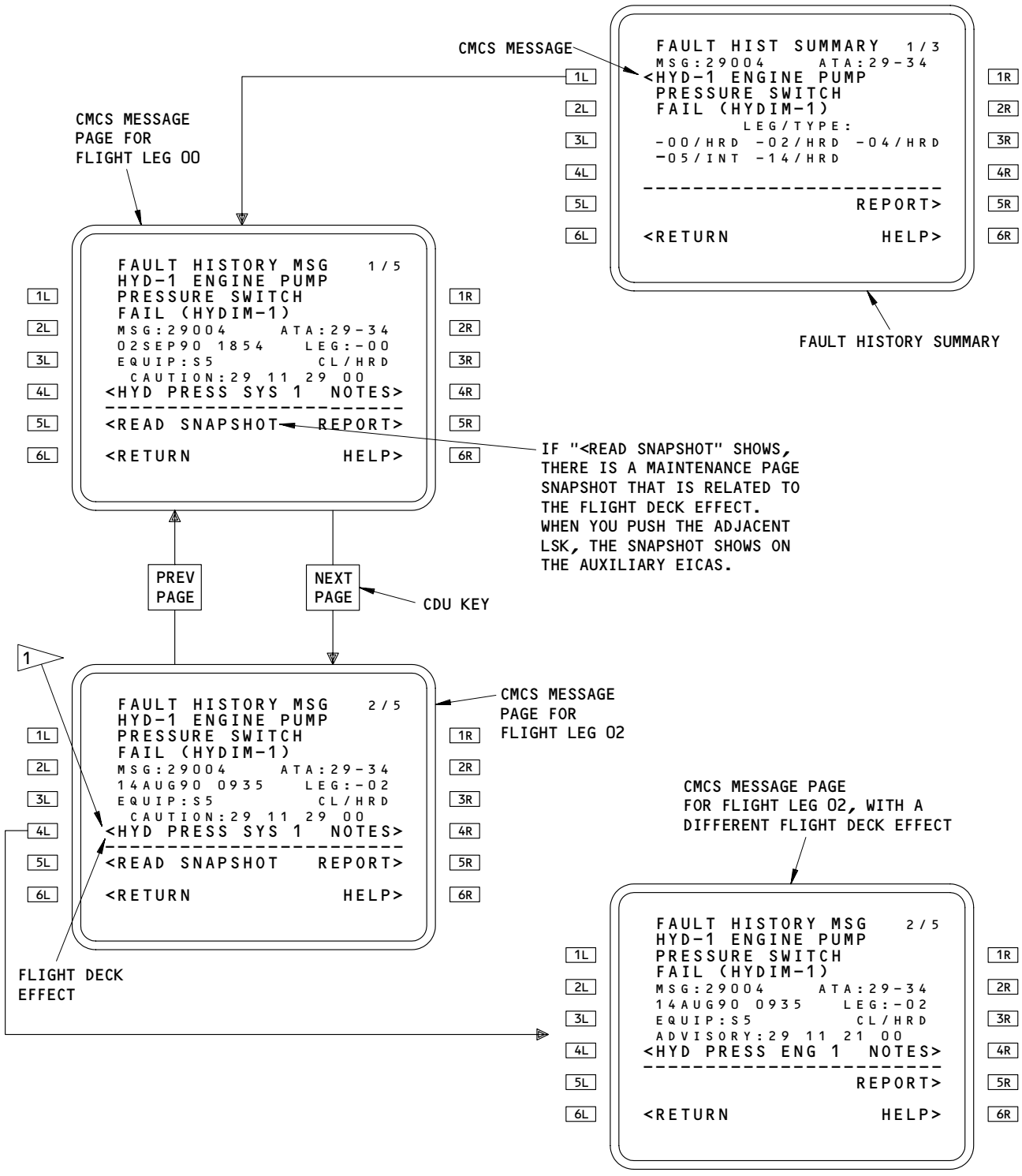

Existing Faults
Figure 14 (Sheet 1)




Existing Faults
Figure 14 (Sheet 2)



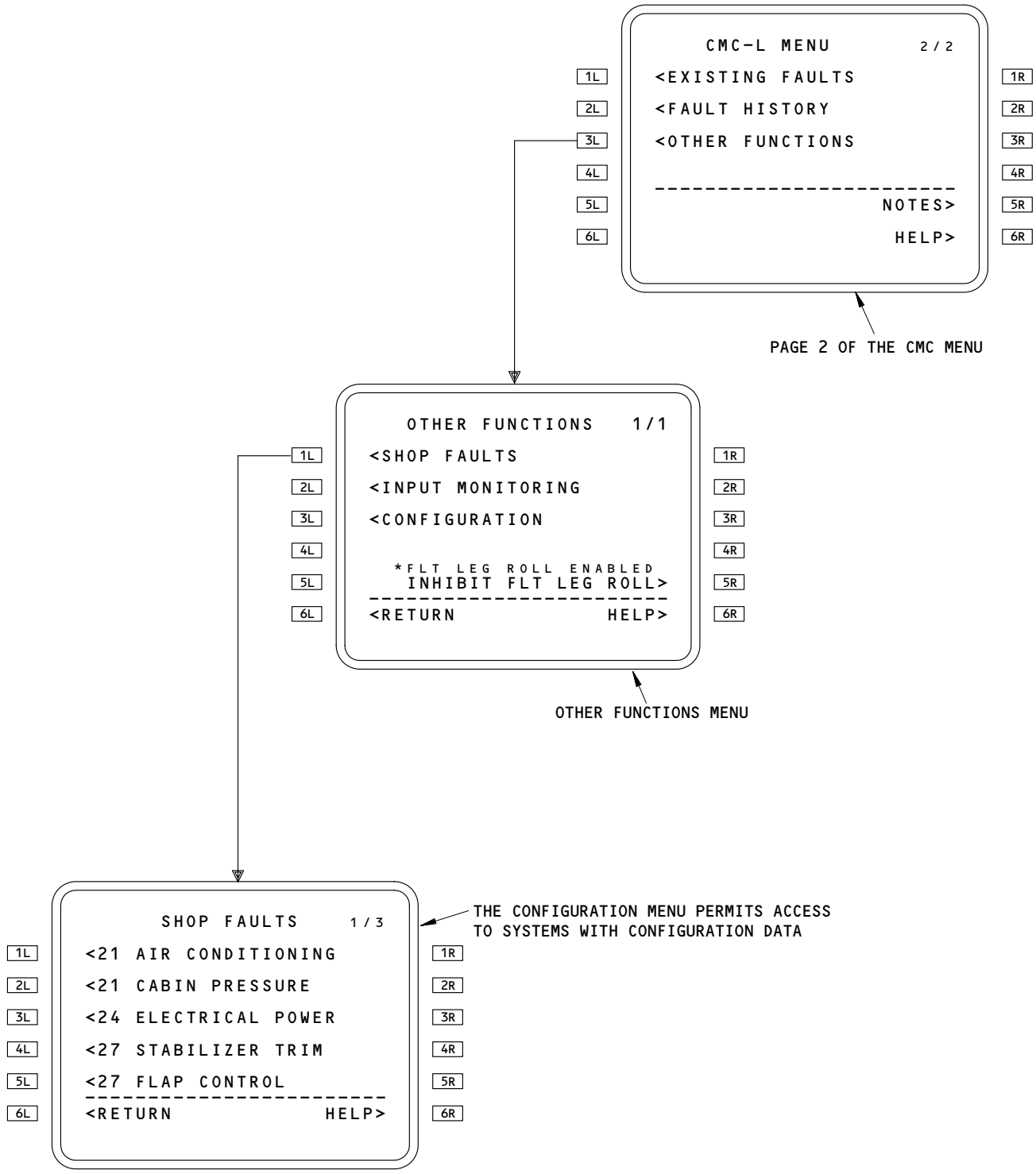

Fault History
Figure 15 (Sheet 1)



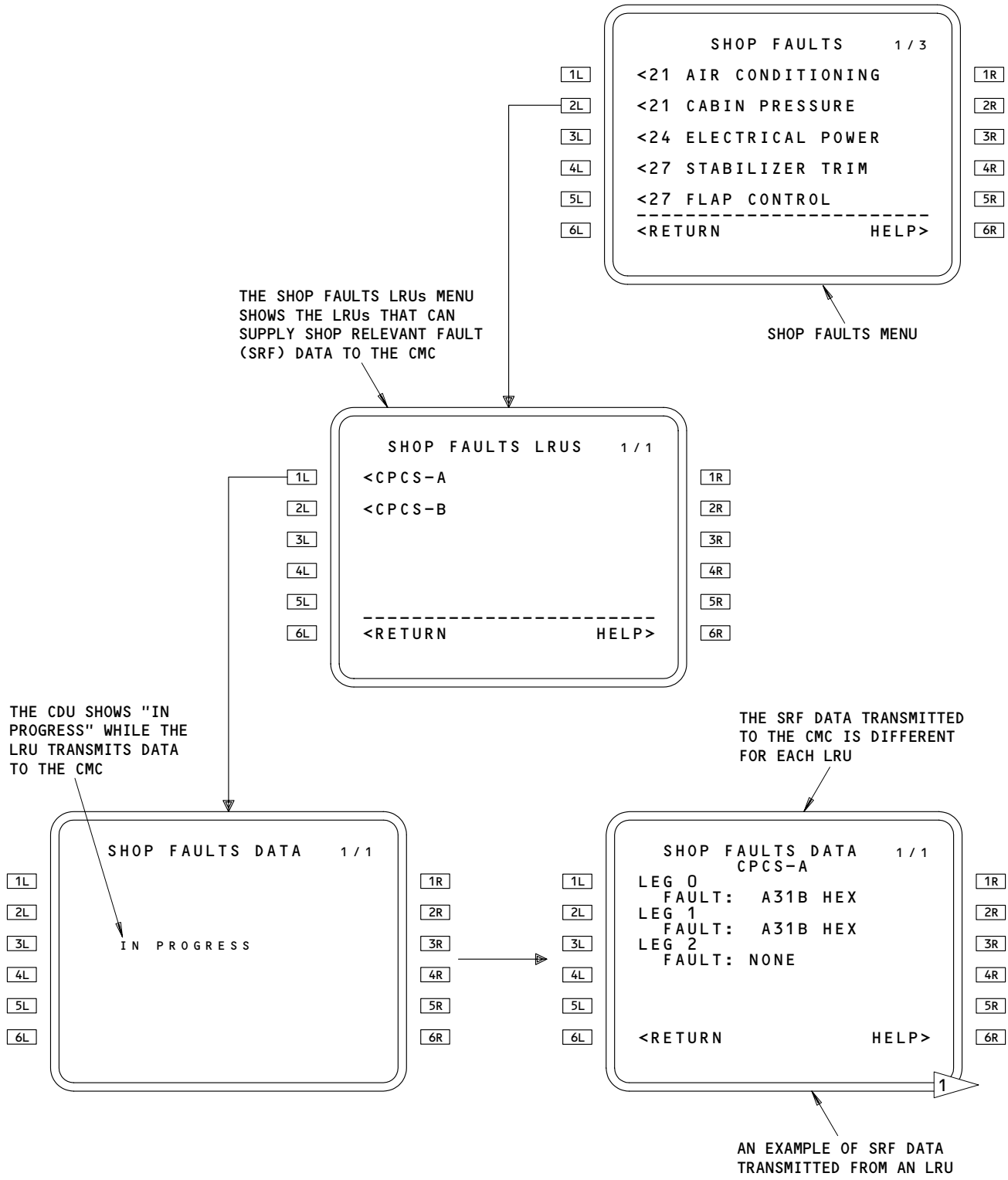

Fault History
Figure 15 (Sheet 2)

EFFECTIVITY
ALL

A05049

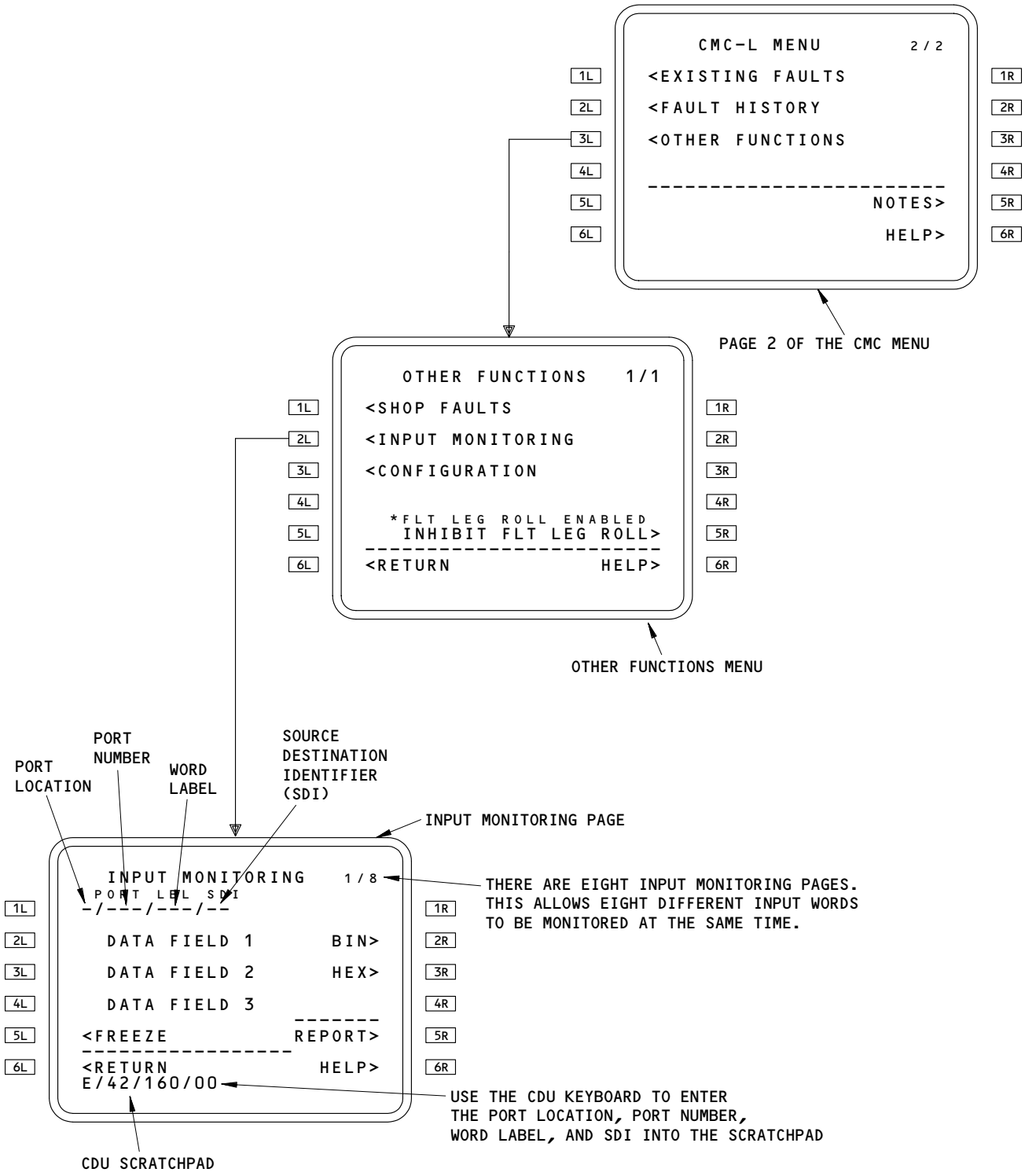



Other Functions - Shop Faults
Figure 16 (Sheet 1)

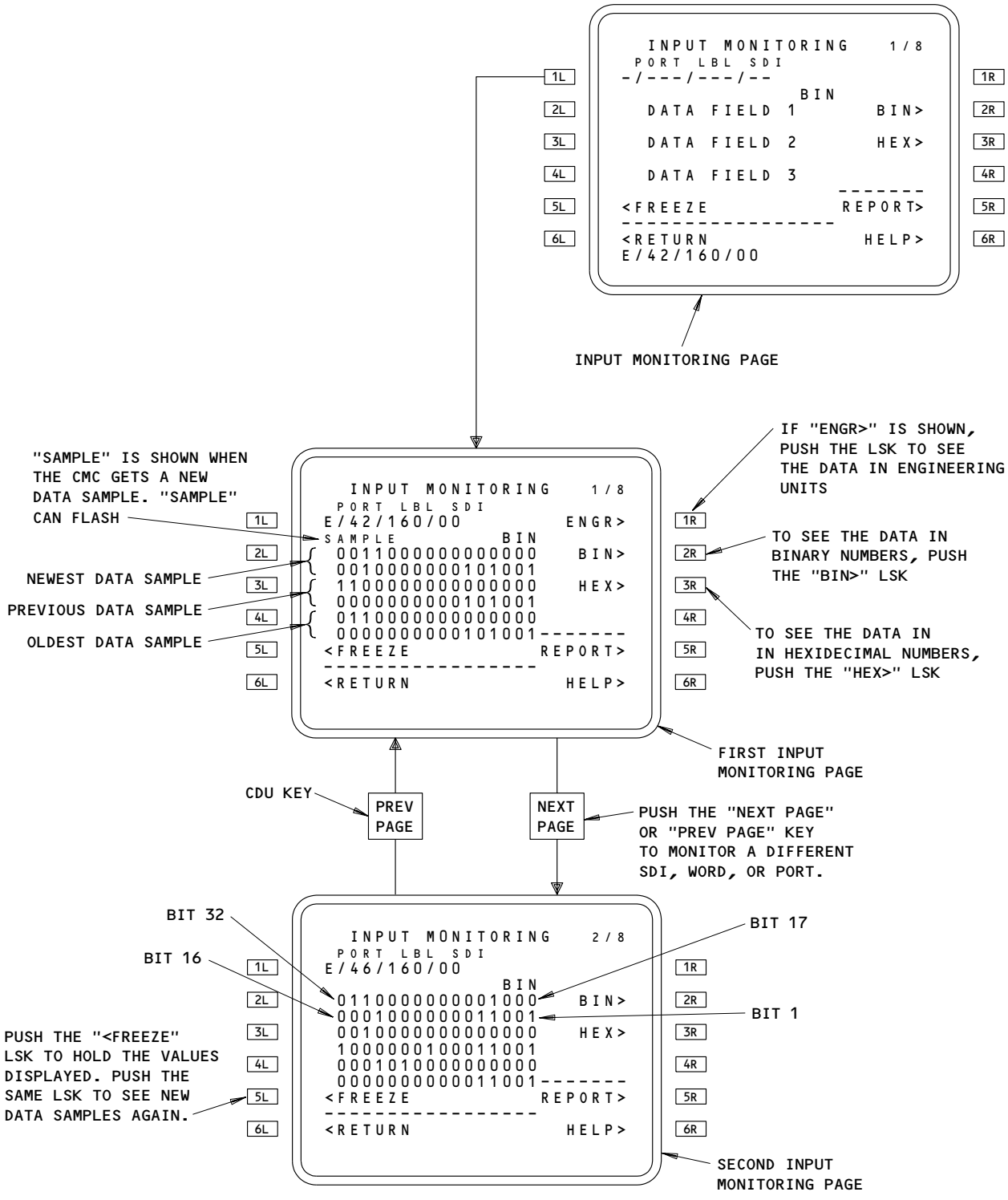



1 IF THE PAGE INDICATION SHOWS MORE THAN ONE PAGE, PUSH THE NEXT PAGE KEY TO SHOW MORE SRF DATA

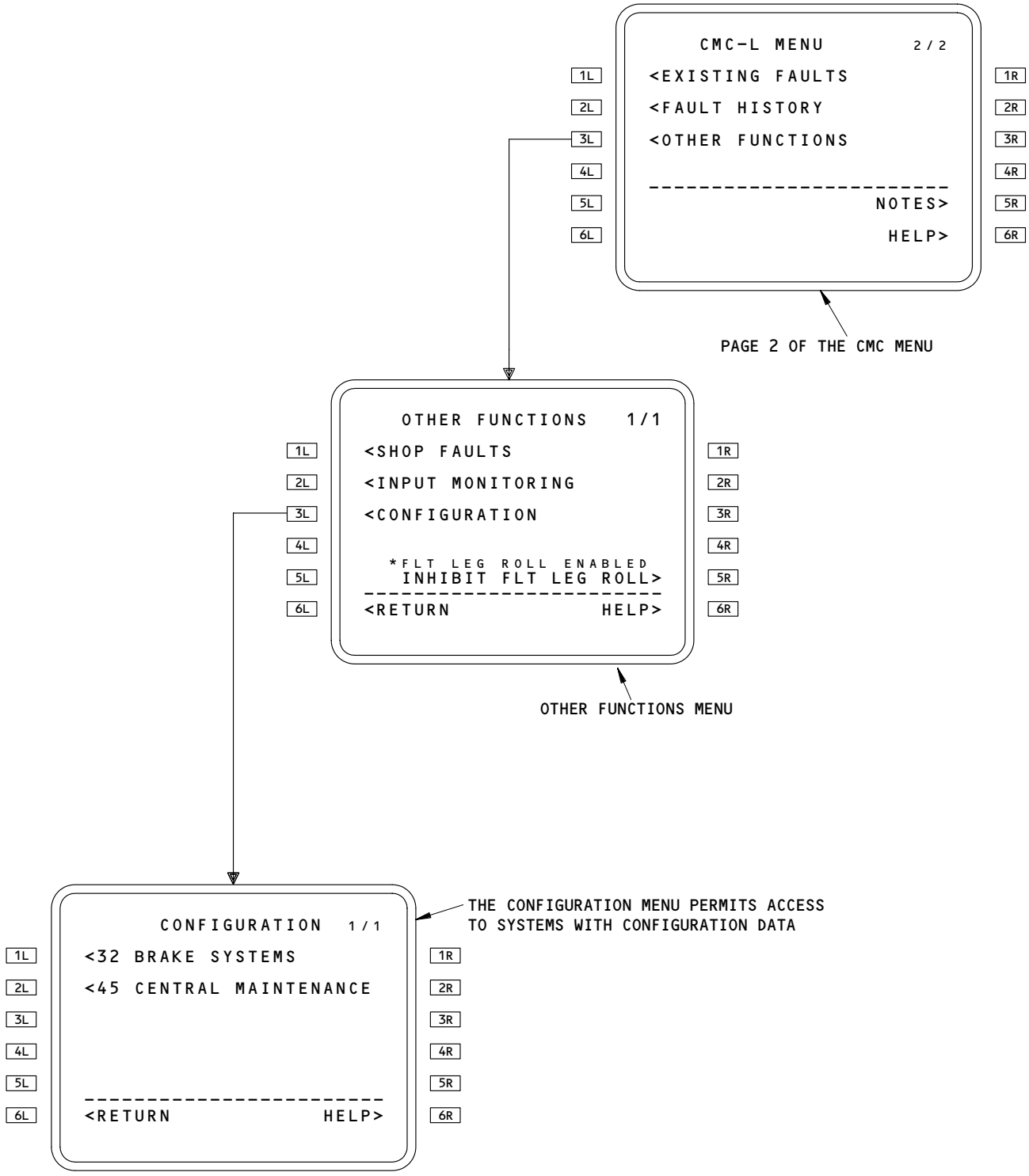
Other Functions - Shop Faults
Figure 16 (Sheet 2)



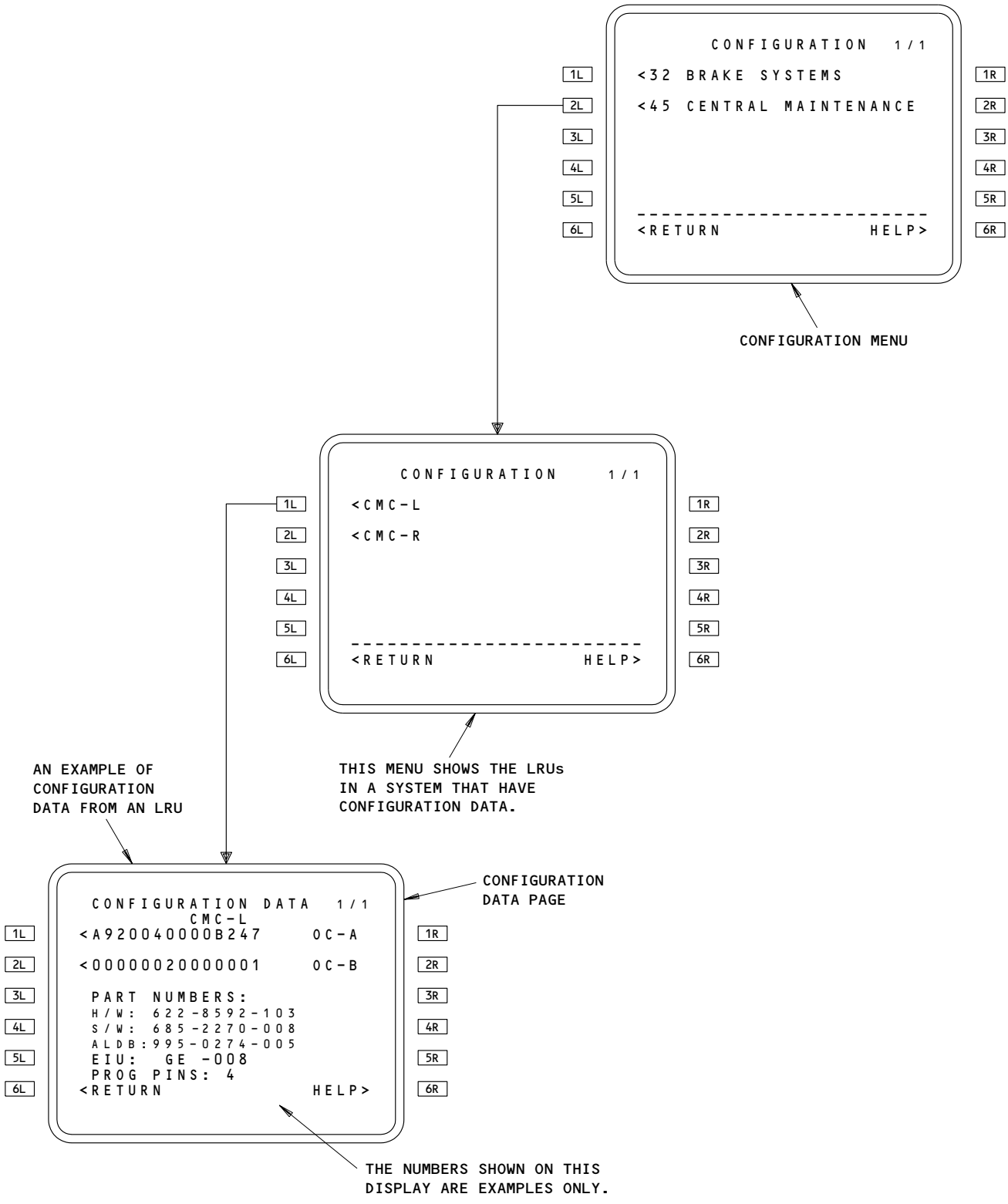

Other Functions - Input Monitoring
Figure 17 (Sheet 1)




Other Functions - Input Monitoring
Figure 17 (Sheet 2)




Other Functions - Configuration
Figure 18 (Sheet 1)




Other Functions - Configuration
Figure 18 (Sheet 2)

| S/W PROGRAM PIN | FUNCTION | EXAMPLE BIN | EXAMPLE HEX |
|---|---|---|---|
| SWPP001 | ACARS INSTALLED | 0 | |
| SWPP002 | ACMS INSTALLED | 1 | |
| SWPP003 | PFIDS (AIRSHOW) INSTALLED | 0 | 2 |
| SWPP004 | OZONE CATALYTIC CONVERTER BYPASS INSTALLED | 0 | |
| SWPP005 | PRINTER INSTALLED | 1 | |
| SWPP006 | PARA-VISUAL DISPLAY INSTALLED | 0 | |
| SWPP007 | RCDU INSTALLED | 0 | 1 |
| SWPP008 | HUMIDIFICATION SYSTEM INSTALLED | 0 | |
| SWPP009 | AUTOTHROTTLE/AUTOPILOT DISCONNECT OPTION SELECT (FCC GT) | 0 | |
| SWPP010 | NOT USED | 0 | |
| SWPP011 | SINGLE SATCOM INSTALLED | 0 | 0 |
| SWPP012 | FAULT HISTORY SYNC INHIBIT | 0 | |
| SWPP013 | CMC SOFTWARE/SYSTEM BITE DISPLAY ENABLE | 0 | |
| SWPP014 | 21116, 21127, 21138 PACK X AIR FLOW SENSOR FAIL MESSAGE ENABLE | 0 | |
| SWPP015 | QUERY SCREENS ENABLE | 0 | 0 |
| SWPP016 | CONTROL WHEEL STEERING INSTALLED | 0 | |
| SWPP017 | FWD CARGO CONDITIONING INSTALLED | 0 | |
| SWPP018 | AFT CARGO CONDITIONING INSTALLED | 0 | |
| SWPP019 | SINGLE W/B INSTALLED | 0 | 0 |
| SWPP020 | DUAL W/B INSTALLED | 0 | |
| SWPP021 | NOT USED | 0 | |
| SWPP022 | CHECK BIT | 0 | |
| SWPP023 | MANUAL LEG ENABLE/DISABLE FUNCTION | 0 | 0 |
| SWPP024 | 30252-55, 30258-61 DUAL ICE/AUTO COWL MESSAGE ENABLE | 0 | |
| SWPP025 | NOT USED | 0 | |
| SWPP026 | 28795 LOW FUEL IN ANY MAIN TANK MESSAGES ENABLE | 0 | |
| SWPP027 | ICE DETECT ADVISORY SYSTEM INSTALLED | 0 | 0 |
| SWPP028 | T/R GND MODE DEPLOY CMD MESSAGE ENABLE | 0 | |
| SWPP029 | NOT USED | 0 | |
| SWPP030 | ADC SWITCH (FCC INSTRUMENTS TEST) | 0 | |
| SWPP031 | 80X33 ENG-X SCU ABORTED AUTOSTART MESSAGE ENABLE | 0 | 0 |
| SWPP032 | 34677-34679, 34682 OVER SPD MESSAGES ENABLE | 0 | |
| SWPP033 | 32059-62 BOBY GEAR LOCK SW DISAGREE MESSAGES ENABLE | 0 | |
| SWPP034 | GROUND TEST HELP OPTION | 0 | |
| SWPP035 | REAL TIME ACARS INTERMITIENT IDENTIFICATION | 0 | 0 |
| SWPP036 | RECORD ALL FDES BETWEEN TO AND RO | 0 | |
| SWPP037 | DEFAULT FLIGHT PHASE | 0 | |
| SWPP038 | NON-FDE FAULT OUTPUT TO PRINTER/ACARS ENABLE | 1 | |
| SWPP039 | ARINC 615 RECORDING FUNCTION | 0 | 2 |
| SWPP040 | CMC - SIMULTANEOUS ACCESS BY 4 CDUS | 0 | |
| SWPP041 | DATA RECORDER (FLIGHT TEST) | 1 | |
| SWPP042 | 21485 AFT CARGO OVERHEAT MESSAGE ENABLE | 0 | |
| SWPP043 | FAULT HISTORY ERASE | 0 | 9 |
| SWPP044 | ERASE STATUS (ERASE ALL EICAS STATUS MESSAGES) | 1 | |
| SWPP045 | CMC INHIBIT IN AIR | 0 | |
| SWPP046 | CMC INHIBIT TO 10K FT | 1 | |
| SWPP047 | CMC DEBUGGING TOOL ENABLE | 0 | A |
| SWPP048 | CHECK BIT | 1 | |

EXAMPLE OC-A:

```
1010 1001 0010 0000 0000 0000 0000 0000 0000 0000 0001 0010   X    X
  A    9    2    0    0    0    0    0    0    0    1    2    X    X
```

X = VALIDITY CHECK BITS

OC-A
CMCS Option Code
Figure 19 (Sheet 1)

| S/W PROGRAM PIN | FUNCTION | EXAMPLE BIN | EXAMPLE HEX |
|---|---|---|---|
| SWPP049 | AUTOSTART DISABLE (GE); SHOP FLTS ENABLE (RR); ACT TST ENABLE (PW) | 0 | |
| SWPP050 | ELEVENTH-STAGE DISAGREE ENABLE (GE) | 0 | |
| SWPP051 | CONSOLIDATION ENABLE (2ND LEVEL) | 1 | 4 |
| SWPP052 | VHF/RCP MESSAGE ENABLE | 0 | |
| SWPP053 | HF MESSAGE ENABLE | 0 | |
| SWPP054 | 28644 & 28762 MN TK 3 AFT BOOST PUMP MESSAGE ENABLE | 0 | |
| SWPP055 | ACARS FAULT MESSAGE ENABLE | 0 | 0 |
| SWPP056 | ACESS FAULT MESSAGE ENABLE | 0 | |
| SWPP057 | ACMS FAULT MESSAGE ENABLE | 0 | |
| SWPP058 | CONSOLIDATION ENABLE (HIGHEST LEVEL) | 0 | |
| SWPP059 | 30400-02 DRAIN MAST HEATER MESSAGE ENABLE | 0 | 0 |
| SWPP060 | FMC-L POWER BUS (1=STANDBY;0=CAPTAIN'S) | 0 | |
| SWPP061 | NEW ACESS SYSTEM FAULT MESSAGE ENABLE | 0 | |
| SWPP062 | HYBRID GPS INSTALLED | 0 | |
| SWPP063 | NOT USED | 0 | 0 |
| SWPP064 | CONSOLIDATION ENABLE (3RD LEVEL) | 0 | |
| SWPP065 | NOT USED | 0 | |
| SWPP066 | CRTC ZONE B ENABLE | 0 | |
| SWPP067 | 36045-48 MESSAGE ENABLE | 0 | 0 |
| SWPP068 | TWO ZONE A HUMIDIFIERS INSTALLED | 0 | |
| SWPP069 | NOT USED | 0 | |
| SWPP070 | CHECK BIT | 1 | |
| SWPP071 | NOT USED | 0 | 2 |
| SWPP072 | BLEED HPC MESSAGE DELETED | 0 | |
| SWPP073 | BLEED PRSOV MESSAGE DELETED | 0 | |
| SWPP074 | FCC CONFIG MENU ENABLE | 0 | |
| SWPP075 | -207 FCU SIM POSITION TEST ENABLE | 0 | 0 |
| SWPP076 | 38001-04 WASTE MESSAGE ENABLE, ROSEMONT | 0 | |
| SWPP077 | NOT USED | 0 | |
| SWPP078 | LEG TRANS DATA IN HEADER OF ACARS RPTS ENABLE | 0 | |
| SWPP079 | FCC DIAG CODE REPORTING ENABLE | 0 | 0 |
| SWPP080 | INPUT MONITORING UPLINK ENABLE | 0 | |
| SWPP081 | REALTIME ACARS REPORT VERSION 2 ENABLE | 0 | |
| SWPP082 | AUTOMATIC PLF ENABLE | 0 | |
| SWPP083 | SATCOM/CDU INTERFACE ENABLE | 0 | 0 |
| SWPP084 | NOT USED | 0 | |
| SWPP085 | BLEED SYS ELEC GROUND TEST ENABLE | 0 | |
| SWPP086 | BLEED SYS APU GROUND TEST ENABLE | 0 | |
| SWPP087 | BLEED SYS ENG GROUND TEST ENABLE | 0 | 0 |
| SWPP088 | T/R GND MODE MESSAGE ENABLE | 0 | |
| SWPP089 | RR TURBINE OVERSPEED MESSAGE ENABLE | 0 | |
| SWPP090 | NOT USED | 0 | |
| SWPP091 | NOT USED | 0 | 0 |
| SWPP092 | BLEED FACTORY TEST ENABLE | 0 | |
| SWPP093 | NOT USED | 0 | |
| SWPP094 | NOT USED | 0 | |
| SWPP095 | NOT USED | 0 | 0 |
| SWPP096 | CHECK BIT | 0 | |

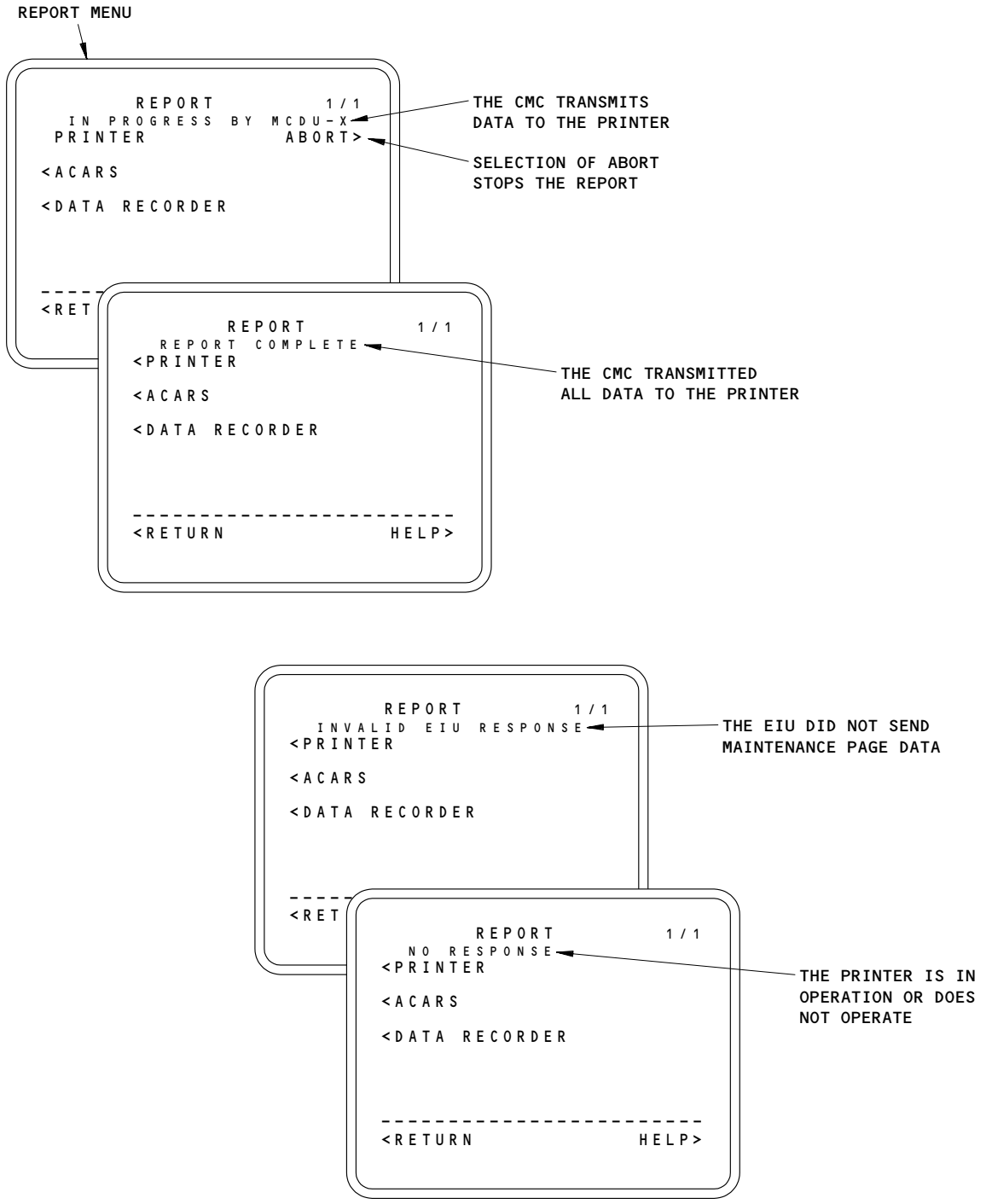
EXAMPLE OC-B:

```
0000 0000 0000 0000 0000 0000 0010 0000 0000 0000 0000 0100   X    X
  0    0    0    0    0    0    2    0    0    0    0    4    X    X
```

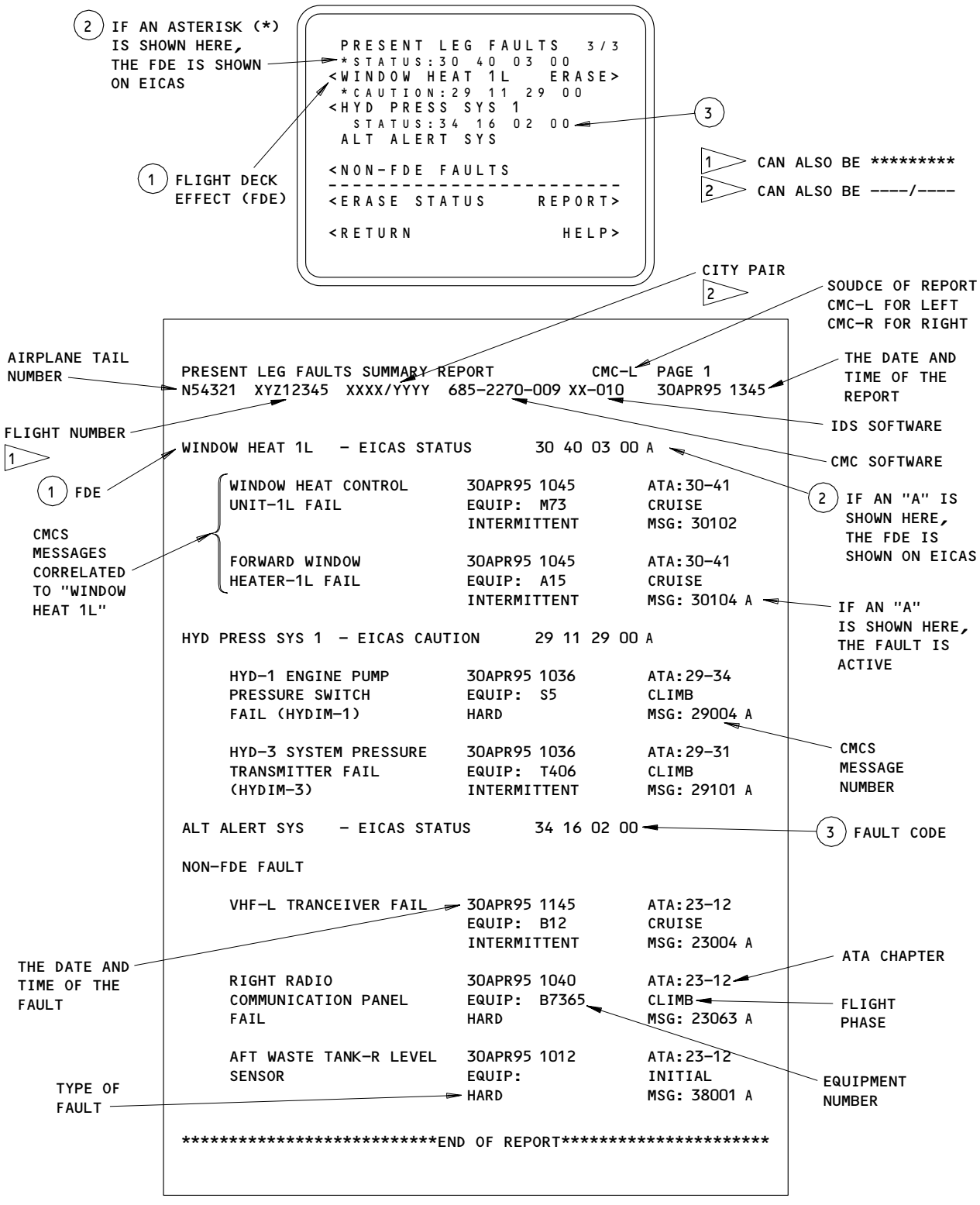
X = VALIDITY CHECK BITS

OC-B

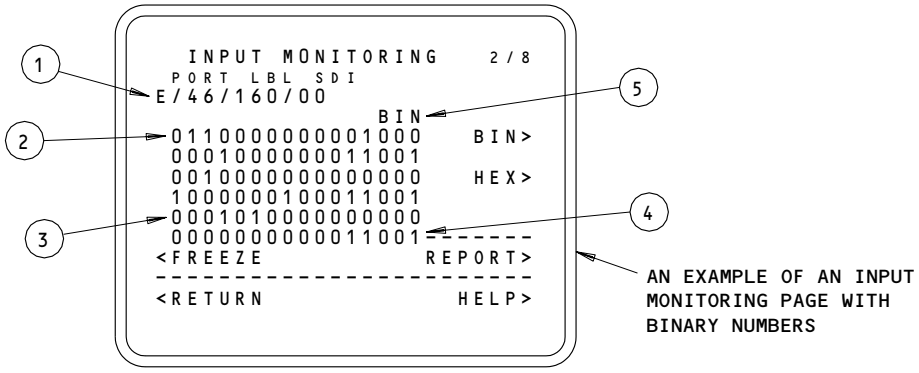
CMCS Option Code
Figure 19 (Sheet 2)

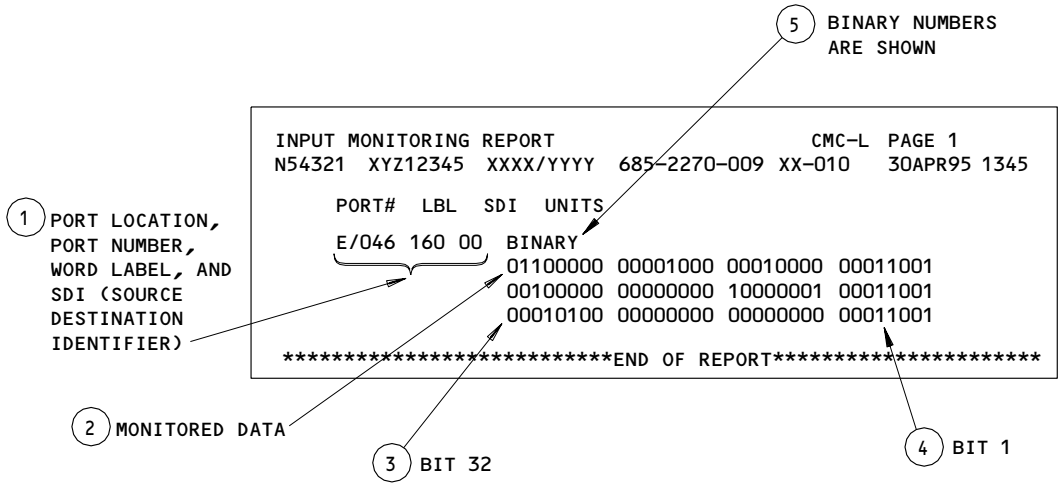



CMC Report to Printer
Figure 20

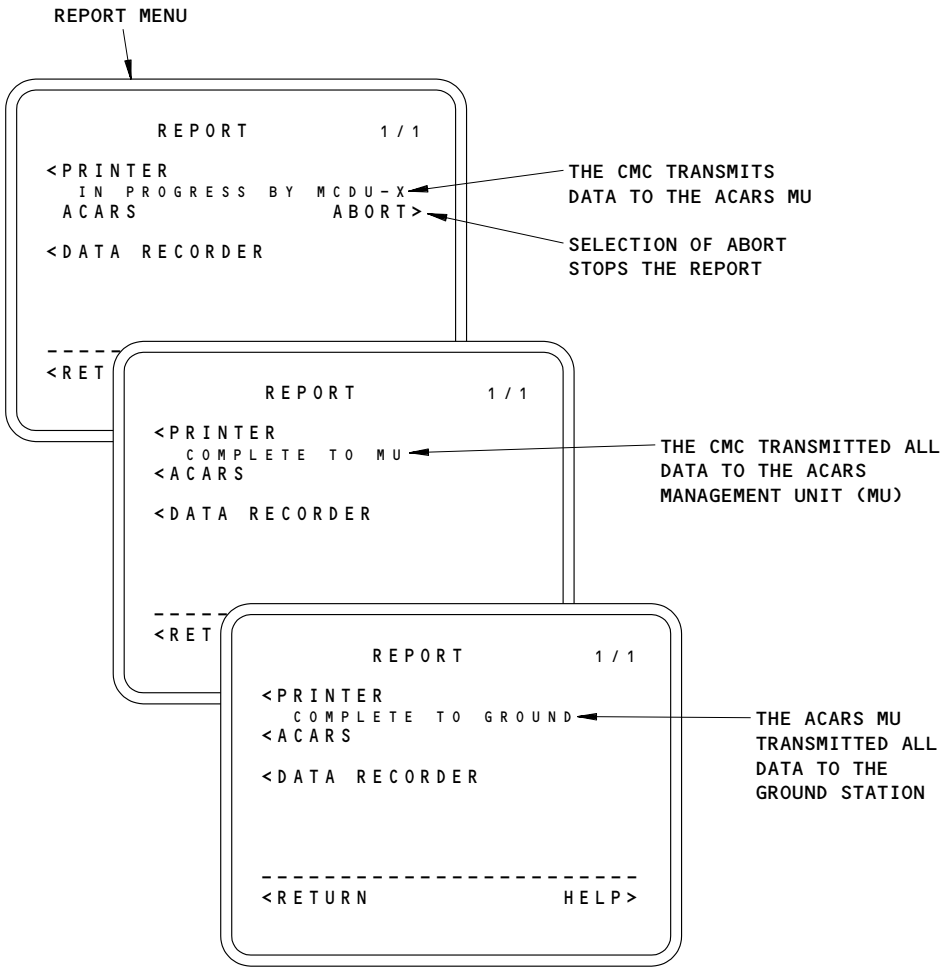



Present Leg Faults Summary - Printer Report
Figure 21

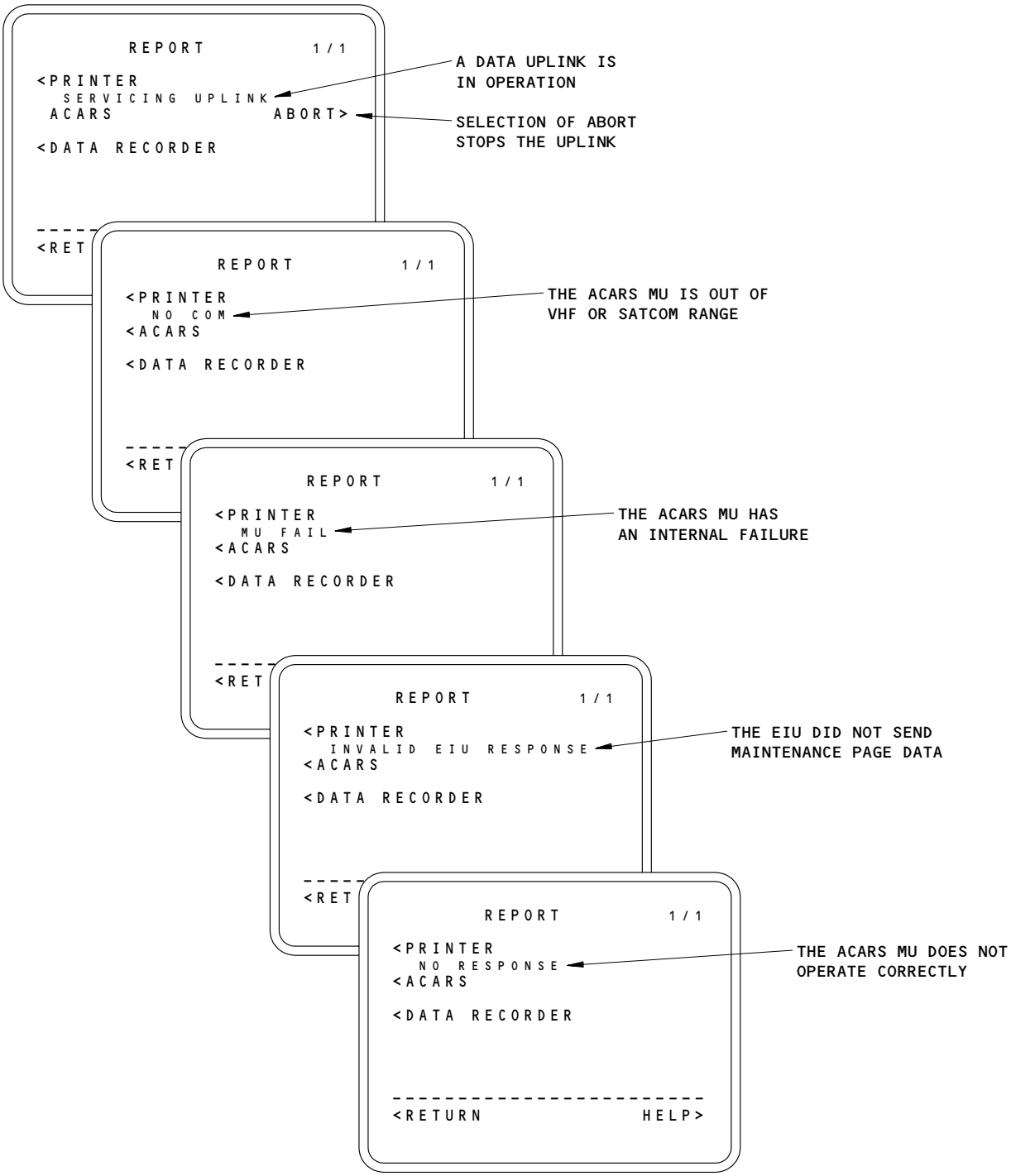



Input Monitoring Display - Printer Report
Figure 22

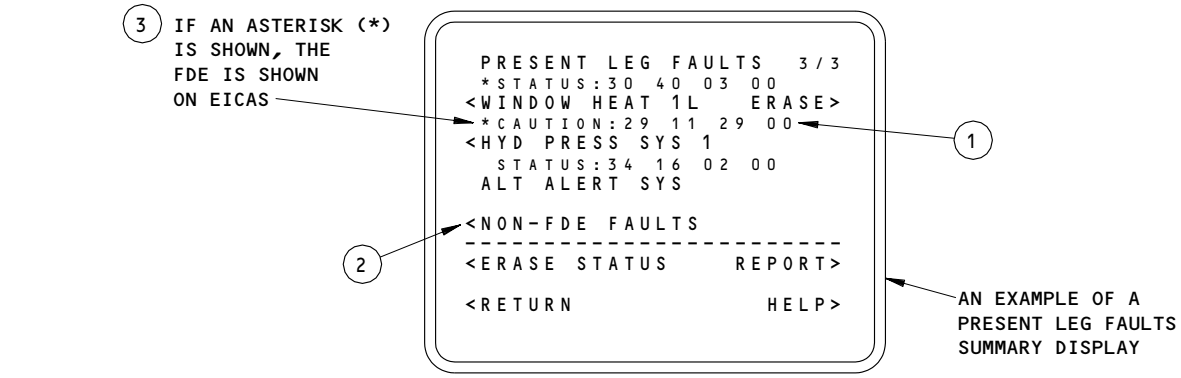


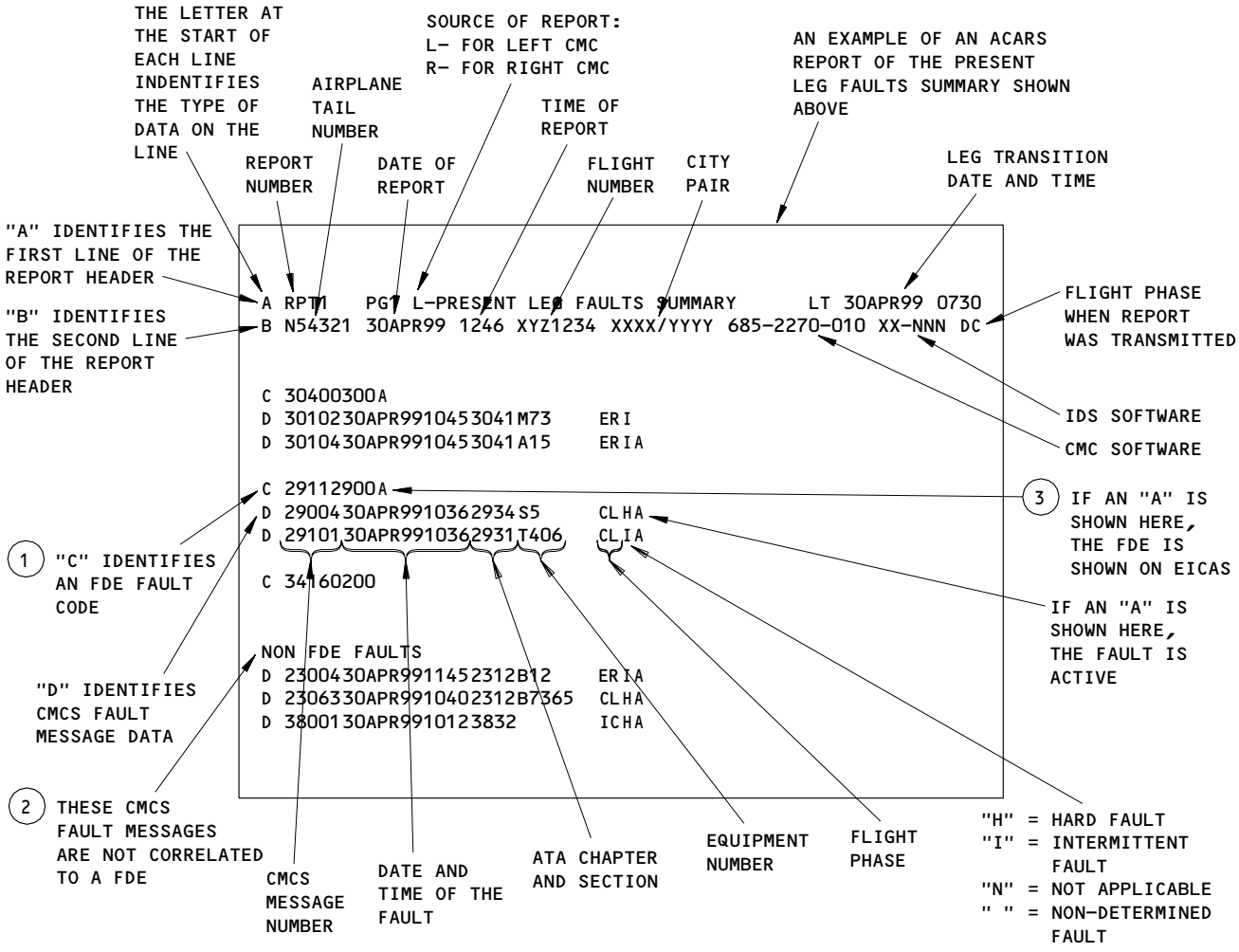

USUAL INDICATIONS
CMC Report to a Ground Station through ACARS
Figure 23 (Sheet 1)



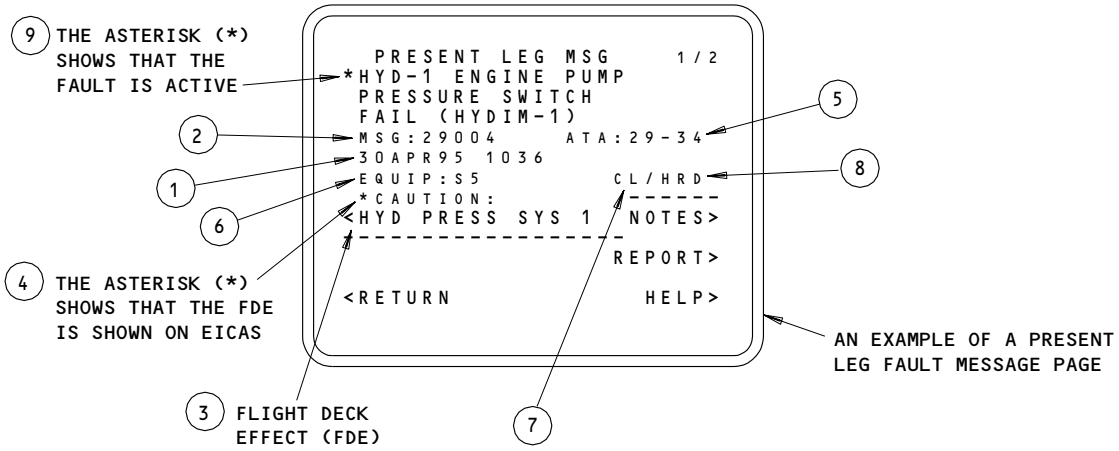

OTHER INDICATIONS

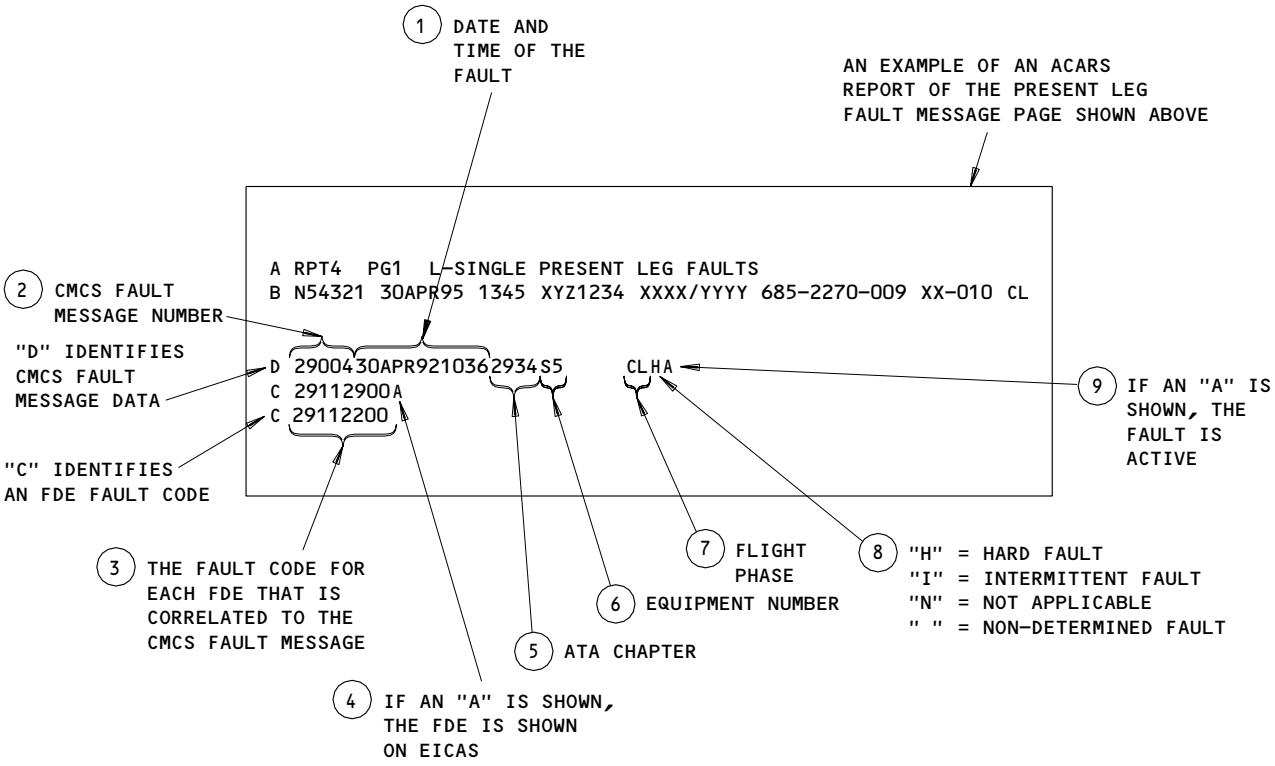
CMC Report to a Ground Station through ACARS
Figure 23 (Sheet 2)



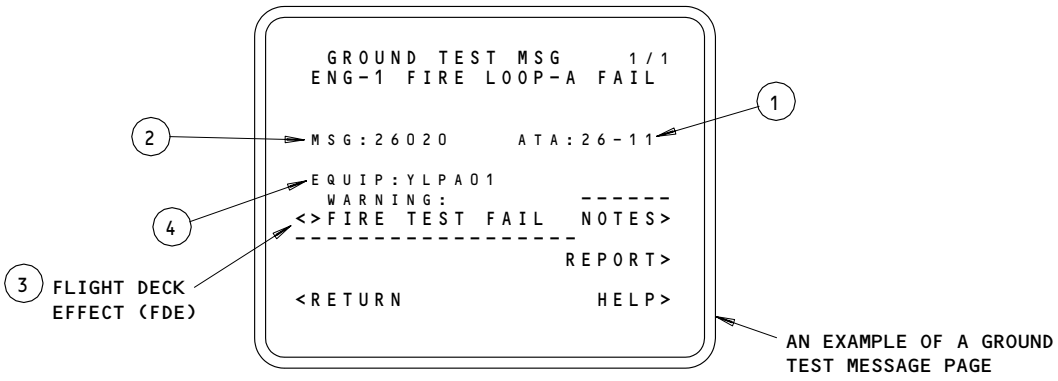



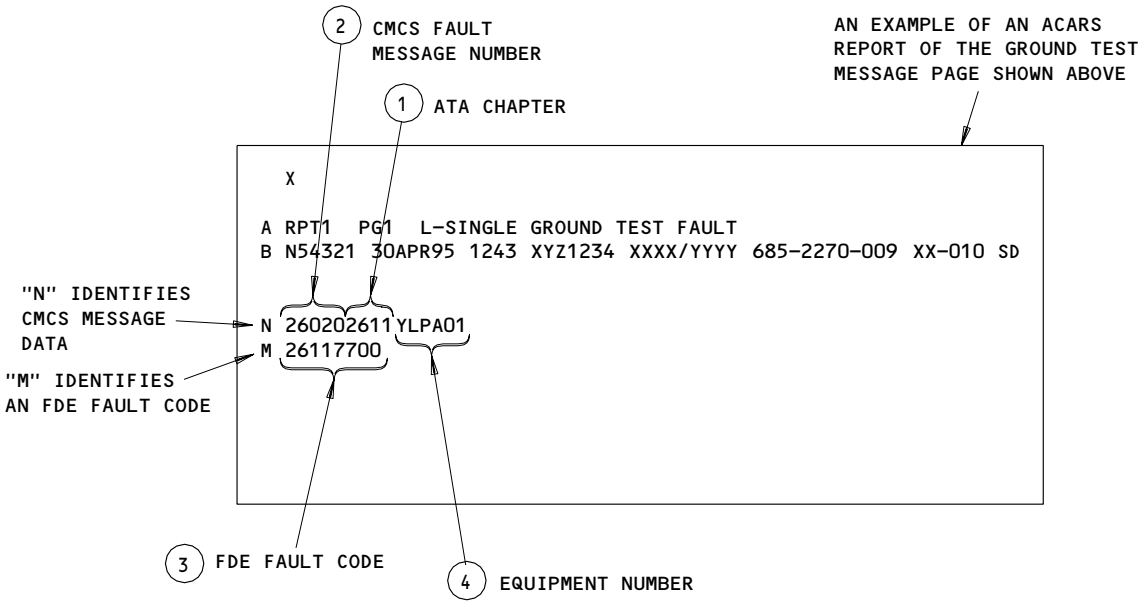

Present Leg Faults Summary - ACARS Report
Figure 24



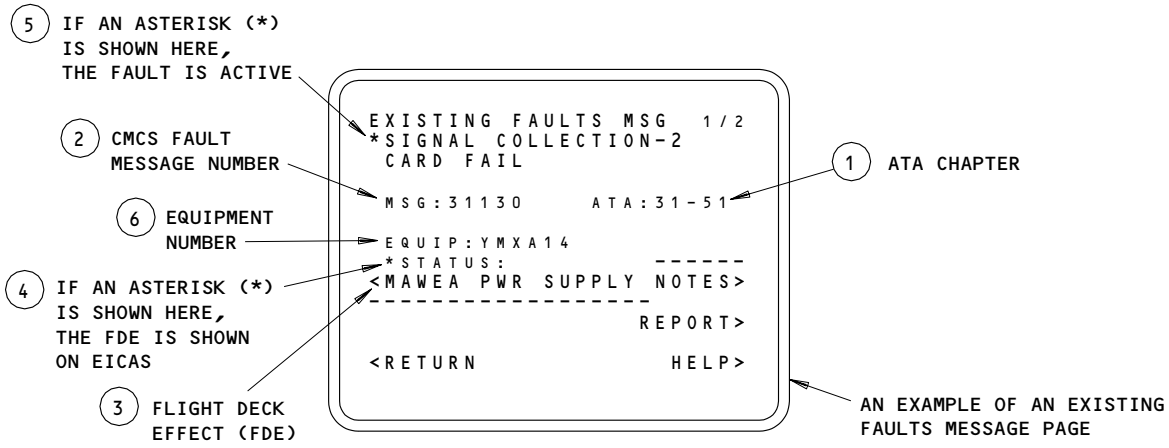



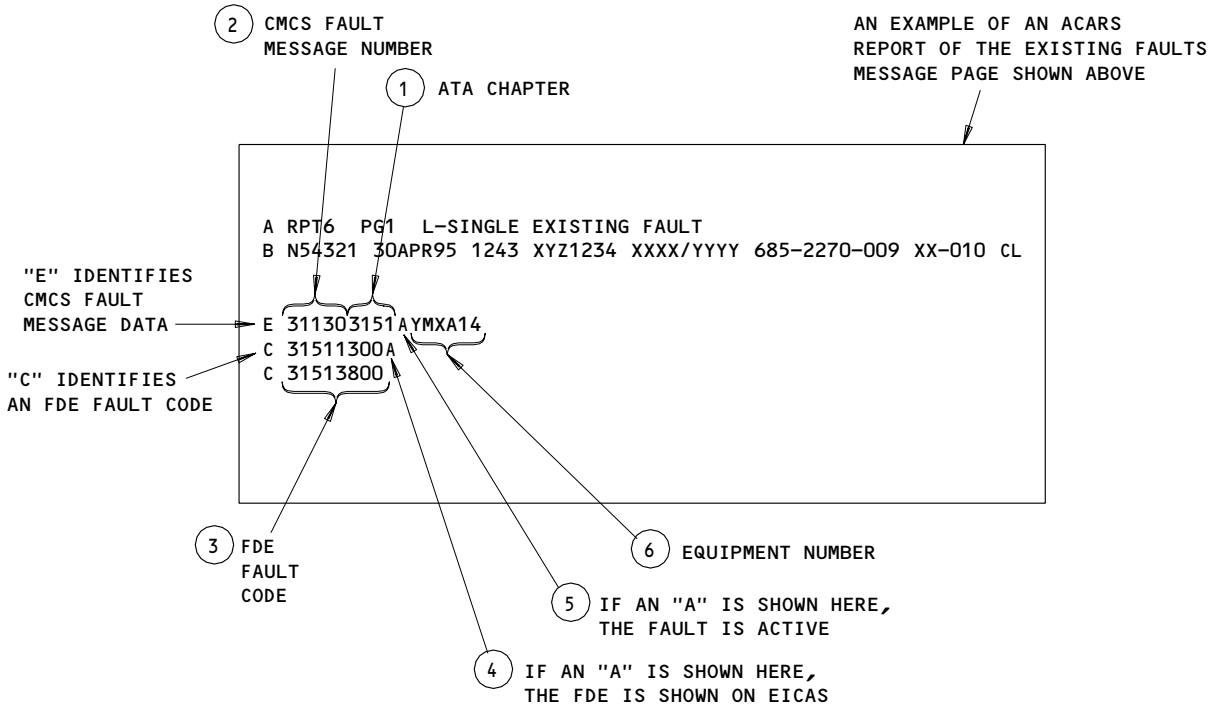

Present Leg Message Page - ACARS Report
Figure 25



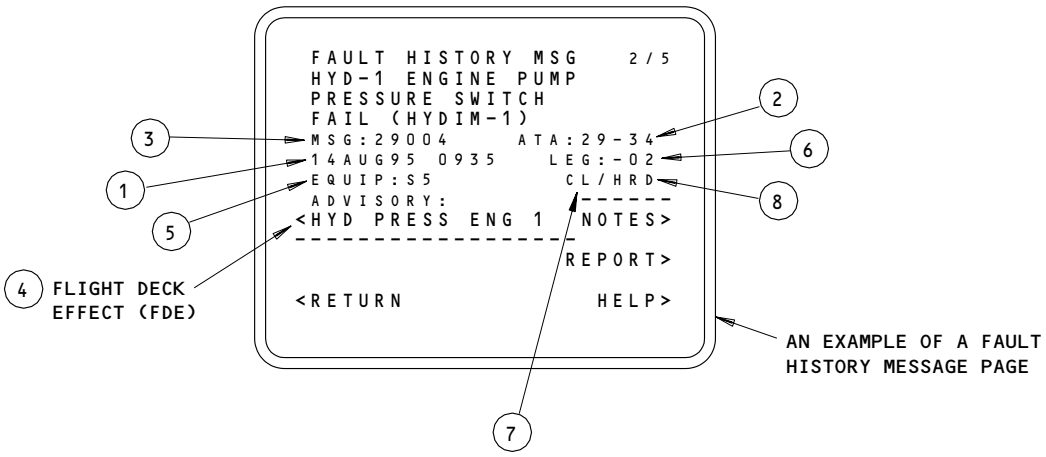



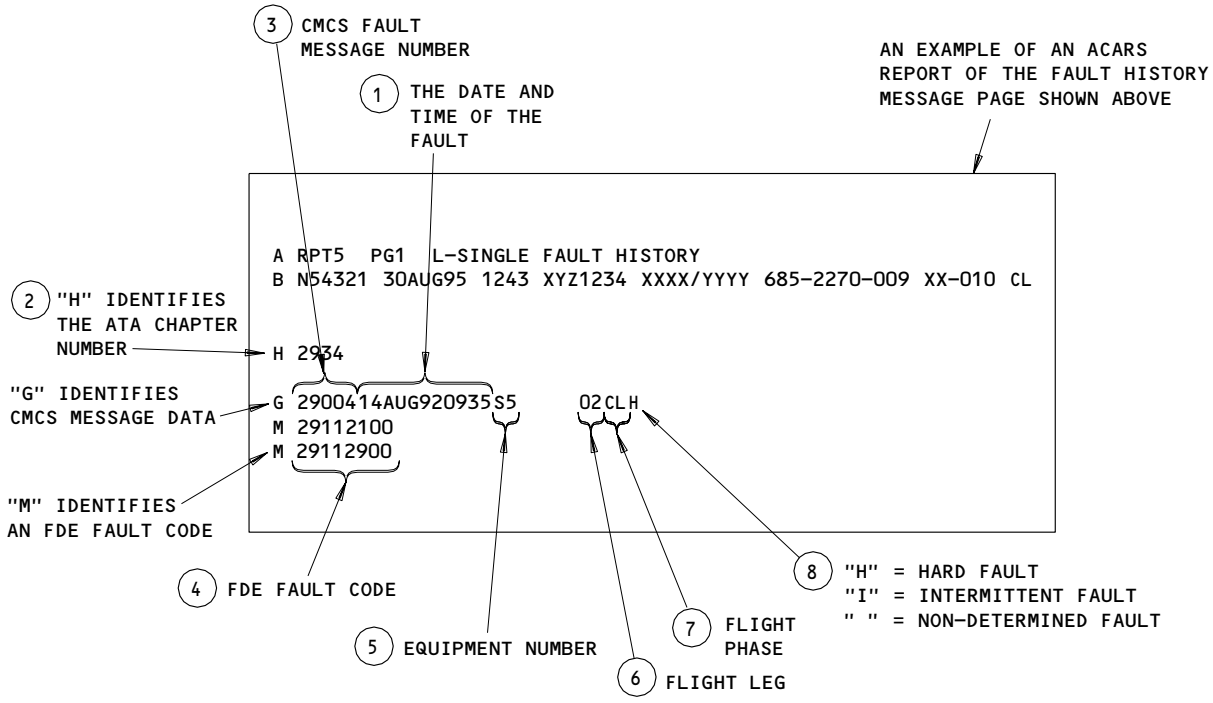

Ground Test Message Page - ACARS Report
Figure 26



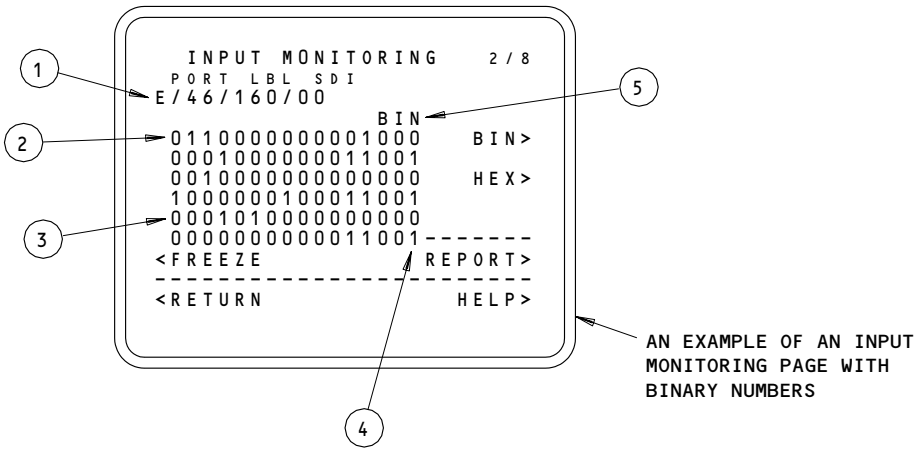



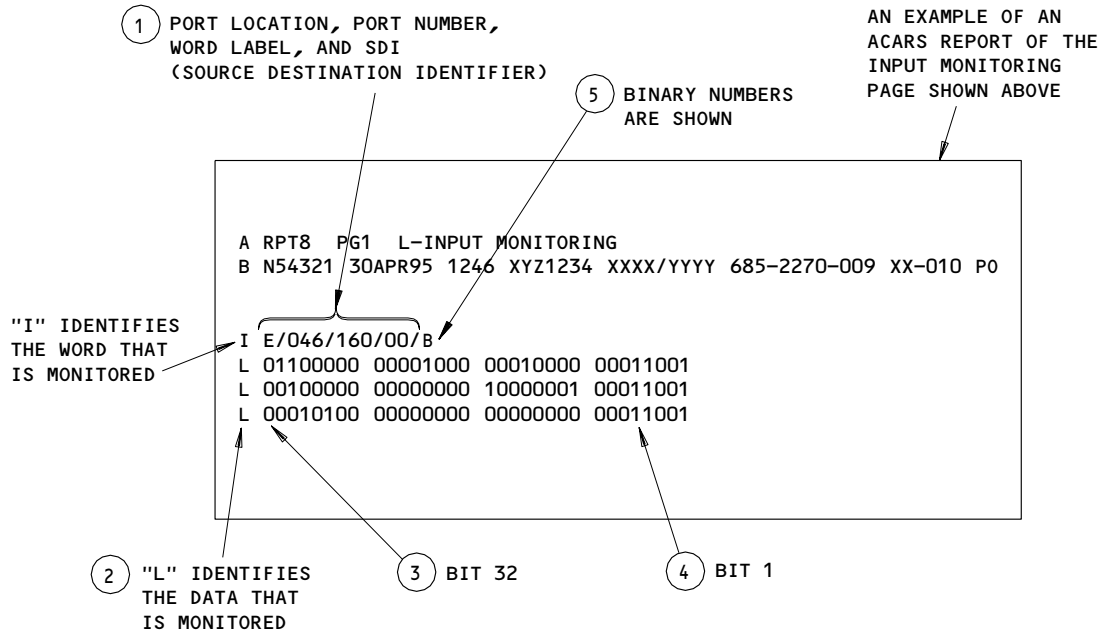

Existing Faults Message Page - ACARS Report
Figure 27



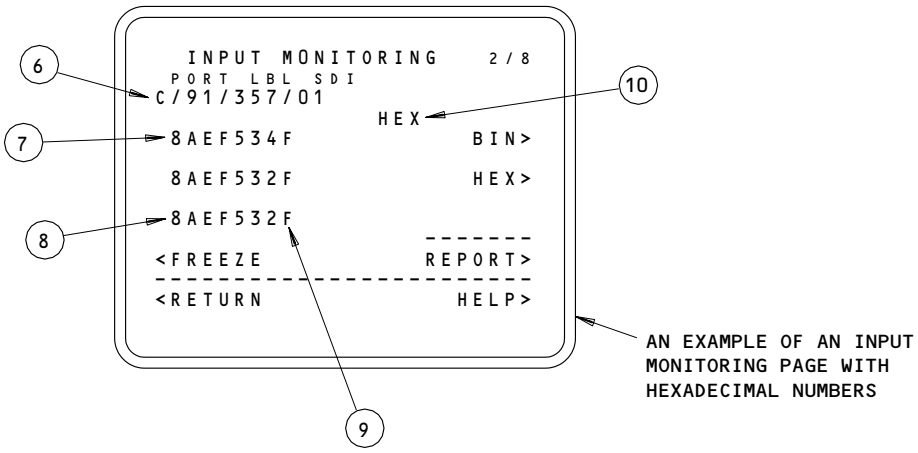

Fault History Message Page – ACARS Report
Figure 28

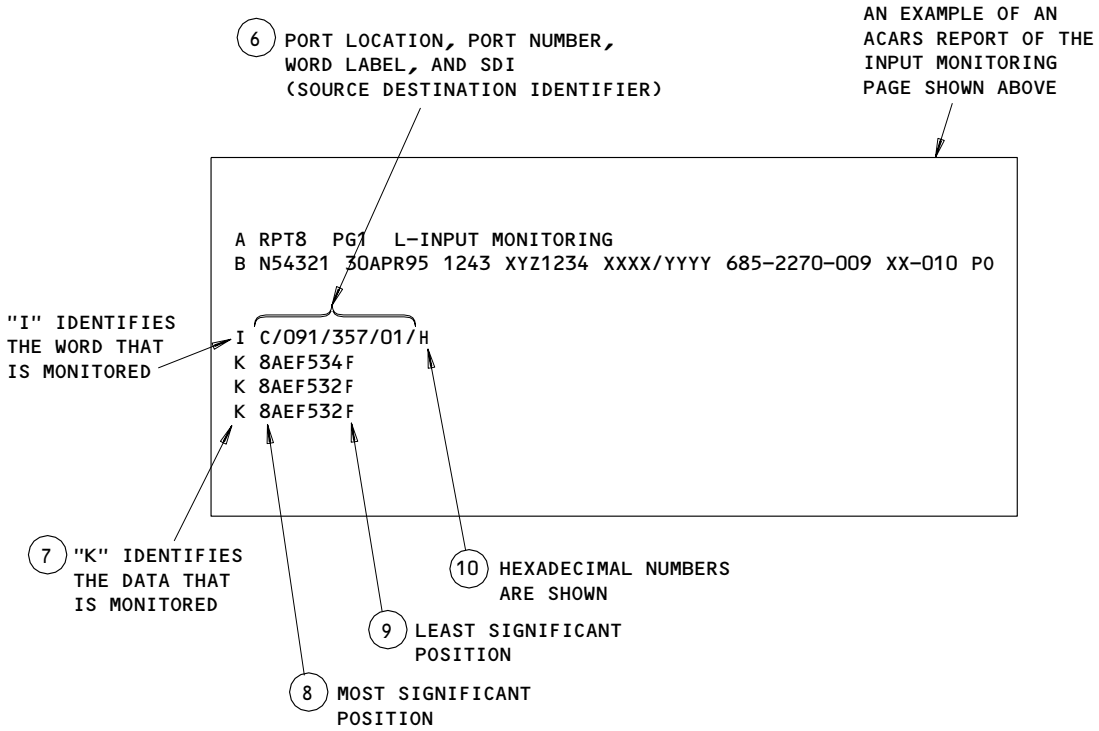


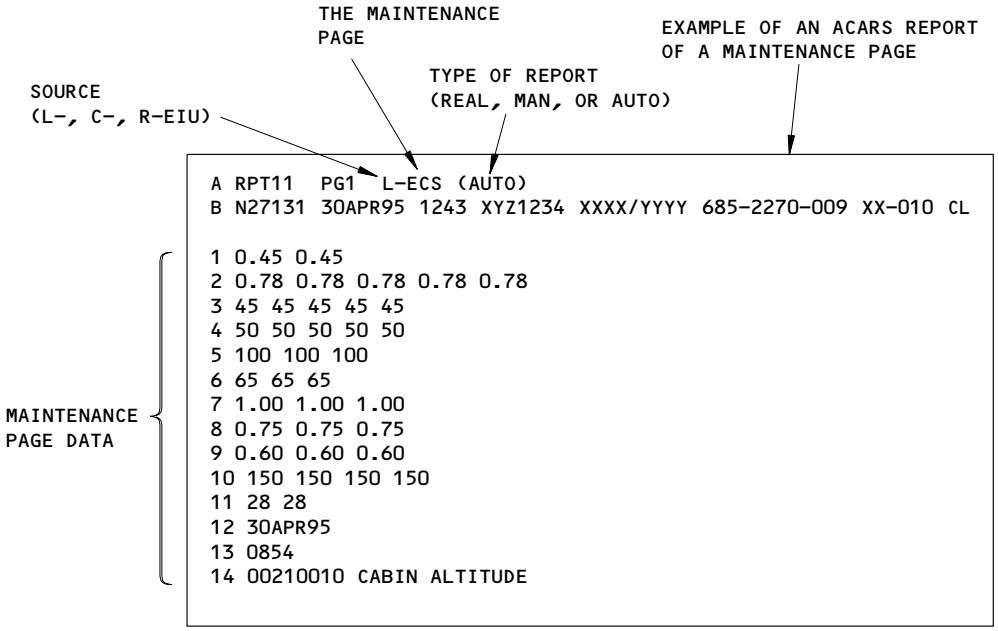

BINARY

Input Monitoring - ACARS Report
Figure 29 (Sheet 1)

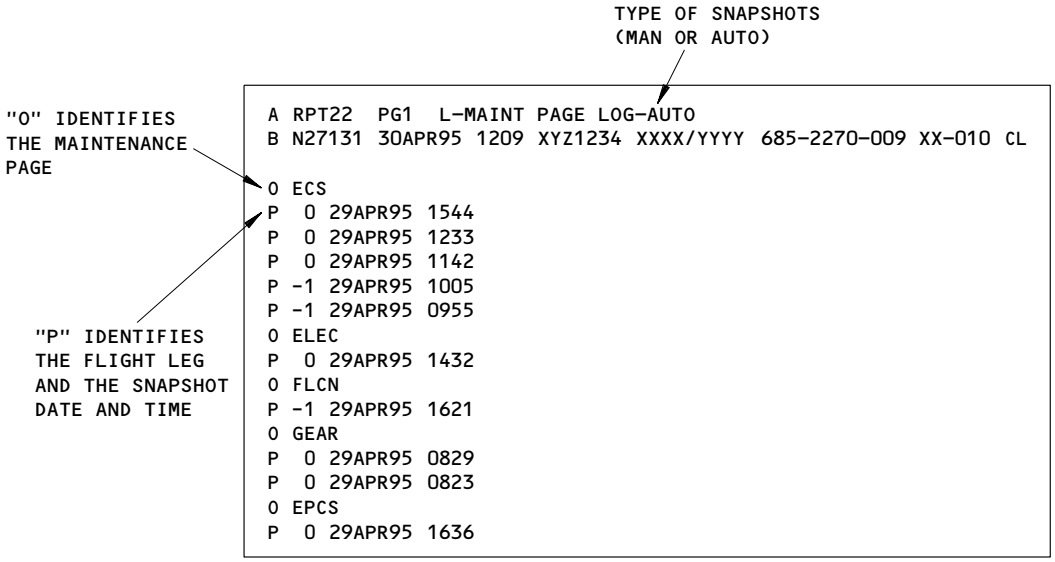



Input Monitoring - ACARS Report
Figure 29 (Sheet 2)




MAINTENANCE PAGE




SNAPSHOT SUMMARY LOG

EICAS Maintenance Pages - ACARS Reports
Figure 30

## CENTRAL MAINTENANCE COMPUTER SYSTEM

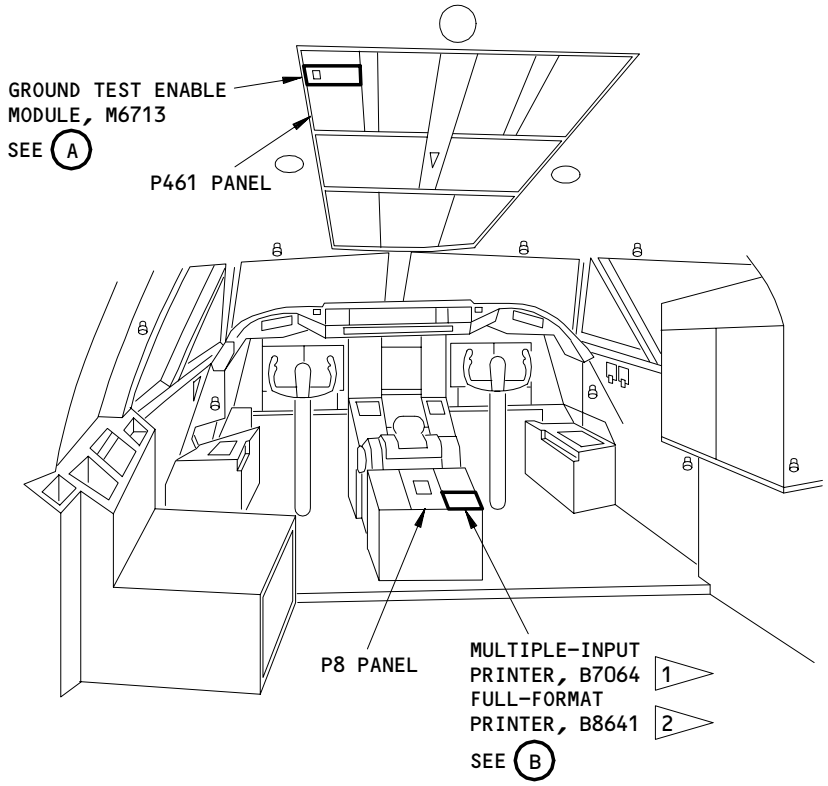
| COMPONENT | FIG. 102 SHT | QTY | ACCESS/AREA | AMM REFERENCE |
|---|---|---|---|---|
| BOX - PRINTER PAPER STOWAGE | 1 | 1 | FLT COMPT, P11 | * |
| CIRCUIT BREAKER - | 2 | | 117AL, MAIN EQUIP CTR, P18O | |
| CMC ENABLE SWITCH, C10475 | | 1 | 18OD17 | * |
| CMC-SW, C10178 | | 1 | 18OD16 | * |
| CIRCUIT BREAKER - | 2 | | 117AL, MAIN EQUIP CTR, P414 | |
| CMC LEFT, C10177 | | 1 | 414L8 | * |
| CIRCUIT BREAKER - | 2 | | 117AL, MAIN EQUIP CTR, P415 | |
| CMC RIGHT, C10179 | | 1 | 415L39 | * |
| PRINTER, C10242 | | 1 | 415L37 | * |
| RCDU, C10474 | | 1 | 415H3O | * |
| RCDU PANEL LIGHTING, C10476 | | 1 | 415K32 | * |
| COMPUTER - L CENTRAL MAINTENANCE (CMC-L), M7373 | 2 | 1 | 117AL, MAIN EQUIP CTR, E1-4 | 45-10-01 |
| COMPUTER - R CENTRAL MAINTENANCE (CMC-R), M7374 | 2 | 1 | 117AL, MAIN EQUIP CTR, E1-4 | 45-10-01 |
| MODULE - GROUND TEST ENABLE, M6713 | 1 | 1 | FLT COMPT, P461 | * |
| PRINTER - FULL-FORMAT, B8641 2 | 1 | 1 | FLT COMPT, P8 | 45-10-02 |
| PRINTER - MULTIPLE-INPUT, B7064 1 | 1 | 1 | FLT COMPT, P8 | 45-10-02 |
| RELAY - (FIM 31-01-36/101) | | | | |
| ENABLE 1, R8053 | | | | |
| ENABLE 2, R8054 | | | | |
| ENABLE 3, R8055 | | | | |
| ENABLE 4, R8056 | | | | |
| ENABLE 5, R8057 | | | | |
| ENABLE 6, R8058 | | | | |
| ENABLE 7, R8059 | | | | |
| ENABLE 8, R8087 | | | | |
| SWITCH - REMOTE GROUND TEST ENABLE, S2090 | 2 | 1 | 117AL, MAIN EQUIP CTR | * |
| UNIT - REMOTE CONTROL DISPLAY (RCDU), M6711 | 2 | 1 | 117AL, MAIN EQUIP CTR | 45-10-03 |

* SEE THE WDM EQUIPMENT LIST

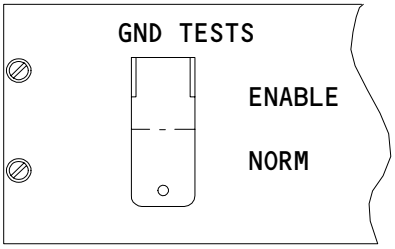
1 KLM 001-034
2 KLM 035-099

Central Maintenance Computer System - Component Index
Figure 101


C78399

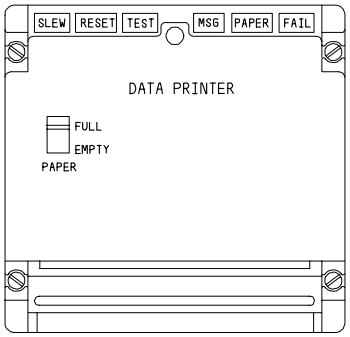



FLIGHT COMPARTMENT



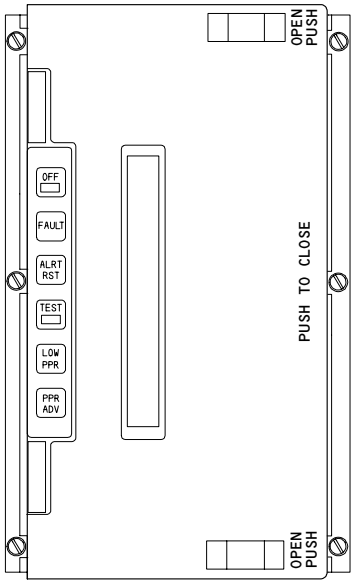

GROUND TEST ENABLE
MODULE, M6713

A




MULTIPLE-INPUT
PRINTER, B7064

B 1

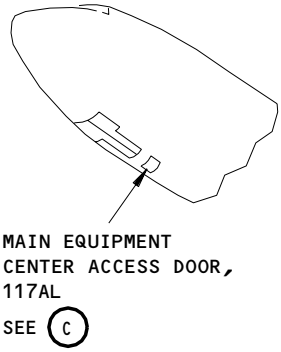


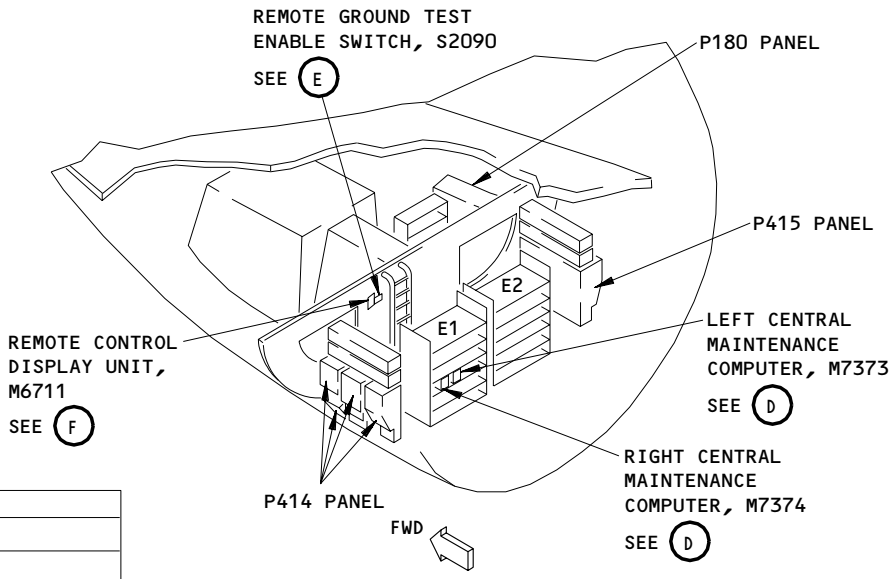

FULL-FORMAT
PRINTER, B8641

B 2

1 KLM 001-034
2 KLM 035-999

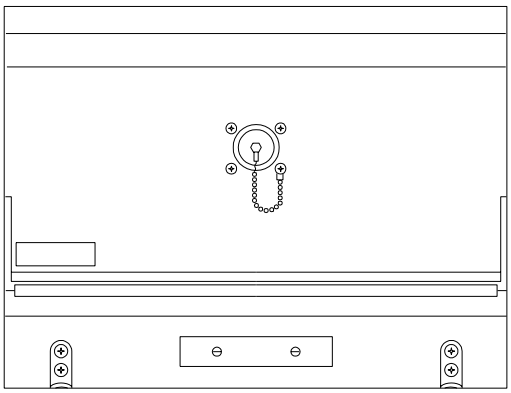
Central Maintenance Computer System - Component Location
Figure 102 (Sheet 1)



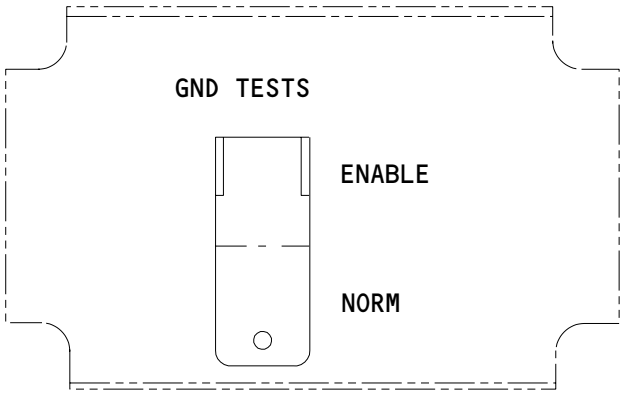

MAIN EQUIPMENT CENTER

C



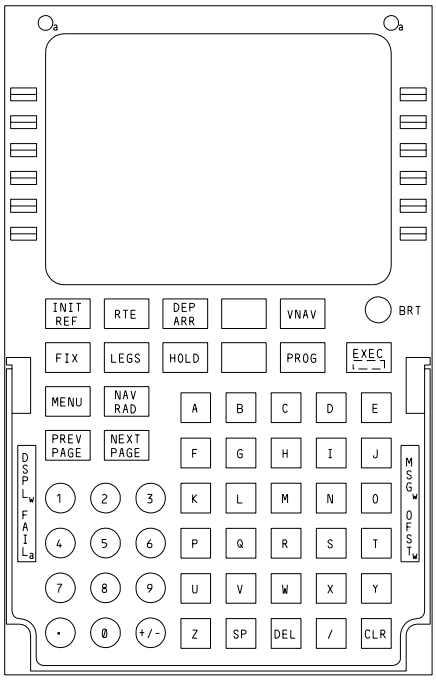
LEFT OR RIGHT CENTRAL MAINTENANCE COMPUTER (CMC), M7373 OR M7374

D




REMOTE GROUND TEST ENABLE SWITCH, S2090

E




REMOTE CONTROL DISPLAY UNIT (RCDU), M6711

F

Central Maintenance Computer System - Component Location
Figure 102 (Sheet 2)

CENTRAL MAINTENANCE COMPUTER SYSTEM - FAULT ISOLATION

1. General
   A. Central Maintenance Computer System (CMCS) fault isolation is provided for problems which occur when you use the CMCS to access maintenance data.
2. Fault Isolation Procedures

| | |
|---|---|
| Fig. 103 | "<CMC" Does Not Show on the CDU MENU |

3. Problems on CONFIGURATION DATA Page
   A. Corrective action when "NO DATA BASE" shows adjacent to EIU on the CMC-R CONFIGURATION DATA page.
      (1) Open these circuit breakers:
         (a) P414 Power Distribution Center - Left Panel
            1) 414L8, CMC LEFT

         (b) P415 Power Distribution Center - Right Panel
            1) 415L39, CMC RIGHT

      (2) Close this circuit breaker:
         (a) P415 Power Distribution Center - Right Panel
            1) 415L39, CMC RIGHT

      (3) Push the MENU key on the CDU and look for <CMC.

         NOTE: <CMC will show after approximately 5 minutes.

      (4) Show the CONFIGURATION DATA page for CMC-R:
         (a) Push the line select key (LSK) that is adjacent to <CMC.
         (b) Push the NEXT PAGE key on the CDU.
         (c) Push the LSK that is adjacent to <OTHER FUNCTIONS.
         (d) Push the LSK that is adjacent to <CONFIGURATION.
         (e) Push the LSK that is adjacent to <45 CENTRAL MAINTENANCE.
         (f) Push the LSK that is adjacent to <CMC-R.
         (g) Make sure that CMC-R shows at the top of the page.

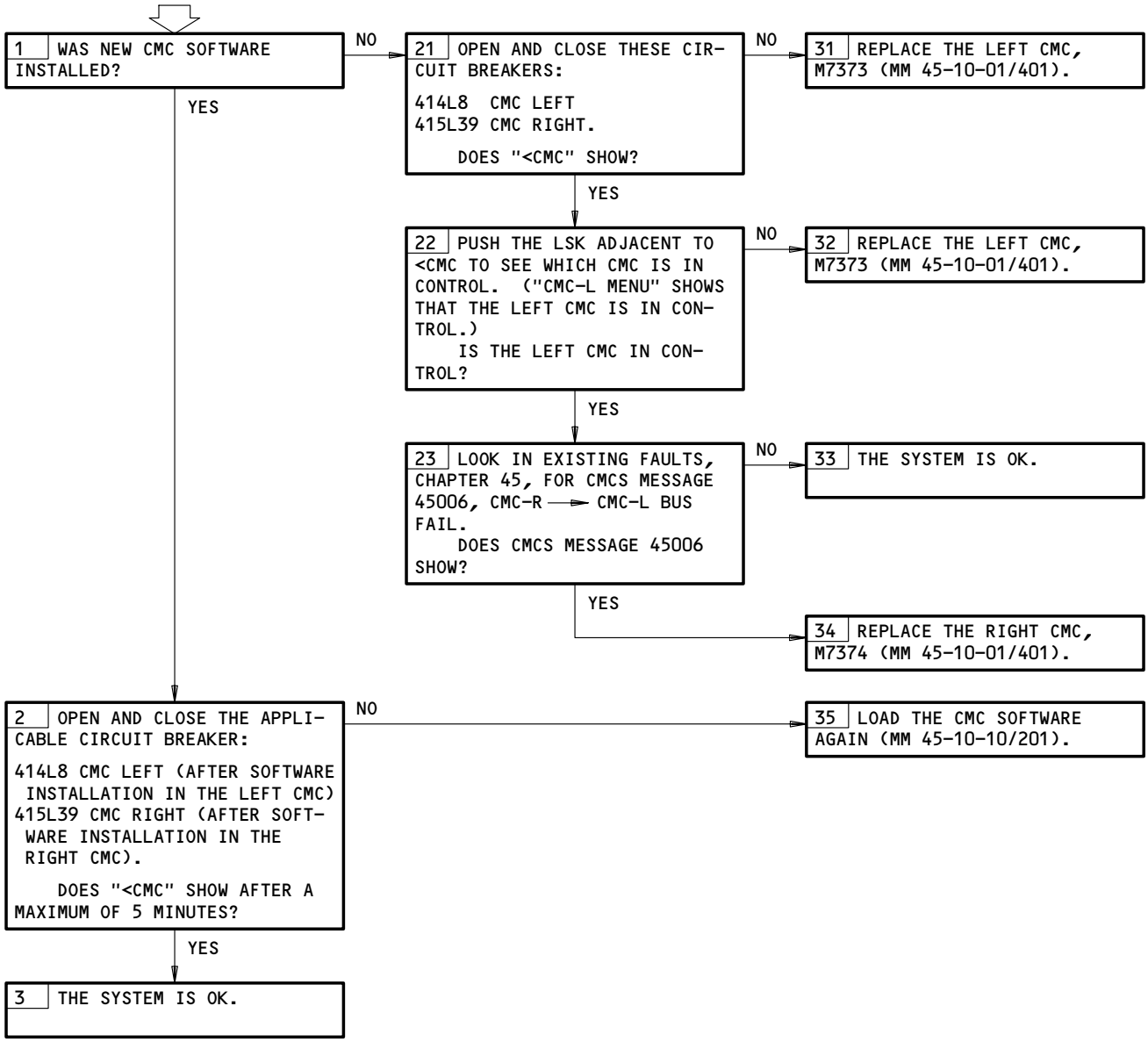
**PREREQUISITES**

ELECTRICAL POWER (MM 24-22-00/201)

CB'S: 18OD16,414L8,415L39

## "<CMC" DOES NOT SHOW ON THE CDU MENU

NOTE: AFTER THE INSTALLATION OF A NEW CMC OR NEW CMC SOFTWARE, "<CMC" SHOWS AFTER A MAXIMUM OF 5 MINUTES.




<CMC Does Not Show on the CDU Menu
Figure 103

(5) Make sure that GE -XXX shows adjacent to EIU.

NOTE: XXX is the IDS software version.

B. Corrective action when "NO DATA BASE" shows adjacent to EIU on the CMC-L CONFIGURATION DATA page.
(1) Open and close this circuit breaker:
(a) P414 Power Distribution Center - Left Panel
1) 414L8, CMC LEFT

(2) Push the MENU key on the CDU and look for <CMC.

NOTE: <CMC will show after approximately 5 minutes.

(3) Show the CONFIGURATION DATA page for CMC-L:
(a) Push the line select key (LSK) that is adjacent to <CMC.
(b) Push the NEXT PAGE key on the CDU.
(c) Push the LSK that is adjacent to <OTHER FUNCTIONS.
(d) Push the LSK that is adjacent to <CONFIGURATION.
(e) Push the LSK that is adjacent to <45 CENTRAL MAINTENANCE.
(f) Push the LSK that is adjacent to <CMC-L.
(g) Make sure that CMC-L shows at the top of the page.
(4) Make sure that GE -XXX shows adjacent to EIU.

NOTE: XXX is the IDS software version.

CENTRAL MAINTENANCE COMPUTER SYSTEM - MAINTENANCE PRACTICES

1. General
   A. This subject has these tasks:
      (1) Display of Present Leg Faults
      (2) Performance of Confidence Tests
      (3) Display of EICAS Maintenance Pages
      (4) Prepare the CDU for a Ground Test
      (5) Display of Existing Faults
      (6) Display of Fault History
      (7) Display of Shop Faults
      (8) Use of Input Monitoring
      (9) Display of the Configuration Data Page
      (10) Manual Flight Leg Control
      (11) Printer Report of a CDU Display
      (12) ACARS Report of a CDU Display
   B. For these tasks you will use one of the CDUs. For the display of EICAS maintenance pages you will also use the lower EICAS display.

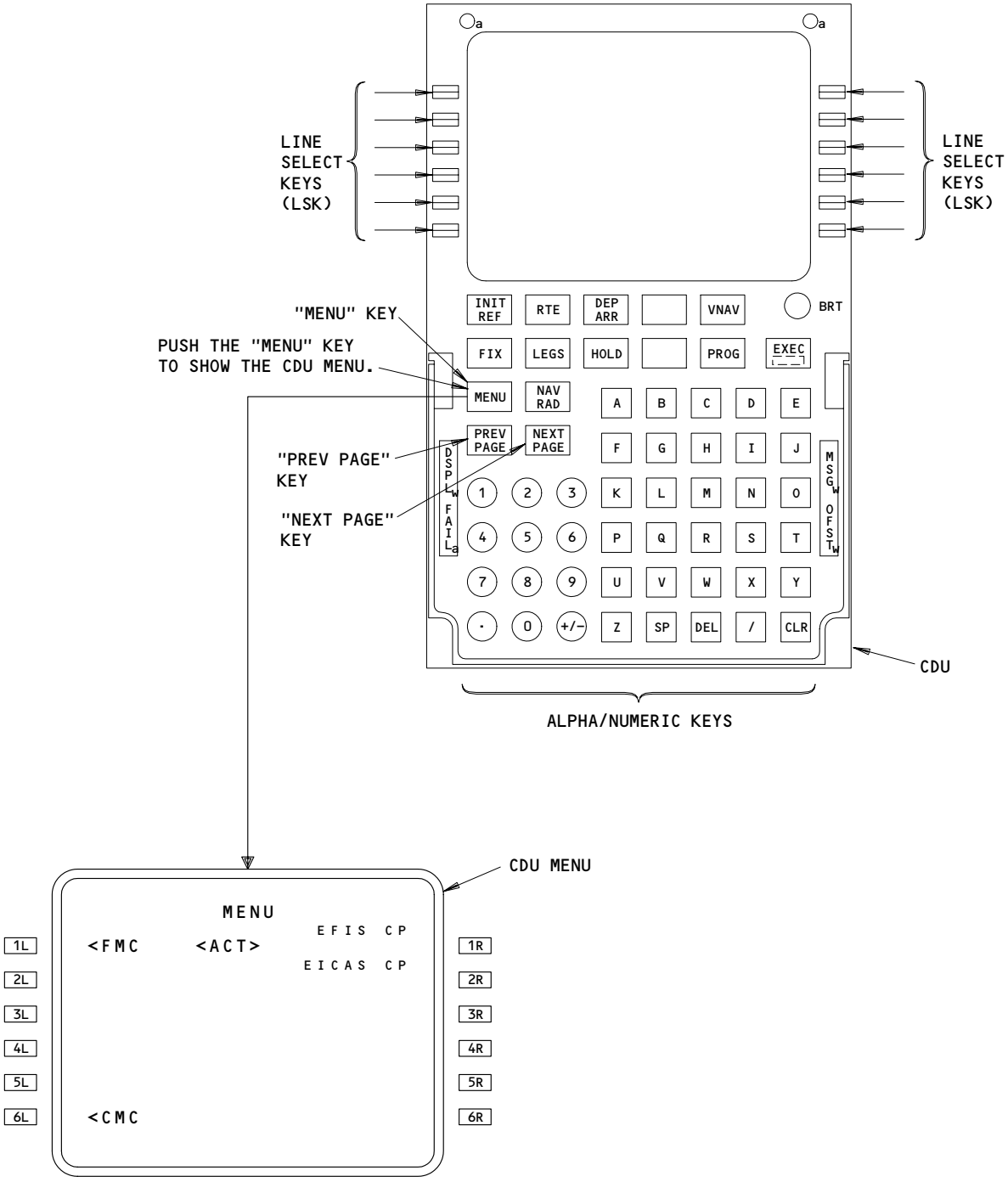
TASK 45-10-00-862-015

2. Display of Present Leg Faults (Fig. 201, Fig. 202)
   A. General
      (1) The present leg faults function supplies data about failures that occurred during this flight leg. The CDU first shows a list of all flight deck effects (FDEs) in the sequence that they occurred. You can look at the CMCS fault messages that are correlated to each FDE that has a caret (<) adjacent to it. You can also look at CMCS fault messages that are not correlated to a FDE.
   B. Access
      (1) Location zones
          221 Control Cabin, LH
          222 Control Cabin, RH

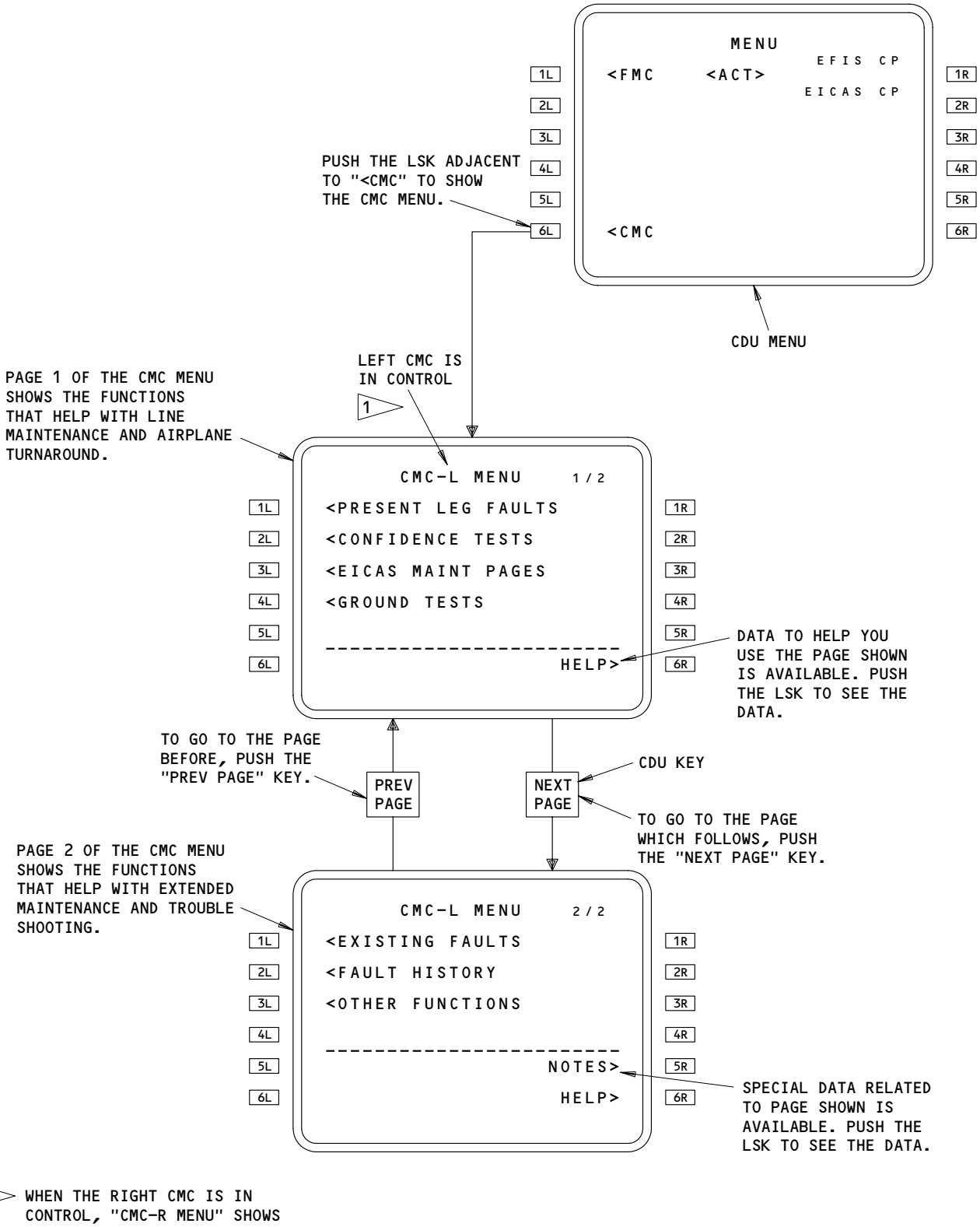
   C. Procedure

      S 862-016
      (1) Show the CMC MENU on the CDU:
          (a) Push the MENU key on the CDU to show the CDU MENU.
          (b) Push the <CMC LSK (line select key) to show the CMC MENU.
          (c) If the CMC MENU is not shown after you push the CMC LSK, push the <RETURN LSK until you see the CMC MENU.

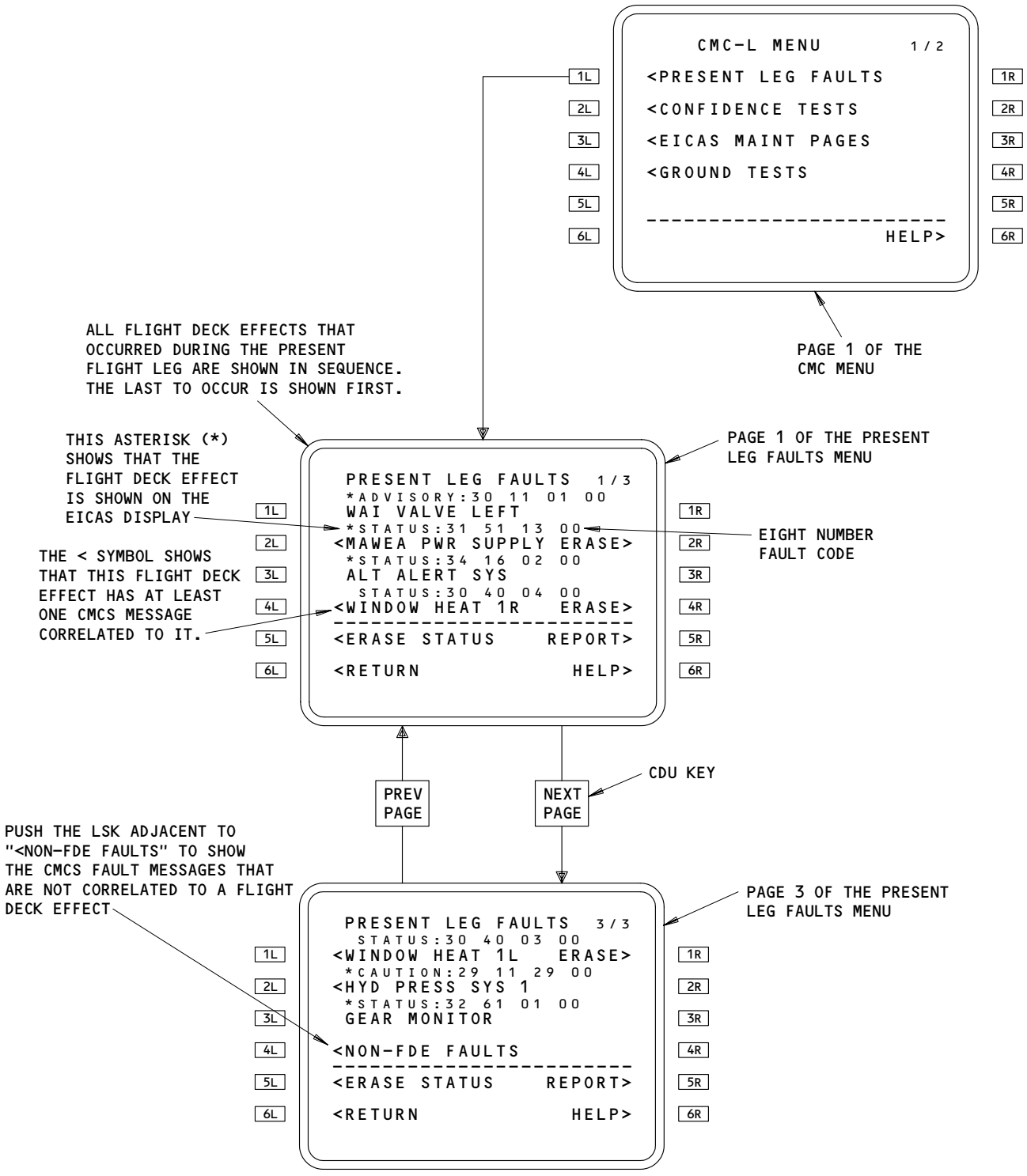
      S 862-017
      (2) Show the flight deck effects (FDEs) that occurred during this flight leg on the PRESENT LEG FAULTS menu:
          (a) Push the <PRESENT LEG FAULTS LSK to show the first page of a list of FDEs.



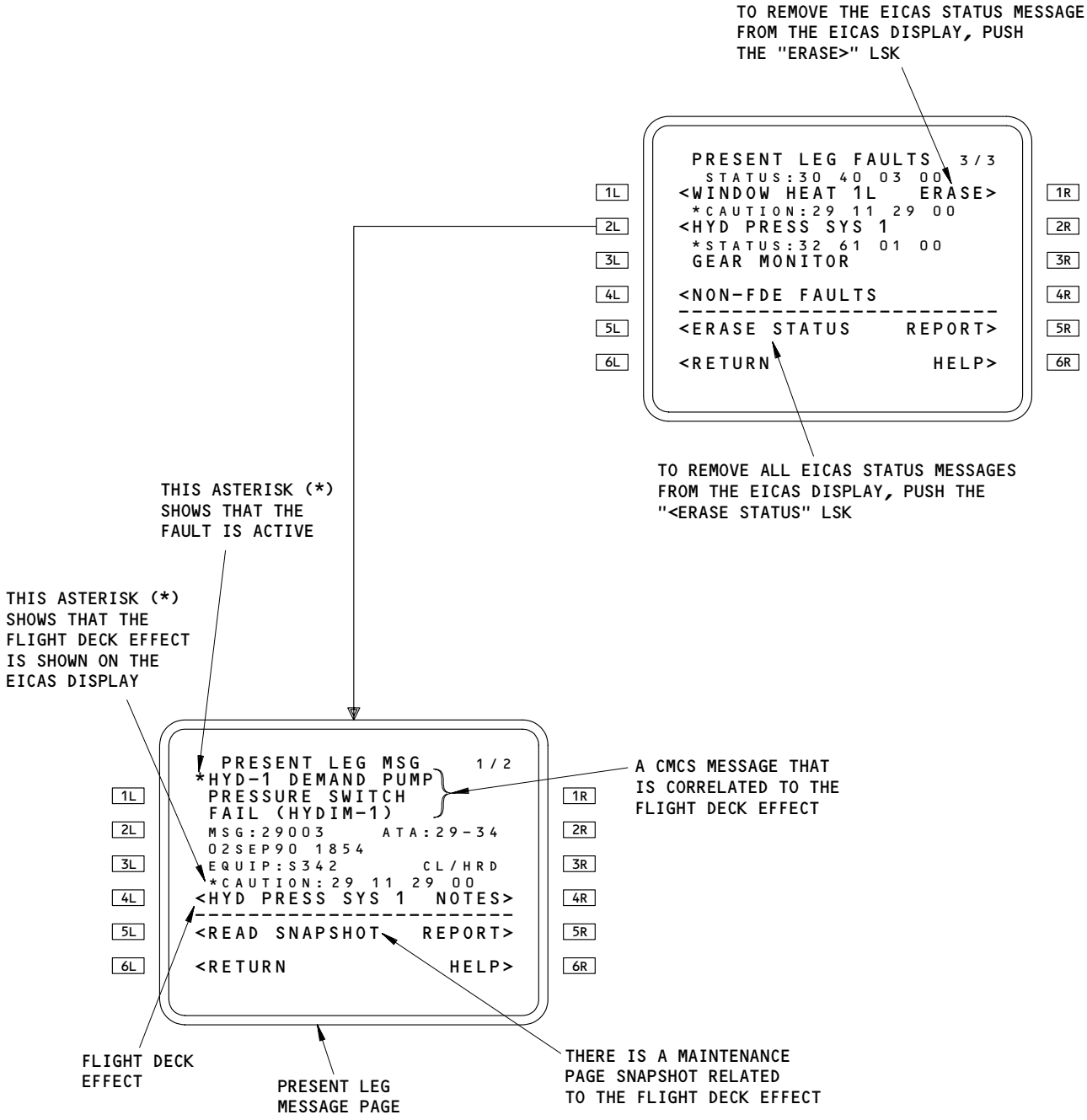

CMC Menu Access
Figure 201 (Sheet 1)




CMC Menu Access
Figure 201 (Sheet 2)




Present Leg Faults
Figure 202 (Sheet 1)




Present Leg Faults
Figure 202 (Sheet 2)



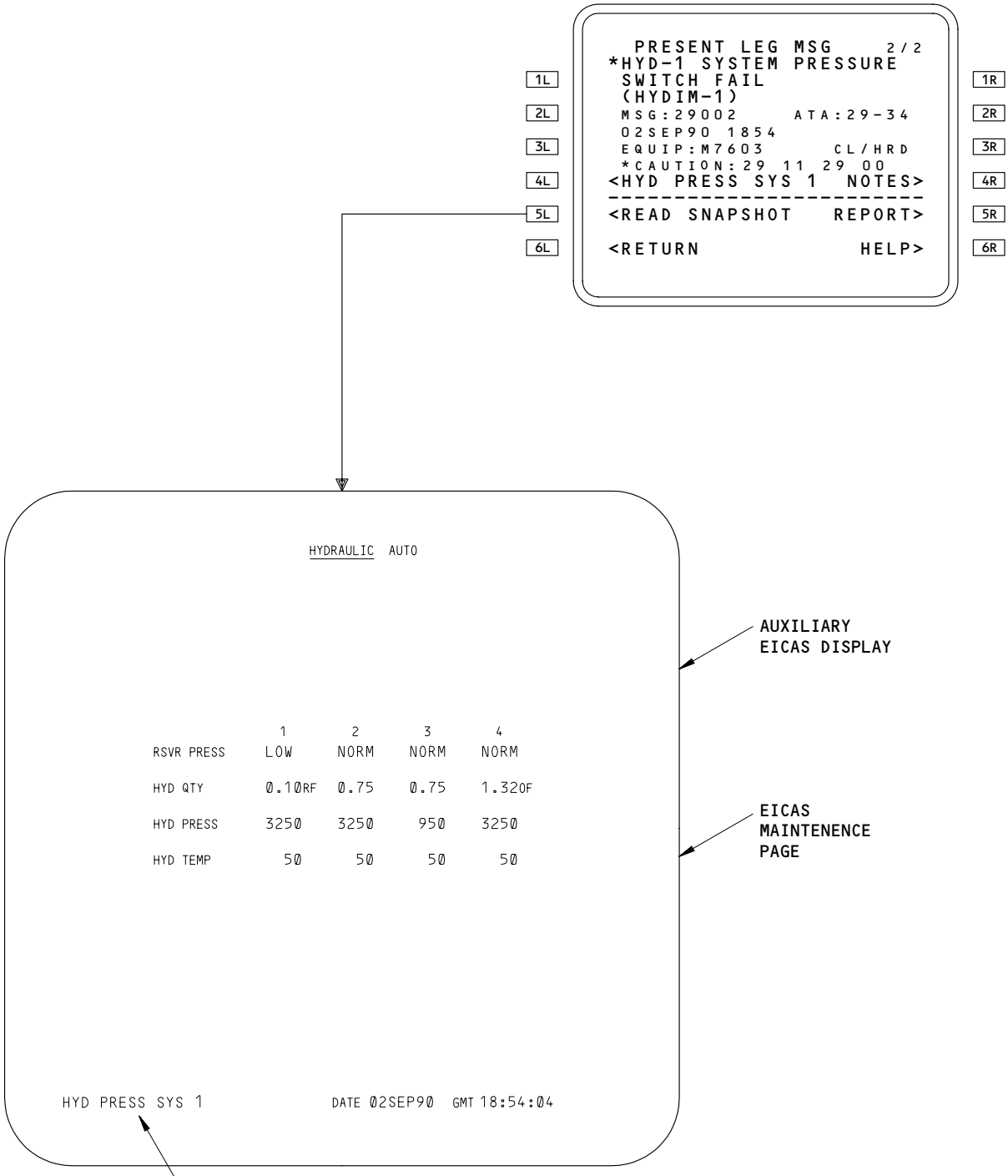
C19613


Present Leg Faults
Figure 202 (Sheet 3)





AD5073




Present Leg Faults
Figure 202 (Sheet 4)



A05076

(b) Push the NEXT PAGE key until you find the FDE that it is necessary to get more data for.

S 862-018

(3) Show the PRESENT LEG MSG pages for an FDE:

NOTE: On the menu, if the FDE does not have a caret (<) adjacent to it, there is no CMCS fault message correlated to the FDE. Thus, there is no PRESENT LEG MSG page for that FDE.

(a) Push the LSK adjacent to an FDE that has a caret (<) adjacent to it to show the first PRESENT LEG MSG page for the FDE.

(b) If the page indication shows that there is more than one page, push the NEXT PAGE key to see a different CMCS fault message that is correlated to the same FDE.

NOTE: Each time you push the NEXT PAGE key you will see a different CMCS fault message. When you see the last CMCS fault message (the two numbers in the page indication are the same), push the NEXT PAGE key to see the first message again.

(c) If the FDE (on the MSG page) has a caret (<) adjacent to it, push the LSK adjacent to the FDE to see a different FDE that is correlated to the same CMCS fault message.

NOTE: If you push the FDE LSK when you see the last FDE, you will see the first FDE again.

NOTE: If there is no caret (<) adjacent to the FDE (on the MSG page), then there is only one CMCS message correlated to the FDE.

(d) If <DIAG CODE shows on the PRESENT LEG MSG page, push the adjacent line select key to see the FCC diagnostic code.

NOTE: Messages from the flight control computer (FCC) have diagnostic codes to help with fault isolation. The L, C, or R of the diagnostic code shows which FCC (left, center, or right) sent the code. An A after the diagnostic code shows that the fault is an avalanche fault. An avalanche fault is one step away from a fault that will cause the autopilot to disconnect. Refer to FIM 22-10-00/101, Fig. 106 for a list of diagnostic codes.

S 862-059

(4) Show the NON-FDE FAULTS message pages:

(a) Push the <RETURN LSK to show the PRESENT LEG FAULTS menu.

(b) Push the NEXT PAGE key until you find the <NON-FDE FAULTS prompt.
(c) Push the <NON-FDE FAULTS prompt to show a PRESENT LEG MSG page for a CMCS fault message that is not correlated to a FDE.
(d) Push the NEXT PAGE key to show each CMCS fault message that is not correlated to a FDE.

TASK 45-10-00-742-020

3. Performance of Confidence Tests (Fig. 201, Fig. 203)

A. General
(1) Confidence test are tests that the flight crew usually does.
(2) Each confidence test is the same as the ground test with the same name.

B. Access
(1) Location zones
221 Control Cabin, LH
222 Control Cabin, RH

C. Procedure

S 862-021
(1) Show the CMC MENU on the CDU:
(a) Push the MENU key on the CDU to show the CDU MENU.
(b) Push the <CMC LSK (line select key) to show the CMC MENU.
(c) If the CMC MENU is not shown after you push the CMC LSK, push the <RETURN LSK until you see the CMC MENU.

S 862-022
(2) Push the <CONFIDENCE TESTS LSK to show the CONFIDENCE TESTS menu.

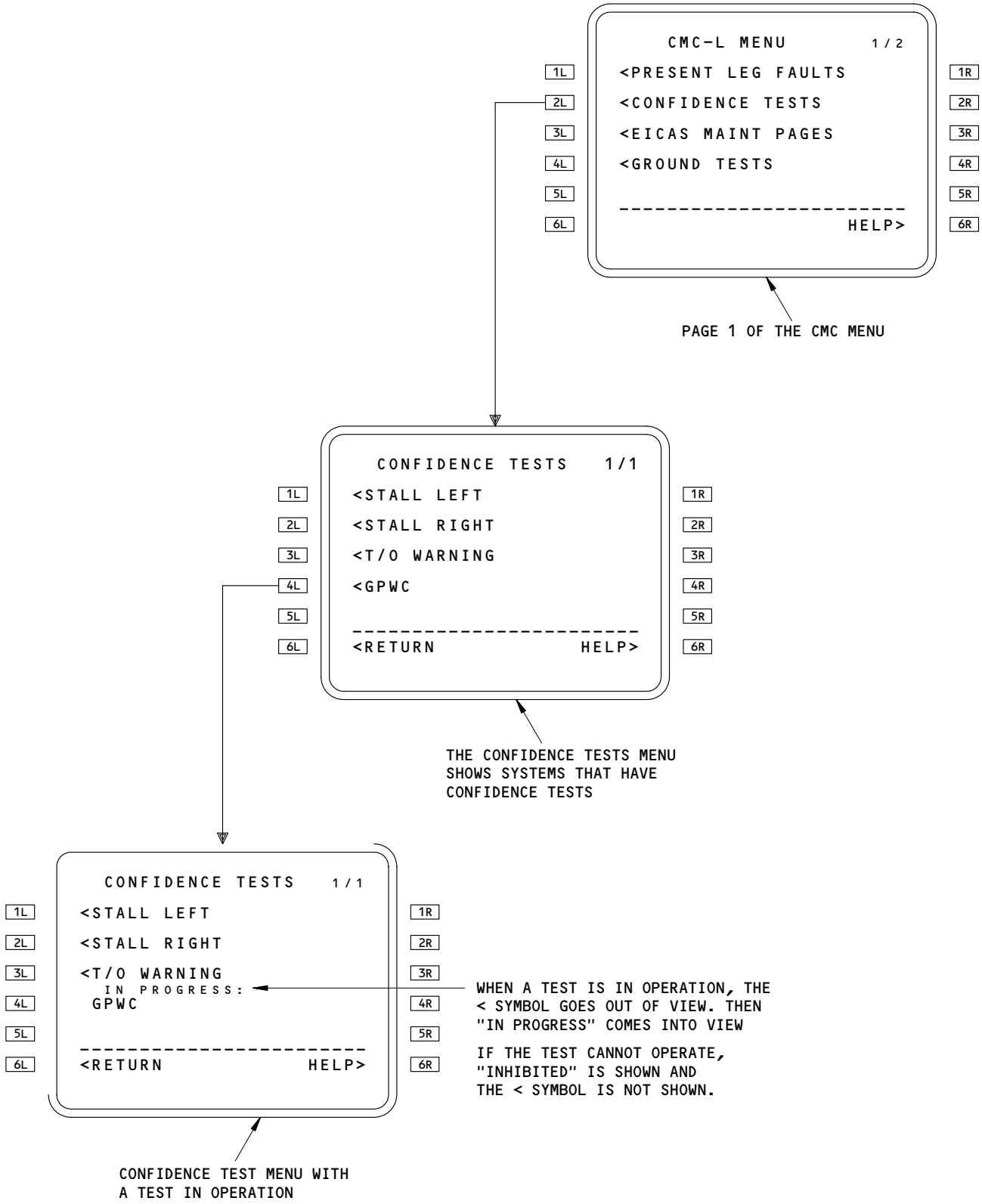
S 742-023
(3) Push the LSK adjacent to the applicable test.

NOTE: The CDU shows the IN PROGRESS indication during the test.

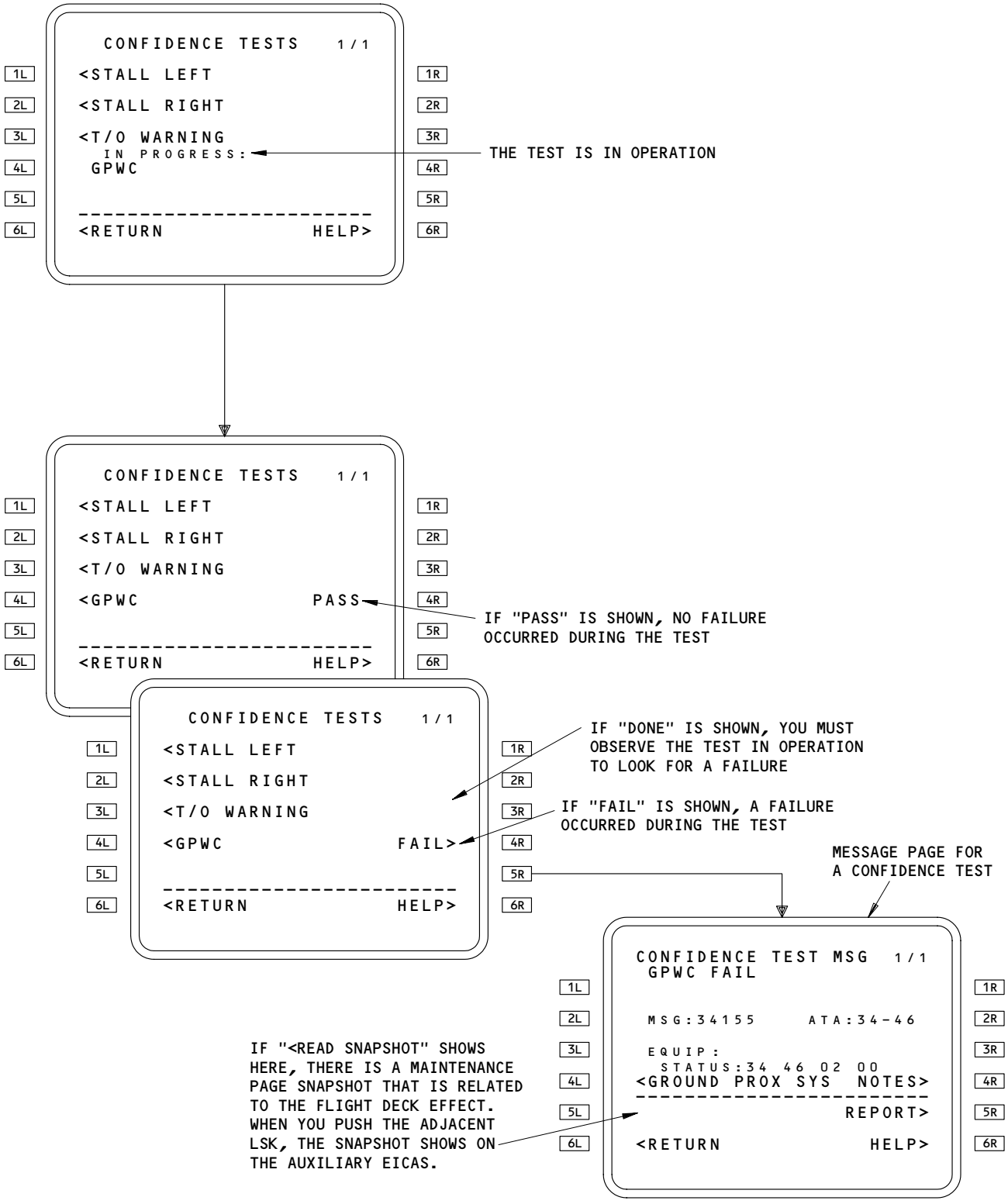
(a) When the IN PROGRESS indication is gone, find the DONE indication, the PASS indication, or the FAIL> prompt adjacent to the test prompt.

NOTE: If a PASS indication is shown, no failures occurred during the test.

1) If a DONE indication is shown, use the existing faults function to look for a failure.




Confidence Tests
Figure 203 (Sheet 1)




Confidence Tests
Figure 203 (Sheet 2)



C20124

2) If a FAIL> prompt is shown, find the corrective action for the failure.

TASK 45-10-00-862-025

4. Display of EICAS Maintenance Pages (Fig. 201, Fig. 204)

A. General

(1) This function lets you use the CDU to control the display of EICAS maintenance pages on the lower EICAS.

(2) For the procedure to make, show, or erase a snapshot of an EICAS maintenance page, refer to AMM 31-61-00/201.

B. Access

(1) Location Zones

221 Control Cabin, LH
222 Control Cabin, RH

C. Procedure

S 862-026

(1) Show the CMC MENU on the CDU:

(a) Push the MENU key on the CDU to show the CDU MENU.

(b) Push the <CMC LSK (line select key) to show the CMC MENU.

(c) If the CMC MENU is not shown after you push the CMC LSK, push the <RETURN LSK until you see the CMC MENU.

S 862-027

(2) Show an EICAS maintenance page:

(a) Push the <EICAS MAINT PAGES LSK to show the menu of systems that have EICAS maintenance pages.

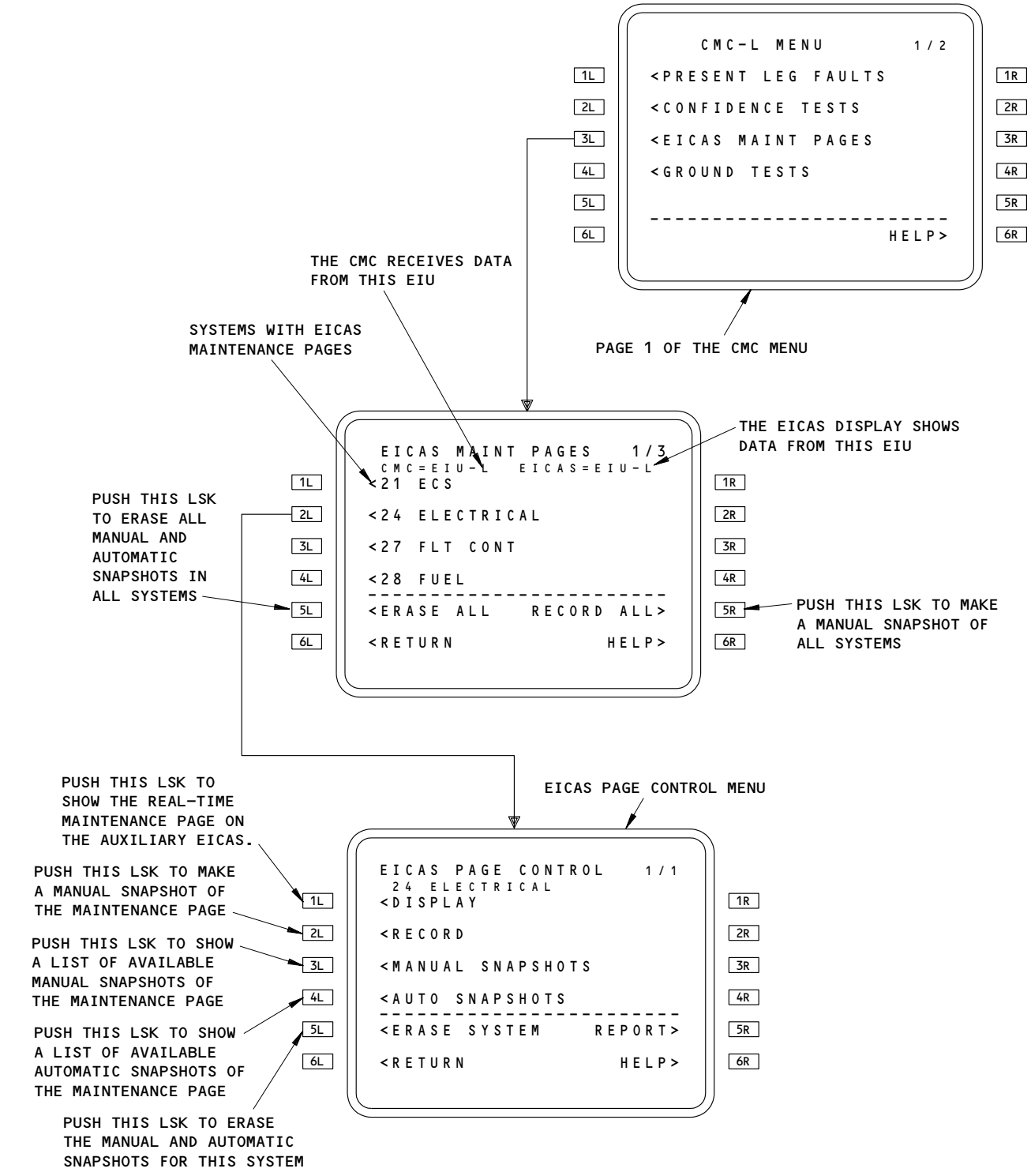
NOTE: It can be necessary to push the NEXT PAGE key to see all the systems that have EICAS maintenance pages.

(b) Push the LSK adjacent to the applicable system to show the EICAS PAGE CONTROL menu for that system.

(c) Push the <DISPLAY LSK to show the EICAS maintenance page on the lower EICAS display.

TASK 45-10-00-862-029

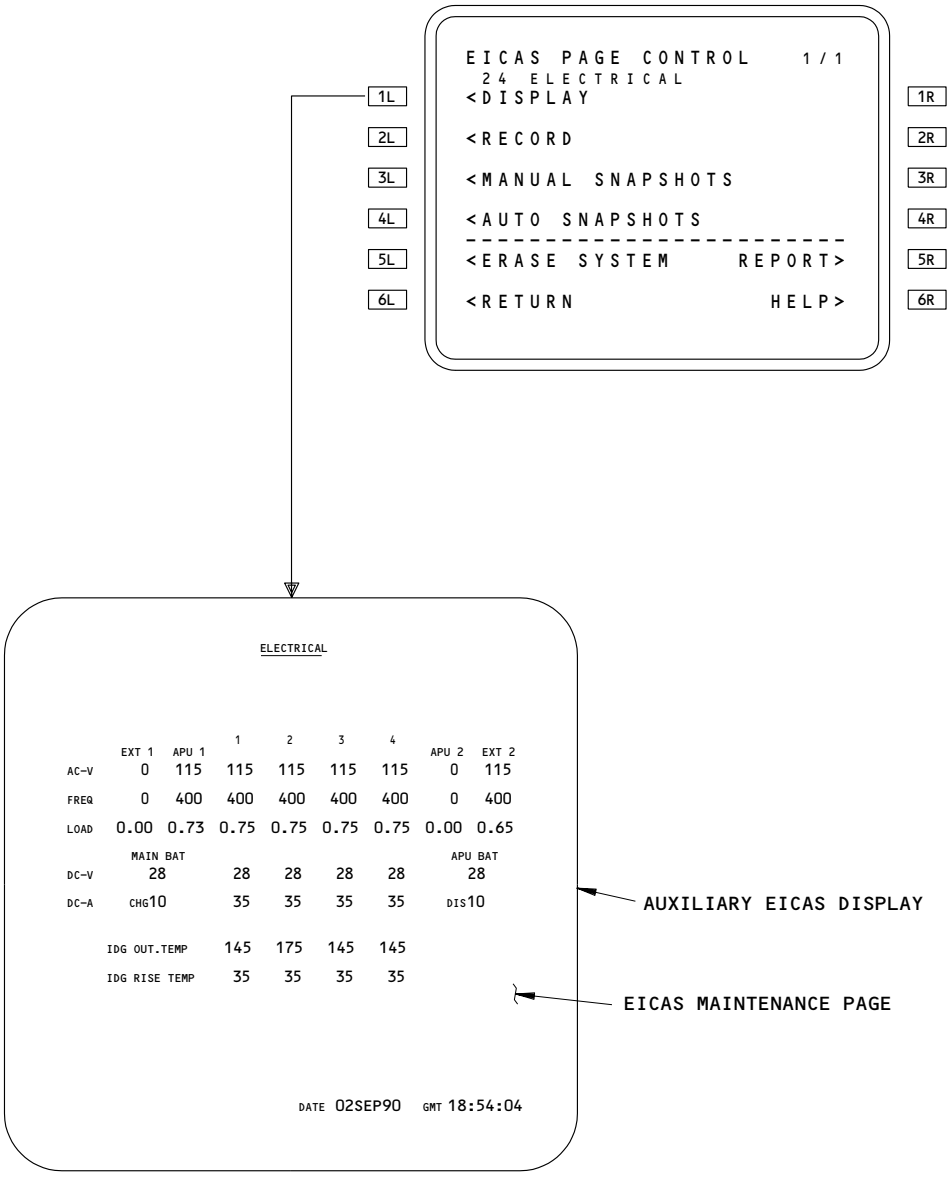
5. Prepare the CDU for a Ground Test (Fig. 201, Fig. 205)



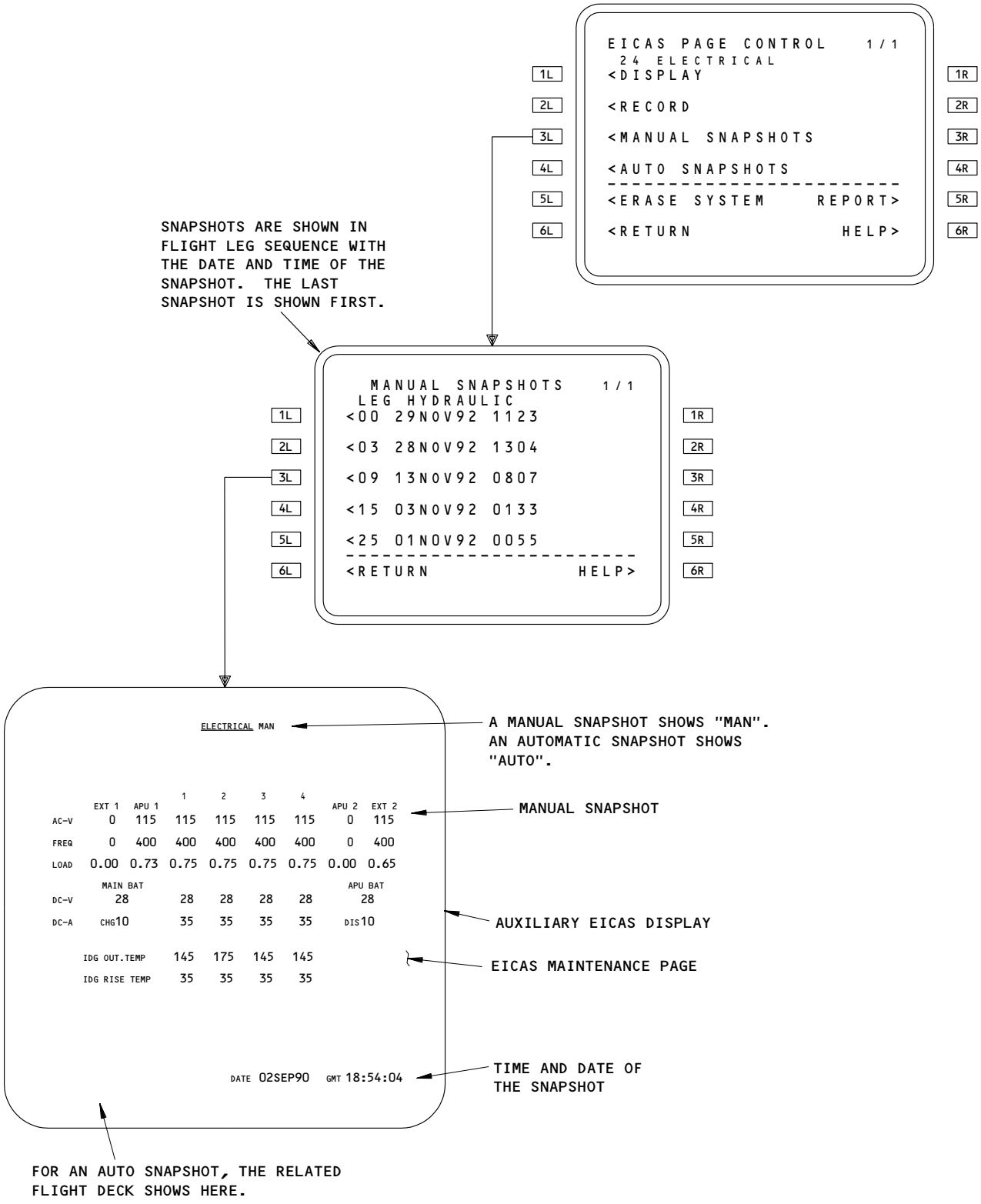

EICAS Maintenance Pages
Figure 204 (Sheet 1)



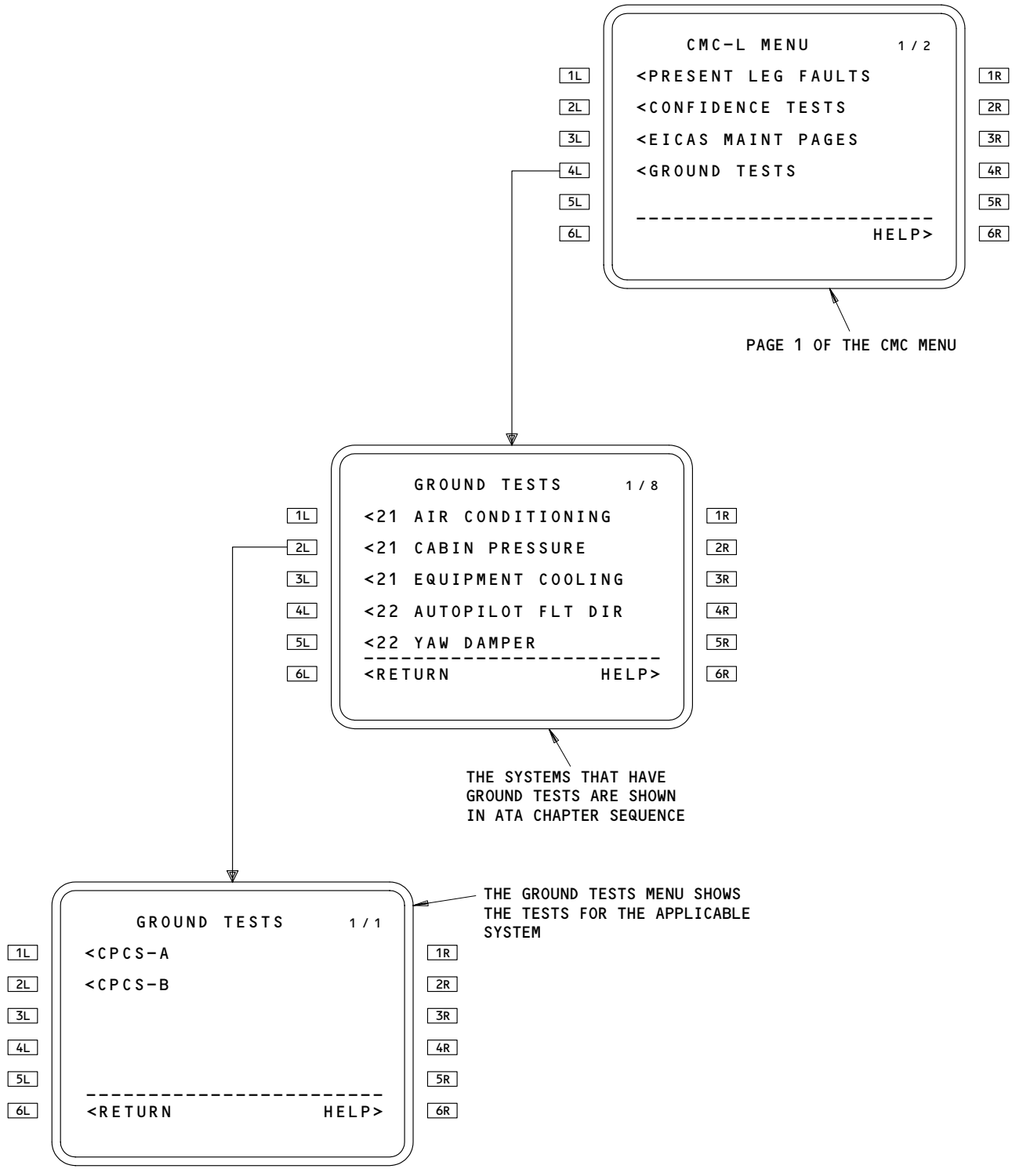
F54474



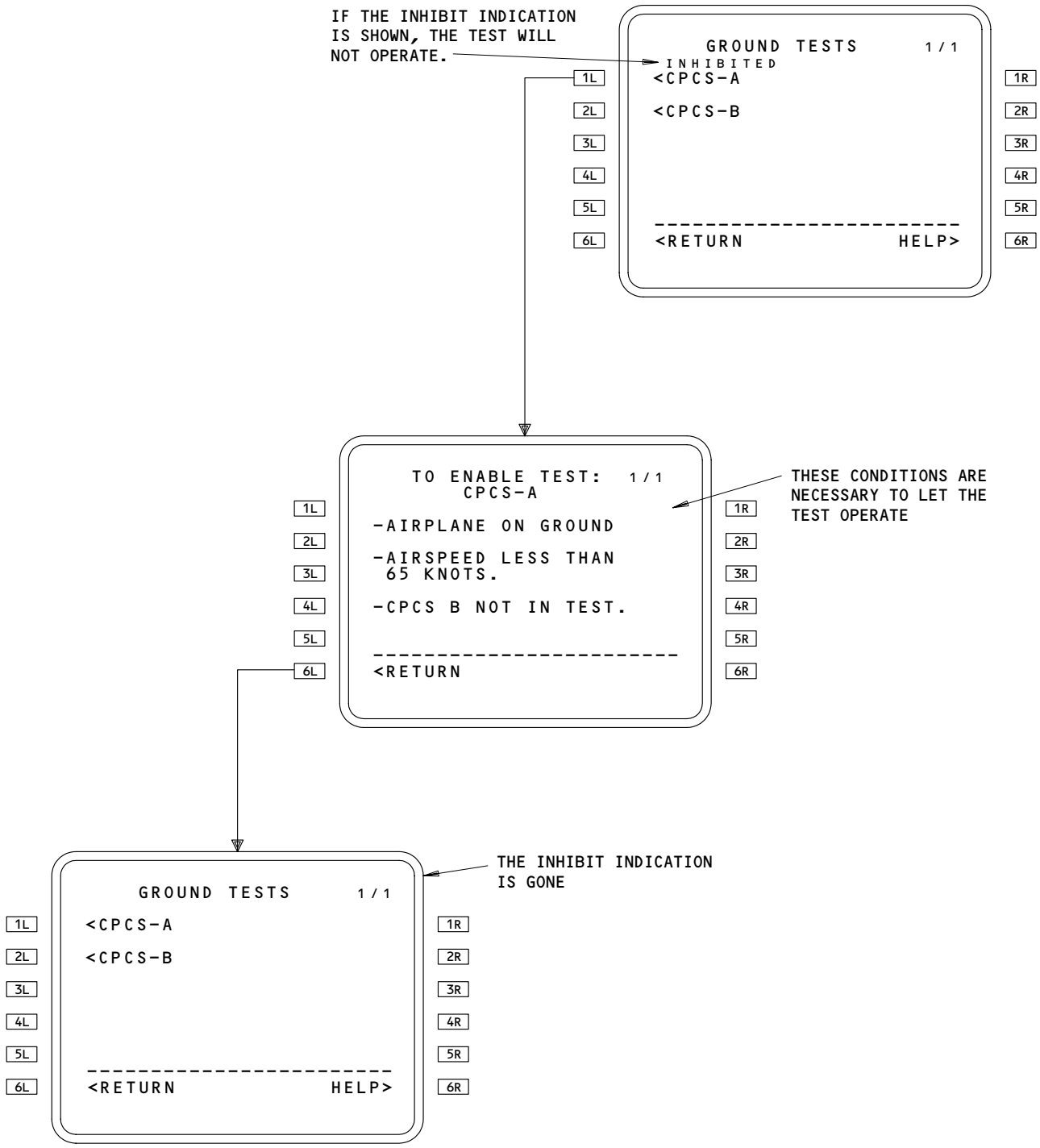

EICAS Maintenance Pages
Figure 204 (Sheet 2)




EICAS Maintenance Pages
Figure 204 (Sheet 3)

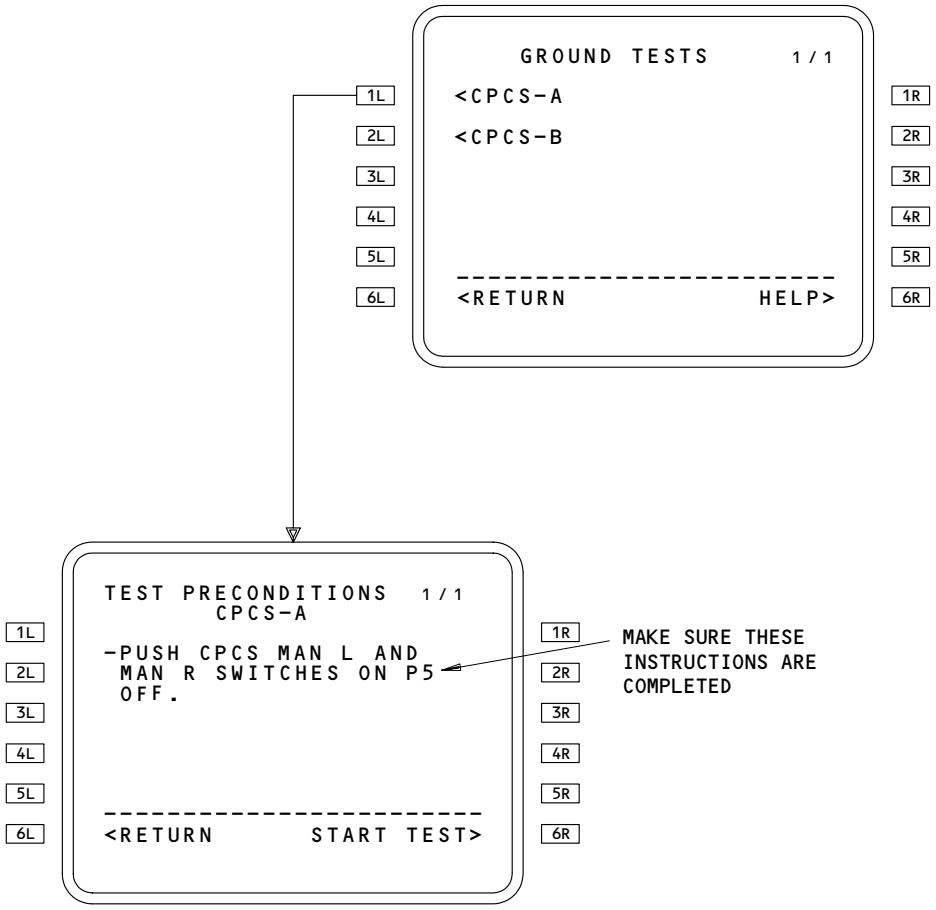



Ground Tests - BITE
Figure 205 (Sheet 1)




TO ENABLE TEST

Ground Tests - BITE
Figure 205 (Sheet 2)




TEST PRECONDITIONS

Ground Tests - BITE
Figure 205 (Sheet 3)

A. General
(1) The ground tests function lets maintenance persons use the CDU to start BITE tests of airplane systems and LRUs. The CMCS transmits a signal to an LRU to start the BITE test. When the test is completed, the LRU sends the test results to the CMC. The CMC shows the test results on the CDU.
(2) After you do these steps, you will see a ground test menu. The menu shows the name of the ground test you will do. You must return to the procedure which referred you to this one to start the test.

B. Access
(1) Location zones
221 Control Cabin, LH
222 Control Cabin, RH

C. Procedure

S 862-030
(1) Show the CMC MENU on the CDU:
(a) Push the MENU key on the CDU to show the CDU MENU.
(b) Push the <CMC LSK (line select key) to show the CMC MENU.
(c) If the CMC MENU is not shown after you push the CMC LSK, push the <RETURN LSK until you see the CMC MENU.

S 862-031
(2) Show the GROUND TESTS menu which contains the test you will do:
(a) Push the <GROUND TESTS LSK to show the GROUND TESTS menu.
(b) Push the NEXT PAGE key if it is necessary until you find the correct system prompt.
(c) Push the LSK adjacent to the applicable system prompt to show the GROUND TESTS menu for that system.
(d) Push the NEXT PAGE key if it is necessary until you find the applicable test prompt.

S 862-066
(3) If INHIBITED shows above the test prompt:
(a) Push the LSK that is adjacent to the test prompt.
(b) Do the steps shown on the TO ENABLE TEST page.
(c) Push the LSK that is adjacent to <RETURN to show the ground test menu again.

S 862-080
(4) If IN USE shows above the test prompt, stop until IN USE goes out of view.

NOTE: IN USE shows that the test is in operation on another CDU.

S 862-081

(5) If USER HOLD shows above the test prompt, stop until USER HOLD goes out of view.

NOTE: USER HOLD shows that a test is in operation on another CDU and the two tests cannot operate at the same time. The CMC prevents the operation of a test when it would cause interference with another test. Refer to Table II - Ground Test Interference for a list of tests that cannot operate at the same time.

S 862-086

CAUTION: REFER TO THE APPLICABLE ADJUSTMENT/TEST PROCEDURE TO DO THE GROUND TEST (SEE TABLE I). FAILURE TO PUT THE SYSTEM IN ITS CORRECT INITIAL CONDITION CAN CAUSE DAMAGE TO THE EQUIPMENT.

(6) If a TEST PRECONDITIONS page shows when you start the test, make sure each instruction on the page is completed. (Push the NEXT PAGE key to see the subsequent pages.)

S 742-087

(7) Refer to the applicable ground test procedure before you start the test (Ref Table I).

NOTE: Table I shows all the available CMCS ground tests. These are are the prompts that show on the GROUND TESTS menus. The table also shows the location of the ground test procedures in the AMM.

| GROUND TESTS MENU PROMPT | AMM REFERENCE |
|---|---|
| <21 AIR CONDITIONING | |
| <OVBD VALVE SYSTEM | AMM 21-31-00/501 |
| <CACC FWD OVBD | AMM 21-26-00/501 |
| <CACC FWD DISTRIB | AMM 21-28-00/501 |
| <CARGO HEAT SYSTEM | AMM 21-44-00/501 |

Table I - Ground Tests

| GROUND TESTS MENU PROMPT | AMM REFERENCE |
|---|---|
| <PTC-A/PACK-1 | AMM 21-51-00/501 |
| <PTC-A/PACK-2 | AMM 21-51-00/501 |
| <PTC-A/PACK-3 | AMM 21-51-00/501 |
| <PTC-A/ALL PACKS | AMM 21-51-00/501 |
| <PTC-A/RECIRC FANS | AMM 21-25-00/501 |
| <PTC-B/PACK-1 | AMM 21-51-00/501 |
| <PTC-B/PACK-2 | AMM 21-51-00/501 |
| <PTC-B/PACK-3 | AMM 21-51-00/501 |
| <PTC-B/ALL PACKS | AMM 21-51-00/501 |
| <PTC-B/RECIRC FANS | AMM 21-25-00/501 |
| <TRIM AIR SYSTEM | AMM 21-61-00/501 |
| <21 CABIN PRESSURE | |
| <CPCS-A | AMM 21-31-00/501 |
| <CPCS-B | AMM 21-31-00/501 |
| <21 EQUIPMENT COOLING | |
| <EQUIPMENT COOLING | AMM 21-58-00/501 |
| <E/E DETECTORS | AMM 21-58-00/501 |
| <22 AUTOPILOT FLT DIR | |
| <FCC-L | AMM 22-10-00/501 |
| <FCC-C | AMM 22-10-00/501 |
| <FCC-R | AMM 22-10-00/501 |
| <MODE CONTL PANEL | AMM 22-10-00/501 |
| <SERVO-AILERON | AMM 22-10-00/501 |
| <SERVO-ELEVATOR | AMM 22-10-00/501 |
| <SERVO-RUDDER | AMM 22-10-00/501 |
| <A/P DISC SWITCH | AMM 22-10-00/501 |
| <GO AROUND SWITCH | AMM 22-10-00/501 |
| <AUTOLAND UNIQUE | AMM 22-10-00/501 |
| <AIR/GROUND RELAY | AMM 22-10-00/501 |
| <FCC CONFIGURATION | AMM 22-10-00/501 |
| <FCC INSTRUMENTS | AMM 22-10-00/501 |
| <SPEED BRK XDUCER | AMM 22-10-00/501 |
| <FLAP XDUCER | AMM 22-10-00/501 |
| <STAB TRIM | AMM 22-10-00/501 |
| <XDUCER OUTPUTS | AMM 22-10-00/501 |
| <AIL SURFACE LIMIT | AMM 22-10-00/501 |
| <ELV SURFACE LIMIT | AMM 22-10-00/501 |
| <RUD SURFACE LIMIT | AMM 22-10-00/501 |

Table I - Ground Tests

| GROUND TESTS MENU PROMPT | AMM REFERENCE |
|---|---|
| <22 YAW DAMPER | |
| <UPPER YDM TEST | AMM 22-21-00/501 |
| <LOWER YDM TEST | AMM 22-21-00/501 |
| <UPR YDM ACTUATOR | AMM 22-21-00/501 |
| <LWR YDM ACTUATOR | AMM 22-21-00/501 |
| <23 COMMUNICATIONS | |
| <HF-L | AMM 23-11-00/501 |
| <HF-R | AMM 23-11-00/501 |
| <VHF-L | AMM 23-12-00/501 |
| <VHF-R | AMM 23-12-00/501 |
| <VHF-C | AMM 23-12-00/501 |
| <24 ELECTRICAL POWER | |
| <EPGS (BCU1) | AMM 24-23-01/501 |
| <EPGS (BCU2) | AMM 24-23-01/501 |
| <26 FIRE PROTECTION | |
| <FIRE SYSTEM TEST | AMM 26-11-00/501 |
| <27 AILERON LOCKOUT | |
| <AIL LO ACTUATORS | AMM 27-11-00/501 |
| <27 RUDDER RATIO | |
| <RUD RATIO ACTR | AMM 27-21-00/501 |
| <RUD RATIO EXTEND | |
| <27 FLAP CONTROL | |
| <FLAP CONTROL-L | AMM 27-51-00/501 |
| <FLAP CONTROL-C | AMM 27-51-00/501 |
| <FLAP CONTROL-R | AMM 27-51-00/501 |
| <27 STALL WARNING | |
| <STALL LEFT | AMM 27-32-00/501 |
| <STALL RIGHT | AMM 27-32-00/501 |

Table I - Ground Tests

| GROUND TESTS MENU PROMPT | AMM REFERENCE |
|---|---|
| <28 FUEL | |
| <SCAVENGE PUMP *[E] | AMM 28-15-00/501 |
| <RESERVE VALVE | AMM 28-16-01/501 |
| <HORZ STAB ISO VLV *[H] | AMM 28-17-01/501 |
| <STAB FUEL XFR SYS *[H] | AMM 28-17-00/501 |
| <JETT TRANSFER VLV | AMM 28-31-00/501 |
| <FUEL QUANTITY IND | AMM 28-41-00/501 |
| <SNGL PT SNSR CARD | AMM 28-16-08/501 |
| <29 HYDRAULIC POWER | |
| <HYDIM-1 | AMM 29-11-42/501 |
| <HYDIM-2 | AMM 29-11-42/501 |
| <HYDIM-3 | AMM 29-11-42/501 |
| <HYDIM-4 | AMM 29-11-42/501 |
| <HYQUIM | AMM 29-33-02/501 |
| <30 ICE AND RAIN | |
| <WTAIS | AMM 30-11-00/501 |
| <ICE DETECTOR-L | AMM 30-81-00/501 |
| <ICE DETECTOR-R | AMM 30-81-00/501 |
| <PROBE HEAT L | AMM 30-31-00/501 |
| <PROBE HEAT R | AMM 30-31-00/501 |
| <WINDOW HEAT-1L | AMM 30-41-00/501 |
| <WINDOW HEAT-1R | AMM 30-41-00/501 |
| <31 INDICATING/WARNING | |
| <IDS | AMM 31-61-00/501 |
| <T/O WARNING | AMM 31-52-00/501 |
| <31 RECORDING | |
| <FLIGHT RECORDER | AMM 31-31-00/501 |
| <ACMS | AMM 31-35-00/501 |
| <32 BRAKE CONTROL | |
| <BRAKE SYSTEM BITE | AMM 32-42-00/501 |
| <TORQ SENSOR ZERO | AMM 32-42-00/501 |
| <A/BRK APPLICATION | AMM 32-42-00/501 |
| <BRAKE RELEASE | AMM 32-42-00/501 |

Table I - Ground Tests

| GROUND TESTS MENU PROMPT | AMM REFERENCE |
|---|---|
| <32 PSEU SYSTEM | |
| <PSEU SYSTEM | AMM 32-09-03/501 |
| <PRI LAND GEAR SYS | AMM 32-61-00/501 |
| <ALT LAND GEAR SYS | AMM 32-61-00/501 |
| <32 TIRE PRESSURE *[O] | |
| <TIRE PRESS SYSTEM*[O] | AMM 32-45-00/501 |
| <LOW TIRE TEST *[O] | |
| <32 BRAKE TEMPERATURE | |
| <BRAKE TEMP SYSTEM | AMM 32-46-00/501 |
| <34 AIR DATA | |
| <AIR DATA CMPTR-L | AMM 34-12-00/501 |
| <AIR DATA CMPTR-C | AMM 34-12-00/501 |
| <AIR DATA CMPTR-R | AMM 34-12-00/501 |
| <34 INERTIAL REFERENCE | |
| <IRU-L | AMM 34-21-00/501 |
| <IRU-C | AMM 34-21-00/501 |
| <IRU-R | AMM 34-21-00/501 |
| <34 NAVIGATION RADIOS | |
| <ILS-L *[I] | AMM 34-31-00/501 |
| <ILS-R *[I] | AMM 34-31-00/501 |
| <ILS-C *[I] | AMM 34-31-00/501 |
| <RA-L | AMM 34-33-00/501 |
| <RA-R | AMM 34-33-00/501 |
| <RA-C | AMM 34-33-00/501 |

Table I - Ground Tests

| GROUND TESTS MENU PROMPT | AMM REFERENCE |
|---|---|
| <MMR-L *[M] | AMM 34-31-00/501 |
| <MMR-R *[M] | AMM 34-31-00/501 |
| <MMR-C *[M] | AMM 34-31-00/501 |
| <WXR-L | AMM 34-43-00/501 |
| <WXR-R | AMM 34-43-00/501 |
| <TCAS | AMM 34-45-00/501 |
| <GPWC | AMM 34-46-00/501 |
| <VOR-L/MKR BCN | AMM 34-51-00/501 |
| <VOR-R/MKR BCN | AMM 34-51-00/501 |
| <ATC-L | AMM 34-53-00/501 |
| <ATC-R | AMM 34-53-00/501 |
| <DME-L | AMM 34-55-00/501 |
| <DME-R | AMM 34-55-00/501 |
| <ADF-L | AMM 34-57-00/501 |
| <ADF-R | AMM 34-57-00/501 |
| <34 FLIGHT MANAGEMENT | |
| <FMC-L | AMM 34-61-00/501 |
| <FMC-R | AMM 34-61-00/501 |
| <FMC-L SERVO LOOP | AMM 34-61-00/501 |
| <FMC-R SERVO LOOP | AMM 34-61-00/501 |
| <36 PNEUMATICS | |
| <BLEED SYS ELEC | AMM 36-11-00/501 |
| <BLEED SYS APU | AMM 36-11-00/501 |
| <BLEED SYS ENGINE | AMM 36-11-00/501 |
| <45 CENTRAL MAINTENANCE | |
| <PRINTER | AMM 45-10-00/501 |
| <49 APU | |
| <APU | AMM 49-11-00/501 |
| <71 POWER PLANT | |

Table I - Ground Tests

| GROUND TESTS MENU PROMPT | AMM REFERENCE |
|---|---|
| <EEC 1A ACTUATORS | AMM 71-00-00/501 |
| <EEC 1B ACTUATORS | AMM 71-00-00/501 |
| <EEC 2A ACTUATORS | AMM 71-00-00/501 |
| <EEC 2B ACTUATORS | AMM 71-00-00/501 |
| <EEC 3A ACTUATORS | AMM 71-00-00/501 |
| <EEC 3B ACTUATORS | AMM 71-00-00/501 |
| <EEC 4A ACTUATORS | AMM 71-00-00/501 |
| <EEC 4B ACTUATORS | AMM 71-00-00/501 |

Table I - Ground Tests

*[E] AIRPLANES WITH AN ELECTRICAL SCAVENGE PUMP
*[H] AIRPLANES WITH A HORIZONTAL STABILIZER TANK
*[I] AIRPLANES WITH ILS RECEIVERS
*[M] AIRPLANES WITH MULTI-MODE RECEIVERS
*[O] OPTIONAL

S 862-129

(8) Refer to Table II to find the tests that cannot operate at the same time.

NOTE: The first column is a list of all system prompts that show on the GROUND TESTS menu. The second column is a two letter code for the system. The third column lists the codes of all the systems with tests that cannot operate at the same time as the system in the first column.

| SYSTEM PROMPT ON GROUND TEST MENU | CODE | TESTS IN THESE SYSTEMS CANNOT OPERATE AT THE SAME TIME: |
|---|---|---|
| <21 AIR CONDITIONING | AC | AC, IW, PS, PP |
| <21 CABIN PRESSURE | CP | CP, IW, PS, PP |
| <21 EQUIPMENT COOLING | EC | EC, IW, PS |
| <22 AUTOPILOT FLT DIR | AP | YD, EP, AL, RR, FC, HP, IW, BC PS, AD, PV, IF, NR, FM, AP |
| <22 YAW DAMPER | YD | AP, RR, HP, IF, YD |
| <23 COMMUNICATIONS | CC | CC, IW, FM |
| <24 ELECTRICAL POWER | EP | AP, FC, IW, BC, TP, BT, PP, IR, EP |
| <26 FIRE PROTECTION | FP | FP, IW, PS, PN |
| <27 AILERON LOCKOUT | AL | AL, AP, FC, HP, IW, AD, RR |
| <27 RUDDER RATIO | RR | AP, YD, HP, IW, AD, AL, RR |
| <27 FLAP CONTROL | FC | AP, EP, AL, SW, FL, HP, IR, IW, FC, PS, PP |
| <27 STALL WARNING | SW | FC, IW, AD, IF, NR, SW |
| <28 FUEL | FL | FC, IW, PP, FL |
| <29 HYDRAULIC POWER | HP | AP, YD, AL, RR, FC, IW, BC, HP |
| <30 ICE AND RAIN | IR | FC, IW, PS, EP, IR |

Table II - Ground Test Interference

| SYSTEM PROMPT ON GROUND TEST MENU | CODE | TESTS IN THESE SYSTEMS CANNOT OPERATE AT THE SAME TIME: |
|---|---|---|
| <31 INDICATING/WARNING | IW | AC, CP, EC, AP, CC, EP, FP, AL, RR, FC, SW, FL, HP, IR, BC, PS, TP, BT, AD, PV, IF, NR, FM, AU, PP, IW, PN |
| <31 RECORDING | RC | RC |
| <32 BRAKE CONTROL | BC | AP, BC, EP, HP, IW, PS, IF, PP |
| <32 PSEU SYSTEM | PS | AC, CP, EC, AP, FC, FP, IR, IW, BC, AD, PV, IF, NR, FM, PS, PP |
| <32 TIRE PRESSURE | TP | EP, IW, TP |
| <32 BRAKE TEMPERATURE | BT | EP, IW, BT |
| <34 AIR DATA | AD | AD, AP, AL, RR, SW, IW, PS, NR, PP, IF |
| <34 PARA-VISUAL DISPLAY | PV | AP, IW, PS, IF, NR, PV, |
| <34 INERTIAL REFERENCE | IF | AD, AP, YD, SW, IF, IW, BC, PS, PV, NR |
| <34 NAVIGATION RADIOS | NR | PS, PV, FM, AP, SW, IW, AD, IF, NR |
| <34 FLIGHT MANAGEMENT | FM | AP, CC, PS, NR, PP, IW, FM |
| <36 PNEUMATICS | PN | PN, IW, FP, PP |
| <45 CENTRAL MAINTENANCE | CM | CM |
| <49 APU | AU | IW, PP, AU |
| <71 POWER PLANT | PP | AC, CP, PP, EP, FL, IW, BC AD, FM, AU, PN, FC, PS |

Table II - Ground Test Interference

TASK 45-10-00-862-032

6. Display of Existing Faults (Fig. 201, Fig. 206)

A. General

(1) The existing faults function supplies data about failures that are active or not repaired. The CDU first shows a list in ATA chapter sequence of all systems that have CMCS fault messages. You can look at the CMCS fault messages and the FDEs that are correlated to them.

B. Access

(1) Location zones

221 Control Cabin, LH
222 Control Cabin, RH

C. Procedure

S 862-033

(1) Show page 2 of the CMC MENU on the CDU:
(a) Push the MENU key on the CDU to show the CDU MENU.
(b) Push the <CMC LSK (line select key) to show the CMC MENU.
(c) If the CMC MENU is not shown after you push the CMC LSK, push the <RETURN LSK until you see the CMC MENU.
(d) Push the NEXT PAGE key to show page 2 of the CMC MENU.

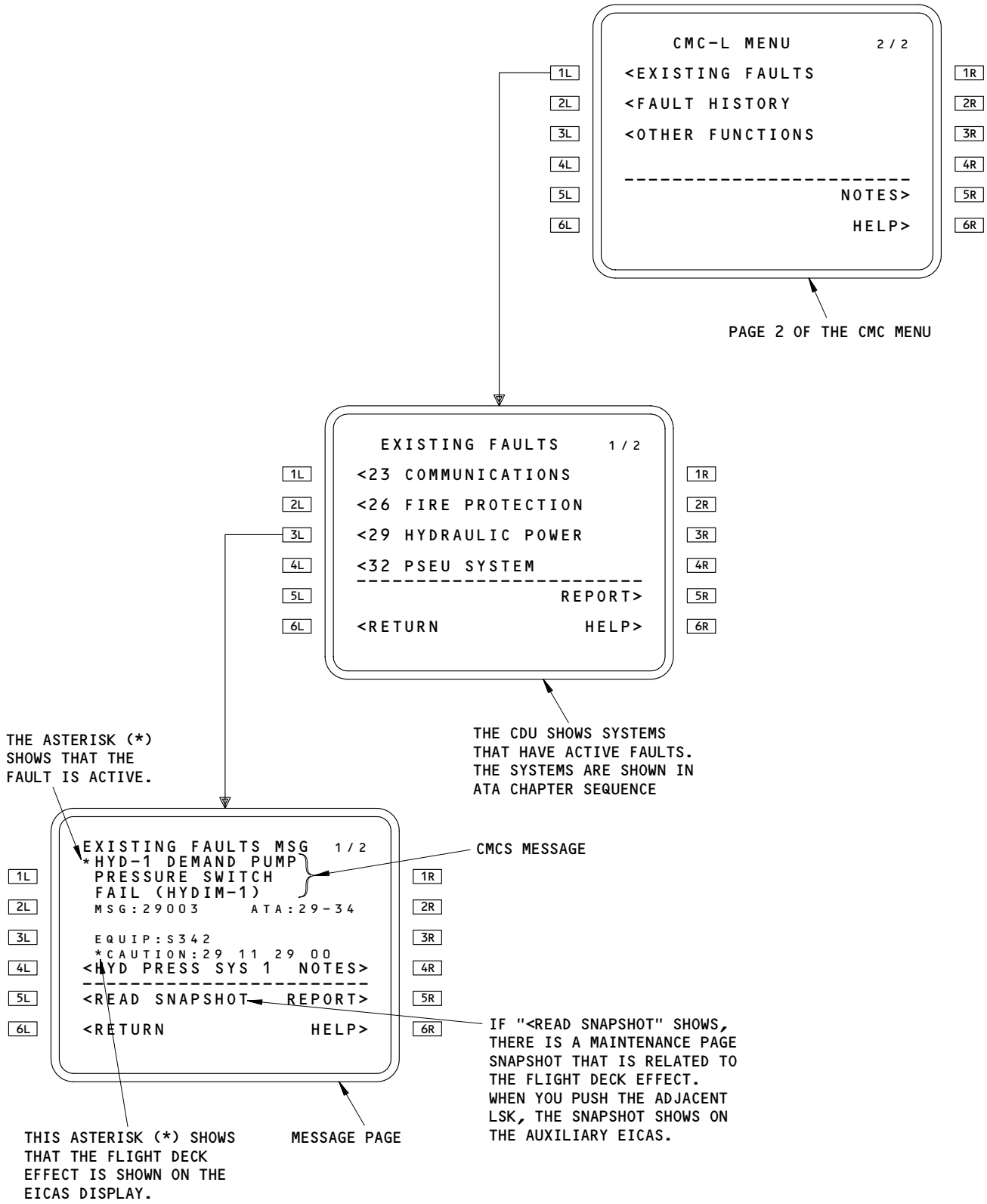
S 862-034

(2) Show the EXISTING FAULTS MSG pages for a system:
(a) Push the <EXISTING FAULTS LSK to show the EXISTING FAULTS menu.

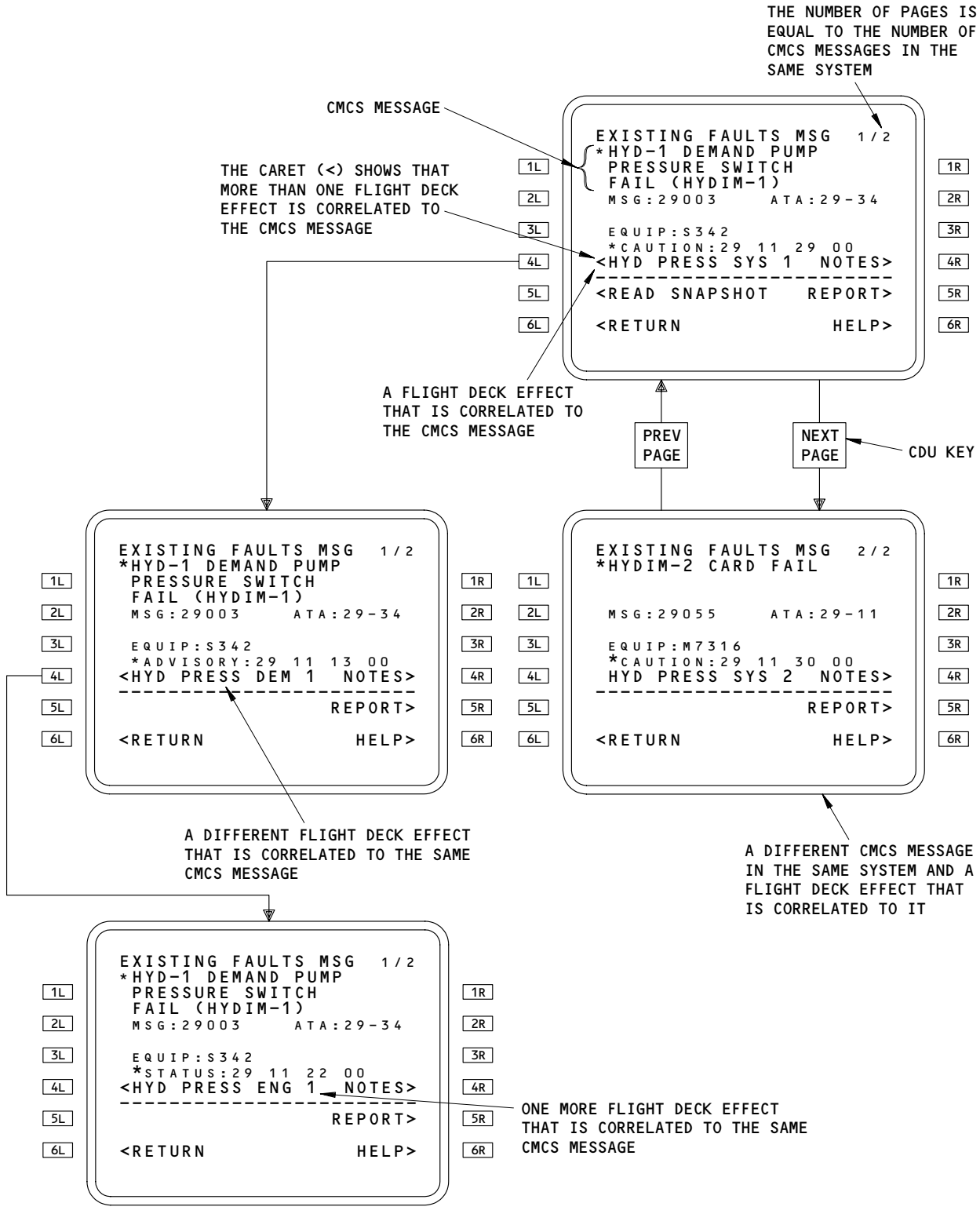
NOTE: It can be necessary to push the NEXT PAGE key to see all the systems that have existing faults.

(b) Push the LSK adjacent to the applicable system prompt to show the first EXISTING FAULTS MSG page for the system.
(c) If the page indication shows that there is more than one page, push the NEXT PAGE key to see a different CMCS fault message, and, possibly, a FDE that is correlated to it.

NOTE: Each time you push the NEXT PAGE key you will see a different CMCS fault message in the same system. When you see the last CMCS fault message (the two numbers in the page indication are the same), push the NEXT PAGE key to see the first message again.




Existing Faults
Figure 206 (Sheet 1)




Existing Faults
Figure 206 (Sheet 2)

(d) If there is a FDE and the FDE has a caret (<) adjacent to it, push the LSK adjacent to the FDE to see a different FDE correlated to the same CMCS fault message.

NOTE: If you push the FDE LSK when you see the last FDE, you will see the first FDE again.

NOTE: If there is no caret (<) adjacent to the FDE, then there is only one CMCS message correlated to the FDE.

TASK 45-10-00-862-036

7. Display of Fault History (Fig. 201, Fig. 207)

A. General

(1) The fault history function supplies data about CMCS fault messages that occurred before or during the present flight leg. CMCS fault messages are kept in the non-volatile memory (NVM) of the CMC. The fault history function shows the contents of the NVM. You can look at the CMCS fault messages in NVM and the FDEs that are correlated to them.

B. Access

(1) Location zones

221 Control Cabin, LH
222 Control Cabin, RH

C. Procedure

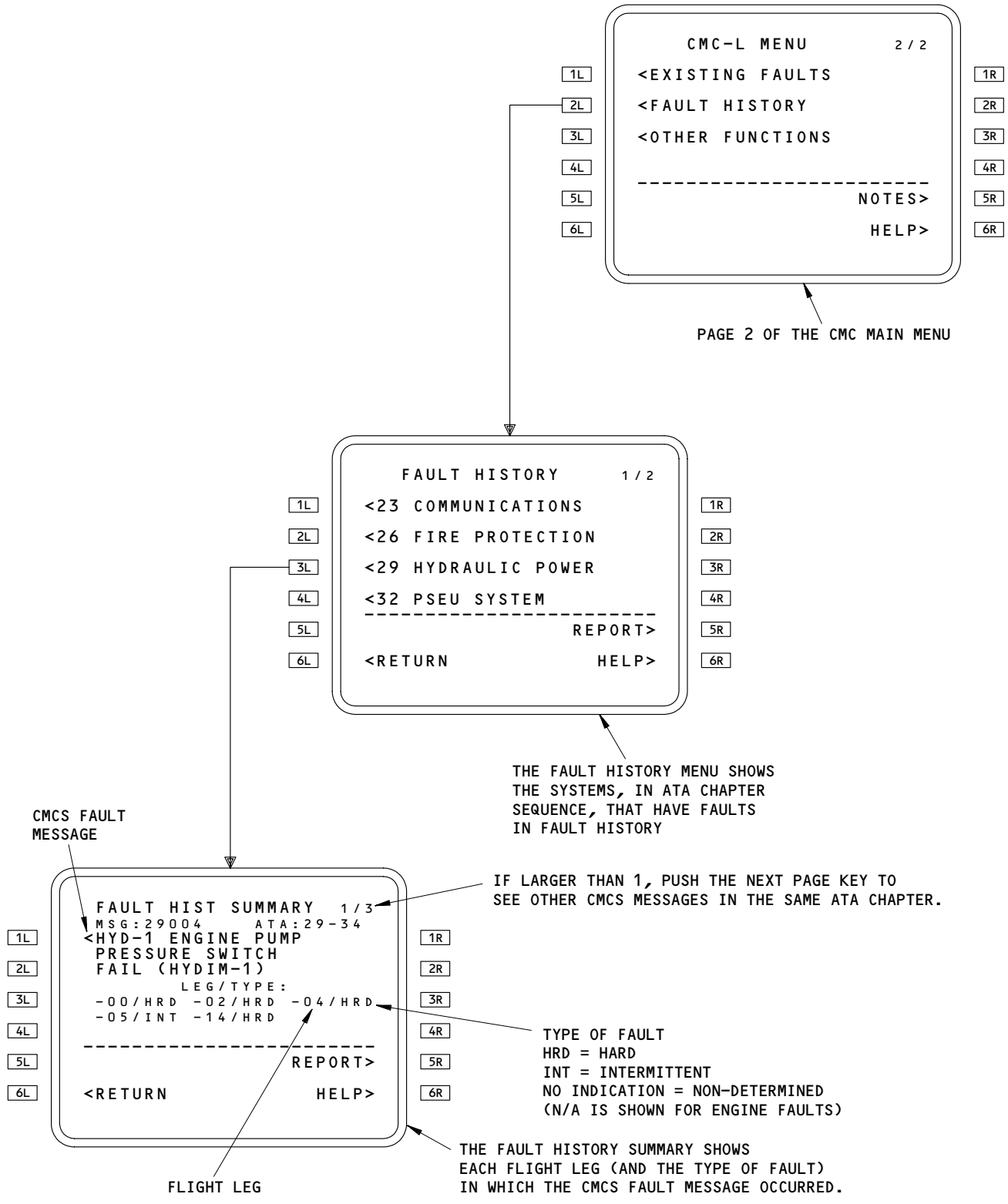
S 862-037

(1) Show page 2 of the CMC MENU on the CDU:
(a) Push the MENU key on the CDU to show the CDU MENU.
(b) Push the <CMC LSK (line select key) to show the CMC MENU.
(c) If the CMC MENU is not shown after you push the CMC LSK, push the <RETURN LSK until you see the CMC MENU.
(d) Push the NEXT PAGE key to show page 2 of the CMC MENU.

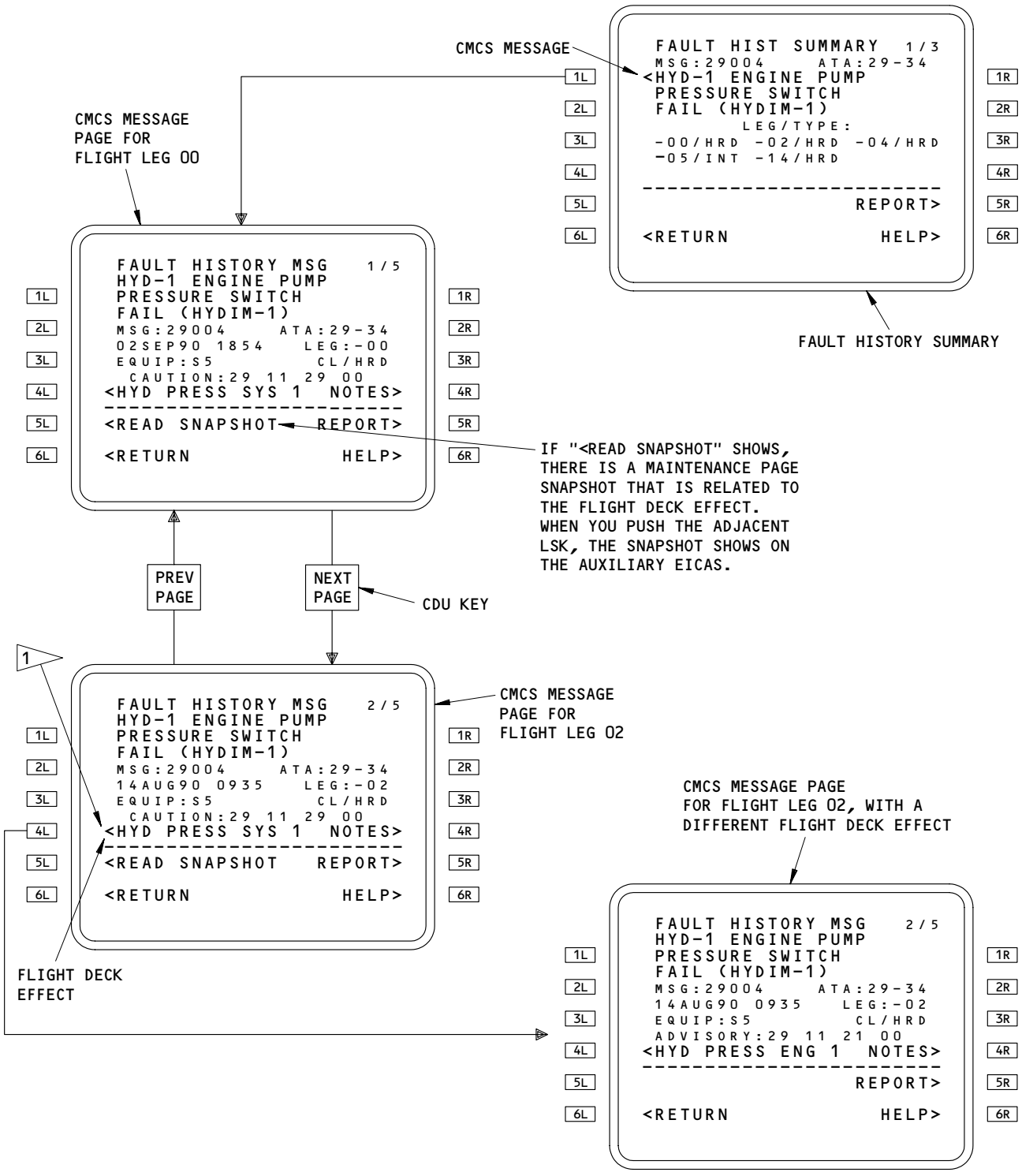
S 862-038

(2) Show the fault history data for a system:
(a) Push the <FAULT HISTORY LSK to show a list of the systems that have data in fault history.

NOTE: It can be necessary to push the NEXT PAGE key to see all the systems that have fault history data.




Fault History
Figure 207 (Sheet 1)




Fault History
Figure 207 (Sheet 2)

(b) Push the LSK adjacent to the applicable system prompt to show the FAULT HIST SUMMARY page for that system.
(c) Push the NEXT PAGE key to see FAULT HIST SUMMARY pages for other CMCS fault messages related to the same system.
(d) Push the LSK adjacent to the CMCS fault message to show the FAULT HISTORY MSG page for the first flight leg shown on the SUMMARY page.
(e) Push the NEXT PAGE key to see the message page for a different flight leg.

NOTE: Each time you push the NEXT PAGE key you will see the message page for a different flight leg. The pages are in sequence from the newest to the oldest flight leg. When you see the oldest message page, push the NEXT PAGE key to see the newest message page again.

(f) If the FDE has a caret (<) adjacent to it, push the LSK adjacent to the FDE to see a different FDE that is correlated to the CMCS fault message.

NOTE: If you push the FDE LSK when you see the last FDE, you will see the first FDE again.

NOTE: If there is no caret (<) adjacent to the FDE, then there is only one CMCS message correlated to the FDE.

TASK 45-10-00-862-040

8. Display of Shop Faults (Fig. 201, Fig. 208)

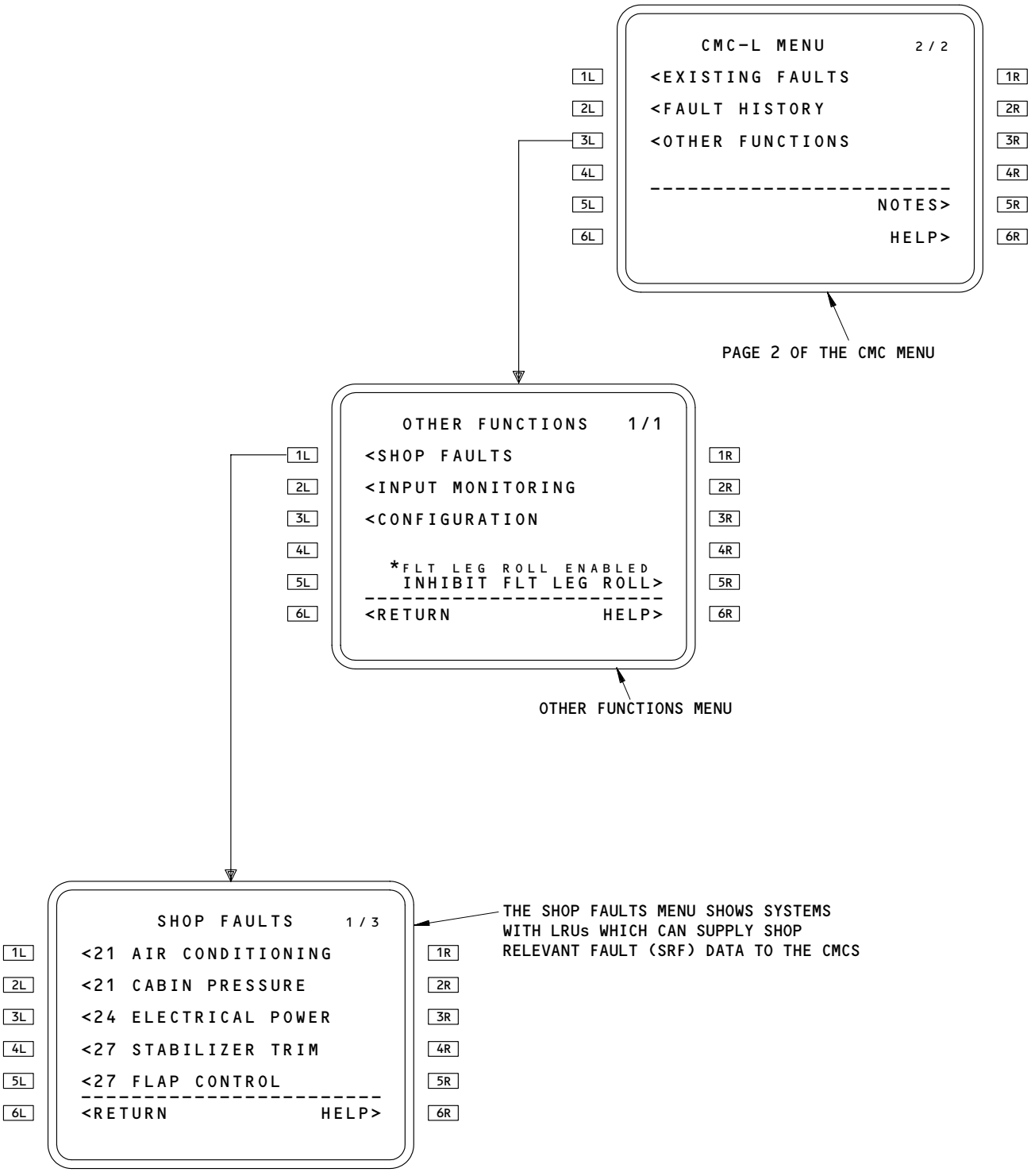
A. General

(1) The shop faults function supplies shop relevant fault (SRF) data for an LRU. The CMCS transmits a signal to an LRU to cause the LRU to transmit SRF data to the CMC. You can look at the data that the LRU transmits.

B. Access

(1) Location zones

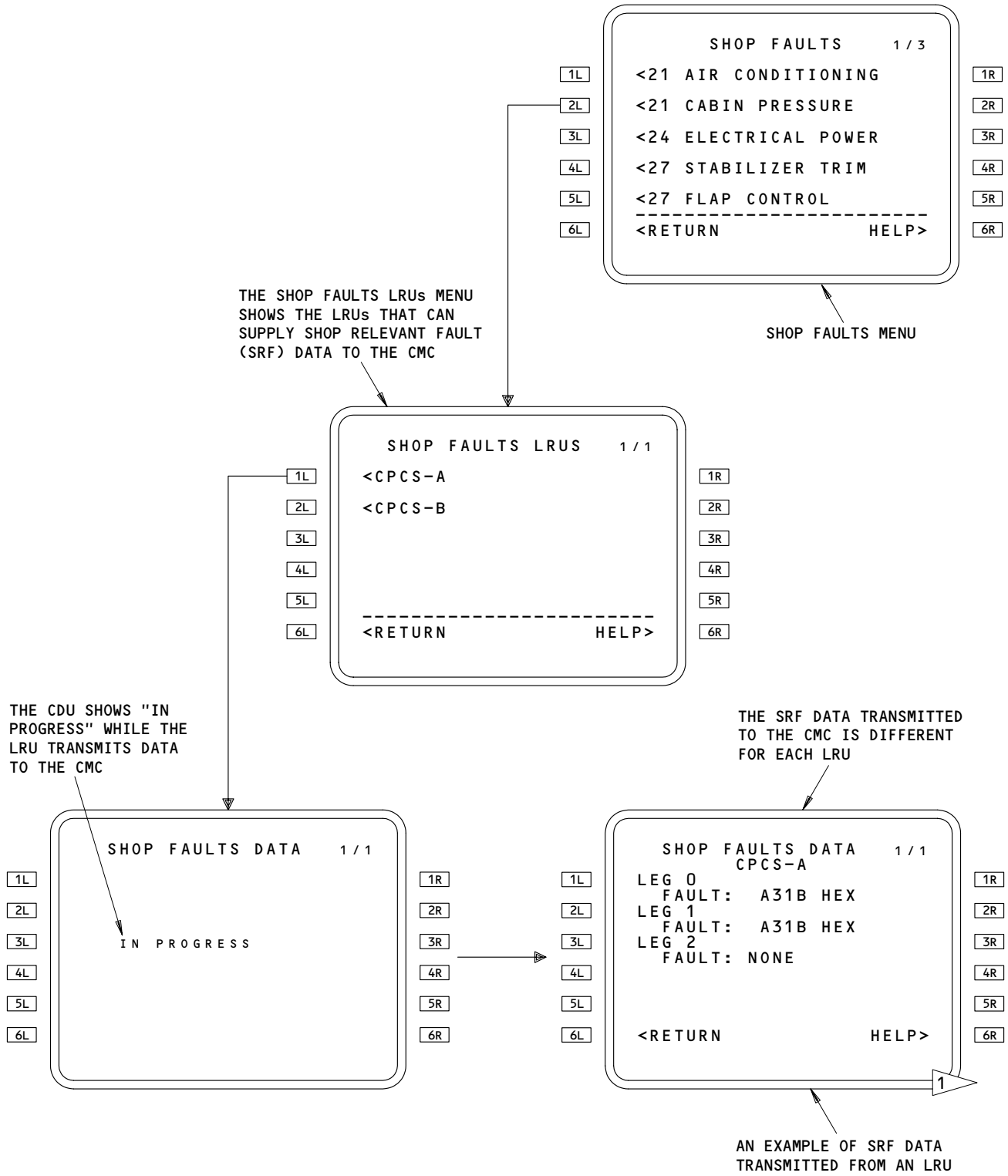
221 Control Cabin, LH
222 Control Cabin, RH




Shop Faults
Figure 208 (Sheet 1)



C20788




1 IF THE PAGE INDICATION SHOWS MORE THAN ONE PAGE, PUSH THE NEXT PAGE KEY TO SHOW MORE SRF DATA

Shop Faults
Figure 208 (Sheet 2)

C. Procedure

S 862-041

(1) Show page 2 of the CMC MENU on the CDU:
  (a) Push the MENU key on the CDU to show the CDU MENU.
  (b) Push the <CMC LSK (line select key) to show the CMC MENU.
  (c) If the CMC MENU is not shown after you push the CMC LSK, push the <RETURN LSK until you see the CMC MENU.
  (d) Push the NEXT PAGE key to show page 2 of the CMC MENU.

S 862-042

(2) Show the SRF data for an LRU:
  (a) Push the <OTHER FUNCTIONS LSK to show the OTHER FUNCTIONS menu.
  (b) Push the <SHOP FAULTS LSK to show the SHOP FAULTS menu.
  (c) Push the LSK adjacent to a system prompt to show the SHOP FAULTS LRUS menu.
  (d) Push the LSK adjacent to the applicable LRU prompt to cause the LRU to transmit SRF data to the CMCs.

NOTE: The CDU shows the IN PROGRESS indication while the LRU transmits data to the CMC. When the IN PROGRESS indication goes out of view, the CDU shows the SRF data for the applicable LRU.

TASK 45-10-00-862-045

9. Use of Input Monitoring (Fig. 201, Fig. 209)

A. General

(1) The input monitoring function permits maintenance persons to monitor inputs to the CMCs or the EIUs. You can monitor eight different inputs at the same time. The data can be shown on the CDU in binary or hexadecimal numbers. Some data can be shown in decimal numbers.

B. Access

(1) Location zones
  221 Control Cabin, LH
  222 Control Cabin, RH

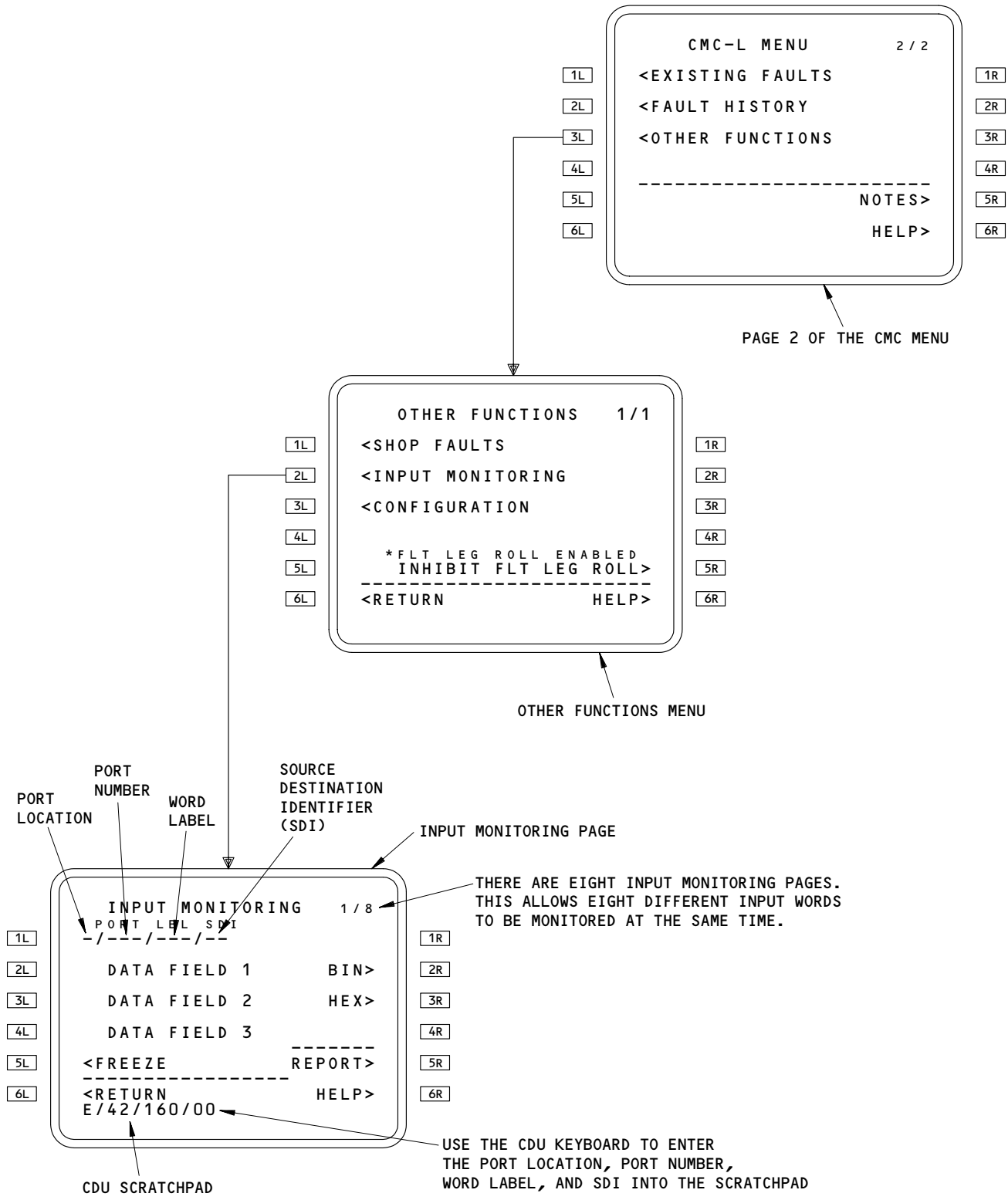
C. Procedure

S 862-046

(1) Show page 2 of the CMC MENU on the CDU:
  (a) Push the MENU key on the CDU to show the CDU MENU.
  (b) Push the <CMC LSK (line select key) to show the CMC MENU.
  (c) If the CMC MENU is not shown after you push the CMC LSK, push the <RETURN LSK until you see the CMC MENU.
  (d) Push the NEXT PAGE key to show page 2 of the CMC MENU.

S 862-047

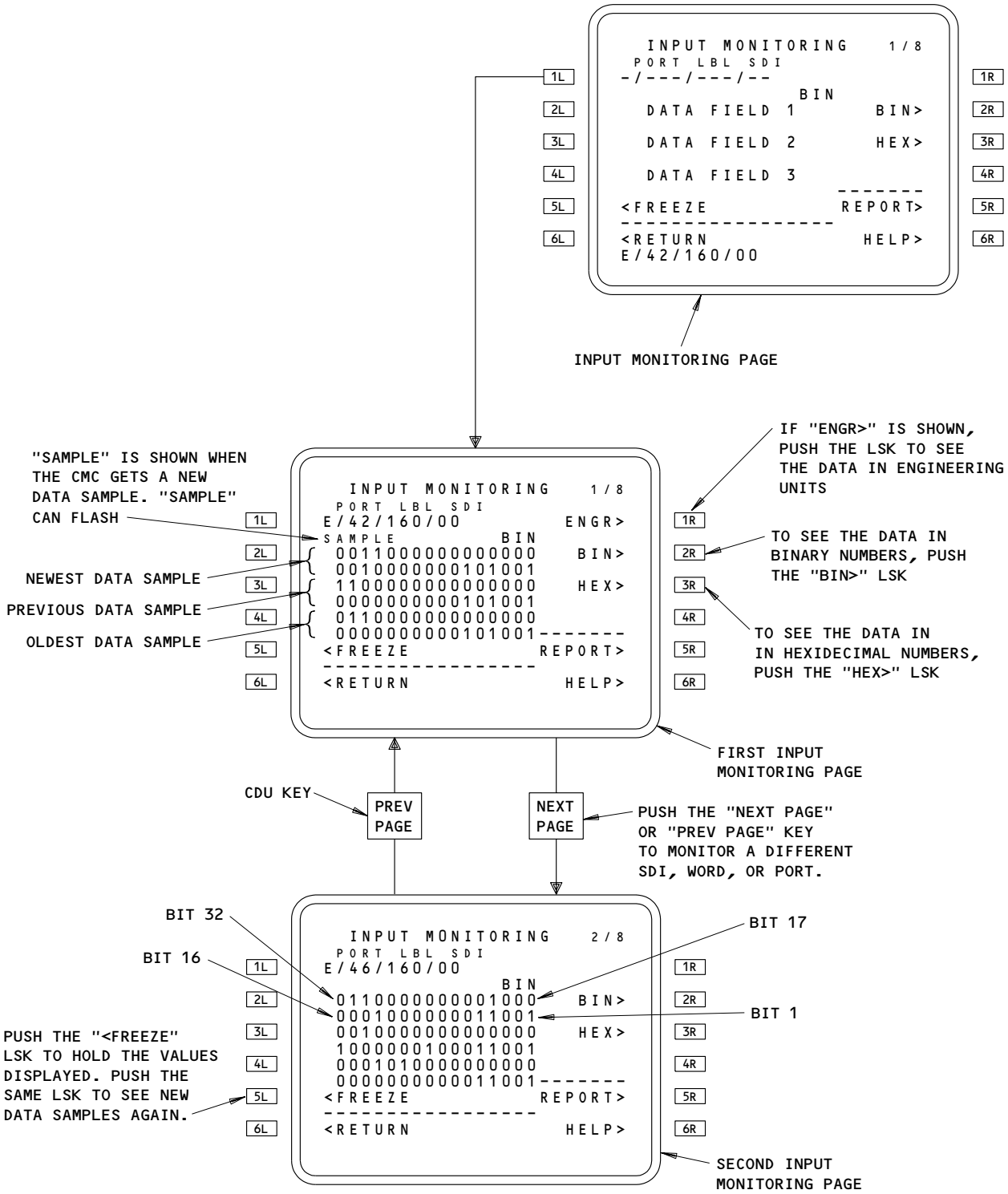
(2) Do input monitoring on one location:
  (a) Push the <INPUT MONITORING LSK to show an empty INPUT MONITORING page on the CDU.




Input Monitoring
Figure 209 (Sheet 1)



C20787




Input Monitoring
Figure 209 (Sheet 2)

(b) Use the CDU keyboard to put the port location, port number, word label, and SDI into the CDU scratchpad area.

NOTE: It is not necessary to include initial zeros in the port number or the word label.

(c) Push the top left LSK to replace the adjacent symbols (-/---/---/---) with the location you put into the CDU scratchpad.

(d) Set the type of input monitoring display:

1) To see the data in binary numbers, push the LSK adjacent to the BIN> prompt.
2) To see the data in hexidecimal numbers, push the LSK adjacent to the HEX> prompt.
3) To see the data with engineering units, push the LSK adjacent to the ENGR> prompt (if it is shown).

S 862-048

(3) Do input monitoring on another location:

NOTE: You can do input monitoring on a total of eight different inputs to the EIU (port location E) at the same time, but you can do input monitoring on only one input to the CMC (port location C) at a time.

The steps that follow allow you to start input monitoring on each new location. The page indication in the top right corner for the first location is 1/8. The page indication for the last location is 8/8.

When you do input monitoring of port location C, use only page 1/8.

(a) Push the <INPUT MONITORING LSK to show an empty INPUT MONITORING page on the CDU.

(b) Use the CDU keyboard to put the port location, port number, word label, and SDI into the CDU scratchpad area.

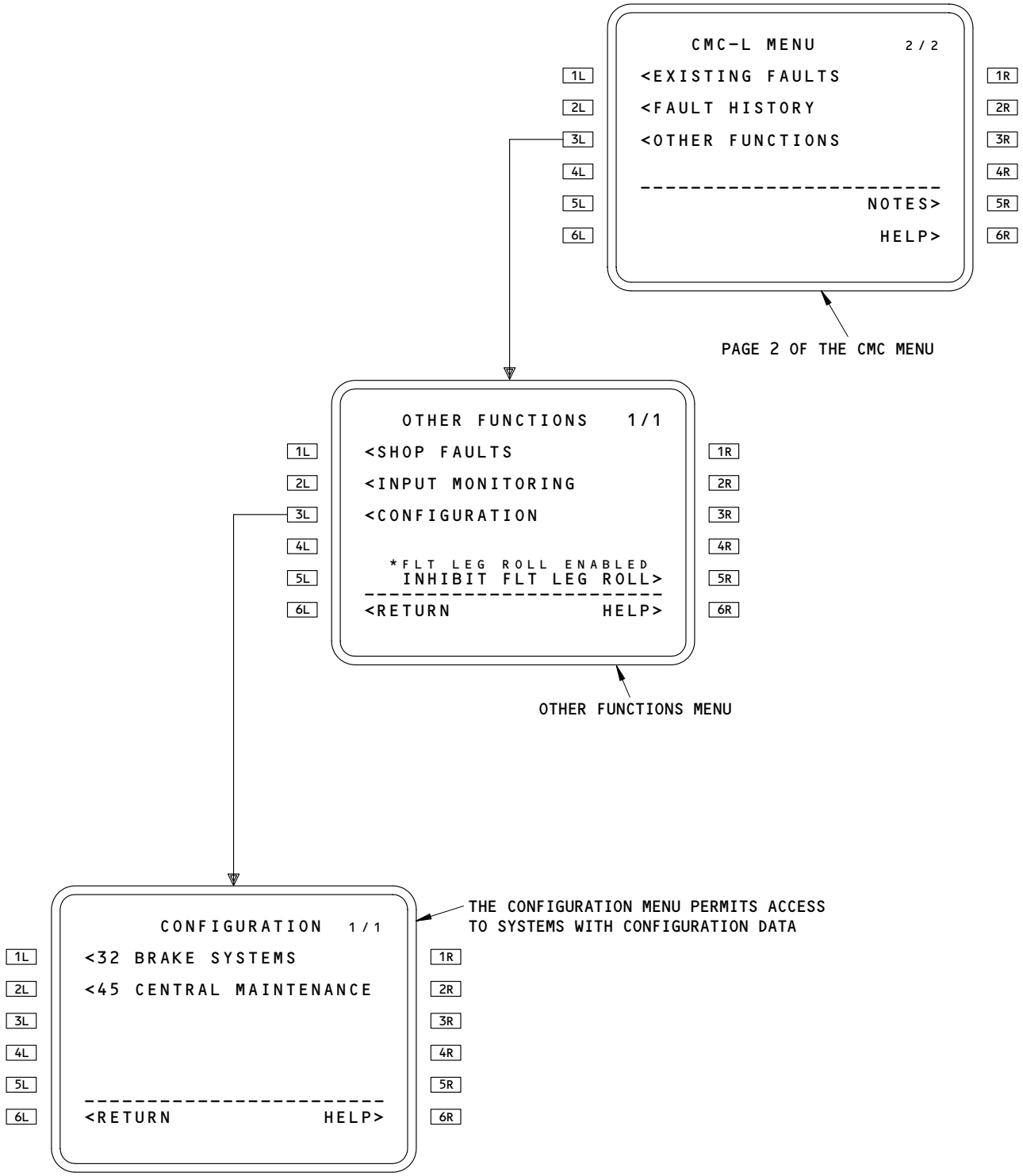
(c) Push the top left LSK to replace the adjacent symbols (-/---/---/---) with the location you put into the CDU scratchpad.

TASK 45-10-00-862-050

10. Configuration Data Page Display (Fig. 201, Fig. 210)

A. General

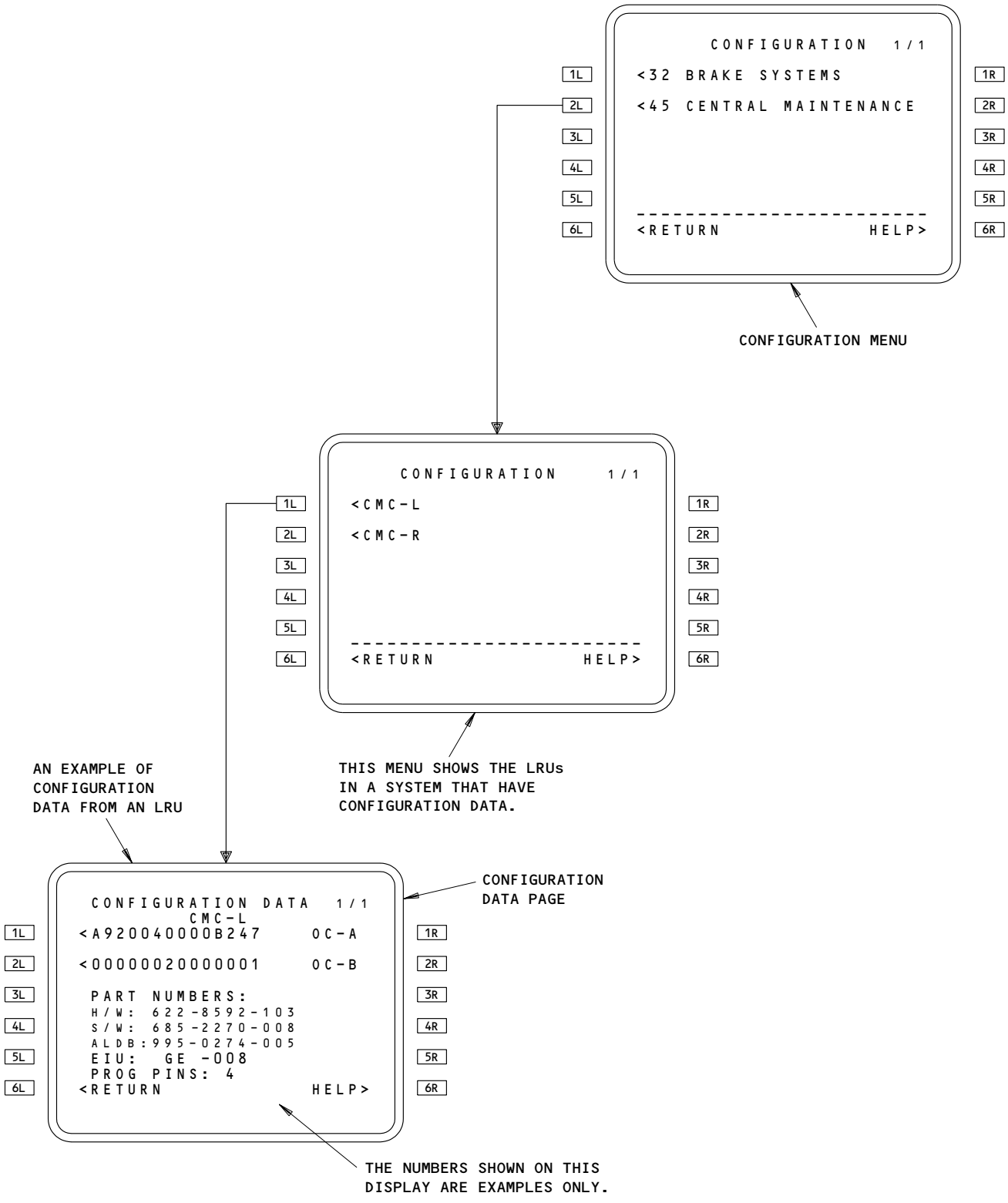
(1) The configuration function lets you look at the configuration of some LRUs. The data supplied includes the CMC option code and the CMC software part number.




Configuration
Figure 210 (Sheet 1)



C20777




Configuration
Figure 210 (Sheet 2)

B. Access
(1) Location zones
221 Control Cabin, LH
222 Control Cabin, RH

C. Procedure

S 862-051
(1) Show page 2 of the CMC MENU on the CDU:
(a) Push the MENU key on the CDU to show the CDU MENU.
(b) Push the <CMC LSK (line select key) to show the CMC MENU.
(c) If the CMC MENU is not shown after you push the CMC LSK, push the <RETURN LSK until you see the CMC MENU.
(d) Push the NEXT PAGE key to show page 2 of the CMC MENU.

S 862-052
(2) Show the CONFIGURATION DATA page for an LRU:
(a) Push the <CONFIGURATION LSK to show the systems that have CONFIGURATION DATA pages.
(b) Push the LSK adjacent to a system prompt to show the LRUs that have CONFIGURATION DATA pages.
(c) Push the LSK adjacent to an LRU prompt to see the CONFIGURATION DATA page for that LRU.

TASK 45-10-00-862-073
11. Manual Flight Leg Control (Fig. 210A)
A. General
(1) You can use manual control of the flight leg to make sure the flight leg does not change during maintenance. You can also use the function to create a separate flight leg for engine run data.
(2) Each manual control operation that you do on one CMC is automatically sent to the other CMC so that the left and right CMCs stay on the same flight leg.
B. Access
(1) Location Zones
221 Control Cabin, LH
222 Control Cabin, RH

C. Prevent Flight Leg Change During Maintenance

NOTE: When you make a selection of INHIBIT FLT LEG ROLL>, you must make a selection of ENABLE FLT LEG ROLL> after maintenance is completed.

S 862-076
(1) Make sure the flight leg does not change during maintenance:
(a) Show page 2 of the CMC MENU on a CDU.
(b) Push the LSK that is adjacent to <OTHER FUNCTIONS.

(c) Push the LSK that is adjacent to INHIBIT FLT LEG ROLL>.

NOTE: *FLT LEG ROLL INHIBITED shows on the CDU. The flight leg will not change in the left CMC or the right CMC.

S 862-077

(2) After maintenance is complete, do these steps so that the flight leg will change for the subsequent flight:
(a) Push the LSK that is adjacent to <OTHER FUNCTIONS on page 2 of the CMC MENU.
(b) Push the LSK that is adjacent to ENABLE FLT LEG ROLL>.

NOTE: *FLT LEG ROLL ENABLED shows. The flight leg of the left CMC and the right CMC will change on the subsequent flight.

D. Separate Flight Leg for Engine Runs

NOTE: When you do engine runs, you must make a selection of ENABLE FLT LEG ROLL> after the engine runs are completed.

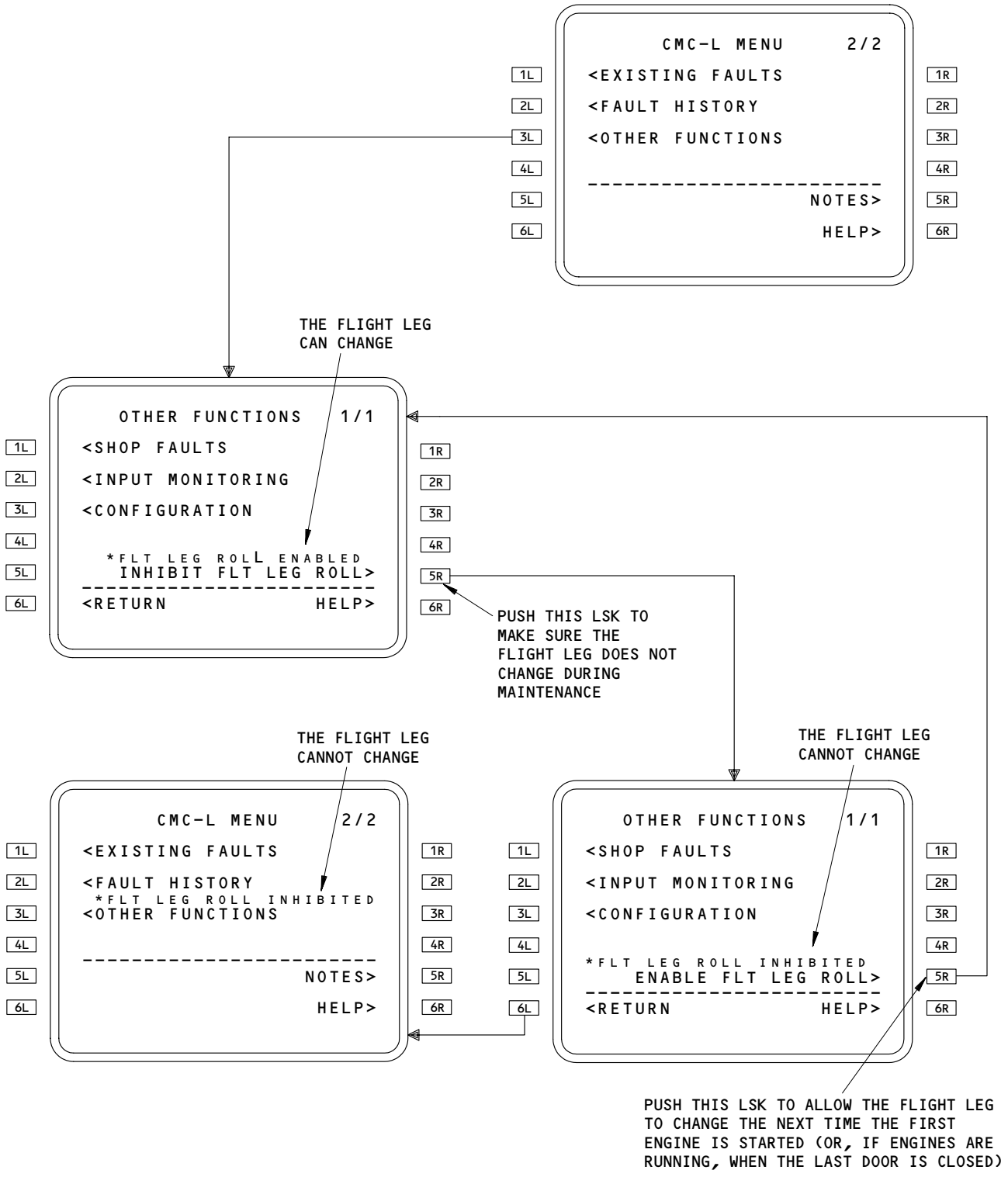
S 862-078

(1) Make a separate flight leg for engine runs:
(a) Make sure that the left and center IRUs or the left and right IRUs are on. (The IRUs can be in ALIGN, NAV, or ATT mode.)
(b) Do the engine runs.

NOTE: When you do the first engine run, the flight leg automatically changes. The CMCs collect all the engine run data in the new flight leg.

S 862-079

(2) When all engine runs are completed, do these steps so that the flight leg will change on the subsequent flight:
(a) Push the LSK that is adjacent to <OTHER FUNCTIONS on page 2 of the CMC MENU.




Manual Flight Leg Control
Figure 210A

(b) Push the LSK that is adjacent to ENABLE FLT LEG ROLL>.

NOTE: FLT LEG ROLL ENABLED shows. The flight leg will change on the subsequent flight in the left and right CMCs.

TASK 45-10-00-972-053

12. Printer Report of a CDU Display (Fig. 211)

A. General

(1) If a CDU display has a REPORT> prompt on it, you can make a printer report of that display. This procedure contains the steps to make a report of a CDU display.

B. Access

(1) Location zones

221 Control Cabin, LH
222 Control Cabin, RH

C. Procedure

S 972-054

(1) Make a printer report of the CDU display:

(a) Push the REPORT> LSK to show the REPORT menu on the CDU.

(b) Push the <PRINTER LSK to start the report.

NOTE: The IN PROGRESS indication is shown while the CMC transmits data to the printer.

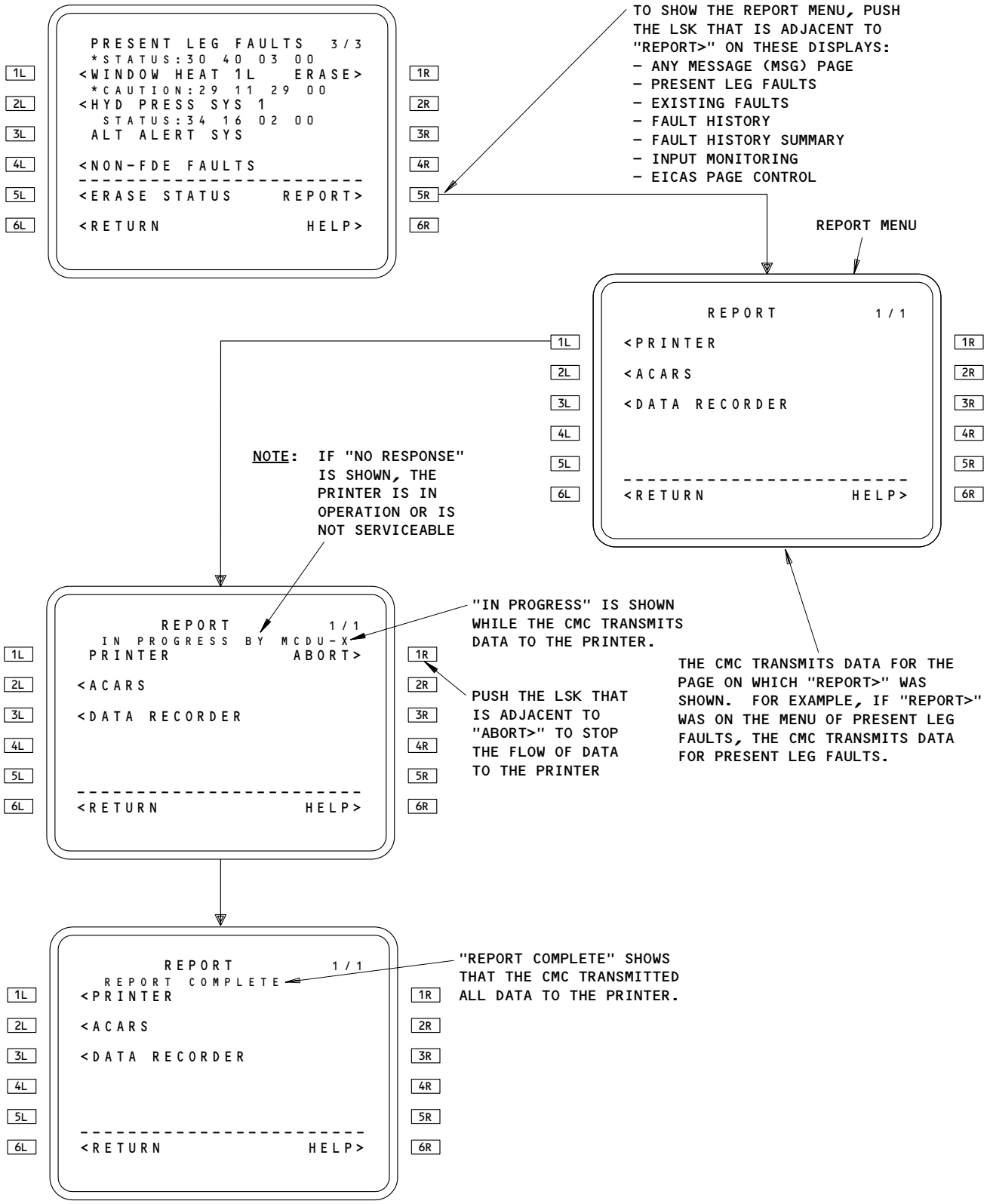
(c) When the REPORT COMPLETE indication is shown, remove the report from the printer.

TASK 45-10-00-972-056

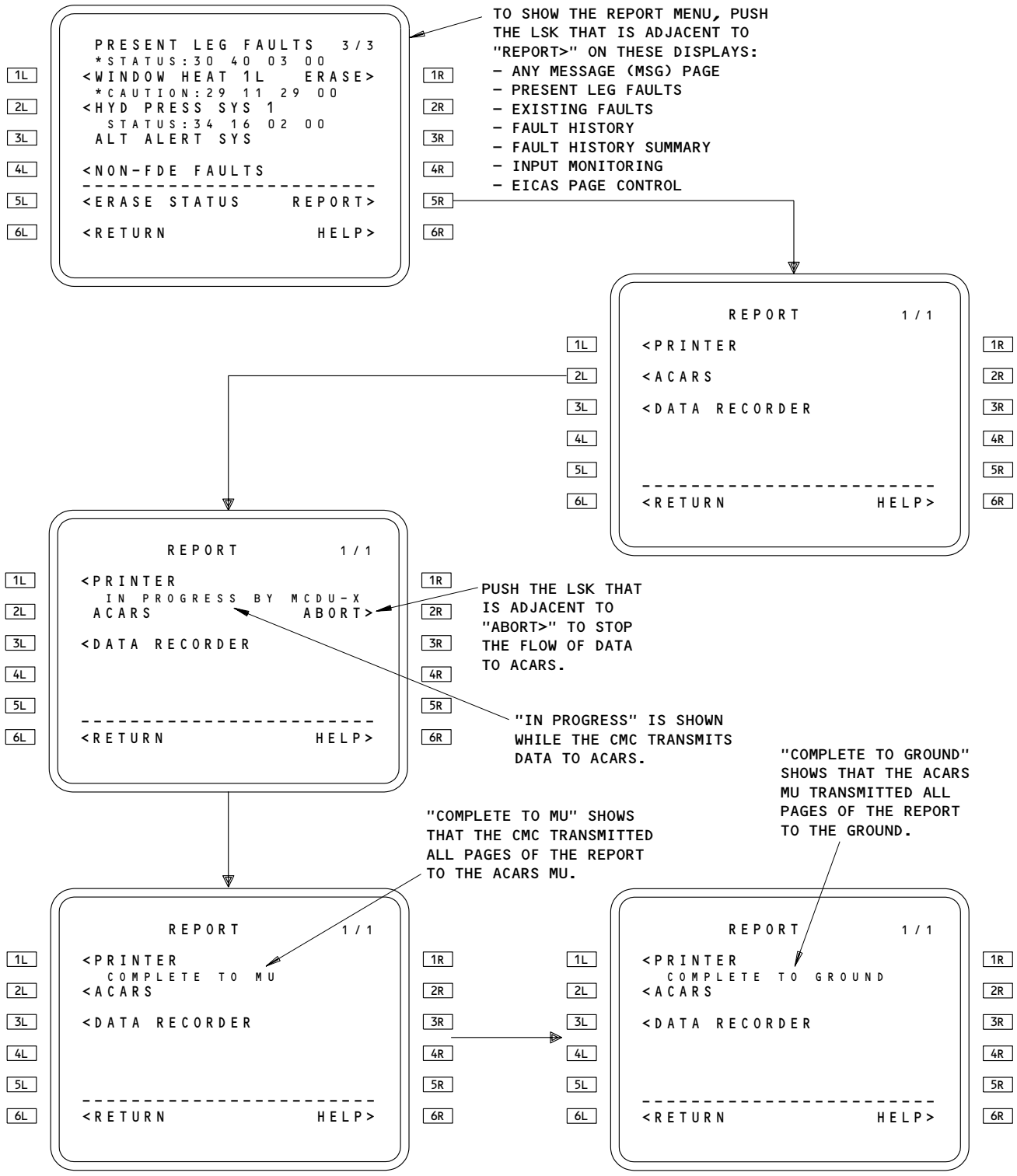
13. ACARS Report of a CDU Display (Fig. 212)

A. General

(1) If a CDU display has a REPORT> prompt on it, you can make an ACARS report of that display. The CMC sends the report to a ground station through ACARS.




Printer Report
Figure 211




ACARS Report
Figure 212

(2) This procedure contains the steps to make a report of a CDU display that has a REPORT> prompt on it.

B. Access

(1) Location zones

221 Control Cabin, LH
222 Control Cabin, RH

C. Procedure

S 972-057

(1) Make an ACARS report of the CDU display:

(a) Push the REPORT> LSK to show the REPORT menu on the CDU.

(b) Push the <ACARS LSK to start the report.

NOTE: The IN PROGRESS indication is shown while the CMC transmits data to the ACARS management unit (MU). The COMPLETE TO MU indication shows that the data was transmitted to the ACARS MU. The COMPLETE TO GROUND indication shows that the data was transmitted to the ground station.

S 862-058

(2) Make sure the COMPLETE TO GROUND indication is shown.

CENTRAL MAINTENANCE COMPUTER SYSTEM - ADJUSTMENT/TEST

1. General
   A. This subject has three tasks. The first task is an operational test of the central maintenance computer system (CMCS). The second task is a ground test of the multiple-input printer. The third task is a system test of the CMCS.

   TASK 45-10-00-715-043

2. Operational Test - Central Maintenance Computer System
   A. General
      (1) This task contains a procedure which makes sure that the left central maintenance computer (CMC) and the right CMC are serviceable.
   B. References
      (1) AMM 24-22-00/201, Manual Control
      (2) AMM 34-61-02/401, Control Display Unit
   C. Access
      (1) Location Zones
          221 Control Cabin, LH
          222 Control Cabin, RH

   D. Preconditions

      S 865-129
      (1) These conditions are necessary for this task:
          (a) Electrical power on (AMM 24-22-00/201).
          (b) CDU installed (AMM 34-61-02/401).
   E. Left CMC Test

      S 865-000
      (1) Supply electrical power (AMM 24-22-00/201)

      S 865-092
      (2) Show the CMC MENU on the CDU:
          (a) Push the MENU key on the CDU to show the MENU.
          (b) Push the line select key (LSK) that is adjacent to <CMC to show the CMC MENU.
          (c) If <RETURN shows after you push the LSK, push the LSK that is adjacent to <RETURN until you see the CMC MENU.

      S 715-095
      (3) Make sure that CMC-L MENU shows at the top of the display.

          NOTE: The left CMC is serviceable if CMC-L MENU shows. The left CMC is not serviceable if CMC-R MENU shows.

F. Right CMC Test

S 865-049

(1) Push the NEXT PAGE key to show page 2 of the CMC MENU.

S 715-096

(2) Make sure CMCS message 45006 (CMC-R>CMC-L BUS FAIL) is not in EXISTING FAULTS:

NOTE: The right CMC is serviceable if CMCS message 45006 is not in EXISTING FAULTS.

(a) Push the LSK that is adjacent to <EXISTING FAULTS.
(b) Look for <45 CENTRAL MAINTENANCE. (Push the NEXT PAGE key to see more pages.)
(c) If <45 CENTRAL MAINTENANCE shows, push the adjacent LSK.
(d) Look for CMCS message 45006 (CMC-R>CMC-L BUS FAIL). (Push the NEXT PAGE key to look at each message page.)

S 865-080

(3) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

TASK 45-10-00-745-075

3. Ground Test - Multiple-Input Printer

A. General

(1) During this test the printer does an internal test. If the printer has no failures, it makes a printout of a page of characters. The lights on the front panel of the printer come on during the test.

B. References

(1) AMM 24-22-00/201, Manual Control
(2) AMM 34-61-02/401, Control Display Unit
(3) AMM 45-10-00/501, Central Maintenance Computer System

C. Access

(1) Location Zones

221 Control Cabin, LH
222 Control Cabin, RH

D. Preconditions

S 865-130
(1) These conditions are necessary for this task:
(a) Electrical power on (AMM 24-22-00/201).
(b) CDU installed (AMM 34-61-02/401).
(c) Central Maintenance Computer System (CMCS), serviceable (AMM 45-10-00/501).

E. Prepare for the Test

S 865-076
(1) Supply electrical power (AMM 24-22-00/201).

S 865-077
(2) Prepare the CDU for the test:
(a) Push the MENU key on the CDU to show the MENU.
(b) Push the line select key (LSK) that is adjacent to <CMC to show the CMC MENU.
(c) If <RETURN shows, push the LSK that is adjacent to <RETURN until you see the CMC MENU.
(d) Push the LSK that is adjacent to <GROUND TESTS to show the GROUND TESTS menu.
(e) Push the NEXT PAGE key until you find <45 CENTRAL MAINTENANCE.
(f) Push the LSK that is adjacent to <45 CENTRAL MAINTENANCE to show the GROUND TESTS menu for the central maintenance computer system.

F. Printer Ground Test

S 745-078
(1) Push the LSK that is adjacent to <PRINTER.

NOTE: IN PROGRESS shows during the test.

S 745-102
(2) When IN PROGRESS goes out of view, look for PASS or FAIL> adjacent to <PRINTER.

NOTE: If a PASS indication shows, no failures occurred during the test.

(a) If FAIL> shows:
1) Push the LSK that is adjacent to FAIL> to see the GROUND TEST MSG pages for the failure.
2) Push the NEXT PAGE key until you find all the GROUND TEST MSG pages.
3) Make a list of all CMCS messages, CMCS message numbers, and ATA numbers that show on the GROUND TEST MSG pages.
4) Go the the CMCS Message Index of the Fault Isolation Manual (FIM) to find the corrective action for each CMCS message.

G. Put the Airplane in Its Usual Condition

S 865-079

(1) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

TASK 45-10-00-735-053

4. System Test - Central Maintenance Computer System

A. General

(1) This task contains two procedures. The first procedure is a configuration check of the left central maintenance computer (CMC). The second procedure is a configuration check of the right CMC.

B. References

(1) AMM 24-22-00/201, Manual Control
(2) AMM 31-61-00/501, Integrated Display System
(3) AMM 34-61-02/401, Control Display Unit
(4) AMM 45-10-01/201, CMC Option Code Installation

C. Access

(1) Location Zones

117 Electrical and Electronics Compartment, LH
221 Control Cabin, LH
222 Control Cabin, RH

D. Preconditions

S 865-131

(1) These conditions are necessary for this task:
(a) Electrical power on (AMM 24-22-00/201).
(b) Integrated Display System (IDS), serviceable (AMM 31-61-00/501).
(c) CDU installed (AMM 34-61-02/401).

E. Prepare for the Test

S 865-103

(1) Supply electrical power (AMM 24-22-00/201).

S 865-104

(2) Show the CONFIG maintenance page on the auxiliary EICAS:
(a) Push the MENU key on a CDU.
(b) Push the line select key (LSK) that is adjacent to <CMC to show the CMC-L MENU.
(c) If <RETURN shows, push the LSK that is adjacent to <RETURN until you see the CMC-L MENU.
(d) Push the LSK that is adjacent to <EICAS MAINT PAGES.
(e) Push the NEXT PAGE key.

(f) Push the LSK that is adjacent to <31 CONFIG.
(g) Push the LSK that is adjacent to <DISPLAY.

F. Configuration Check of The Left CMC

S 865-060
(1) Show the CONFIGURATION DATA page for the left CMC on the CDU:
(a) Push the LSK that is adjacent to <RETURN until the CMC-L MENU shows.
(b) Push the NEXT PAGE key to show page 2 of the CMC-L MENU.
(c) Push the LSK that is adjacent to <OTHER FUNCTIONS.
(d) Push the LSK that is adjacent to <CONFIGURATION.
(e) Push the LSK that is adjacent to <45 CENTRAL MAINTENANCE.
(f) Push the LSK that is adjacent to <CMC-L.
(g) Make sure that CMC-L shows on the CONFIGURATION DATA page.

S 755-105
(2) Make sure that the correct CMC option code shows adjacent to OC-A and OC-B (AMM 45-10-01/201).

S 755-061

CAUTION: MAKE SURE YOU KNOW THE CORRECT SOFTWARE PART NUMBER FOR THE CMC, WHEN YOU LOOK AT THE SOFTWARE PART NUMBER ON THE CDU. FOR THE CMC TO BE AN APPROVED INSTALLATION, THE CORRECT SOFTWARE PART NUMBER MUST BE INSTALLED.

(3) Make sure the correct CMC software part number shows adjacent to the S/W.
(a) If the part number is incorrect, install software in the left CMC (AMM 45-10-10/201).

S 755-099
(4) Make sure that the part number of the airline data base shows adjacent to ALDB.
(a) If the part number does not show or is incorrect, install the airline data base in the left CMC (AMM 45-10-10/201).

S 755-107
(5) Make sure that this indication shows adjacent to EIU: GE -XXX

NOTE: XXX is the IDS software version number.

S 755-110
(6) Make sure that the numbers XXX agree with the last three digits of the IDS software part number on the CONFIG page on the auxiliary EICAS.

S 755-064
(7) Make sure that this indication shows adjacent to PROG PINS: 4

G. Configuration Check of The Right CMC

S 865-069

(1) Show the CONFIGURATION DATA page for the right CMC on a CDU:
  (a) Push the LSK that is adjacent to <RETURN.
  (b) Push the LSK that is adjacent to <CMC-R.
  (c) Make sure that CMC-R shows on the CONFIGURATION DATA page.

S 755-111

(2) Make sure that the correct CMC option code shows adjacent to OC-A and OC-B (AMM 45-10-01/201).

S 755-070

CAUTION: MAKE SURE YOU KNOW THE CORRECT SOFTWARE PART NUMBER FOR THE CMC, WHEN YOU LOOK AT THE SOFTWARE PART NUMBER ON THE CDU. FOR THE CMC TO BE AN APPROVED INSTALLATION, THE CORRECT SOFTWARE PART NUMBER MUST BE INSTALLED.

(3) Make sure that the correct CMC software part number shows adjacent to S/W.
  (a) If the part number is incorrect, install software in the right CMC (AMM 45-10-10/201).

S 755-097

(4) Make sure that the part number of the airline data base shows adjacent to ALDB.
  (a) If the part number does not show or is incorrect, install the airline data base in the right CMC (AMM 45-10-10/201).

S 755-114

(5) Make sure that this indication shows adjacent to EIU: GE -XXX

NOTE: XXX is the IDS software version number.

S 755-116

(6) Make sure that the numbers XXX agree with the last three digits of the IDS software part number on the CONFIG page on the auxiliary EICAS.

S 755-086
(7) Make sure that this indication shows adjacent to PROG PINS: 8

S 865-074
(8) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

## CENTRAL MAINTENANCE COMPUTER - OPTION CODE INSTALLATION

1. General
   A. This subject has one task. The task is to install the option code in the central maintenance computer (CMC).
   B. It is necessary to use one of the CDUs to install the option code.

   TASK 45-10-01-472-061

2. CMC Option Code Installation
   A. General
      (1) The CMC must contain the correct option code. Without a satisfactory option code, the CDU shows only the CMC CONFIGURATION DATA page when you push the <CMC LSK. You cannot use the other CMC functions until the CMC contains a satisfactory option code.
      (2) Option code installation is necessary after you replace the two CMCs or after you install software in the two CMCs. Some service bulletins also refer you to this procedure to change the option code. The option code is automatically transmitted from one CMC to the other. Thus, it is necessary to install the option code only once for the two CMCs. It is not necessary to install the option code after you replace only one CMC or after you install software in only one CMC.
   B. References
      (1) AMM 24-22-00/201, Manual Control
   C. Access
      (1) Location Zones
          221 Control Cabin, LH
          222 Control Cabin, RH

   D. Prepare for the Option Code Installation

      S 862-074
      (1) Supply electrical power (Ref 24-22-00/201).

      S 862-076
      (2) Make sure the captain's clock and the first officer's clock are set to the correct date and time (GMT ±12 seconds).

      S 862-075
      (3) Show the CONFIGURATION DATA page on a CDU:

          NOTE: The CONFIGURATION DATA page will show automatically if you replaced the two CMCs or if you installed software in the two CMCs immediately before this task.

          (a) Push the MENU key on a CDU.

(b) Push the line select key (LSK) that is adjacent to <CMC.
(c) If <RETURN shows, push the LSK that is adjacent to <RETURN until you see the CMC MENU.
(d) Push the NEXT PAGE key to show page 2 of the CMC MENU.
(e) Push the LSK that is adjacent to <OTHER FUNCTIONS.
(f) Push the LSK that is adjacent to <CONFIGURATION.
(g) Push the LSK that is adjacent to <45 CENTRAL MAINTENANCE.
(h) Push the LSK adjacent to <CMC-L.

NOTE: The CONFIGURATION DATA page will show after approximately 10 seconds.

E. Option Code Installation

S 712-077
(1) Find the applicable option code for the airplane:

(a) KLM 001-005, 025-035;
ABE1CA456453BA (OC-A)
00F42A249A9C07 (OC-B)

(b) KLM 036, 037;
These are the option codes:
1) WITHOUT SATCOM;
ABE1CA45605376 (OC-A)
00F02A249ABC07 (OC-B)

2) WITH SATCOM;
ABE1CA456453D6 (OC-A)
00F42A249ABC07 (OC-B)

(c) KLM 038-999;
ABE1CA45605376 (OC-A)
00F02A249ABC07 (OC-B)

S 472-067

(2) Install the CMC option code:

(a) If the CDU scratchpad is not clear, push and hold the CLR key until the scratchpad is clear.

NOTE: The CDU scratchpad is the area at the bottom of the CDU display.

(b) Use the CDU keyboard to put in the first 14 hexadecimal numbers of the option code (OC-A).

(c) Make sure that the first 14 numbers of the option code (OC-A) are shown in the scratchpad.

(d) Push the LSK on the left side of the OC-A prompt.

(e) Make sure the first 14 numbers of the option code are shown adjacent to the OC-A prompt.

(f) When ENTER OC-B is shown in the scratchpad, push and hold the CLR key until the scratchpad is clear.

(g) Use the CDU keyboard to put in the second 14 hexadecimal numbers of the option code (OC-B).

(h) Make sure the second 14 numbers of the option code (OC-B) are shown in the scratchpad.

(i) Push the LSK on the left side of the OC-B prompt.

(j) Make sure the second 14 numbers of the option code (OC-B) are shown adjacent to the OC-B prompt.

F. Put the Airplane in Its Usual Condition

S 862-069

(1) Remove electrical power if it is not necessary (Ref 24-22-00/201).

CENTRAL MAINTENANCE COMPUTER - REMOVAL/INSTALLATION

1. General
   A. This subject contains two tasks. The first task is the removal of a central maintenance computer (CMC). The second task is the installation of a CMC. Each installation task includes steps to do a check of these part numbers: CMC software, CMCS airline data base, and IDS software. A CDU is necessary to do the part number checks.
   B. If CMC software was not installed in the shop, or if the CMC software part number is incorrect, you must install software in the replacement CMC. The data loader is necessary to install software.
   C. When a new CMC is installed, the fault history data and the option code in the other CMC are automatically transmitted to the new CMC. To keep the data with the airplane, replace only one CMC at a time.
   D. The circuit breaker for the right CMC must be opened before the circuit breaker for the left CMC. This sequence of steps makes sure that CMCS messages from other flight legs do not show incorrectly as non-FDE faults in the present flight leg.
   E. The CMCs (left and right) are installed in the main equipment center on shelf E1-4 of the electronic equipment rack.

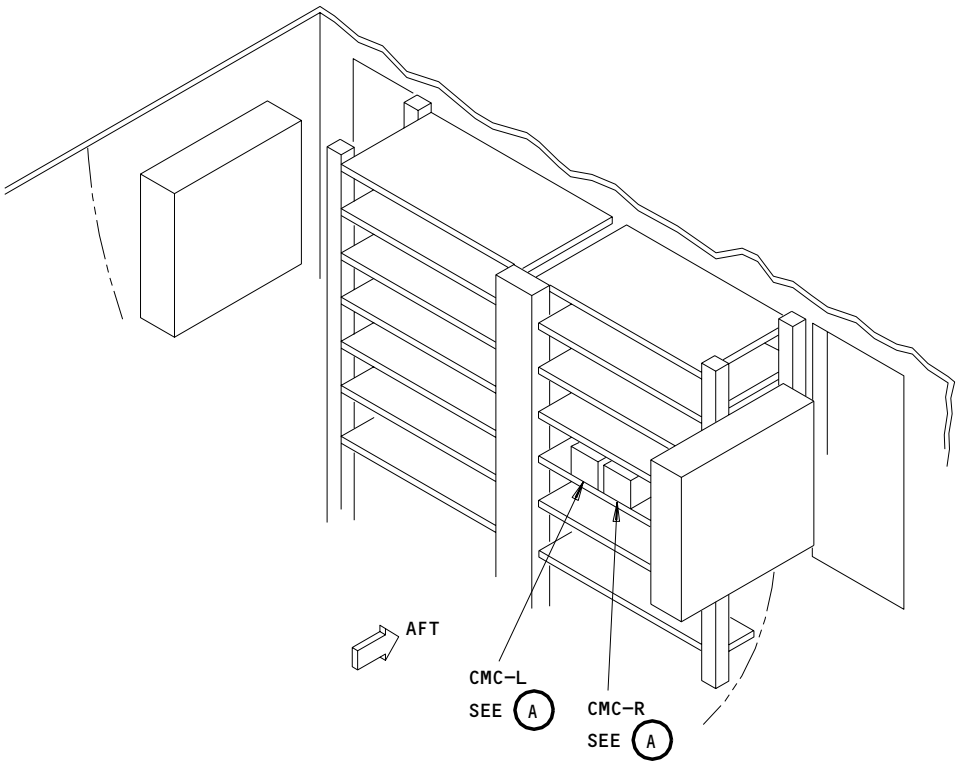
TASK 45-10-01-024-050

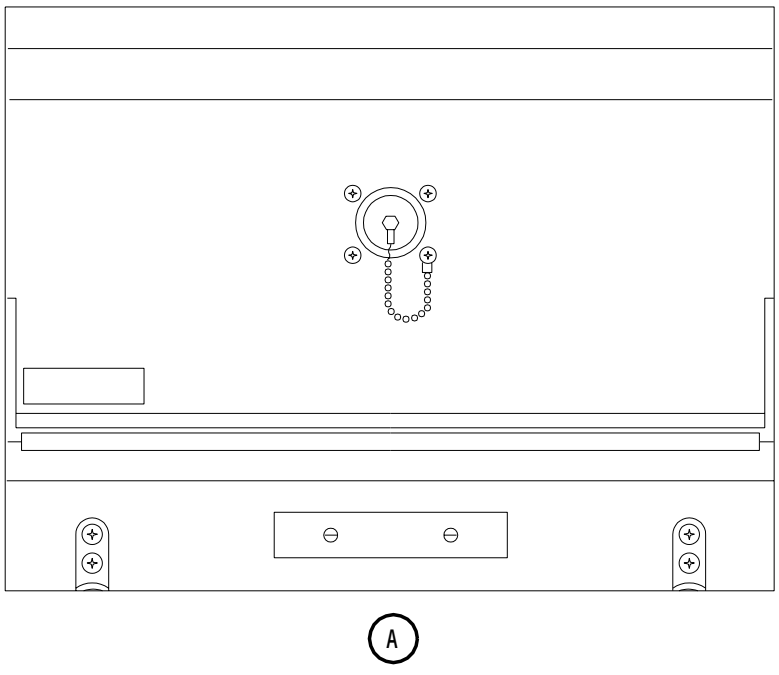
2. Central Maintenance Computer Removal
   A. References
      (1) AMM 20-11-22/401, Rack-Mounted Electrical/Electronic Module
   B. Access
      (1) Location Zone
          117 Electrical and Electronics Compartment, LH

   C. Procedure

      S 864-163
      (1) Open these circuit breakers in the given sequence and attach DO-NOT-CLOSE tags:
          (a) P18O DC Power Distribution Panel
              1) 18OD16 CMC-SW

          (b) P415 Power Distribution Center - Right Panel
              1) 415L39 CMC RIGHT




Central Maintenance Computer Location
Figure 401

(c) P414 Power Distribution Center - Left Panel
1) 414L8 CMC LEFT

S 024-052

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CMC. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE FROM YOUR BODY CAN CAUSE DAMAGE TO THE CMC.

(2) Remove the applicable CMC (AMM 20-11-22/401).

TASK 45-10-01-424-165

3. Central Maintenance Computer Installation

A. General
(1) To keep the fault history data and the CMC option code on the airplane, replace one CMC at a time.

B. References
(1) AMM 20-11-22/401, Rack-Mounted Electrical/Electronic Module
(2) AMM 24-22-00/201, Manual Control
(3) AMM 45-10-10/201, CMC Software Installation

C. Access
(1) Location Zones
117 Electrical and Electronics Compartment, LH
221 Control Cabin, LH
222 Control Cabin, RH

D. Procedure

S 864-142
(1) Supply electrical power (AMM 24-22-00/201).

S 864-166
(2) Make sure the captain's clock and the first officer's clock are set to the correct date and time (GMT ±12 seconds).

S 864-143
(3) Make sure these circuit breakers are open with DO-NOT-CLOSE tags attached:

NOTE: The circuit breakers must be opened in the given sequence.

(a) P18O DC Power Distribution Panel
1) 18OD16 CMC-SW

(b) P415 Power Distribution Center - Right Panel
1) 415L39 CMC RIGHT

(c) P414 Power Distribution Center - Left Panel
1) 414L8 CMC LEFT

S 424-144

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CMC. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE FROM YOUR BODY CAN CAUSE DAMAGE TO THE CMC.

(4) Install the replacement CMC (AMM 20-11-22/401).

S 864-145

(5) Make sure these circuit breakers are closed:

NOTE: These circuit breakers must be closed to make sure that the CMCs receive data from the EIUs.

(a) P7 Overhead Circuit Breaker Panel
1) 7F9 EIU L
2) 7F10 EIU C
3) 7F15 EIU R

S 864-146

(6) If you installed the left CMC, remove the DO-NOT-CLOSE tags and close these circuit breakers:
(a) P18O DC Power Distribution Panel
1) 18OD16 CMC-SW

(b) P414 Power Distribution Center - Left Panel
1) 414L8 CMC LEFT

S 864-147

(7) If you installed the right CMC, remove the DO-NOT-CLOSE tags and close these circuit breakers:
(a) P18O DC Power Distribution Panel
1) 18OD16 CMC-SW

(b) P415 Power Distribution Center - Right Panel
1) 415L39 CMC RIGHT

S 864-148
(8) Push the MENU key on a CDU.

S 474-149
(9) If <CMC does not show on the menu after five minutes, install software in the replacement CMC (AMM 45-10-10/201).

S 864-150
(10) When <CMC shows, push the line select key (LSK) that is adjacent to <CMC.

NOTE: After selection of <CMC, the CONFIGURATION DATA page will show on the CDU. The indication EIU DOWNLOAD IN PROGRESS followed by CONFIGURING TO EIU'S will show in the scratchpad while the CMC receives data from the EIUs. The option code will not show.

S 754-152
(11) When the indications EIU DOWNLOAD IN PROGRESS and CONFIGURING TO EIU'S go out of view, make sure that GE -XXX shows adjacent to EIU.

NOTE: XXX is the IDS software version number.

S 754-155
(12) Make sure that the numbers XXX agree with the last three digits of the IDS software part number.
(a) If NO DATABASE shows adjacent to EIU, open and then close the CMC circuit breaker that is closed and repeat the previous steps.

S 754-156

CAUTION: MAKE SURE YOU KNOW THE CORRECT SOFTWARE PART NUMBER FOR THE CMC, WHEN YOU LOOK AT THE SOFTWARE PART NUMBER ON THE CDU. FOR THE CMC TO BE AN APPROVED INSTALLATION, THE CORRECT SOFTWARE PART NUMBER MUST BE INSTALLED.

(13) Make sure that the correct CMC software part number shows adjacent to S/W.
(a) If the part number is incorrect, install software in the replacement CMC (AMM 45-10-10/201).

S 754-157
(14) Make sure that the part number of the airline data base shows adjacent to ALDB.
(a) If the part number does not show or is incorrect, install the airline data base in the replacement CMC (AMM 45-10-10/201).

S 864-158
(15) If you installed the left CMC, remove the DO-NOT-CLOSE tag and close this circuit breaker:
(a) P415 Power Distribution Center - Right Panel
1) 415L39 CMC RIGHT

S 864-159
(16) If you installed the right CMC, remove the DO-NOT-CLOSE tag and close this circuit breaker:
(a) P414 Power Distribution Center - Left Panel
1) 414L8 CMC LEFT

S 754-160
(17) If you installed the left CMC, make sure that the option code shows after a minimum of three minutes.

NOTE: The option code is automatically transmitted from the right CMC to the left CMC within three minutes.

S 864-161
(18) If you installed the right CMC, do these steps to make sure the right CMC receives the option code:
(a) Stop for 3 minutes to let the right CMC receive the option code and fault history data from the left CMC.
(b) When <CMC shows, push the LSK that is adjacent to <CMC.

NOTE: The indication EIU DOWNLOAD IN PROGRESS followed by CONFIGURING TO EIU'S will show in the scratchpad of the CDU while the CMC receives data from the EIUs.

(c) When all prompts show on the CMC MENU, do these steps to show the CONFIGURATION DATA page for the right CMC:
1) Push the NEXT PAGE key.
2) Push the LSK that is adjacent to <OTHER FUNCTIONS.
3) Push the LSK that is adjacent to <CONFIGURATION.
4) Push the LSK that is adjacent to <45 CENTRAL MAINTENANCE.
5) Push the LSK that is adjacent to <CMC-R.

(d) Make sure that the option code shows.
1) If the option code does not show, do these steps:
a) Push the LSK that is adjacent to <RETURN.
b) Push the LSK that is adjacent to <CMC-R.

S 864-162

(19) Remove electrical power if it is not necessary (AMM 24-22-00/201).

PRINTER - SERVICING

1. General
   A. This procedure tells you how to install a new roll of paper in the multiple-input printer and the full-format printer.
   B. The printer is in the flight compartment in the aft electronics panel.

   TASK 45-10-02-613-076
2. KLM 001-034;
   Multiple-Input Printer Paper Installation (Fig. 301)
   A. Consumable Materials
      (1) G00967 - Paper, 8050917-001
   B. References
      (1) AMM 24-22-00/201, Manual Control
   C. Access
      (1) Location Zones
          221 Control Cabin, LH
          222 Control Cabin, RH

   D. Procedure

      S 863-047
      (1) Open this circuit breaker and attach a DO-NOT-CLOSE tag:
          (a) P415 Power Distribution Center - Right Panel
              1) 415L37 PRINTER

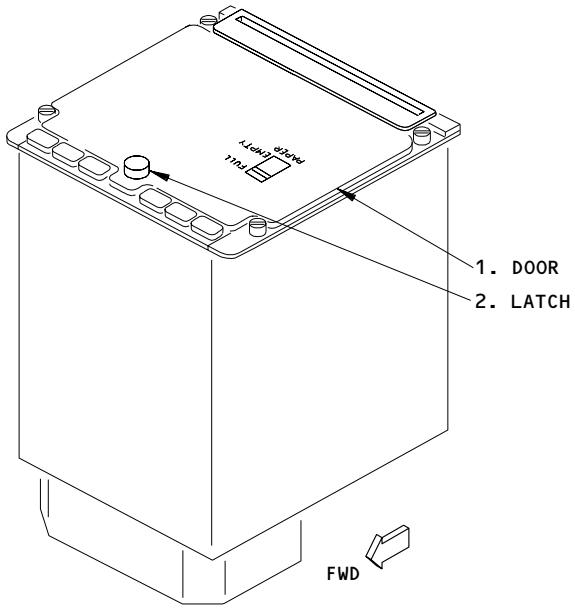
      S 013-048
      (2) Turn the latch (2) on the front face of the printer counterclockwise until it is free and pull the door (1) open.

      S 023-049
      (3) Remove the empty spool:
          (a) Push the paper spool (4) to the right side of the spindle (3) to disengage the left end of the spindle.
          (b) Pull the left end of the spindle away from the printer.
          (c) Remove and discard the cardboard tube.

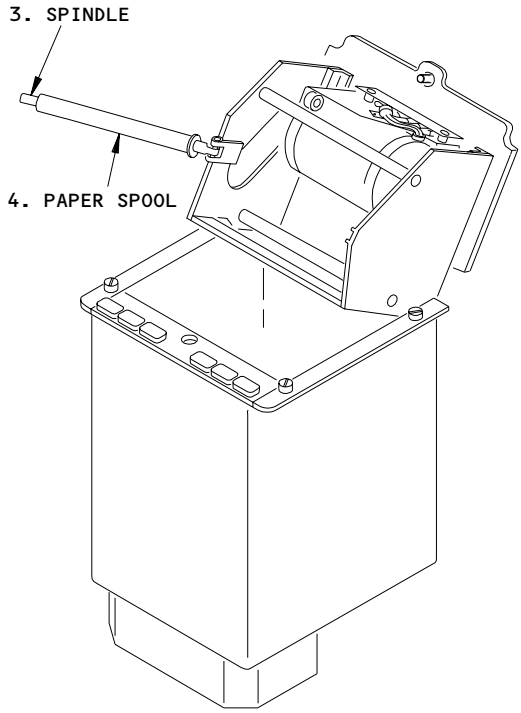
      S 423-050
      (4) Install a new roll of paper:
          (a) Put a new roll of paper (5) on the spindle.

              NOTE: The paper must wind counterclockwise off the roll when you look at the free end of the spindle (Fig. 301, step 3).

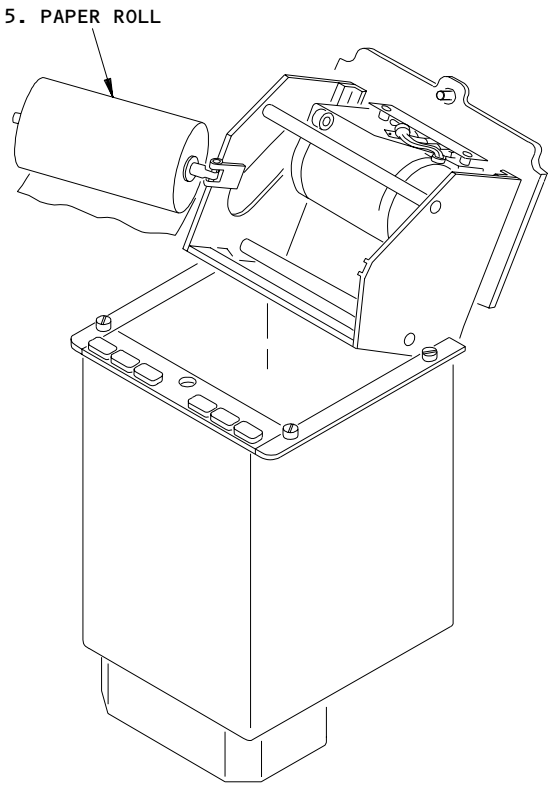
          (b) Push the free end of the spindle into the fastener.



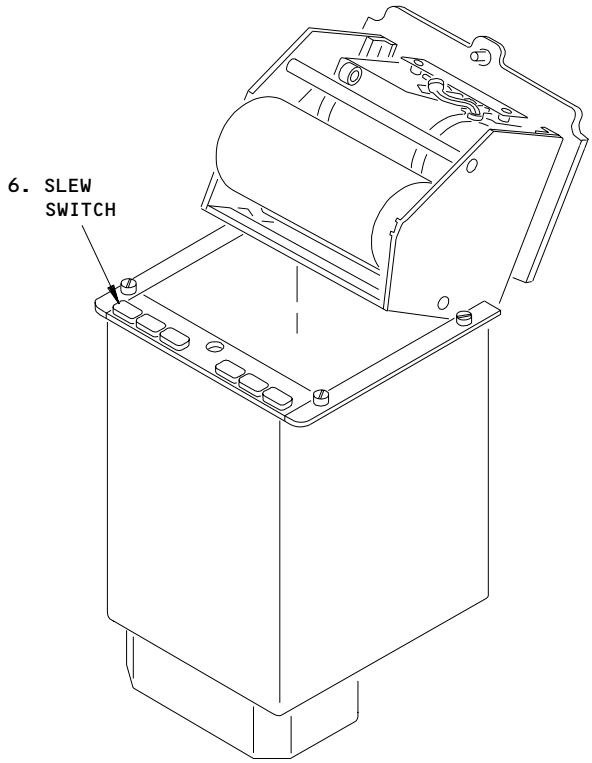

STEP 1




STEP 2




STEP 3




STEP 4

Multiple-Input Printer Servicing
Figure 301



829343

S 413-051
(5) Close the printer door and turn the latch clockwise.

S 863-052
(6) Remove the DO-NOT-CLOSE tag and close this circuit breaker:
(a) P415 Power Distribution Center - Right Panel
1) 415L37 PRINTER

S 863-053
(7) Supply electrical power (AMM 24-22-00/201).

S 713-054
(8) Push the SLEW switch (6) on the printer front panel until paper comes out of the slot.

S 863-055
(9) Remove electrical power if it is not necessary (AMM 24-22-00/201).

TASK 45-10-02-613-080

3. KLM 035-099;
Full-Format Printer Paper Installation (Fig. 302)
A. Consumable Materials
(1) G01521 - Paper, 705822-111 (8.5 inch wide roll, thermally sensitive outward)
(a) Sources:
1) Miltope Corporation
1770 Walt Whitman Road
Melville, New York 11747
2) Eastern Data Paper Systems
61 Stevens Avenue
Little Falls, New Jersey 07424
3) Ludlow Recording Products
2 Ludlow Park
Chicopee, Massachusetts 01021

B. References
(1) AMM 24-22-00/201, Manual Control

C. Access
(1) Location Zones
221 Control Cabin, LH
222 Control Cabin, RH

D. Procedure

S 863-067
(1) Open this circuit breaker and attach a DO-NOT-CLOSE tag:
(a) P415 Power Distribution Center - Right Panel
1) 415L37 PRINTER

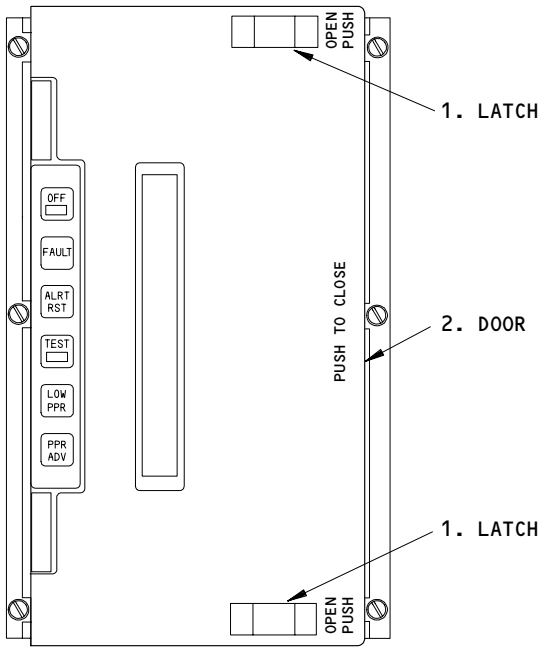
S 013-068
(2) Push the two latches (1) on the front of the printer and open the door (2).

S 023-069
(3) Remove the empty spool (4):
(a) Pull the empty spool and spindle out of the spindle clamps (3).
(b) Pull the spindle (5) out of the empty spool (4) and discard the spool.

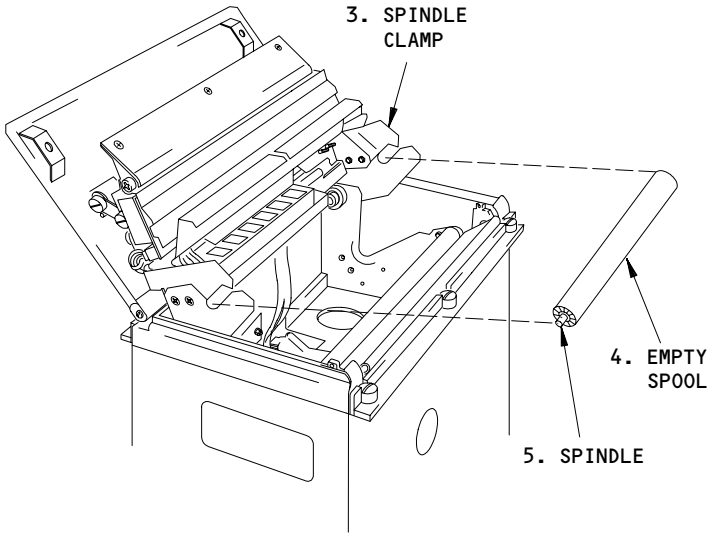
S 423-070
(4) Install a new roll of paper:
(a) Push the spindle (5) into a new roll of paper (6).
(b) Push the ends of the spindle (5) into the spindle clamps (3).
(c) Make sure the paper extends over the edge of the printer.

S 413-071
(5) Close the printer door and push until it latches.

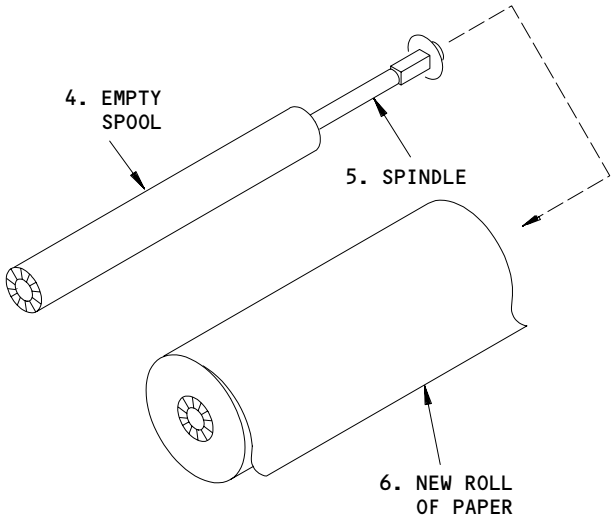
S 863-072
(6) Remove the DO-NOT-CLOSE tag and close this circuit breaker:
(a) P415 Power Distribution Center - Right Panel
1) 415L37 PRINTER



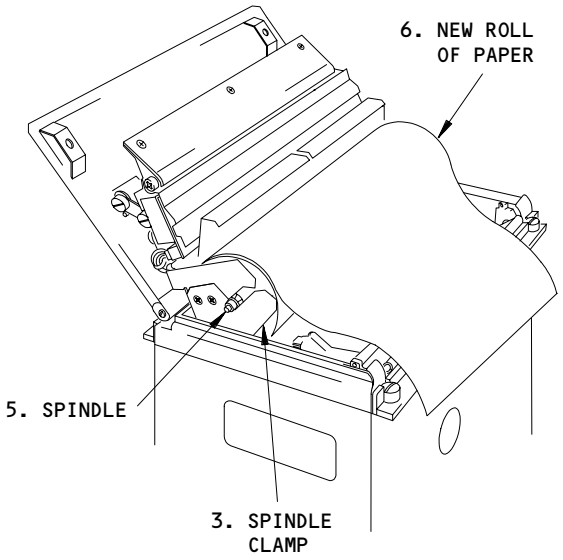

STEP 1




STEP 2




STEP 3




STEP 4

Multiple-Input Printer Servicing
Figure 302



C81832

## PRINTER - REMOVAL/INSTALLATION

1. General
   A. This procedure tells you how to remove and install the printer. You can use this procedure for the multiple-input printer or the full-format printer.
   B. The printer is in the flight compartment in the aft electronics panel.

TASK 45-10-02-024-038

2. Printer Removal (Fig. 401)
   A. Access
      (1) Location Zones
          221 Control Cabin, LH
          222 Control Cabin, RH

   B. Procedure

      S 864-023
      (1) Open these circuit breakers and attach DO-NOT-CLOSE tags:
          (a) P415 Power Distribution Center - Right Panel
              1) 415L37 PRINTER

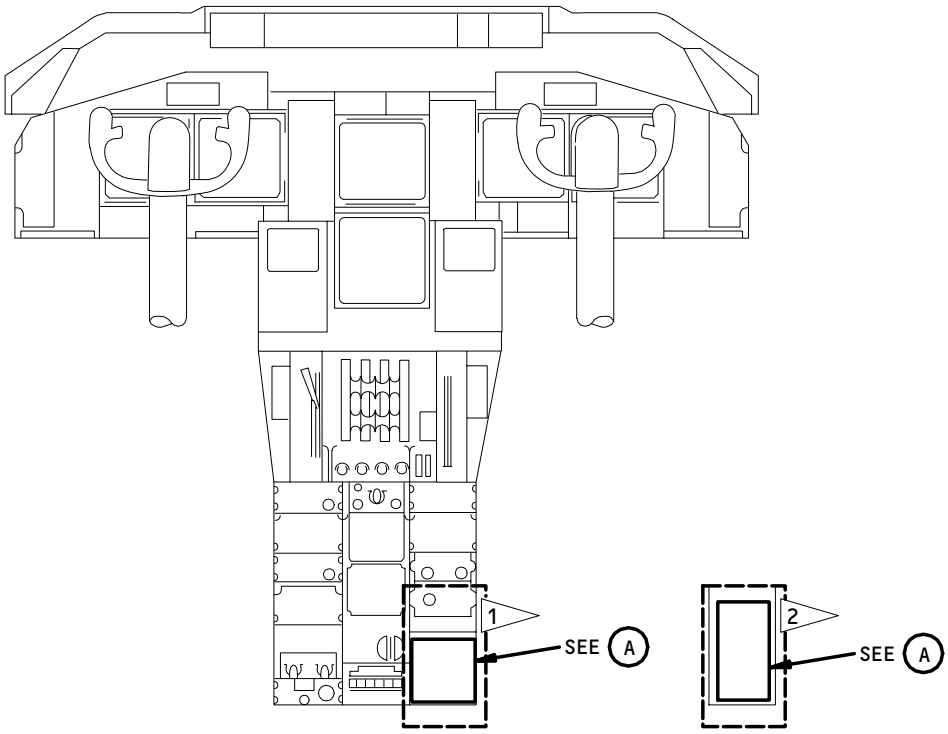
          (b) P6 Main Power Distribution Panel
              1) 6E22 FLT DK LIGHTS PANEL CONT STAND

      S 864-040
      (2) Make sure the printer door is closed.

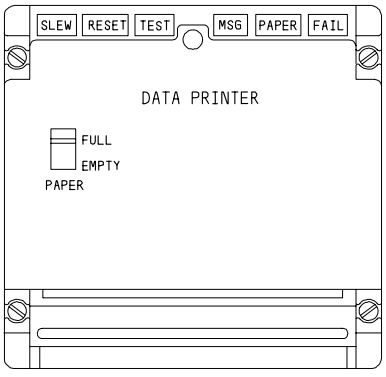
      S 024-025
      (3) Remove the printer:
          (a) Release the fasteners on the front of the printer.
          (b) Pull the printer out slowly until you can get access to the electrical connector on the rear of the printer.
          (c) Disconnect the electrical connector from the printer.
          (d) Install dust caps on the electrical connectors.

TASK 45-10-02-424-039

3. Printer Installation (Fig. 401)
   A. References
      (1) AMM 24-22-00/201, Manual Control
      (2) AMM 45-10-02/301, Printer - Servicing
      (3) IPC 45-45-02, Fig. 1
   B. Access
      (1) Location Zones
          221 Control Cabin, LH
          222 Control Cabin, RH

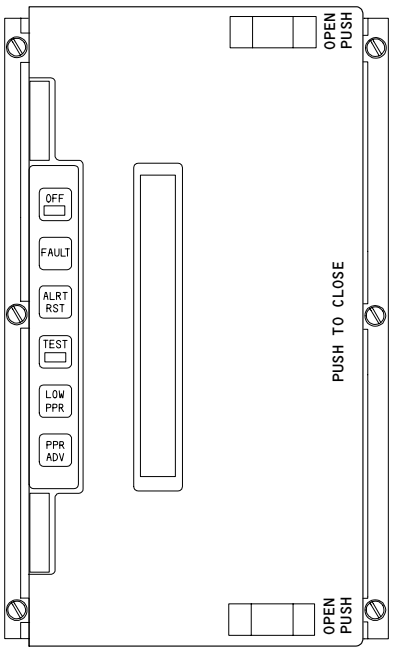



FLIGHT COMPARTMENT




MULTIPLE-INPUT PRINTER

A 1




FULL-FORMAT PRINTER

A 2

1 KLM 001-034
2 KLM 035-999

Printer Location
Figure 401

C. Procedure

S 864-027
(1) Make sure these circuit breakers are open with DO-NOT-CLOSE tags attached:
(a) P415 Power Distribution Center - Right Panel
1) 415L37 PRINTER

(b) P6 Main Power Distribution Panel
1) 6E22 FLT DK LIGHTS PANEL CONT STAND

S 864-037
(2) Make sure the printer door is closed.

S 424-029
(3) Install the printer:
(a) Remove the dust caps from the electrical connectors.
(b) Examine the printer's electrical connector for loose, dirty, bent, or broken pins.
(c) Connect the electrical connector to the printer.
(d) Carefully put the printer into the panel.
(e) Lock the fasteners on the front of the printer.

S 864-030
(4) Remove the DO-NOT-CLOSE tags and close these circuit breakers:
(a) P415 Power Distribution Center - Right Panel
1) 415L37 PRINTER

(b) P6 Main Power Distribution Panel
1) 6E22 FLT DK LIGHTS PANEL CONT STAND

S 864-031
(5) Supply electrical power (AMM 24-22-00/201).

S 424-041

(6) Install a roll of paper in the printer (AMM 45-10-02/301).

S 744-042

(7) Use a CDU to do the CMCS ground test of the printer:
  (a) Make these selections on the CDU:
    1) <GROUND TESTS (from the CMC MENU)
    2) <45 CENTRAL MAINTENANCE
    3) <PRINTER
  (b) Make sure a test pattern comes out of the printer.
  (c) When the test is completed, make sure that PASS shows adjacent to <PRINTER.

## REMOTE CONTROL DISPLAY UNIT - SERVICING

1. General
   A. This subject has two tasks. The first task is to clean the inlet screen for the cooling air on the remote control display unit (RCDU). The second task is to clean the RCDU display screen.
   B. The RCDU is installed in the main equipment center at STA 402, WL 188, LBL 57.

TASK 45-10-03-143-027

2. Remote Control Display Unit - Cooling Air Inlet Screen Cleaning
   A. General
      (1) The inlet screen for the cooling air is installed on the rear of the remote control display unit (RCDU).
   B. Standard Tools and Equipment
      (1) Vacuum Source
   C. References
      (1) 45-10-03/401, Remote Control Display Unit
   D. Access
      (1) Location Zones
          117 Electrical and Electronics Compartment, LH
   E. Procedure

      S 023-028
      (1) Remove the remote control display unit (Ref 45-10-03/401).

      S 863-029
      (2) Put the RCDU on a stable surface.

      S 143-030
      (3) Remove all the dirt from the inlet screen with a vacuum source.

      S 423-031
      (4) Installl the remote control display unit (Ref 45-10-03/401).

TASK 45-10-03-113-032

3. Remote Control Display Unit - Display Surface Cleaning
   A. Equipment
      (1) Brush - Soft bristle (commercially available)
      (2) Cloth - Clean, lint-free, cotton
   B. Consumable Materials
      (1) B01057 Cleaner, Glass, standard household

C. Access
(1) Location Zone
117 Electrical and Electronics Compartment, LH

D. Procedure

S 103-036

CAUTION: DO NOT USE ABRASIVE MATERIALS WHEN YOU CLEAN THE DISPLAY SURFACE. ABRASIVE MATERIALS WILL CAUSE SCRATCHES IN THE DISPLAY SURFACE.

(1) Remove all particles from the display surface with a clean, soft, natural-bristle brush.

S 113-033
(2) Clean the grease, oil, and contamination from the display surface with a lint-free cloth and the standard household glass cleaner:
(a) Apply the glass cleaner to the cloth.

CAUTION: DO NOT USE TOO MUCH FORCE WHEN YOU CLEAN THE DISPLAY SURFACE WITH THE CLOTH. DO NOT USE A DRY CLOTH ON THE DISPLAY. TOO MUCH FORCE OR A DRY CLOTH WILL CAUSE DAMAGE TO THE DISPLAY SURFACE.

(b) Use the moist cloth to clean the glass in a straight line from top to bottom.
(c) Gradually move from one side of the display to the other side while you clean from top to bottom.
(d) Frequently change to a clean area of the moist cloth.
(e) Remove the excess glass cleaner before it dries.
(f) Let the display dry.
(g) If a thin layer of dry glass cleaner stays on the display, clean again in a straight line from top to bottom with a clean, moist cloth.

REMOTE CONTROL DISPLAY UNIT - REMOVAL/INSTALLATION

1. General
   A. This subject has two tasks. The first task is the removal of the remote control display unit (RCDU). The second task is the installation of the RCDU. The installation task includes a test of the installation of the RCDU.
   B. The RCDU is installed in the main equipment center at STA 402, WL 188, LBL 57.

TASK 45-10-03-024-032

2. Remote Control Display Unit Removal
   A. Access
      (1) Location Zone
          117 Electrical and Electronics Compartment, LH

   B. Procedure

      S 864-033
      (1) Open these circuit breakers and attach DO-NOT-CLOSE tags:
          (a) P415 Power Distribution Center - Right
              1) 415H30 RCDU
              2) 415K32 RCDU PANEL LIGHTING

      S 024-035

      CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE RCDU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE FROM YOUR BODY CAN CAUSE DAMAGE TO THE RCDU.

      (2) Remove the RCDU:
          (a) Disconnect the electrical connector from the RCDU.
          (b) Release the fasteners on the front of the RCDU.
          (c) Pull the RCDU carefully out of its mounting bracket.
          (d) Install dust caps on the electrical connectors.

TASK 45-10-03-424-036

3. Remote Control Display Unit Installation
   A. References
      (1) 24-22-00/201, Manual Control
      (2) IPC 45-45-51, Fig. 1
   B. Access
      (1) Location Zone
          117 Electrical and Electronics Compartment, LH

C. Procedure

S 864-037

(1) Make sure these circuit breakers are open with DO-NOT-CLOSE tags attached:
  (a) P415 Power Distribution Center - Right
    1) 415H30 RCDU
    2) 415K32 RCDU PANEL LIGHTING

S 424-039

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE RCDU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE FROM YOUR BODY CAN CAUSE DAMAGE TO THE RCDU.

(2) Install the RCDU:
  (a) Remove the dust caps from the electrical connectors.
  (b) Examine the RCDU's electrical connector for loose, dirty, bent, or broken pins.
  (c) Put the RCDU carefully into its mounting bracket.
  (d) Lock the fasteners on the front of the RCDU.
  (e) Connect the electrical connector to the RCDU.

S 864-040

(3) Remove the DO-NOT-CLOSE tags and close these circuit breakers:
  (a) P415 Power Distribution Center - Right
    1) 415H30 RCDU
    2) 415K32 RCDU PANEL LIGHTING

S 864-042

(4) Supply electrical power (Ref 24-22-00/201).

S 714-043

(5) Do a test of the RCDU:
  (a) Push the MENU key on the RCDU.
  (b) Make sure the RCDU shows the MENU.

    NOTE: It can be necessary to turn the BRT control on the RCDU clockwise to see the MENU.

S 864-044

(6) Remove electrical power if it is not necessary (Ref 24-22-00/201).

# CENTRAL MAINTENANCE COMPUTER - SOFTWARE INSTALLATION

1. General
   A. This subject contains two tasks. The first task is the CMC software installation. The second task is the installation of the CMCS airline data base. The data loader is used for both tasks.
   B. The software installation and the data base installation are divided into separate procedures for the right CMC and the left CMC. The software or the data base can be installed in one or both CMCs.
   C. The CMC software is installed from two 3-1/2 inch diskettes. The CMCS airline data base is installed from one 3-1/2 inch diskette.
   D. To read about software installation times and data loaders, do this task: On-Airplane Software Installation (AMM 20-15-11/201).

TASK 45-10-10-472-075

2. CMC Software Installation
   A. General
      (1) The software installation task is divided into separate procedures for the right CMC and the left CMC so that software can be installed in one or both CMCs.
      (2) The CMC software is installed from on two 3-1/2 inch diskettes.
   B. References
      (1) 24-22-00/201, Manual Control
      (2) 45-10-01/201, Central Maintenance Computer-Option Code Installation
   C. Access
      (1) Location Zones
          221 Control Cabin, LH
          222 Control Cabin, RH

   D. Prepare for Software Installation

      S 862-197
      (1) Supply electrical power (AMM 24-22-00/201).

      S 862-198
      (2) Make sure the captain's clock and the first officer's clock are set to the correct date and time (GMT ±12 seconds).
   E. Right CMC Software Installation

      S 862-134
      (1) Set the selector switch for the data loader on the P11 first observer's panel to NORMAL.

S 862-137

(2) Open this circuit breaker and attach a DO-NOT-CLOSE tag:
  (a) P414 Power Distribution Panel - Left
    1) 414L8 CMC LEFT

S 862-138

(3) Set the selector switch for the data loader to CMC-R.

S 472-139

CAUTION: MAKE SURE YOU HAVE THE CORRECT CMC SOFTWARE DISKETTES BEFORE YOU PUT ONE IN THE DISK DRIVE. FOR THE CMC TO BE AN APPROVED INSTALLATION, THE CORRECT SOFTWARE MUST BE INSTALLED.

(4) Install the CMC software:
  (a) Open the access door on the data loader.
  (b) Put the first CMC software diskette into the disk drive.
  (c) After approximately 10 minutes, when the CHNG indication comes on, push the EJECT key to remove the diskette.
  (d) Put the second CMC software diskette into the disk drive.
  (e) After approximately 5 minutes, when the COMP indication comes on, push the EJECT key to remove the diskette.

S 862-140

(5) Push the MENU key on the CDU and look for <CMC.

NOTE: <CMC shows after approximately 10 seconds to 1 minute.

S 862-141

(6) Push the line select key (LSK) adjacent to <CMC to show the CONFIGURATION DATA page for CMC-R.

S 752-142

CAUTION: MAKE SURE YOU KNOW THE CORRECT SOFTWARE PART NUMBER FOR THE CMC, WHEN YOU LOOK AT THE SOFTWARE PART NUMBER ON THE CDU. FOR THE CMC TO BE AN APPROVED INSTALLATION, THE CORRECT SOFTWARE PART NUMBER MUST BE INSTALLED.

(7) Make sure the part number of the CMC software you installed shows adjacent to S/W.

S 472-143
(8) Install the CMC option code in the right CMC (Ref 45-10-01/201).

S 752-145
(9) Make sure GE -XXX shows adjacent to EIU.
(XXX is the IDS software version number.)

S 972-148
(10) Make a record of the numbers XXX.

S 862-149
(11) Show the CONFIG maintenance page on the auxiliary EICAS:
(a) Push the LSK adjacent to <RETURN until the CMC-R MENU shows.
(b) Push the PREV PAGE key on the CDU.
(c) Push the LSK adjacent to <EICAS MAINT PAGES.
(d) Push the NEXT PAGE key.
(e) Push the LSK adjacent to <31 CONFIG.
(f) Push the LSK adjacent to <DISPLAY.
(g) Find the IDS software part number at the top of the page.

S 752-150
(12) Make sure that the last three digits of the IDS software part number on the CONFIG page agree with the numbers XXX you made a record of.

S 862-151
(13) Remove the DO-NOT-CLOSE tag and close this circuit breaker:
(a) P414 Power Distribution Panel - Left
1) 414L8 CMC LEFT

F. Left CMC Software Installation

S 862-152
(1) Set the selector switch for the data loader to NORMAL.

S 862-153
(2) Open this circuit breaker and attach a DO-NOT-CLOSE tag:
(a) P415 Power Distribution Panel - Right
1) 415L39 CMC RIGHT

S 862-154
(3) Set the selector switch for the data loader to CMC-L.

S 472-155

CAUTION: MAKE SURE YOU HAVE THE CORRECT CMC SOFTWARE DISKETTES BEFORE YOU PUT ONE IN THE DISK DRIVE. FOR THE CMC TO BE AN APPROVED INSTALLATION, THE CORRECT SOFTWARE MUST BE INSTALLED.

(4) Install the CMC software:
(a) Put the first CMC software diskette into the disk drive.
(b) After approximately 10 minutes, when the CHNG indication comes on, push the EJECT key to remove the diskette.
(c) Put the second CMC software diskette into the disk drive.
(d) After approximately 5 minutes, when the COMP indication comes on, push the EJECT key to remove the diskette.

S 862-195
(5) Push the MENU key on the CDU and look for <CMC.

NOTE: <CMC shows after approximately 10 seconds to 1 minute.

S 862-156
(6) Push the line select key (LSK) adjacent to <CMC to show the CONFIGURATION DATA page for CMC-L.

S 752-157

CAUTION: MAKE SURE YOU KNOW THE CORRECT SOFTWARE PART NUMBER FOR THE CMC, WHEN YOU LOOK AT THE SOFTWARE PART NUMBER ON THE CDU. FOR THE CMC TO BE AN APPROVED INSTALLATION, THE CORRECT SOFTWARE PART NUMBER MUST BE INSTALLED.

(7) Make sure the part number of the CMC software you installed shows adjacent to S/W.

S 472-158
(8) Install the CMC option code in the left CMC (Ref 45-10-01/201).

S 752-160
(9) Make sure GE -XXX shows adjacent to EIU.
(XXX shows the IDS software version number.)

S 752-163
(10) Make sure that the numbers XXX agree with the last three digits of the IDS software part number on the CONFIG page on the auxiliary EICAS.

S 862-164
(11) Remove the DO-NOT-CLOSE tag and close this circuit breaker:
(a) P415 Power Distribution Panel - Right
1) 415L39 CMC RIGHT

S 862-165
(12) Set the selector switch for the data loader to NORMAL.

S 862-166
(13) Remove electrical power if it is not necessary (Ref 24-22-00/201).

TASK 45-10-10-472-097

3. CMCS Airline Data Base Installation

A. General
(1) The data base installation task is divided into separate procedures for the right CMC and the left CMC so that the data base can be installed in one or both CMCs.
(2) The data base is installed from one 3-1/2 inch diskette.

B. References
(1) 24-22-00/201, Manual Control

C. Access
(1) Location Zones
221 Control Cabin, LH
222 Control Cabin, RH

D. Airline Data Base Installation in the Right CMC

S 862-167
(1) Supply electrical power (Ref 24-22-00/201).

S 862-168
(2) Set the selector switch for the data loader on the P11 first observer's panel to NORMAL.

S 862-171
(3) Open this circuit breaker and attach a DO-NOT-CLOSE tag:
(a) P414 Power Distribution Panel - Left
1) 415L8 CMC LEFT

S 862-172
(4) Set the selector switch for the data loader to CMC-R.

S 472-173
(5) Install the airline data base:
(a) Open the access door on the data loader.
(b) Put the airline data base diskette into the disk drive.
(c) After approximately 1 minute, when the COMP indication comes on, push the EJECT key to remove the diskette.

S 862-174
(6) Show the CONFIGURATION DATA page for CMC-R:
(a) Push the MENU key on the CDU.
(b) Push the line select key (LSK) adjacent to <CMC.
(c) Push the NEXT PAGE key on the CDU.
(d) Push the LSK adjacent to <OTHER FUNCTIONS.
(e) Push the LSK adjacent to <CONFIGURATION.
(f) Push the LSK adjacent to <45 CENTRAL MAINTENANCE.
(g) Push the LSK adjacent to <CMC-R.

S 752-175
(7) Make sure the part number of the airline data base you installed shows adjacent to ALDB.

S 862-176
(8) Remove the DO-NOT-CLOSE tag and close this circuit breaker:
(a) P414 Power Distribution Panel - Left
1) 414L8 CMC LEFT

E. Airline Data Base Installation in the Left CMC

S 862-177
(1) Set the selector switch for the data loader to NORMAL.

S 862-178
(2) Open this circuit breaker and attach a DO-NOT-CLOSE tag:
(a) P415 Power Distribution Panel - Right
1) 415L39 CMC RIGHT

S 862-179
(3) Set the selector switch for the data loader to CMC-L.

S 472-180
(4) Install the airline data base:
(a) Put the airline data base diskette into the disk drive.
(b) After approximately 1 minute, when the COMP indication comes on, push the EJECT key to remove the diskette.

S 862-181
(5) Show the CONFIGURATION DATA page for CMC-L:
(a) Push the MENU key on the CDU.
(b) Push the line select key (LSK) adjacent to <CMC.
(c) Push the NEXT PAGE key on the CDU.
(d) Push the LSK adjacent to <OTHER FUNCTIONS.
(e) Push the LSK adjacent to <CONFIGURATION.
(f) Push the LSK adjacent to <45 CENTRAL MAINTENANCE.
(g) Push the LSK adjacent to <CMC-L.

S 752-182
(6) Make sure the part number of the airline data base you installed shows adjacent to ALDB.

S 862-183
(7) Remove the DO-NOT-CLOSE tag and close this circuit breaker:
(a) P415 Power Distribution Panel - Right
1) 414L39 CMC RIGHT

S 862-184
(8) Set the selector switch for the data loader to NORMAL.

S 862-118
(9) Remove electrical power if it is not necessary (Ref 24-22-00/201).

CENTRAL MAINTENANCE COMPUTER SYSTEM - MAINTENANCE PRACTICES - DATA OUTPUT

1. General
   A. This section contains two tasks. The first task is to send maintenance data from the CMC to a diskette in a personal computer (PC). The second task is to send maintenance data from the CMC to a diskette in the data loader. You can keep the data on the diskette and examine it at a different time.

TASK 45-10-11-972-042

2. CMC Data Output to a Personal Computer
   A. General
      (1) This task contains the steps to send maintenance data from the CMC to a personal computer (PC). You can keep the data in the PC and examine it at a different time.
      (2) Data is sent through a cable connected from the ATE connector on the front of the CMC to the PC. The data is collected from the ARINC 429 bus of the CMC. The PC must contain an ARINC 429 interface card and the ARINC Data Collector (ADC) software program to receive data from the CMC.
      (3) When you start the ADC program, the PC waits for data from the CMC. You can send any CMC data that shows on a CDU page with a REPORT> prompt. This is the CMC data you can send to the PC:
         (a) Any Present Leg Faults, Existing Faults, Fault History, Ground Test, or Confidence Test message page
         (b) All Present Leg Faults
         (c) All Existing Faults
         (d) All Fault History data
         (e) A Fault History summary for a CMCS message
         (f) An Input Monitoring page
         (g) A Realtime, Manual, or Automatic Snapshot of an EICAS Maintenance Page
      (4) The software, which can be kept on the PC hard drive or on a diskette, includes three files, ADC.EXE, SMRTCRD1.HEX, and CONFIG.ADC.
         (a) The ADC.EXE file is the ADC program. It loads the SMRTCRD1.HEX file into the ARINC interface card.
         (b) The SMRTCRD1.HEX file controls the ARINC interface card.
         (c) The CONFIG.ADC file contains the configuration parameters for the ADC program. The parameters tell the ADC program where and how to collect the data. You can change the values of some of the parameters before you send the data. Table 201 shows all the parameters in the CONFIG.ADC file and the recommended values for the parameters.

| CONFIG.ADC File Parameters and Recommended Values |
|---|
| DATA_TIMEOUT 60 |
| TAIL (Supply a name for the data file, 4 characters maximum) |
| FILE_TYPE A |
| LOGFILE log.cmc |
| LABEL 0307. |
| GMT 0125 |
| DATE 0260 |
| HEADER (Supply a header for the data) |
| DIR (The data will go to the specified directory) |
| BUS 2.H |
| LOADADDR 0XA000 |
| SRAMADDR 0XD000 (Use 0XD400 for an EFIS INTERFACE CARD) |
| CARD ID 0X310 (Use 0X300 for an EFIS interface card) |

Table 201

(d) These are the effects each CONFIG.ADC parameter has on the operation of the ADC program:

DATA_TIMEOUT — The ADC program closes the CMC data file this number of seconds after the CMC data input to the PC stops. (The default is 120 seconds.) You can change this parameter.

TAIL — This parameter gives the name of the CMC data file. You supply a name. The name cannot contain more than four letters. (The default name is "NONE".)

FILE_TYPE — This parameter tells the ADC program where to send the data. You can use A or S. An A sends the data to the diskette. An S sends the data to the PC screen.

LOGFILE — This is the name of the log file that is made at the same time as the data file. The default name of the log file is log.cmc. It is not necessary to change this parameter.

LABEL — This parameter tells the ADC program which ARINC 429 label to collect the data from. Use 0307. to collect CMC data (The period at the end is necessary.).

GMT — This parameter puts the time the data file was made into the log file and the data file. (The default is the PC time.) Use 0125 to get the GMT from the ARINC 429 bus.

DATE — This parameter puts the date the data file was made into the log file and the data file. (The default is the PC date.) Use 0206 to get the date from the ARINC 429 bus.

HEADER — This parameter shows at the top of all data files. (The default is "No Header Defined".) You can supply an applicable header for the data you will send.

DIR — This parameter sends the data file and the log file to the specified directory. The default is the current directory.

BUS — This parameter tells the ADC program which ARINC 429 receiver bus (1, 2, 3, or 4) to use and the speed of the bus (H = 100KHz; L = 12.5KHz). Use 2.H.

LOADADDR — This parameter tells the ADC program where in the ARINC 429 interface card to put the SMRTCRD1.HEX program. The default is 0XA000. It is not necessary to change this parameter.

SRAMADDR — This parameter gives the location in the PC of the shared memory of the ARINC interface card. This value is on a label on the ARINC interface card. Use 0XD000 for an MCDU card and 0XD400 for an EFIS card. The default is 0XD000.

CARD_ID — This parameter tells the ADC program which type of ARINC interface card is installed. Use 0X310 for an MCDU card and 0X300 for an EFIS card. The default is 0X310.

(5) The ADC program makes two files when it runs, a data file and a log file. The data file contains the report that was sent to the PC. The log file contains the name of the data file (the TAIL parameter), the number of ARINC words received, and the time and date when the data file was made (the GMT and DATE parameters). When the data file closes, the data file name and an indication that the data is collected show on the PC.

(6) The data file is kept as an ASCII text file. You can read the file with most line editors or with the DOS TYPE command.

(7) The name of the data file is the TAIL parameter followed by the month and day the file was made. The file extension is the file type followed by the file count from the log file. For example, if the value of the TAIL parameter is TEST and the value of FILE_TYPE is A, the name of the first data file made on September 22 is TEST0922.A01.

(8) The ADC program operates in the standby, active, inactive, and timeout modes.

(a) The standby mode is when the program is prepared to receive data. The PC shows tildes during this mode.

(b) The active mode of the program is when the PC receives data. The PC shows plus signs during this mode.

(c) The inactive mode of the program is the time after the data input to the PC stops but before the program closes the data file. The PC shows asterisks during this mode.

(d) The timeout mode of the program is when the data file closes after the time specified by the DATA_TIMEOUT parameter. The PC shows carets during this mode.

(e) The standby mode begins again when the file closes.

B. Special Tools and Equipment

(1) KBI-035002 - CMC Data Retrieval Interface Kit, Pacific Avionics, Redmond, Washington

(a) 30301-5 - ARINC 429 Interface Card

(b) 30401-1 - Cable Interface with Circular ATE Connector

(c) 30201-1/F - Software

(d) 30011-1 - Users Manual

C. Standard Tools and Equipment

(1) Computer, IBM AT or compatible such as Compac 386

D. References

(1) 24-22-00/201, Manual Control

(2) 45-10-00/201, Central Maintenance Computer System

E. Access

(1) Location Zones

117 Electrical and Electronics Compartment, LH

221 Control Cabin, LH

222 Control Cabin, RH

F. Prepare for Data Output

S 862-043

(1) Supply electrical power to the airplane (Ref 24-22-00/201).

S 862-044

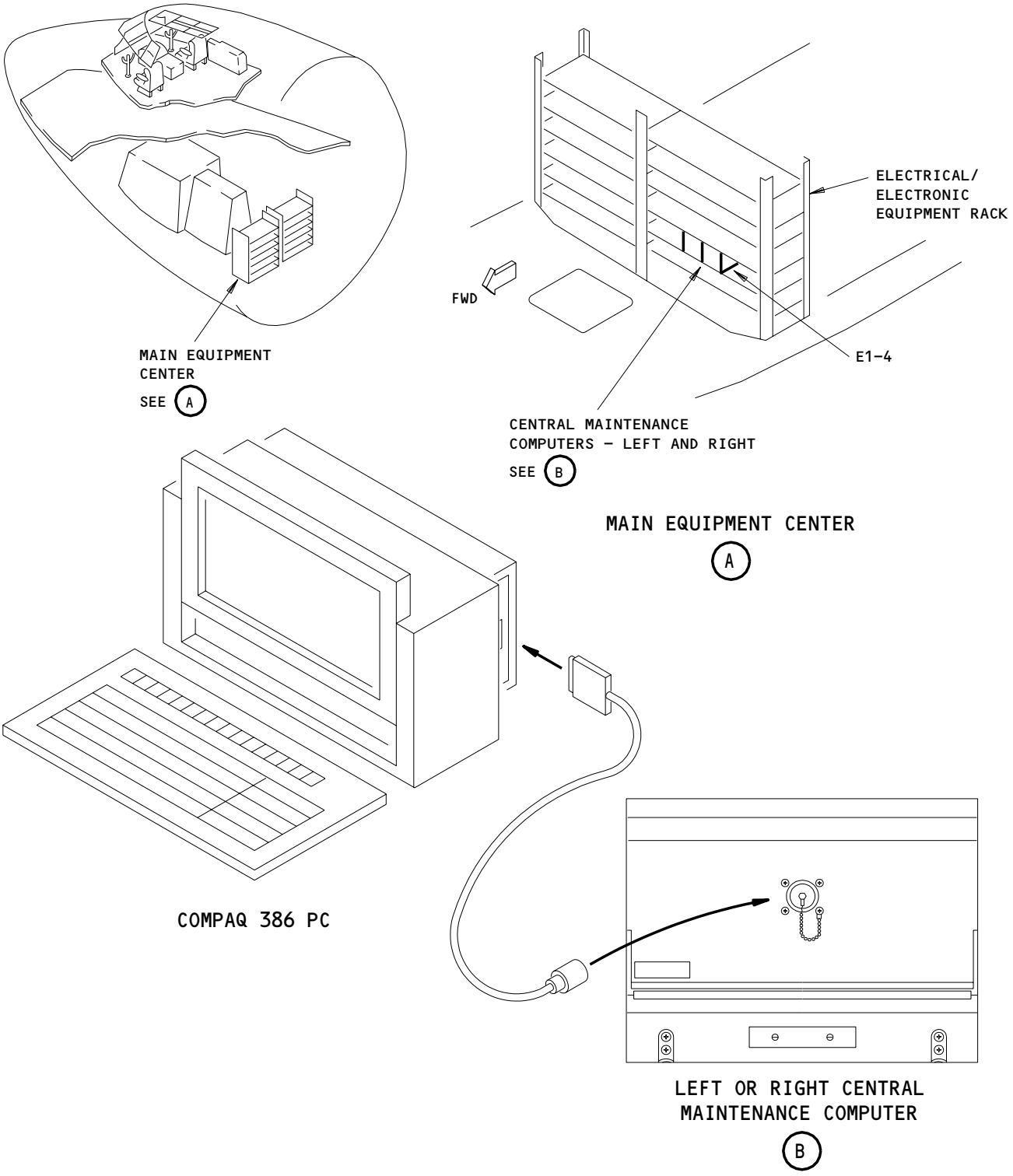
(2) Make sure the ARINC 429 Interface Card is installed in the PC.

S 862-045

(3) Use the cable to connect the connector on the back of the PC to the ATE connector on the front of the CMC (Fig. 201, Sheet 1).

S 862-046

(4) Supply electrical power to the PC.




CMC Data Output to a Personal Computer
Figure 201 (Sheet 1)

S 862-047
(5) Look at the CONFIG.ADC file on the PC and make sure the parameters have the correct values (Refer to Table 201).

G. Data Output

S 972-048
(1) Start the ADC program:
(a) If it is necessary, change the directory to the directory that contains the ADC.EXE file.
(b) Use the PC keyboard to put in ADC.
(c) Push the RETURN key or the ENTER key on the PC.

S 972-049
(2) Send the data to the PC (Fig. 201, Sheet 2):
(a) Show the page on the CDU that contains the necessary maintenance data to send to the diskette.
(b) Push the LSK that is adjacent to REPORT>.
(c) Push the LSK that is adjacent to <DATA RECORDER.

NOTE: IN PROGRESS shows on the CDU above DATA RECORDER. When all data is sent to the diskette, REPORT COMPLETE shows. The ADC program header and the file name show on the PC.

S 972-050
(3) To send a different page of maintenance data, do step 2 again.

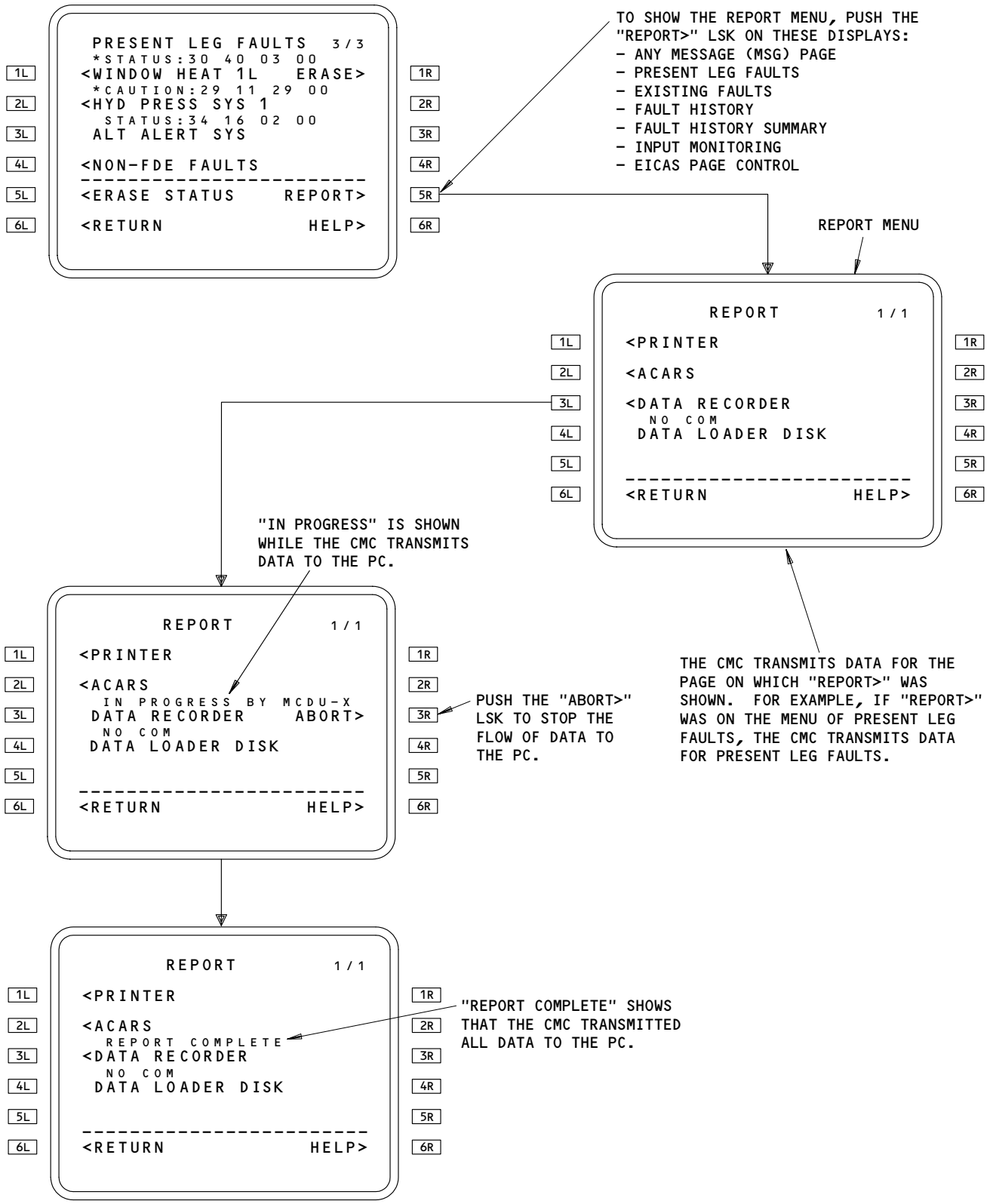
S 972-051
(4) When all maintenance data is sent, push the Q key on the PC to stop the ADC program.

H. Put the Airplane in its Usual Condition

S 862-052
(1) Remove the electrical power from the PC.

S 862-053
(2) Disconnect the cable from the CMC and the PC.

S 862-054
(3) Remove the electrical power from the airplane if it is not necessary (Ref 24-22-00/201).




CMC Data Output to a Personal Computer
Figure 201 (Sheet 2)

TASK 45-10-11-972-079

3. KLM 001-099;

CMC Data Output to the Data Loader

A. General

(1) This task contains the steps to send reports of maintenance data from the CMC to a diskette in the data loader. You can keep the data on the diskette and examine it at a different time.

(2) CMC data output to the data loader can operate in two modes. In mode 1 operation, the selection of data to send is made by request codes in a file on the diskette. In mode 2 operation, you use the REPORT> prompt on the CDU to make a selection of data to send.

(a) In mode 1 you can send reports of this CMC data to the data loader:

1) All Present Leg Faults
2) All Existing Faults
3) All of Fault History
4) The Fault History for a specified chapter-section
5) EICAS Maintenance Pages:
   a) One Realtime Maintenance Page
   b) One Automatic Snapshot
   c) One Manual Snapshot
   d) All Automatic Snapshots
   e) All Manual Snapshots

(b) In mode 2 you can send reports of this CMC data to the data loader:

1) All Present Leg Faults
2) All Existing Faults
3) All of Fault History
4) A Fault History summary for a CMCS message
5) A Present Leg Faults, Existing Faults, Fault History, Ground Test or Confidence Test message page
6) An Input Monitoring page
7) A Realtime, Manual, or Automatic Snapshot of an EICAS Maintenance Page

(3) You must use a formatted, 3.5 inch diskette with an unformatted capacity of 2 megabytes (formatted capacity of 1.44 megabytes). The diskette must be formatted with MS DOS. For modes 1 and 2, the diskette must contain a configuration file (CONFIG.LDR). For mode 1 operation, the diskette must also contain a file of report request codes (REPORTS.RQD).

(a) The CONFIG.LDR file contains the configuration parameters for the data loader. The parameters tell the data loader how to collect the data. You must put the CONFIG.LDR file on the diskette. A list of the contents of the file is given in Table 202. The effect of the parameters follows Table 202.

(b) The REPORTS.RQD file is a list of the reports to collect. For mode 1 operation you must put the REPORTS.RQD file on the diskette. To collect different reports in mode 1 you change the REPORTS.RQD file. A list of the available codes is given in Table 203.

(4) When you put the diskette into the data loader, the data loader reads the CONFIG.LDR file. When the data loader is in the correct configuration, it sends a signal to the CMC. The CMC sends the data loader a signal which causes the data loader to look on the diskette for a REPORTS.RQD file.

(5) If the data loader finds a REPORTS.RQD file on the diskette, the CMC starts mode 1 operation. If the data loader does not find a REPORTS.RQD file on the diskette, the CMC starts mode 2 operation.

(a) In mode 1 operation, the CMC reads the REPORTS.RQD file and transmits the data in the same sequence as the codes in the file. Each report goes into a different file. New report files are written over previous report files.

(b) In mode 2 operation, the CMC waits for operator input on a CDU to start the data output. Each report goes into a different file. New report files will not be written over previous report files.

(6) You can make the CONFIG.LDR and REPORTS.RQD file with a word processor or text editor on a computer that can use 3.5 inch double sided high-density diskettes (2 mega byte capacity unformatted). You can use MS DOS commands on a computer to look at or make a copy of the collected data.

(7) The parameters in the CONFIG.LDR file are given in Table 202. Each parameter in the file must be followed by a carraige return/line feed. The parameters can be in a different sequence. The parameters can be in upper or lower case. The CONFIG.LDR file must be saved unformatted or as an ASCII file.

| CONFIG.LDR File Parameters |
|---|
| LBL = 226 |
| DFM = F |
| DWE = T |
| DOW = F |
| DMT = F |
| B1D = 1H,3L,303 |
| B2D = 0H,0H,000 |
| B3D = 0H,0H,000 |
| B4D = 0H,0H,000 |
| B1P = 1 |
| B2P = 0 |
| B3P = 0 |
| B4P = 0 |
| B1W = T |
| B10 = F |

Table 202

(8) These are the effects of each CONFIG.LDR parameter on the data loader:

LBL = 226 (LABEL = 226) The data loader will only use inputs from ARINC 429 octal label 226.

DFM = F (DISK FORMAT = FALSE) The data loader will not format the diskette if the CMC sends a format instruction.

DWE = T (DISK WRITE ENABLE = TRUE) The data loader can write to the diskette and read from the diskette.

DOW = F (DISK OVERWRITE = FALSE) The data loader will not automatically write over the oldest data in the open file if the disk becomes full.

DMT = F (DISK MAINTENANCE TEST = FALSE) The data loader will operate as usual. It will not operate in test mode.

B1D = 1H,3L,303 (BUS 1 DEFINITION = HIGH SPEED TRANSMITTER 1, LOW SPEED RECEIVER 3, LABEL 303) The data loader transmits data to the CMC at high speed with transmitter number 1 and receives data from the CMC at low speed with receiver number 3. The data loader will put the ARINC 429 octal label 303 (CMC address) into all words it transmits.

B2D = 0H,0H,000 (BUS 2 DEFINITION = ) Bus 2 is not used.

B3D = 0H,0H,000 (BUS 3 DEFINITION = ) Bus 3 is not used.

B4D = 0H,0H,000 (BUS 4 DEFINITION = ) Bus 4 is not used.

B1P = 1 (BUS 1 PRIORITY = 1) The data on bus 1 has the highest priority.

B2P = 0 (BUS 2 PRIORITY = 0) Bus 2 is not used.

B3P = 0 (BUS 3 PRIORITY = 0) Bus 3 is not used.

B4P = 0 (BUS 4 PRIORITY = 0) Bus 4 is not used.

B1W = T (BUS 1 WRITE = TRUE) The CMC can read from the diskette and write to the diskette with instructions it sends to the data loader on bus 1 as specified above (see B1D and B1P).

B10 = F (BUS 1 OVERWRITE = FALSE) If the diskette becomes full while the data loader writes to an open file, the data loader will stop and the CHNG light will come on. The data loader will not write over the data in the open file. (Use the letter O, not a zero in "B10".)

(9) In mode 1, the REPORTS.RQD file can contain the codes in Table 203 below. Table 203 shows the data that each code causes the CMC to transmit. Table 203 also shows the name of the file that is put on the diskette as a result of each code.

(10) In mode 2, the data shown in Table 204 can be transmitted by the CMC. The reports will go into files on the diskette with the names shown in Table 204.
   (a) The diskette can contain a maximum of 45 files. (This includes the CONFIG.LDR file, the data files, and any other files that are on the diskette.)
   (b) If there are 45 files on the diskette when you put it into the data loader, the caret does not show on the DATA LOADER DISK prompt. To get the caret back, you must erase some files or use a different diskette.

| REPORTS.RQD CODE | DATA TRANSMITTED BY THE CMC IN MODE 1 | FILENAME ON THE DISKETTE |
|---|---|---|
| PL | All of Present Leg Faults | PL.RPT |
| EF | All of Existing Faults | EF.RPT |
| FH-ALL | All of Fault History | FH-ALL.RPT |
| FH-YY-ZZ | Fault History summary from ATA chapter YY, section ZZ | FH-YY-ZZ.RPT |
| | EICAS Maintenance Pages, Realtime, Manual, or Automatic Snapshot: (XXXX = REAL, MAN, or AUTO) | |
| EM-ECS-XXXX | Environmental Control Sys | ECSXXXX.RPT |
| EM-ELEC-XXXX | Electrical System | ELECXXXX.RPT |
| EM-FLCN-XXXX | Flight Control | FLCNXXXX.RPT |
| EM-FUEL-XXXX | Fuel System | FUELXXXX.RPT |
| EM-HYD-XXXX | Hydraulic System | HYDXXXX.RPT |
| EM-GEAR-XXXX | Landing Gear | GEARXXXX.RPT |
| EM-APU-XXXX | APU | APUXXXX.RPT |
| EM-EPCS-XXXX | Engine Propulsion Ctrl Sys | EPCSXXXX.RPT |
| EM-PERF-XXXX | Engine Performance | PERFXXXX.RPT |
| EM-ENEX-REAL | Engine Exceedance | ENEXREAL.RPT |
| EM-CONF-REAL | Configuration | CONFREAL.RPT |
| EM-AUTO-ALL | All Automatic Snapshots | AUTO-ALL.RPT |
| EM-MAN-ALL | All Manual Snapshots | MAN-ALL.RPT |

Table 203 - Mode 1 Reports

| DATA TRANSMITTED BY THE CMC IN MODE 2 | FILENAME ON THE DISKETTE (N = 0 - 9) |
|---|---|
| All of Present Leg Faults | PL.RNN |
| All of Existing Faults | EF.RNN |
| All of Fault History | FH-ALL.RNN |
| Fault History summary from chapter XX | FH-XX.RNN |
| One Present Leg Faults Message Page | PL-ONE.RNN |
| One Existing Faults Message Page | EF-ONE.RNN |
| One Fault History Message Page | FH-ONE.RNN |
| One Ground Test Message Page | GNDTEST.RNN |
| One Confidence Test Message Page | CONFTEST.RNN |
| One Input Monitoring Page | INPUTMON.RNN |
| EICAS Maintenance Page Snapshots: | |
| Realtime Snapshot of EICAS Maintenance Page XXXX | XXXXREAL.RNN |
| Automatic Snapshot # Y of EICAS Maintenance Page XXXX | XXXX-Y-A.RNN |
| Manual Snapshot # Y of EICAS Maintenance Page XXXX | XXXX-Y-M.RNN |
| (XXXX = ECS, ELEC, FLCN, FUEL, HYD, GEAR, APU, EPCS, PERF) | |
| (Y = 1, 2, 3, 4, or 5) | |

Table 204 - Mode 2 Reports

B. Standard Tools and Equipment
   (1) Diskette - 3.5 inch, 1.44 Mega Bytes formatted for MS DOS (PC DOS).
   (2) Computer - IBM PC (or compatible) with a 3.5 inch disk drive. (The computer is only necessary if you have to make or change the CONFIG.LDR and/or REPORTS.RQD files.)

C. References
   (1) AMM 24-22-00/201, Manual Control
   (2) AMM 45-10-00/201, Central Maintenance Computer System

D. Access
   (1) Location Zones
      221 Control Cabin, LH
      222 Control Cabin, RH

E. Mode 1 Data Output (Automatic)

NOTE: Do these steps when the diskette contains a REPORTS.RQD file. The REPORTS.RQD file is a list of the maintenance data that will be transmitted to the diskette.

S 862-057
(1) Use a PC to make sure the CONFIG.LDR file contains the correct parameter values (See Table 202).

S 862-058
(2) Use a PC to make sure the REPORTS.RQD file contains the correct request codes (See Table 203).

S 862-059
(3) Supply electrical power to the airplane (AMM 24-22-00/201).

S 862-060
(4) Set the selector switch for the data loader on the P11 first observer's to the NORMAL position.

S 972-062
(5) Put the diskette into the disk drive of the data loader to start the data output.

S 972-063
(6) When the COMP indication comes on, push the EJECT switch to remove the diskette.

S 862-064
(7) Remove the electrical power from the airplane if it is not necessary (AMM 24-22-00/201).

F. Mode 2 Data Output (CDU Controlled)

NOTE: Do these steps when the diskette does not contain a REPORTS.RQD file. You will use the REPORT> prompt on the CDU to make the selection of the reports to transmit to the diskette.

S 862-065
(1) Use a PC to make sure the CONFIG.LDR file contains the correct parameter values (See Table 202).

S 862-066
(2) Supply electrical power to the airplane (AMM 24-22-00/201).

S 862-067
(3) Set the selector switch for the data loader on the P11 first observer's panel to the NORMAL position.

S 972-069
(4) Put the diskette into the disk drive of the data loader.

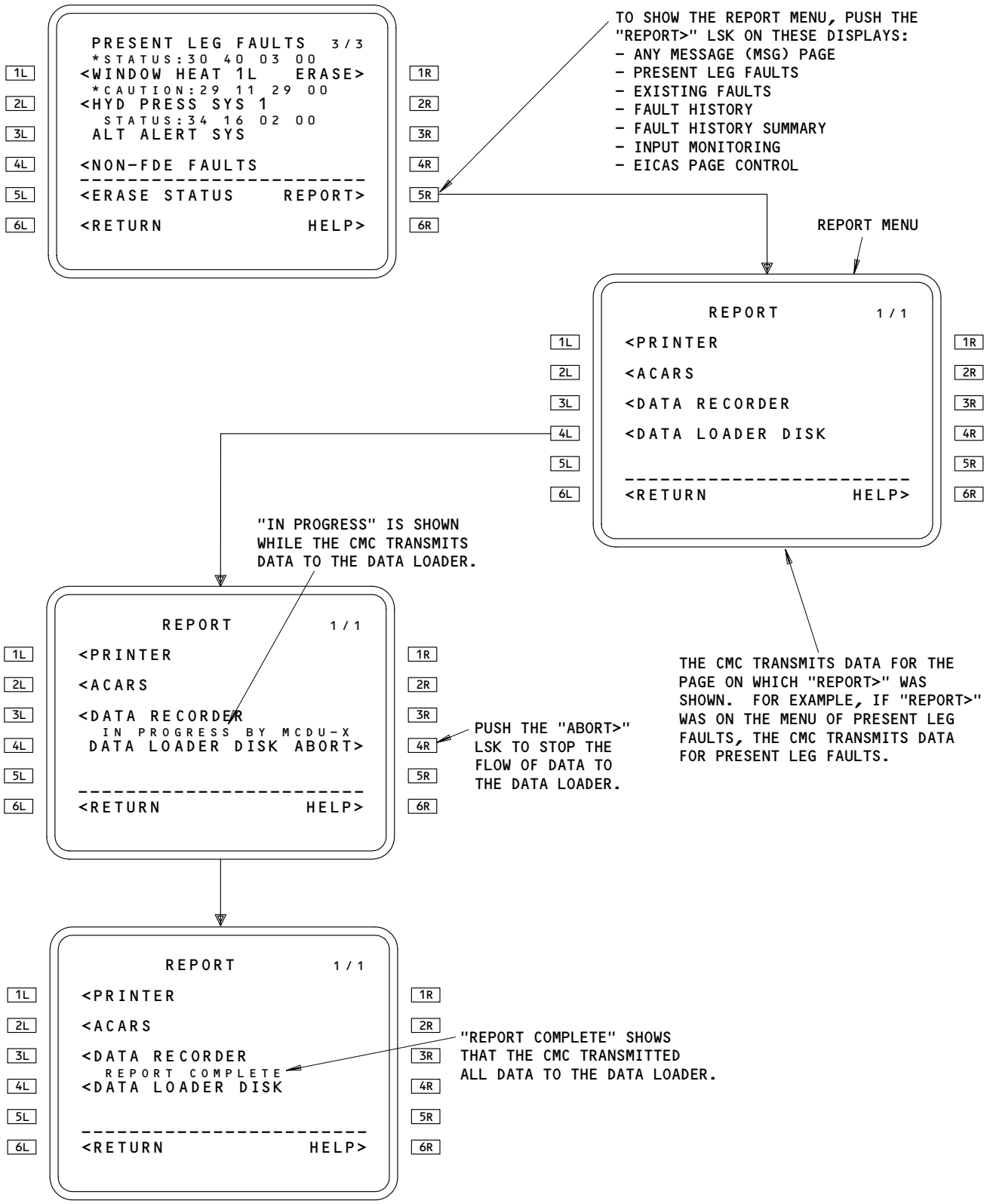
NOTE: The RDY indication comes on approximately 5 seconds after you put the diskette into the disk drive.

S 972-070
(5) Send a report to the diskette (Fig. 202):
(a) Show the page on the CDU that contains the necessary maintenance data to send to the diskette.
(b) Push the LSK that is adjacent to REPORT>.
(c) Push the LSK that is adjacent to <DATA LOADER DISK.

NOTE: If NO COM shows above DATA LOADER DISK, the diskette is not correctly installed in the disk drive, the diskette does not contain correct parameter values, or there are 45 files on the diskette.

NOTE: IN PROGRESS shows above DATA LOADER DISK while the data is transmitted to the diskette. When all data is transmitted to the diskette, REPORT COMPLETE shows.

S 972-071
(6) To transmit a different report, do these steps:
(a) Push the EFJECT switch to remove the diskette from the disk drive.




CMC Data Output to the Data Loader - Mode 2
Figure 202

(b) Put the diskette back into the disk drive.
(c) Make the necessary selections on the CDU to make the report.

S 862-073
(7) Remove the electrical power from the airplane if it is not necessary (AMM 24-22-00/201).

AIRPLANE DIGITAL MAINTENANCE INFORMATION TOOL - DESCRIPTION AND OPERATION

1. General
   A. The Airplane Digital Maintenance Information Tool (ADMIT) is a test set that can be interface with the Central Maintenance Computer (CMC) and the Low Range Radio Altimeter (LRRA) systems.
   B. The ADMIT provides an alternative method to show selected EICAS maintenance pages, access many MCDU functions, and provide simulation capability for the PSEU, the ADC, and the LRRA Line Replacement Units (LRUs).
   C. The ADMIT consist of a VXI based hardware, a HP-UX UNIX operating system, and one or two X-Windows touch displays.
2. Operation
   A. The ADMIT operates from a 120/240 volts, 50/60 Hz power source. It has a 743 HP controller, 2 GB hard drive, 2 ARINC 429 cards, 28v dc power supply.
   B. The ADMIT interfaces with the airplane via one or two cables that connect from the CMC-1 and/or CMC-2 connector in front of the ADMIT to the front connector of either CMC.
   C. One or two touch displays connected to the front of the ADMIT allows the user to access airplane information and to provide PSEU and ADC simulation via the CMCs. LRRA simulation is provided by removing the LRRA LRUs from the equipment rack and connecting a cable from the equipment rack LRRA LRUs connectors to the LRRA connector in front of the ADMIT.
3. Functionality
   A. The status area is always present on the touch displays. The status area shows the information that follows:
      (1) Current Date/Time
      (2) ADMIT control number
      (3) Print button that permits the user to send the current page to a printer
      (4) Phone button that shows the phone list of person to call if the user needs help with the ADMIT
      (5) Help button that shows information on how to use the ADMIT
   B. From the main menu, the user can reset the ADMIT hardware, show the ADMIT information page, and start the ADMIT shutdown process. You can also show selective airplane information when you select the pages that follow:
      (1) The MCDU functions allow you to show or do the functions that follow:
         (a) The Ground Test selection allows you to run any ground test that is in the CMCS.

(b) The Input Monitoring selection allows you to show up to two words at the same time. You can show the words in binary or hexadecimal format or translate them to engineering units. You can enter new words or selected from a list of previously entered words.

(c) The Existing Faults selection allows you to view all the existing faults by ATA system. The * in the front of the message test indicates the fault is active.

(d) The EIU/CMC Software Rev selection allows you to see the EIU or the CMC software version that is installed in the airplane.

(2) The EICAS Displays allows you to show selective airplane information from some EICAS maintenance or synoptic pages when you select the pages that follow:

(a) The View FDEs selection allows you to show all the Flight Deck Effects (FDE). You can choose to show all FDEs or a selection of FDEs.

(b) The Wing or Tail selection allows you to show flight controls parameter information.

(c) The Brake Temp, Brake Torque, and Tire Pressure selection allows you to show brake and tire parameter information.

(d) The Gear Air/Gnd selection allows you to show landing gear parameter information.

(e) The Engine Sensor selection allows you to show Engine parameter information.

(3) The LRU Simulation allows you to simulate some airplane system parameters when you select the pages that follow:

(a) The ADC SIMULATION selection allows you to simulate air data altitude, airspeed, total air temperature, and angle of attack parameters when the airplane is in the ground mode.

(b) The PSEU SIMULATION selection allows you to simulate the primary and the alternate gear sensors to the air mode. You can also simulate a single sensor position.

(c) The LRRA SIMULATION selection allows you to simulate radio altitude.

AIRPLANE DIGITAL MAINTENANCE INFORMATION TOOL - MAINTENANCE PRACTICES

1. General
   A. This subject has these tasks:
      (1) Installation and Removal of the Airplane Digital Maintenance Information Tool (ADMIT)
      (2) Display of Existing Faults
      (3) Display of EICAS Displays Pages
      (4) Use of Input Monitoring
      (5) Display of EIU/CMC Software Revision Page
      (6) Prepare the ADMIT for a Ground Test
   B. For these tasks, you will use one of the ADMIT touch displays.

TASK 45-10-99-902-001

2. Installation and Removal of the ADMIT
   A. General
      (1) The installation and removal task gives you the steps that are necessary to install or remove the test equipment to and from the airplane.
      (2) This procedure gives the steps that are necessary to install the ADMIT test set to both CMCs. You may choose to install the ADMIT to only one CMC.
   B. Procedure

S 862-007

      (1) Install the ADMIT to the CMC:
         (a) Connect the ADMIT main unit to the power source.
         (b) Push the power on switch in the front of the ADMIT main unit.
            1) Make sure the green LED is on.
         (c) Connect the CMC interface cables from the front of each CMC to the front of the ADMIT test set connectors label CMC 1 and CMC 2.
         (d) Connect the displays interface cables from the ADMIT test set to the ADMIT touch displays.
         (e) Push the power switch on each of the touch displays.
            1) Make sure the 747 ADMIT MAIN MENU page shows.

S 862-008

      (2) Remove the ADMIT from the CMC:
         (a) Touch the RETURN button to show the 747 ADMIT MAIN MENU page.
            1) Make sure the 747 ADMIT MAIN MENU page shows.
         (b) Touch the SHUTDOWN button.
            1) Make sure the ADMIT display shows SHUTTING DOWN CART NOW.
         (c) Touch the YES button.
         (d) Push the power switch on the touch display(s).
         (e) Remove the cables that are attached from the front of the CMCs to the front of the ADMIT test set.

(f) Remove the cables that are attached from the ADMIT test set to the touch displays.
(g) Push the power switch in the front of the ADMIT test set.
1) Make sure the green LED goes off.
(h) Remove the ADMIT main unit power cable.

TASK 45-10-99-862-002

3. Display of Existing Faults

A. General

(1) The existing faults function supplies data about failures that are active or not repaired. The ADMIT first shows a list of all ATA chapters.

B. Procedure

S 862-009

(1) Show the EXISTING FAULTS page on the ADMIT touch display:
(a) If the 747 ADMIT MAIN MENU page is not shown, touch RETURN until you see the page.
(b) Touch the MCDU Functions button.
1) Make sure the MCDU FUNCTIONS page shows.
(c) Touch the EXISTING FAULTS button.
1) Make sure the EXISTING FAULTS SELECTION page shows.

S 862-010

(2) Show the EXISTING FAULTS pages for a system:
(a) Touch the line or page UP/DOWN buttons to select the applicable system.
(b) Touch the ENTER button.
1) Make sure the EXISTING FAULTS page for the system you selected shows.
(c) Touch the page UP/DOWN buttons to see more faults, if applicable.

TASK 45-10-99-862-003

4. Display of EICAS Display Pages

A. General

(1) This function lets you use the ADMIT touch display to show selective maintenance pages.
(2) The ADMIT will show the maintenance pages that follows:
(a) VIEW FDEs
(b) WING
(c) TAIL
(d) BRAKE TEMP
(e) BRAKE TORQUE
(f) TIRE PRESSURE
(g) GEAR AIR/GND

(h) ENGINE SENSORS

B. Procedure

S 862-011

(1) Show an EICAS display page:
(a) If the 747 ADMIT MAIN MENU page does not show, touch RETURN until you see the page.
(b) Touch the EICAS Displays button on the ADMIT touch display.
1) Make sure the display shows the EICAS DISPLAYS page.
(c) Touch the applicable button for the EICAS maintenance page that you want to see.
1) Make sure the display shows the applicable EICAS maintenance page.

TASK 45-10-99-912-004

5. Use of Input Monitoring

A. General

(1) The input monitoring function permits maintenance persons to monitor inputs to the CMC or the EIUs. You can monitor many inputs but can only show two at the same time. The data can be shown on the ADMIT display in binary or hexadecimal numbers. Some data can be shown in decimal numbers.

B. Procedure

S 862-012

(1) Show the INPUT MONITORING MAIN MENU page on the ADMIT touch display:
(a) If the 747 ADMIT MAIN MENU page is not shown, touch RETURN until you see the page.
(b) Touch the MCDU Functions button.
1) Make sure the MCDU FUNCTIONS page shows.
(c) Touch the INPUT MONITOR button.
1) Make sure the INPUT MONITORING MAIN MENU page shows.

S 862-013

(2) Do input monitoring on a new location:
(a) Touch the NEW ARINC 429 button.
1) Make sure the INPUT MONITORING -ARINC 429 page shows.
(b) Touch the CMC or EIU SOURCE button.
1) Make sure a carat shows next to the SOURCE button you selected.
(c) Touch the PORT button.
(d) Touch the number button for the port you want.
(e) Touch the ENTER button.
1) Make sure the port button shows the port that you entered.
(f) Touch the LABEL button.
(g) Touch the number button for the label you want.

(h) Touch the ENTER button.
1) Make sure the label button shows the label that you entered.
(i) Touch the SDI button for the SDI you need.
1) Make sure a carat shows next to the SDI button you selected.
(j) Touch the READ DATA button.
1) Make sure the INPUT MONITORING page shows the data word.
(k) Set the type of input monitoring display:
1) To see the data in hexadecimal numbers, touch the HEXADECIMAL button.
2) To see the data in binary numbers, touch the BINARY button.
3) To see the data in engineering units, touch the TRANSLATE button.
4) To see the data in hexadecimal/binary numbers, touch the RAW button.
(l) Touch the CLEAR LIST or RETURN button to do input monitoring on other locations.
Do input monitoring on a previously entered location:
(m) Touch the PREVIOUSLY MONITOR button.
1) Make sure the PREVIOUSLY MONITORED PARAMETERS page shows.
(n) Touch the UP or DOWN button to select the data word you want to see.
(o) Touch the READ DATA button.
1) Make sure the INPUT MONITORING page shows the data word.
(p) Set the type of input monitoring display:
1) To see the data in hexadecimal numbers, touch the HEXADECIMAL button.
2) To see the data in binary numbers, touch the BINARY button.
3) To see the data in engineering units, touch the TRANSLATE button.
4) To see the data in hexadecimal/binary numbers, touch the RAW button.
(q) Touch the CLEAR LIST or RETURN button to do input monitoring on other locations.
(r) Touch the REMOVE PARAMETER to delete the data word from the list.

TASK 45-10-99-912-005

6. Display of the EIU/CMC Software Revision

A. General

(1) The EIU/CMC software revision lets you look at the EIU and the CMC software revision installed in the airplane.

B. Procedure

S 862-014

(1) Show the EIU/CMC SOFTWARE REV page on the ADMIT touch display:
  (a) If the 747 ADMIT MAIN MENU Page is not shown, touch RETURN until you see the page.
  (b) Touch the MCDU Functions button.
    1) Make sure the MCDU FUNCTIONS page shows.
  (c) Touch the EIU/CMC SOFTWARE REV button.
    1) Make sure the EIU/CMC Software label page shows.
  (d) Touch the RETURN buttons to return to the MCDU functions page.

TASK 45-10-99-912-006

7. Prepare the ADMIT for a Ground Test

A. General

(1) The ground tests function lets maintenance persons use the ADMIT to start BITE tests of airplane systems and LRUs. The ADMIT transmits a signal to an LRU via the CMC to a LRU to start the BITE test. When the LRU test is completed, the CMC analyzes the results and sends them to the ADMIT.

B. Procedure

S 862-015

(1) Show the GROUND TEST SELECTION page on the ADMIT touch display:
  (a) If the 747 ADMIT MAIN MENU page is not shown, touch RETURN until you see the page.
  (b) Touch the MCDU Functions button.
    1) Make sure the MCDU FUNCTIONS page shows.
  (c) Touch the GROUND TEST button.
    1) Make sure the GROUND TEST SELECTION page shows.

S 862-016

(2) Start a ground test for a system:
  (a) Touch the line or page UP/DOWN buttons to select the applicable system.
    1) Make sure the ATA system you want is highlighted.
  (b) Touch the CONTINUE button.
    1) Make sure the SPECIFY TEST ID page shows.
  (c) Touch the line or page UP/DOWN buttons to select the test you want to run.
    1) Make sure the test you want is highlighted.
  (d) Touch the RUN TEST button.
  (e) If a GROUND TEST PRE-CONDITIONS page shows when you start the test, make sure each instruction on the page is completed. (Touch the page UP/DOWN buttons to see subsequent pages, if applicable).

(f) Touch the CONTINUE button.
    1) Make sure the GROUND TEST page shows RUN MODE.
    2) When the test is completed, the GROUND TEST page shows PASSED or FAILED.
(g) If FAILED shows, the ADMIT will also show the CMC fault code messages for the failure.
(h) Touch RUN NEW TEST to select a new test.
(i) Touch RETURN to select a new ATA system.