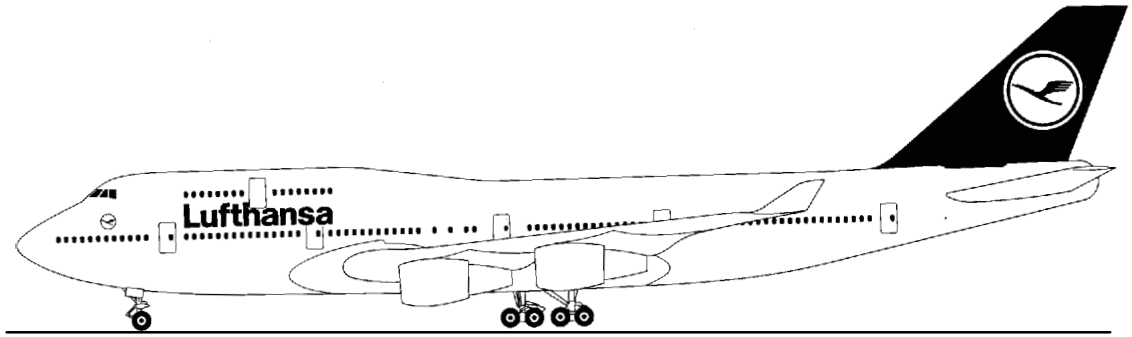
Lufthansa
Technical Training

Training Manual
B 747-400



ATA 31
Indicating/ Recording Systems
31-35 ACMS

Level 3

Book No: B747-400 31-35 L3 e

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31-35 AIRPLANE CONDITION MONITORING SYSTEM (ACMS)

INTRODUCTION

The airplane condition monitoring system (ACMS) collects, monitors, records, and distributes airplane performance data for detailed system analysis.

The ACMS reports produced by the system are used for airplane system trend analysis. Through trend analysis the engineering department determines the rate of deterioration of a component within a monitored system. The system also monitors airplane and crew performance.

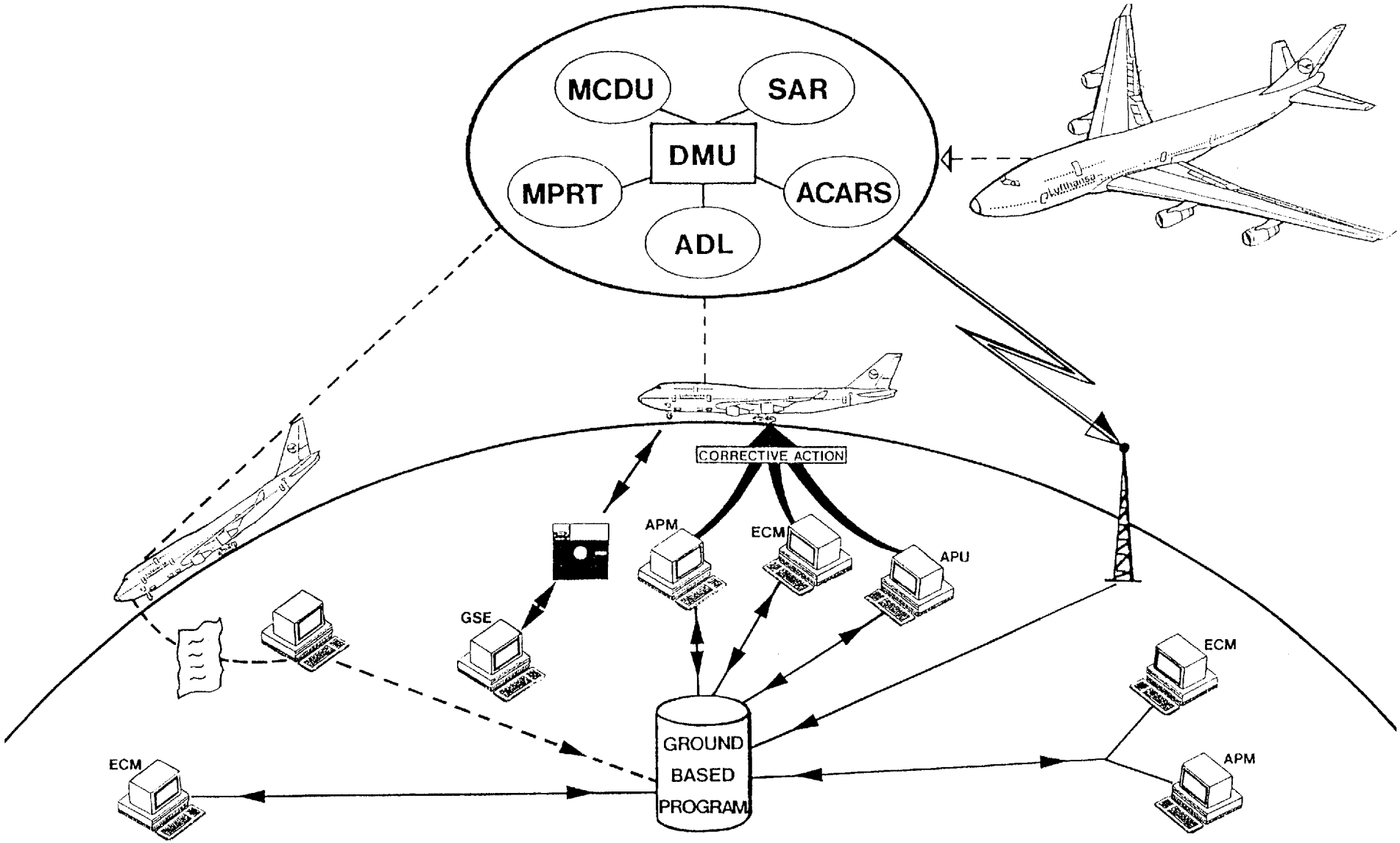


Figure 1 ACMS Overview

AIRPLANE CONDITION MONITORING SYSTEM

The airplane conditioning monitoring system (ACMS) consists of

a data management unit (DMU) and

a optical quick access recorder (OQAR).

Some airlines have replaced the OQAR by a SAR (smart airborne recorder) which is installed inside the DMU.

The major component of the airplane condition monitoring system is the data management unit. The DMU collects data from various airplane systems, processes this data into a report format and upon a request, sends these reports to the:

- ACARS
- Center control display unit (CDU)
- Data loader panel
- Multi-input printer
- Optical quick access recorder (QAR) (if installed)

Input data monitored comes from these systems:

- Fuel
- Navigation
- Indicating and Recording
- Communications
- Engines
- Autopilot
- Electrical
- Flight controls

The central maintenance computer system (CMCS) checks and monitors the data management unit.

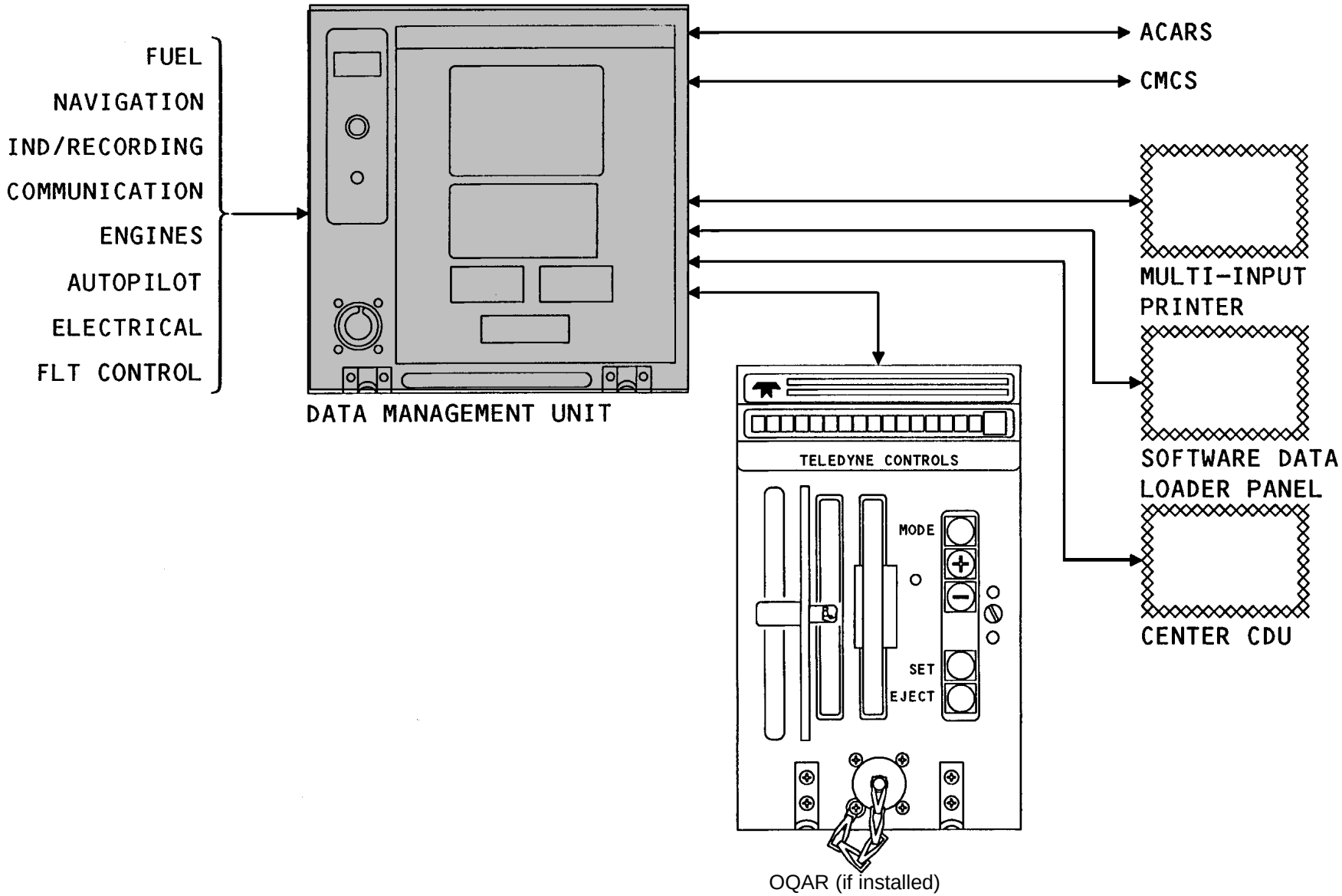


Figure 2 Airplane Condition Monitoring System

ACMS - COMPONENTS

The P8 aft electronics panel contains the:

- center control display unit (CDU) only.
- multi-input printer.

The first observer bookcase contains the:

- airborne data loader/ switch

The P2 (pilot center panel) contains the:

- EVENT RECORD switch

CDU (AMM 34-61)

The center CDU provides cockpit crew with the capability of interacting with the ACMS while on board the airplane. It allows the cockpit crew to control the DMU, extract the information from the DMU and download the ACMS data to the output devices. The ACMS reports can be shown on the center CDU. In addition, any CDU can display CMCS messages.

The CDU contains a display area of 14 lines of 24 characters each. Data input is provided by a full alphanumeric keyboard as well as special function and control keys.

The DMU and center CDU communicate with an ARINC 429 low speed input/ output pair.

Airborne Data Loader (ADL) (AMM 34-61)

The DMU provides CDU mask/menu to enable the CDU user to transfer memory contents between the DMU and the ADL. This process can be automatically started by the DMU or manually started from the center CDU. The ADL stores the ACMS data on a 3 1/2 inch floppy disk.

The DMU receives a ground enable discrete from the ADL switch when the ADL switch is set to the ACMS position. When the enable discrete to the DMU is grounded, the DMU will have an interface with ADL through two high ARINC 429 buses when commanded from the CDU.

The DMU output to the ADL is also sent to the ADL but it does not go through the ADL switch. This allows the ADL to record ACMS data continuously in flight.

Multi-Input Printer (AMM 45-10)

The multi-input printer provides the airline personnel with hardcopy printouts of ACMS reports. The printer is a multi-input cockpit printer and is a shared resource with other airplane subsystems.

The DMU sends the ACMS reports to the multi-input printer. This process can be manually started from the center CDU or automatically started by the DMU.

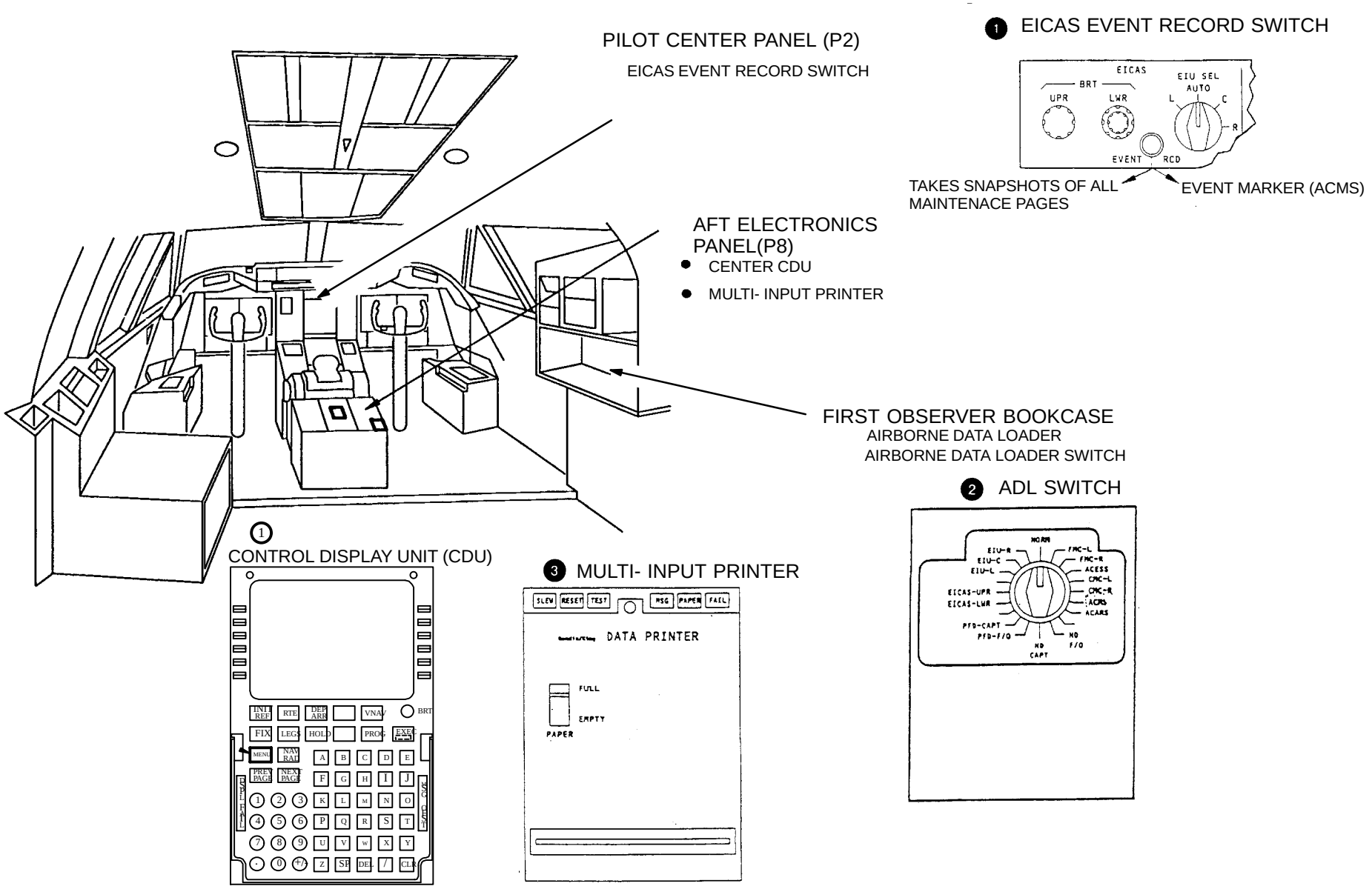


Figure 3 ACMS Component Locations

MEC

In the main equipment center (MEC) you will find:

- the data management unit (DMU) is on the E1-3 rack.
- the quick access recorder (QAR) (if installed) is on the E1-5 rack.
- the ACMS-AC circuit breaker is on the P415 panel.

Data Management Unit (DMU) #1

The DMU form factor is six modular concept unit (MCU). Input power is 115v ac, 400 Hz single phase.

Automatic test equipment (ATE)/test connector and airplane interface connector are located on the front and rear of the unit, respectively. The DMU does not contain external indicators. Fault indications can be identified and displayed on the CDU through the CMC.

The DMU can be programmed in software for a specific airline's requirement. A wide range of user's defined algorithms and output report formats may be accommodated. Additional hardware capabilities can also be added to the unit. The unit is located in the main equipment center on E1-3 shelf.

Data Management Unit (DMU) #2

An airplane interface connector is located on rear of the unit.
A READ switch, an ATE test connector, DMU FAIL indicator and a STATUS display are located on the DMU front panel. The READ switch is used to display stored fault codes in the STATUS display. These fault codes are used for bench maintenance. The ATE test connector is provided for connecting to external equipment. The DMU FAIL indicator comes on to indicate that the DMU has failed.

Quick Access Recorder

AIRPLANES WITH TAPE-BASED QAR;

The QAR records the digital data stream provided by the auxiliary output of the DMU on magnetic tape in a replaceable cassette to permit the data to be extracted for ground processing.

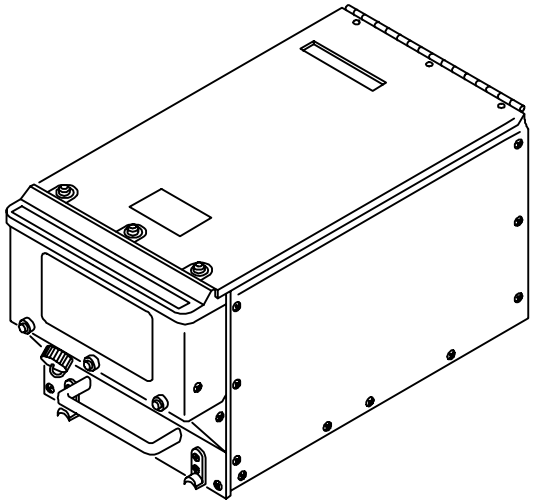
AIRPLANES WITH OPTICAL DISK QAR;

The QAR records the digital data stream provided by the auxiliary output of the DMU on optical disk to permit the data to be extracted for ground processing.

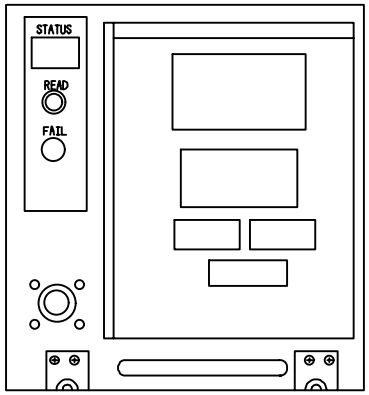
ACARS Management Unit (AMM 23-27)

The ACARS management unit (if installed) provides the airlines with the capability of automatically transferring information between the airplanes and ground based computer systems via radio transmission.

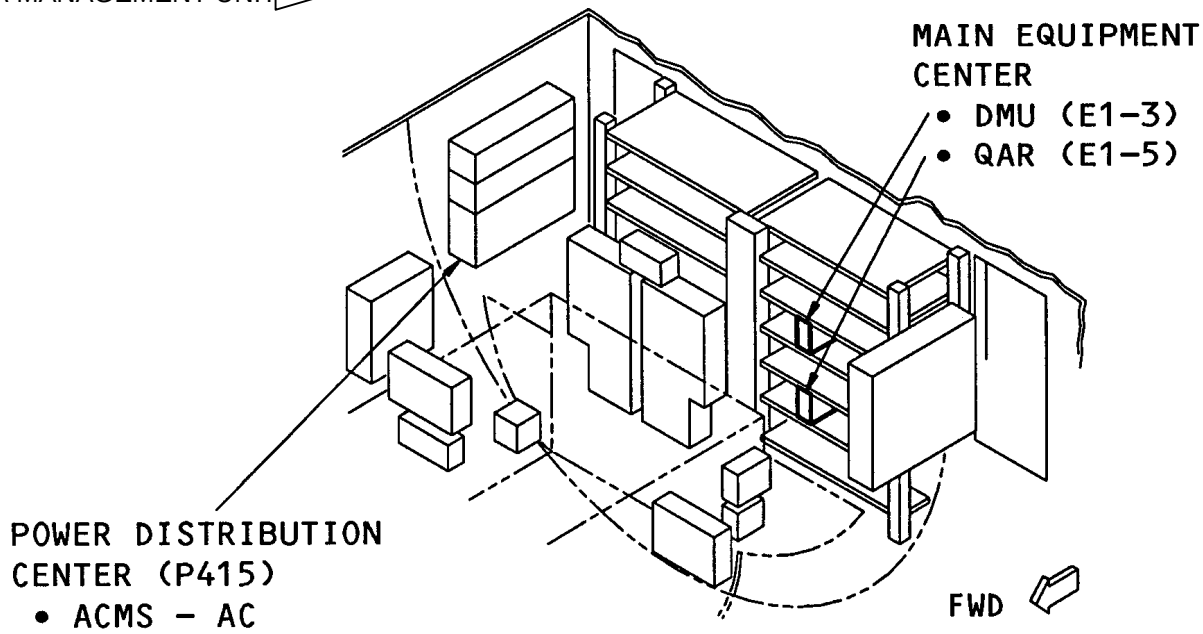
With ACARS, the DMU can send the ACMS reports directly to the ground station for data analysis. This process can be manually started from the center CDU or automatically started by the DMU. The interfacing of DMU with ACARS is through two low speed ARINC 429 buses.

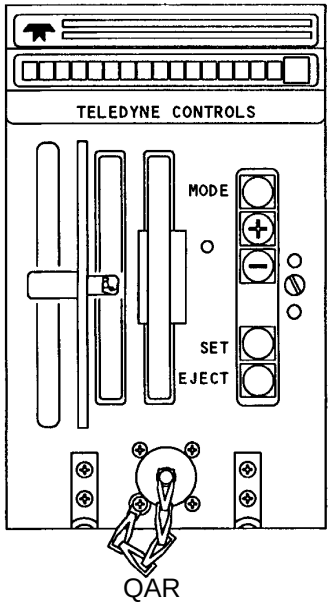


DATA MANAGEMENT UNIT 1



DATA MANAGEMENT UNIT 2





QAR

Figure 4 ACMS Component Locations

ACMS - POWER

Input Power

The DMU and the QAR receive 115v AC from AC bus 3.

ACMS - DISCRETE INPUTS

Discrete Inputs

The DMU receives discrete inputs from these systems:

- Primary nose gear squat relay
- EICAS control panel event switch
- Quick access recorder (QAR) (if installed)
- Airborne data loader (ADL) switch
- VHF radios
- HF radios

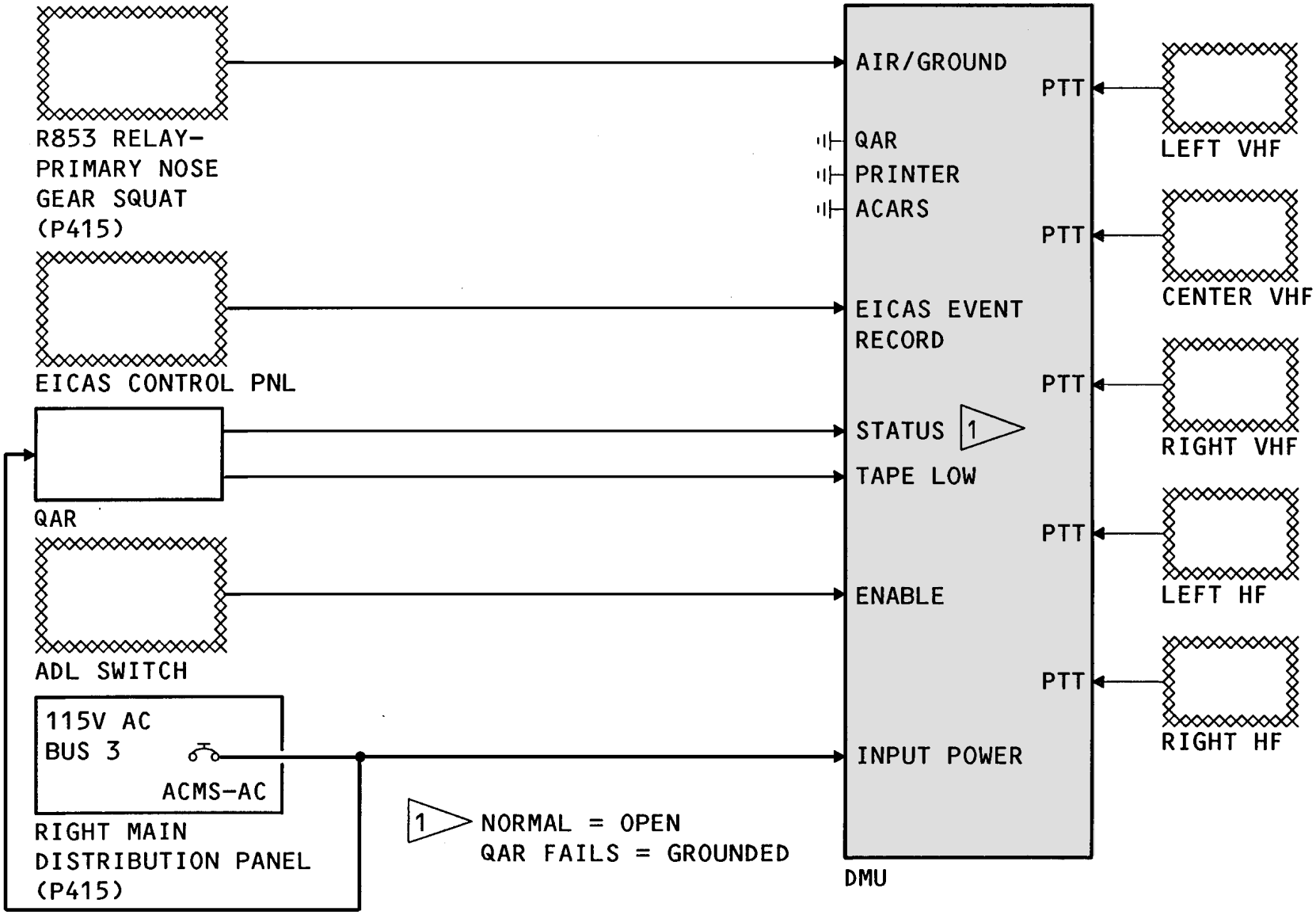


Figure 5 ACMS - Power and Discrete Inputs

ACMS - DIGITAL DATA INPUTS

The DMU receives ARINC data from these systems:

- EFIS/EICAS interface units (EIU)
- MCP (Mode control panel)
- Inertial reference units (IRU)
- Flight management computers (FMC)
- Captain and first officer clocks
- Flight control computers (FCC)
- Air data computers (ADC)
- Radio altimeters (RA)
- Instrument landing systems (ILS)
- Fuel quantity processor unit (FQPU)
- Bus control units (BCU)
- Digital flight data acquisition card (DFDAC)
- Central maintenance computer (CMC)
- Global positioning system sensor units (GPSSU)

The parameters processed and recorded are determined by the airlines' individual requirements. This is controlled by programming in the DMU software.

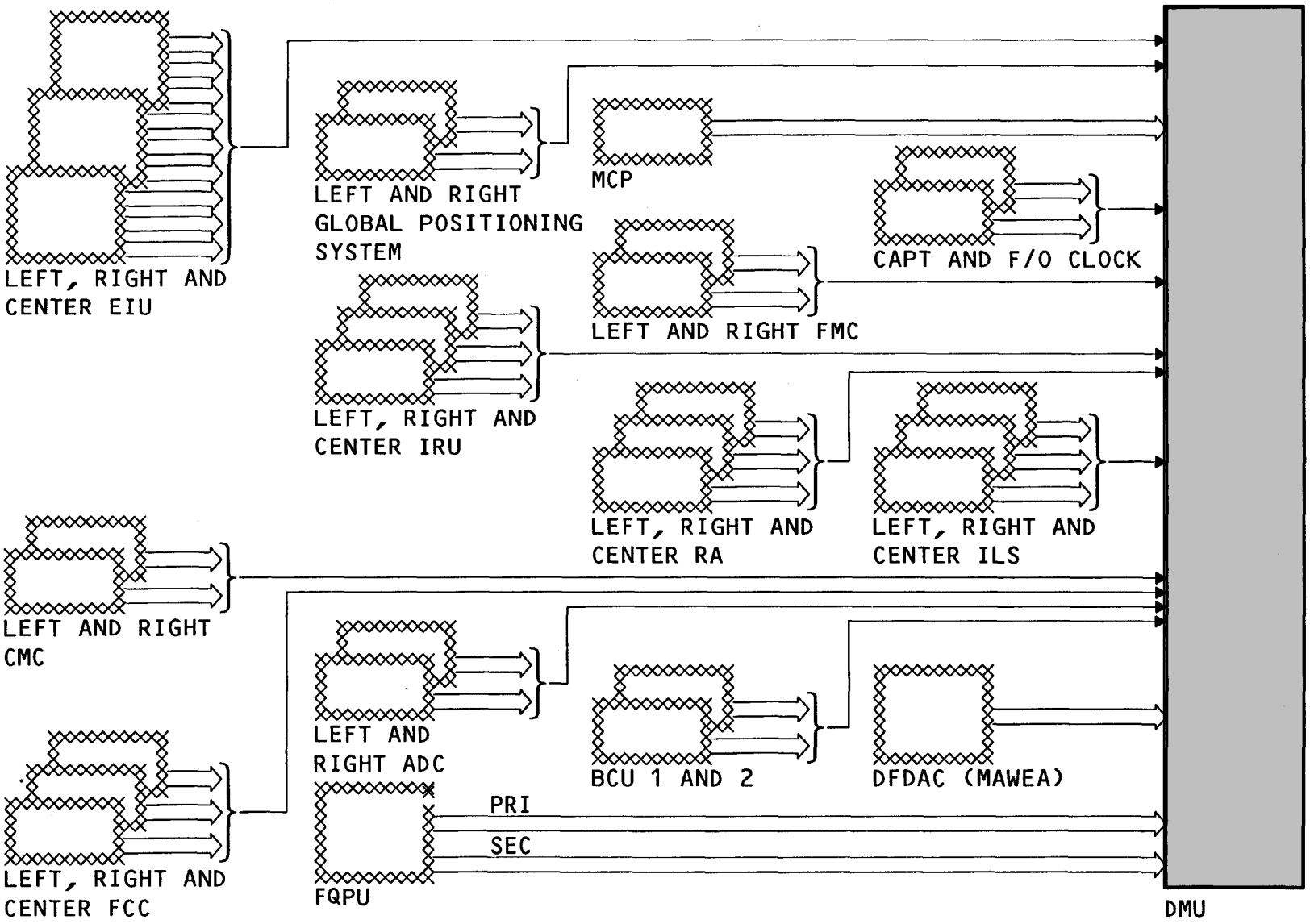


Figure 6 ACMS - Digital Data Inputs

DMU DATA EXCHANGE

General

The ACMS sends reports to these systems:

- Control display unit (CDU)
- Multi-input printer
- ARINC communication addressing and reporting system (ACARS)
- Airborne data loader (ADL)
- Quick access recorder (QAR) (if installed)
- Central maintenance computers (CMC)

CDU

The center CDU provides the capability to interact with the ACMS. The center CDU controls the DMU, extracts the data from the DMU and downloads the ACMS data to the output devices. The ACMS reports are also displayed on the center CDU. The interface between the DMU and the center CDU is through two ARINC 429 low speed buses.

Multi-Input Printer

The DMU sends ACMS reports to the multiinput printer. This data transfer process is manually started from the center CDU or by the DMU software commands. The DMU to CDU interface is through two low speed ARINC 429 buses. The DMU to the multi-input printer is through two low speed ARINC 429 busses.

ACARS

With ACARS, the DMU sends the ACMS reports directly to the ground station for data analysis. This process can be manually started from the center CDU or automatically started by the DMU. The DMU has interfaces with ACARS through two low speed ARINC 429 buses.

ADL

The DMU sends ACMS report data to the airborne data loader (ADL). The data transfer process starts when the DMU has processed the report or manually when requested by the crew. The ADL stores the DMU data on a 3.5 inch optical disk.

With the ADL switch in the ACMS position, the DMU gets a ground enable discrete. This discrete is from the switch to the DMU through the ADL. In flight, the DMU sends ACMS data to the ADL on a single high speed bus. This bus does not go through the ADL switch.

QAR

The data management unit (DMU) sends ACMS reports to the QAR. The data transfer process starts when the DMU has processed the report or manually when requested by the crew. The QAR stores the report data on a 128 megabit, 3.5inch, optical disk. The DMU interfaces with the QAR through two (2) high speed and one low speed data bus, one status and one tape low discrete.

The program pin (PP) on the QAR is set at 256 words per second (WPS).

CMCS

The DMU transmits status data to the central maintenance computers (CMCs). This status data shows the DMU input port status. The DMU also sends DMU BITE data to the CMCs when a valid test command is received from the left CMC.

The CMC also provides this data to the DMU:

- Flight phase
- Flight number
- Time
- Date
- Airplane identification number
- Departure/destination airport

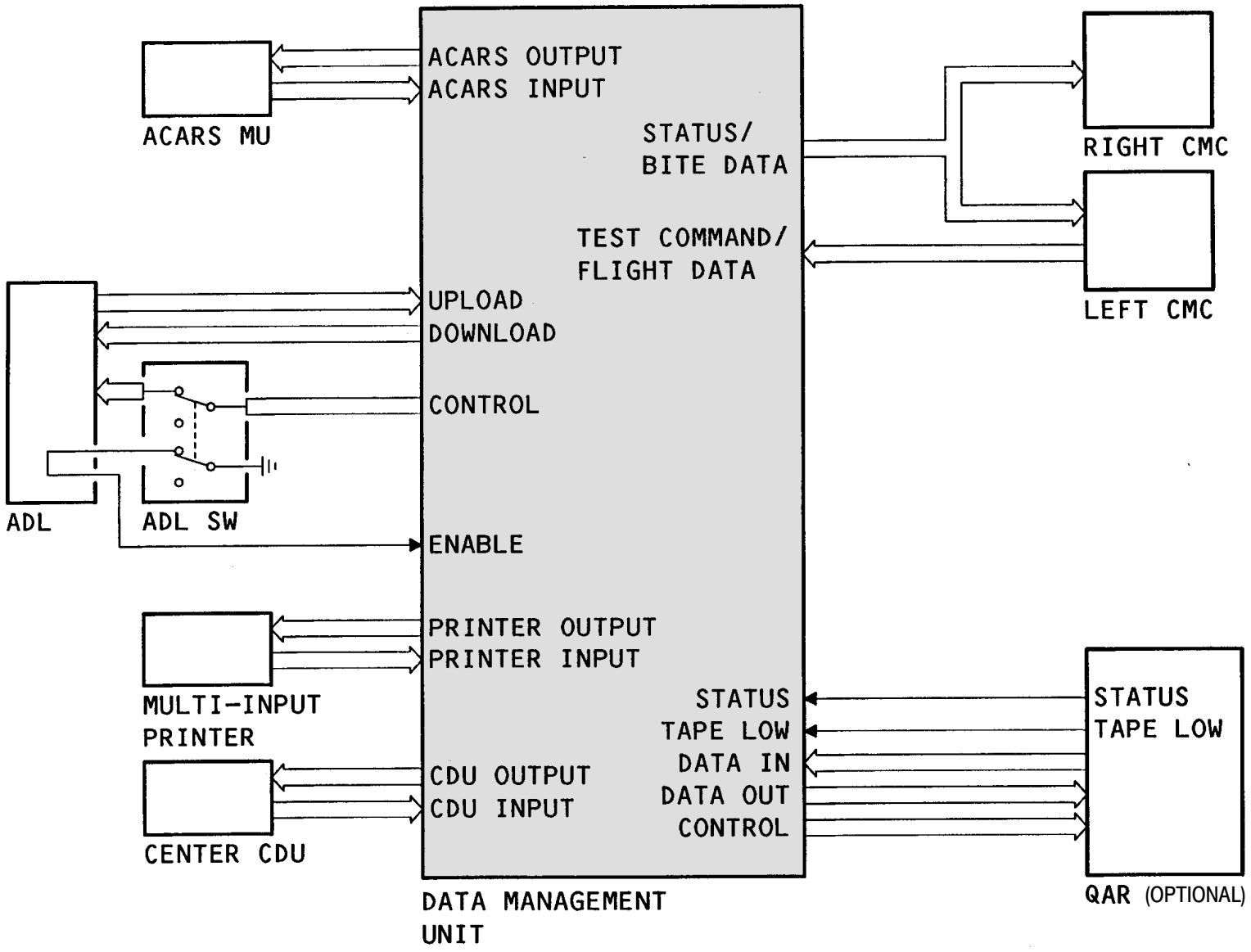


Figure 7 ACMS - DMU Data Exchange

DATA MANAGEMENT UNIT #1 (DMU)

Purpose

The DMU's function is to provide for the collection, manipulation, storage and distribution of data for the aircraft condition monitoring system (ACMS).

The DMU collects airplane performance data from the systems. The DMU then analyzes and sorts the data according to the operator's needs.

The data is distributed automatically or manually when requested, to:

- ACARS
- CDU
- Multi-input printer
- Quick access recorder (if installed).

The DMU performs different management and analytical tasks to satisfy individual operator's requirements for the collection and display of aircraft data.

The DMU is designed to be configured by the airline for their specific needs. The airborne data loader (ADL) is used to program the DMU with software prepared by the airline.

Features

The yellow DMU FAIL lamp comes on for a DMU fault. When the READ switch is pushed, the DMU FAIL lamp comes on and the status display window shows 888 for 4 seconds and then any fail codes in sequence.

The ATE connector on the front panel is for shop testing.

The DMU requires 115v ac, 400 Hz single phase power.

An internal +3v dc battery pack is used to prevent loss of data that is stored in memory.

The shelf life of the cells is five years.

The actual life based on eight hours per day usage and 70 percent of rated current is approximately three years. The battery pack is not a line replaceable item.

CAUTION: STATIC SENSITIVE. DO NOT HANDLE BEFORE READING PROCEDURE FOR HANDLING ELECTROSTATIC DISCHARGE SENSITIVIE DEVICES (REF 20-41-02/201). CONTAINS DEVICES THAT CAN BE DAMAGED BY STATIC DISCHARGE.

Built-in-T est Function

The DMU contains software to perform built-in-test (BIT) to determine the functionality of the DMU hardware and to detect a DMU hardware failure.

During the DMU initialization, the software is responsible for initializing various hardware interfaces, initializing memory contents and software functions, and performing power-up BIT.

During the normal operation of DMU, the software continuously performs the continuous BIT to check the DMU hardware functions.

If the DMU malfunctions, a DMU FAIL indicator will come on, a READ switch may be used to test the fault indicator. A BITE test of the DMU can also be accomplished by accessing to the CMC ground test menu using any CDU.

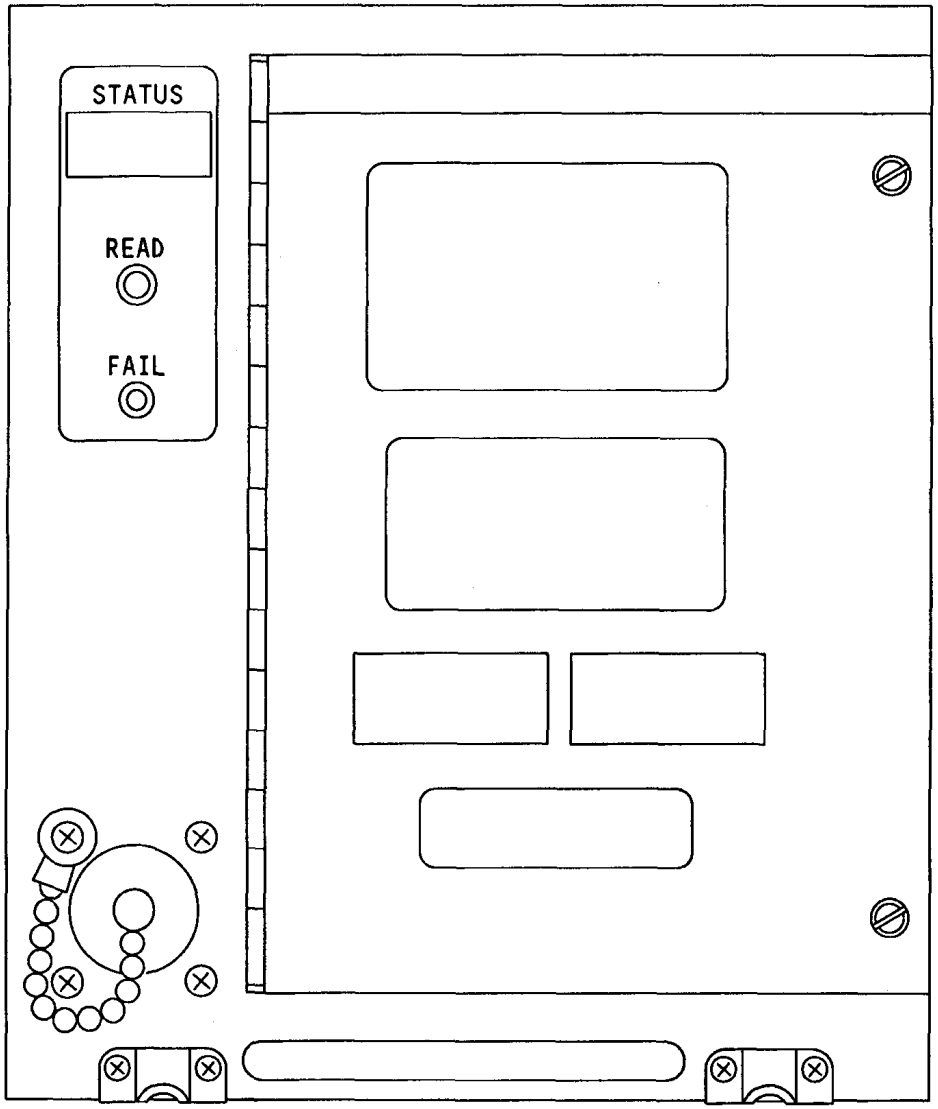


Figure 8 DATA MANAGEMENT UNIT #1

DATA MANAGEMENT UNIT #2 (DMU)

The DMU is the major element of the ACMS providing data acquisition, data management, and data distribution functions.

Airplane information is generally received via ARINC 429 digital input data buses to the DMU ARINC receiver cards (A, B and C). Each receiver card is capable of receiving 16 ARINC input buses.

A master controller can access information on any three of ARINC 429 receiver boards. It allows the microcomputer to read/write to both mass memory and global memory within the DMU. In addition, it also interface with QAR (if installed) and can receive and process 14 discrete shunt inputs to the DMU.

The special I/O controller allows the controllers to have an interface with ACARS (if installed) , CMC, ADL, center CDU, multi-input printer, and QAR (if installed).

The controllers have an interface with memory card for ACMS report storage.

Memory

Two types of stored memory in the DMU:

a mass memory and

a global memory.

Mass memory can be selected by the users. This memory contains compressed data for extended event monitor storage.

The global memory contains the ACMS reports.

Both the mass memory and global memory can be uploaded or downloaded from/to the ADL. This process can be started from the center CDU.

BITE

The DMU has no BITE (Built-in-test equipment) indicators and test switches. A BITE test of the DMU is done by the CMC on the CDU CMC ground tests menu.

From the ground test menu, selecting the LSK next to the DMU enables the DMU to perform its test. If the DMU passes the test, the word PASS is shown. If it fails, the word FAIL is shown.

Pressing the LSK next to FAIL causes the GROUND TESTS RESULT page to be displayed. This shows the DMU failures that occurred in the tests

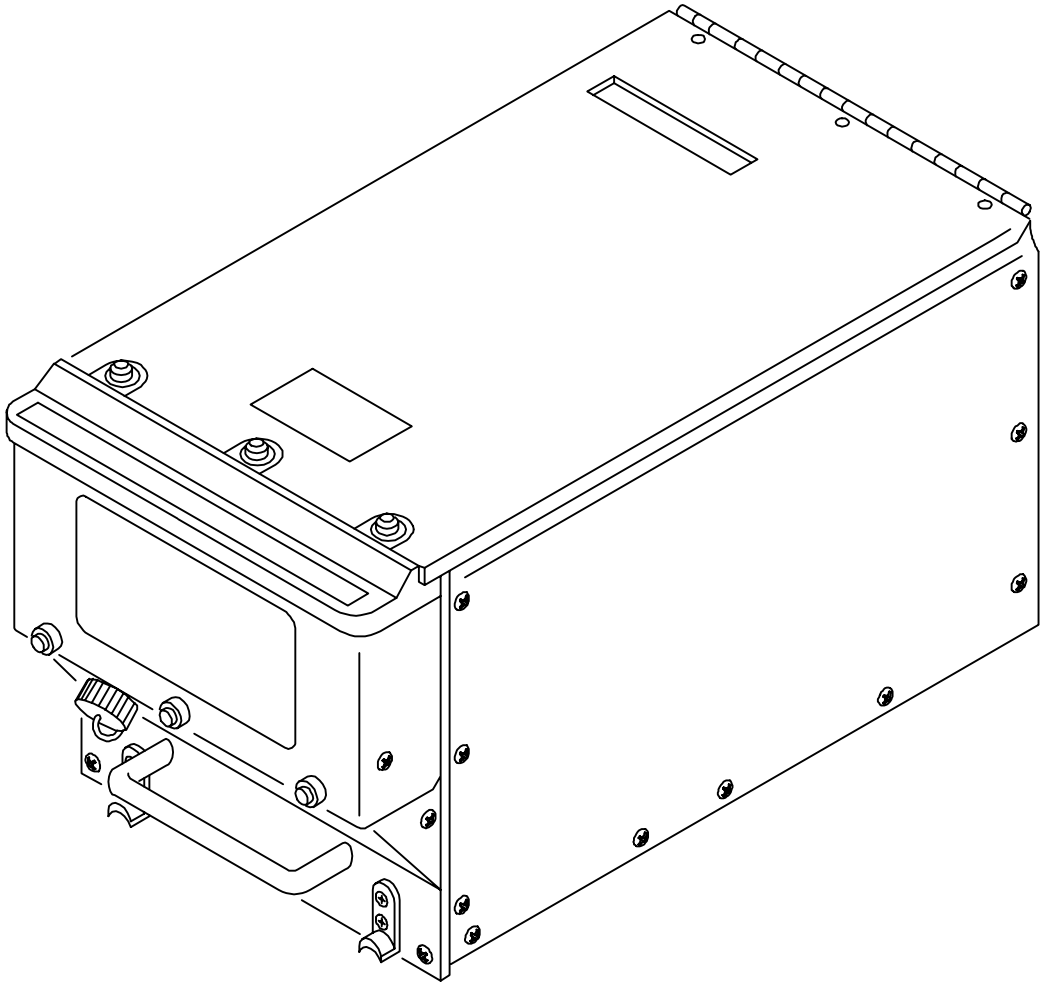


Figure 9 DATA MANAGEMENT UNIT #2

OPTICAL QUICK ACCESS RECORDER (OQAR)

Purpose

The OQAR stores digital flight information from the DMU.

Power

The OQAR gets 115V AC, 400 hertz from the ACMS-AC circuit breaker on the P415 power distribution panel.

Front Panel Features

The 16 character LCD shows mode, status and disk activity.

The OQAR front panel controls and indicators are protected by a door.

The five button keypad:

- Controls mode selection
- Controls the program
- Ejects the disks

Push the MODE key to return to the main menu from a primary display mode or return to the primary display from a program function.

Push the 11+11 or 1111 keys to increase or decrease display numbers or scroll through menus.

Push the SET key to enter a selected function.

Push the EJECT key to eject the disk.

The two slots are for the active disk and a spare disk. The disks are preformatted in the shop prior to use.

The hole next to the active disk is used to eject the disk manually.

A OQAR fail LED comes on to show memory failures, bus driver problems, or internal failures.

The ATE test connector is for use by the shop.

Optical Disk

The OQAR uses a 128 MB, optical floppy disk as a recording medium with a minimum capacity of 20.5 hours of data.

The disk is simular to a standard 3.5 inch magnetic disk. One side of the floppy disk is replaced with an optical tracking spiral.

The spiral is similar to a standard music compact disk (CD) but contains only track information. A laser gives control to the read/write heads. This control puts the data bits close together. The result is increased storage capacity.

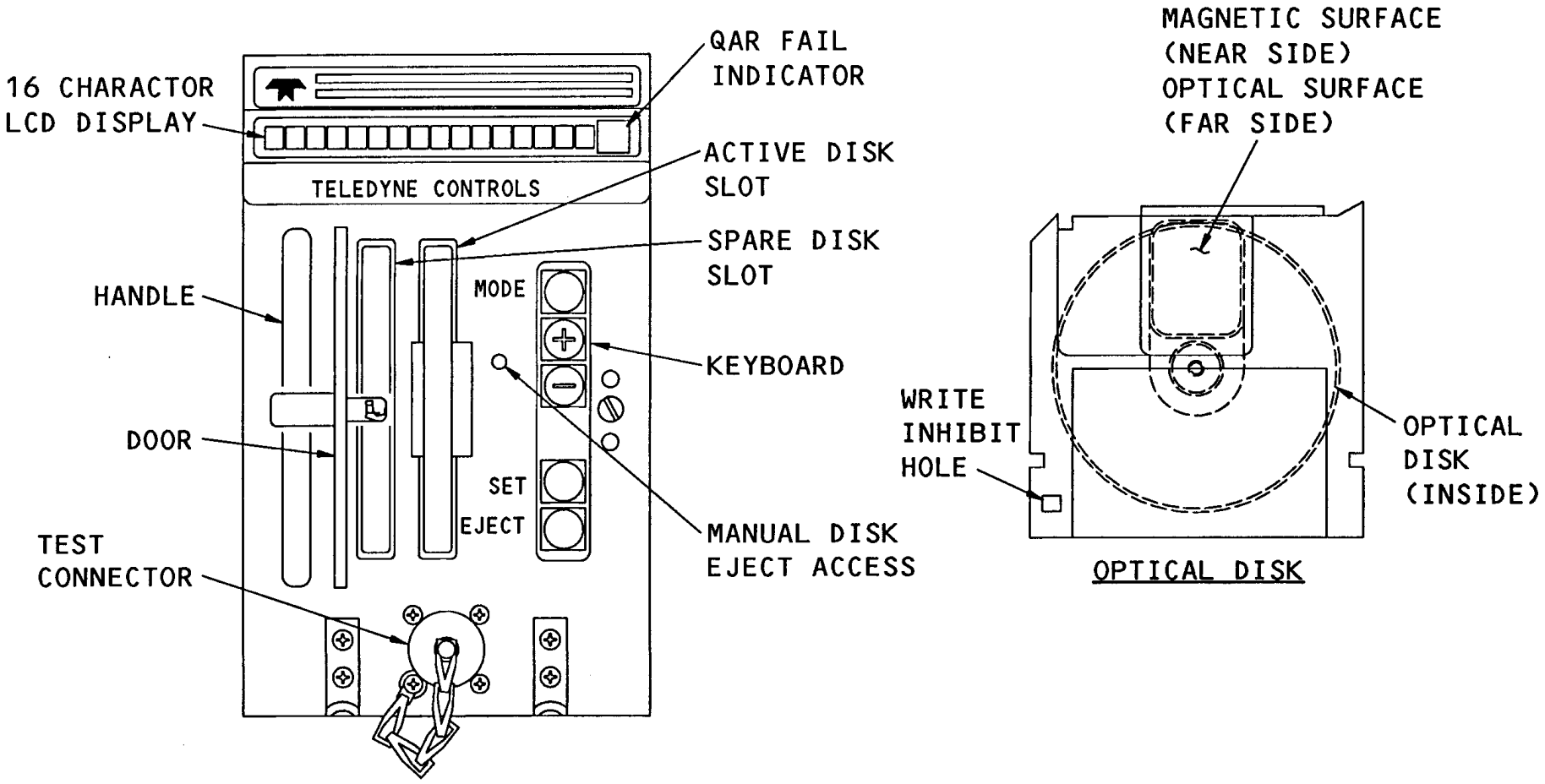


Figure 10 OQAR

ACMS OPERATION

The ACMS CDU menu can be selected on the center CDU. To get access to the ACMS main menu on the CDU, first push the MENU key, then push the line select key (LSK) adjacent to ACMS. From the ACMS main menu, one or more of these submenus can be selected:

NOTE:
The title of the main menu and the submenu selections can be different when the airline custom application software is installed.
(a) REPORTS
(b) REPROGRAM
(c) ADL
(d) DATA DISPLAY
(e) DOC DATA
(f) MAIN ACTIONS
(g) RT PRINT

This is what each selection on the ACMS INDEX does:

REPORTS:

- Activation of manual selected reports or stored reports.

DOC DATA:

The DOC DATA selection shows the ACMS DOC DATA display, which lets you see and modify the values of documentary data parameters.

Indication of ENGINE-HOURS and ENGINE-CYCLES.

DATA DISPLAY

The DATA DISPLAY selection shows the ACMS DATA DISPLAY menu, which has three selections:

- The ALPHA CALLUPS selection lets you see real-time airplane data.
- The DISCRETE INPUTS selection lets you see the binary values of the 14 shunt inputs to the DMU.
- The DITS DATA selection lets you see the ARINC 429 bus inputs to the DMU.

MAINT

The MAINT selection shows the ACMS MAINT (maintenance) display, which lets you start some interface tests and see the error history of the DMU.

Indication and initiating of maintenance-relevant tasks:

- ACARS TEST,
- MCDU TEST or
- ERROR HISTORY.

STATUS

The STATUS selection shows the ACMS STATUS display, which shows this: DMU serial number, part number, and mod status.

Software part numbers and mod status.

ACMS fault status indication of

- DMU- hard- and software-P/N as well as
- FAULT STATUS.
- QAR STATUS (if installed).

RT PRINT

The RT PRINT selection shows the ACMS RT (real-time) PRINT display, which lets you program and trigger (print) real-time reports.

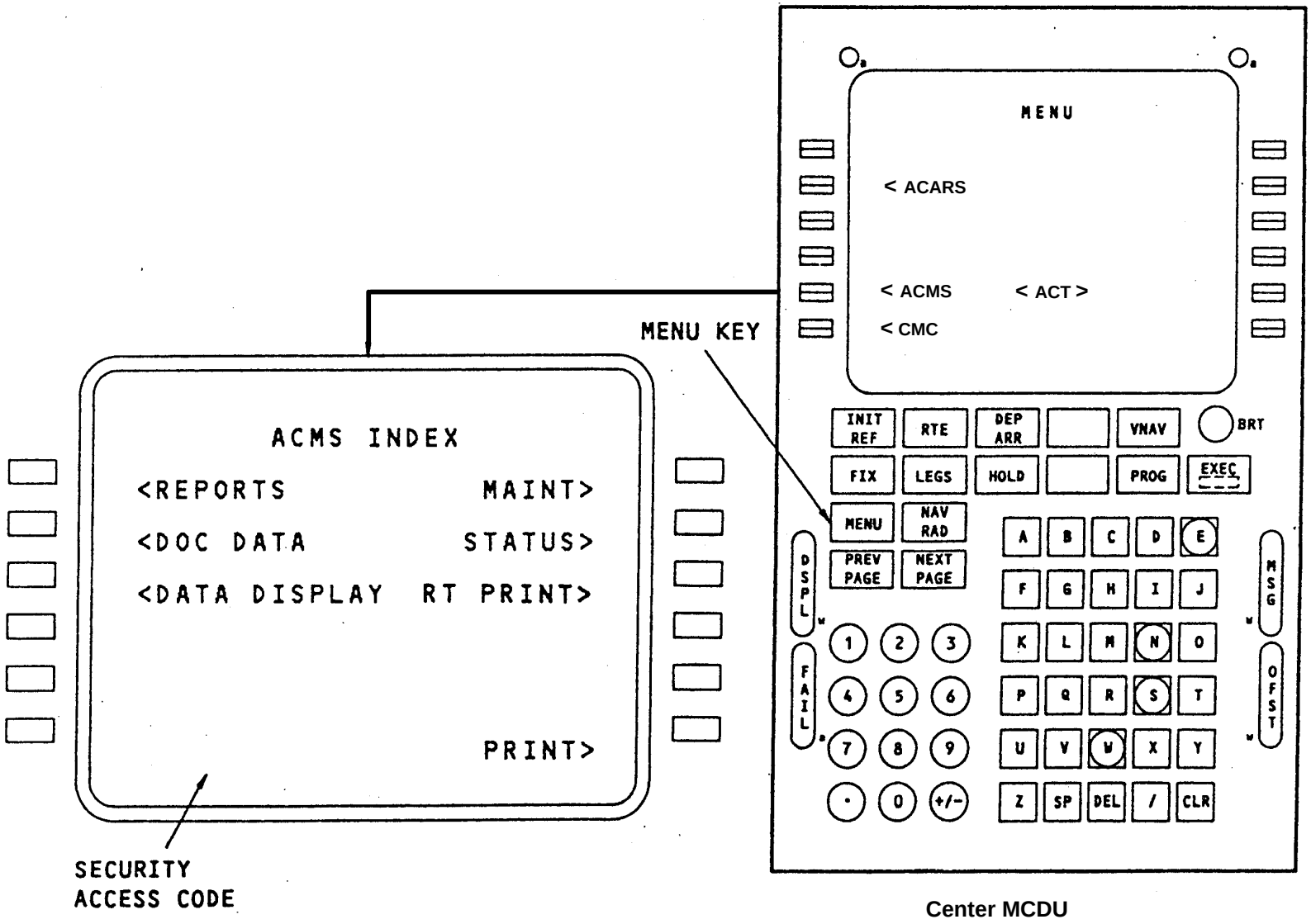


Figure 11 ACMS INDEX

ACMS - REPORTS MENU

REPORTS

The REPORTS selection shows the ACMS REPORTS display, which lets you do this:

1) See the enable/disable status of each report.

2) See the number of reports made during the last flight.

3) See the defined status of each programmable report.

4) Change the enable/disable status of each report (optional).

5) Manually trigger some reports.

6) See the report log and detail report log for each report.

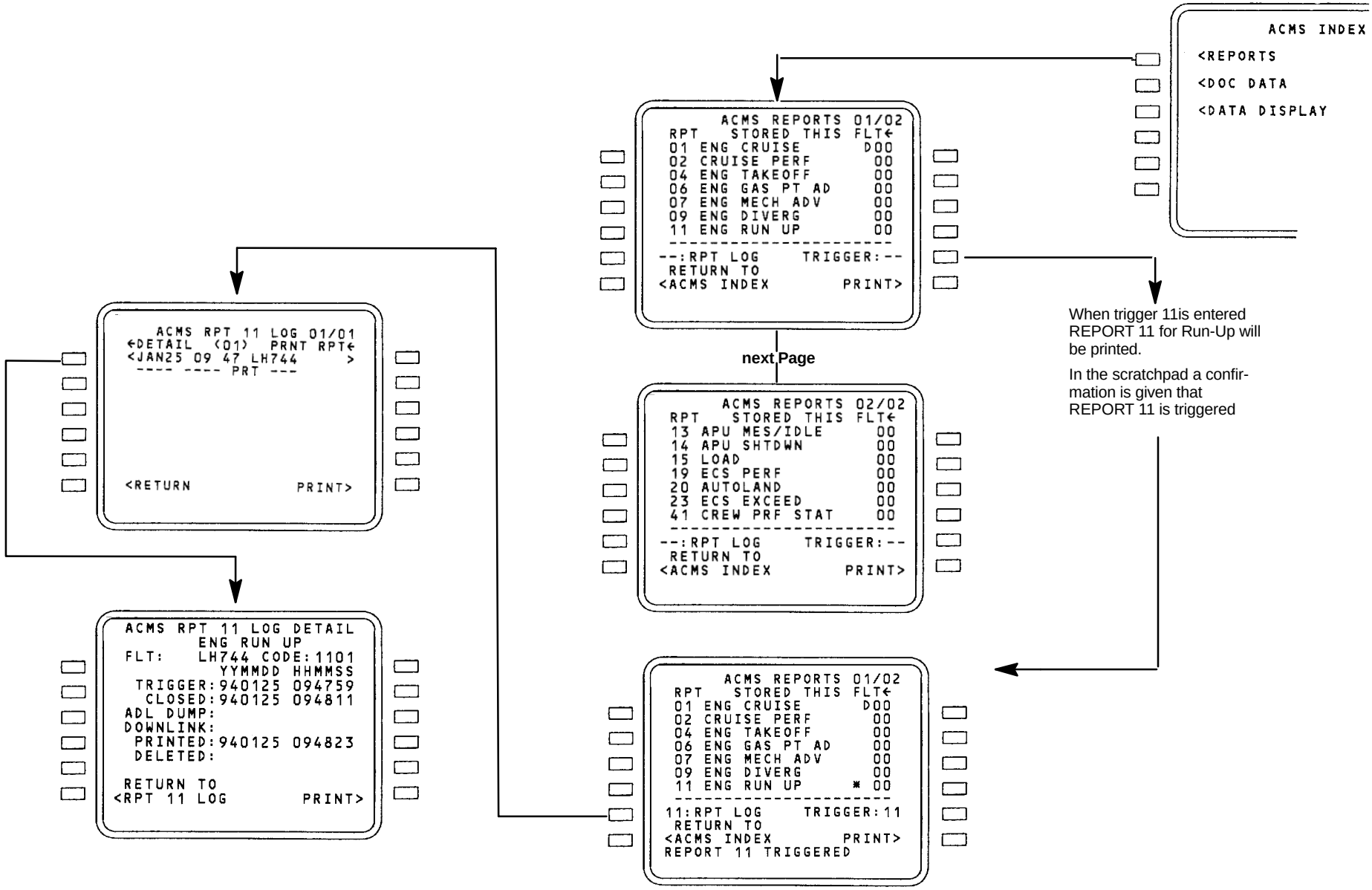


Figure 12 REPORTS Menu

Following reports are active at DLH:

CRUISE PERFORMANCE REPORT - 02 -

will be generated automatically every 6 hours (engine stability condition fullfilled).

ENGINE TAKE OFF REPORT - 04 -

will be generated automatically when EGT-limits are exceeded in flt. phase T0, IC, CLB. The report also shows the N1-derate counter.

ENGINE GAS PATH REPORT - 06 -

will be generated when the red line limits of the engine primary parameters are are exceeded (EGT, N1, N2). Some seconds before and after the occurrence will be stored.

ENGINE MECH ADV REPORT - 07 -

will be triggered when the limits for OIL TEMP or OIL PRESS are exceeded or ENGINE VIBRATION is too high.

ENGINE DIVERGENCY REPORT - 09 -

will be triggered when there is a divergence of EGT oder TN (Nacelle Temp) data. (At least 3 engines running; flight phase CLB or CR.

ENGINE RUN UP REPORT - 11 -

can be triggered by ACARS or MCDU. The report contains all relevant engine parameters and ENG-Hrs, ENG-CYCLES.

APU MES / IDLE REPORT - 13 -

will be triggered after a start in IDLE condition (Gen load = 0 , isolation valve= closed). It shows the most important APU data during start and idle condition.

APU SHUTDOWN REPORT - 14 -

will be triggered when an abnormal APU shutdown occurs.
Max. 2 reports/ flight can be generated.

LOAD REPORT - 15 -

will be triggered when following limits are exceeded by turbulence, hard landing or overweight landing:

-Vertical Acceleration,

-Lateral Acceleration und

-Longitudinal Acceleration

ECS PERFORMANCE REPORT - 19 -

will be triggered every 20. flight cycle and shows performance data of the air-conditiong system.

AUTO LAND REPORT - 20 -

will be triggered at each landing (60 sec. after touch down) and counts the landings, the automatic landings and not sucessfull auto landings. It gives informations, messages/comments for the die pilots.

ECS EXCEEDANCE REPORT - 23 -

will be triggered when in the enviromental control system (ECS) stable parameters are exceeded. The report shows important flight- and ECS data.

CREW PROFICIENCY STATISTICS REPORT - 41 —

32 criteria are stored during 30 days in the DMU if the conditions are fullfilled. (TRUE).
The data will be erased automatically after some time or when the software is changeda. The data is only used for statistical purposes.

Activation of the reports is shown in the table below.

```
MR B74711
****FOR PILOT / MAINTENANCE INFO ONLY***
*******TRANSMISSION IS NOT REQUIRED*******
        B747 ENGINE RUN UP REPORT   <11>
   ACID   DATE    UTC    FLT
C1+D-ABVF 25JAN94 094759 LH744<<<+ SO
   PH FROM TO   DMU   CODE CNT
C2+PO EDDF VTBD BASE8+1101 00000 53
   TAT  ALT    MN
C3 0188 000431 <<< N3
   BFLW         NAI WAI PYLV ISO A FCV
C4 04 08 08 04 0000 00 0000 00  0 000 8V
   ESN    EHRS  ECYC
C5 702170 00000 00000 09
C6 706000 00000 00000 06
C7 702297 00000 00000 15
C8 706000 00000 00000 08
   N1   EGT  N2   FF   P14  P25  T25
E1 0000 0014 <<<< 0000 1450 1450 013 T3
E2 0000 0014 <<<< 0000 1448 1447 014 E2
E3 0000 0016 <<<< 0000 1450 1450 013 T7
E4 0000 0016 <<<< 0000 1450 1447 013 TE
```

Figure 13 PRINT Report (Example)

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Not User Modifiable								User Modifiable		
Report Name	Report #	Maximum # of Stored Reports	Available * Formats	Number of Triggers	Trigger Codes	Limitations (per trigger)	Manual ** Trigger	Trigger Limits	Automatic Trigger (E)nable/(D)isable	Automatic * Destinations
Engine Cruise	01									
Cruise Performance	02	5	ACR	2		one/6 hrs	none		E	ACR
Engine Take off	04	5	ACR	3		one/19 flts			E	ACR/SAT
Engine Gas Path Advisory	06	6	ACR, PRT	12		2/eng/flt	none		E	PRT/ACR
Engine Mechanical Advisory	07	10	ACR, PRT	32		2/eng/flt	none		E	PRT/ACR
Engine Divergence	09	6	ACR	4		3/eng/flt	none		E	ACR/SAT
Engine Run up	11	4	PRT	2		none			E	PRT
APU MES/IDLE	13	4	ACR	1		one/7 flt	none		E	ACR
APU Shutdown	14	4	ACR, PRT	34		2/flt			E	PRT/ACR
Load Report	15	8	PRT	7					E	PRT/ACR
ECS Performance	19	5	ACR	1		one/20 flts	none		E	ACR
Autoland	20	5	PRT	2		one/flt	none		E	PRT
ECS Exceedance	23	5	ACR	13		one/flt			E	ACR
Crew Proficiency Statistics	41	5	ACR	2		day of mon.=10			E	ACR
Autoland Warning	90	-	PRT	-			none		E	PRT
SAR Troubleshooting	95	-	ACR	-			none		E	ACR

Figure 14 Report List

DOC DATA

The menu DOC DATA contains following data:

- EHRS , engine hours and
- ECYC , engine cycles.

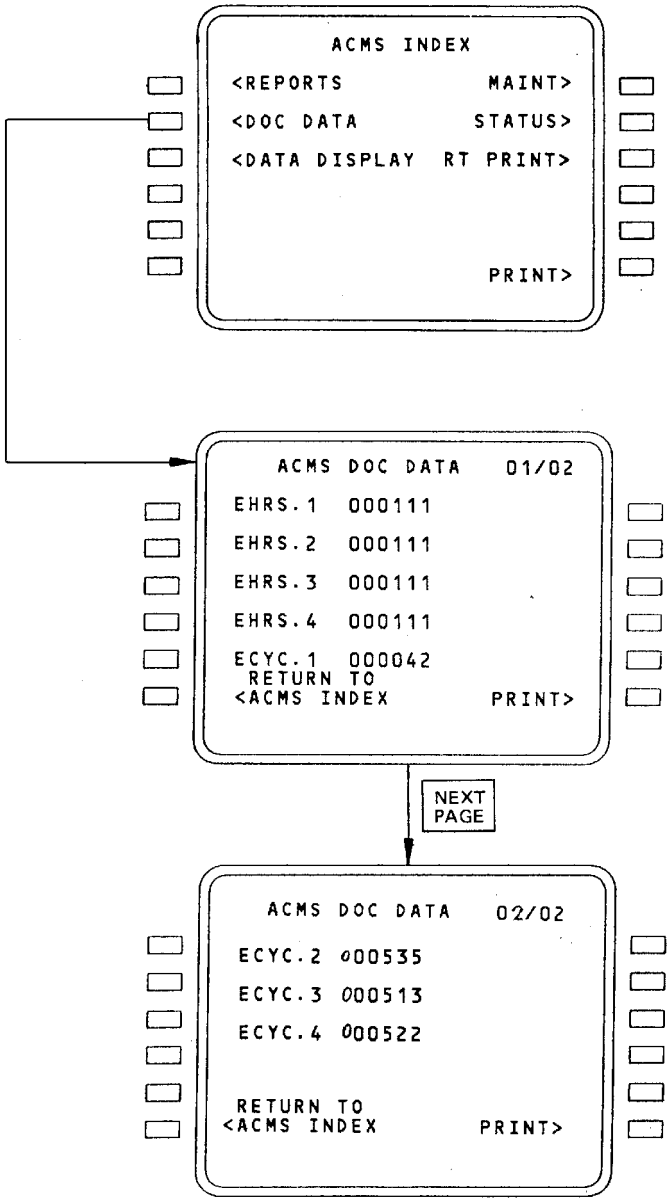


Figure 15 DOC DATA Menu

DATA DISPLAY

The ACMS DATA DISPLAY page provides a selection for ACMS real-time data display.

The DATA DISPLAY selection shows the DATA DISPLAY menu, which has three selections:

It can display the :

- ALPHA CALLUP,
- DISCRETE INPUTS (the DISCRETE DATA selection lets you see the binary values (0 = ground; 1 = open) of the 28 discrete ports wired to the DMU).
- DITS (ARINC) DATA FUNCTION (the DITS DATA selection lets you see the ARINC 429 bus inputs to the DMU).

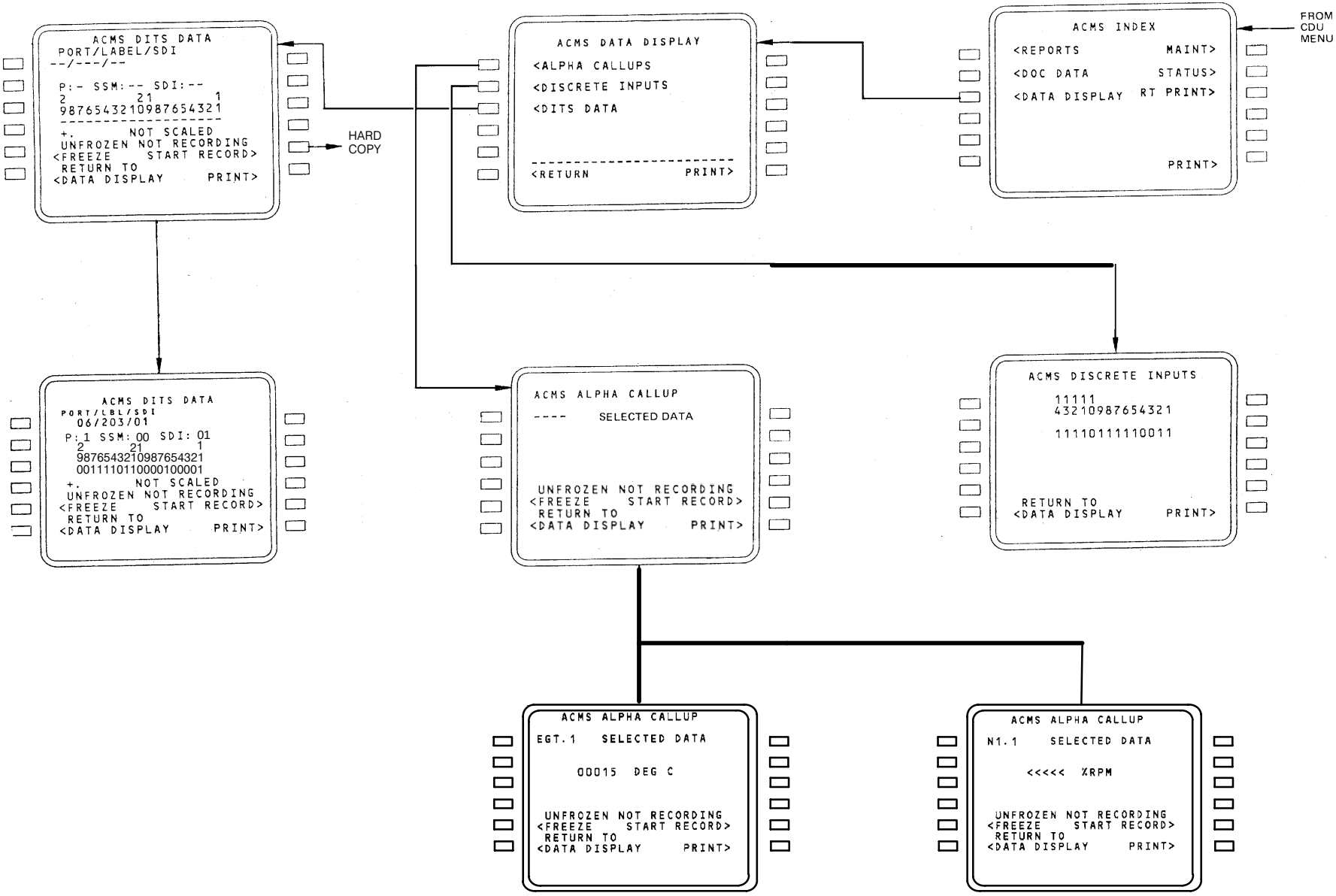


Figure 16 DATA DISPLAY MENU

ALPHA CALLUP

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
A	APU ISOLATION VALVE	DIS		OPEN	CLOSE
A/G	AIRGROUND	DIS		AIR	GND
ACA	LOWER AFT CARGO ACTUAL TEMPERATURE	BNR	DEG C		
ACID	AIRCRAFT IDENTIFICATION	ASC			
ACT	LOWER Aft CARGO TARGET TEMP	BNR	DEG C		
ACW.1	APU STATUS WORD 1	HEX			
ACW.2	APU STATUS WORD 2	HEX			
ACW.3	APU STATUS WORD 3	HEX			
ACW.4	APU STATUS WORD 4	HEX			
ACW.5	APU STATUS WORD 5	HEX			
ACWA	APU STATUS WORD - 312	HEX			
ACWB	APU STATUS WORD - 313	HEX			
ACYC	APU CYCLES	BNR	STARTS		
ADP.1	AIR DRIVEN PUMP	DIS		OFF	ON
ADP.4	AIR DRIVEN PUMP	DIS		OFF	ON
AHRS	APU OPERATING HOURS	BNR	HOURS		
AIL.1	AILERON POSITION	BNR	DEGS		
AIL.2	AILERON POSITION	BNR	DEGS		
AIL.3	AILERON POSITION	BNR	DEGS		
AIL.4	AILERON POSITION	BNR	DEGS		
ALT	PRESSURE ALTITUDE	BNR	FEET		
AMBP	AMBIENT PRESSURE	BNR	PSIA		
AOA	INDICATED AOA	BNR	DEGS		
AOAH.1	AOA PROBE HEAT (LEFT)	DIS		OFF	ON
AOAH.2	AOA PROBE HEAT (RIGHT)	DIS		OFF	ON
AOAL	ANGLE OF ATTACK LEFT	BNR	DEG		
AOAR	ANGLE OF ATTACK RIGHT	BNR	DEG		
AP.1	AUTO PILOT STATUS	PKD		OFF	CMD
AP.2	AUTO PILOT STATUS	PKD		OFF	CMD
AP.3	AUTO PILOT STATUS	PKD		OFF	CMD
APD	AUTO PILOT STATUS - 272	HEX			
APD1.1	A/P G/A MODE OPER PITCH	DIS		OFF	ON
APD1.2	A/P FLARE MODE OPER	DIS		OFF	ON
APD1.3	A/P R/O MODE OPER	DIS		OFF	ON
APD2.1	A/P G/S MODE OPER	DIS		OFF	ON
APD2.2	A/P LAND 3 GREEN	DIS		OFF	ON
APD2.3	A/P LAND 2 GREEN	DIS		OFF	ON
APU	APU RUNNING STATUS	DIS		OFF	ON
ARS	ACTIVE ROUTE SELECT	DIS		0	1
ASN	APU SERIAL NUMBER	BNR			
ASW1.1	APU SHUTDOWN (N1 FAIL)	DIS		OFF	ON
ASW1.2	APU SHUTDOWN (H/W OSPD)	DIS		OFF	ON
ASW1.3	APU SHUTDOWN (H/W TEMP)	DIS		OFF	ON
ASW1.4	APU SHUTDOWN (IN FIRE)	DIS		OFF	ON
ASW2.1	APU SHUTDOWN (N1 OVER)	DIS		OFF	ON
ASW2.2	APU SHUTDOWN (N2 OVER)	DIS		OFF	ON
ASW2.3	APU SHUTDOWN (STEP MTR)	DIS		OFF	ON
ASW2.4	APU SHUTDOWN (N1 UNDER)	DIS		OFF	ON
ASW3.1	APU SHUTDOWN (EGTA)	DIS		OFF	ON
ASW3.2	APU SHUTDOWN (OTA)	DIS		OFF	ON
ASW3.3	APU SHUTDOWN (OIPA)	DIS		OFF	ON
ASW3.4	APU SHUTDOWN (DOOR CLS)	DIS		OFF	ON
ASW4.1	APU SHUTDOWN (T13)	DIS		OFF	ON
ASW4.2	APU SHUTDOWN (DUCTHEAT)	DIS		OFF	ON
ASW4.3	APU SHUTDOWN (T6 T1 N2)	DIS		OFF	ON
ASW4.4	APU SHUTDOWN (T12 T1 N2)	DIS		OFF	ON
ASW5.1	APU SHUTDOWN (RESOL N2)	DIS		OFF	ON
ASW5.2	APU SHUTDOWN (P1 N2)	DIS		OFF	ON

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
VGMX	VRTG MAXIMUM	BNR	G		
VH.1	ENGINE VIBRATION - N2 (REAR PICKUP)	BNR	UNITS		
VH.2	ENGINE VIBRATION - N2 (REAR PICKUP)	BNR	UNITS		
VH.3	ENGINE VIBRATION - N2 (REAR PICKUP)	BNR	UNITS		
VH.4	ENGINE VIBRATION - N2 (REAR PICKUP)	BNR	UNITS		
VHF.1	VHF KEYING - LEFT	DIS		OFF	ON
VHF.2	VHF KEYING - RIGHT	DIS		OFF	ON
VHF.3	VHF KEYING - CENTER	DIS		OFF	ON
VL.1	ENGINE VIBRATION - N1 (FRONT PICKUP)	BNR	UNITS		
VL.2	ENGINE VIBRATION - N1 (FRONT PICKUP)	BNR	UNITS		
VL.3	ENGINE VIBRATION - N1 (FRONT PICKUP)	BNR	UNITS		
VL.4	ENGINE VIBRATION - N1 (FRONT PICKUP)	BNR	UNITS		
VMIN	VELOCITY MINIMUM	BNR	KNOTS		
VMO	MAXIMUM ALLOWABLE CAS	BNR	KNOTS		
VMX	VELOCITY MAXIMUM	BNR	KNOTS		
VORF.1	VOR FREQUENCY (LEFT)	BCD	MHZ		
VORF.2	VOR FREQUENCY (RIGHT)	BCD	MHZ		
VREF	VELOCITY REFERENCE	BNR	KNOTS		
VRTG	VERTICAL ACCELERATION	BNR	G		
VS	VERT SPEED CMD	BNR	FT/MIN		
VSV.1	VARIABLE STATOR VANE	BNR	PERCENT		
VSV.2	VARIABLE STATOR VANE	BNR	PERCENT		
VSV.3	VARIABLE STATOR VANE	BNR	PERCENT		
VSV.4	VARIABLE STATOR VANE	BNR	PERCENT		
WAI.1	WING ANTI-ICE LEFT	DIS		OFF	ON
WAI.2	WING ANTI-ICE RIGHT	DIS		OFF	ON
WBFL	WEIGHT AND BALANCE SYSTEM FLAG	DIS			
WC	WIND COMPONENT	BNR	KNOTS		
WD	WIND DIRECT TRUE	BNR	DEGS		
WS	WIND SPEED	BNR	KNOTS		
WSP.1	WATER SEP DELTA PRESSURE	BNR	PSID		
WSP.2	WATER SEP DELTA PRESSURE	BNR	PSID		
WSP.3	WATER SEP DELTA PRESSURE	BNR	PSID		
YAWD.1	YAW DAMPER UPPER	DIS		OFF	ON
YAWD.2	YAW DAMPER LOWER	DIS		OFF	ON
ZD	ZONE DEMAND	BNR	DEG C		
ZTA.1	ZONE ACTUAL TEMP	BNR	DEG C		
ZTA.2	ZONE ACTUAL TEMP	BNR	DEG C		
ZTA.3	ZONE ACTUAL TEMP	BNR	DEG C		
ZTA.4	ZONE ACTUAL TEMP	BNR	DEG C		
ZTB.1	ZONE ACTUAL TEMP	BNR	DEG C		
ZTB.2	ZONE ACTUAL TEMP	BNR	DEG C		
ZTB.3	ZONE ACTUAL TEMP	BNR	DEG C		
ZTB.4	ZONE ACTUAL TEMP	BNR	DEG C		

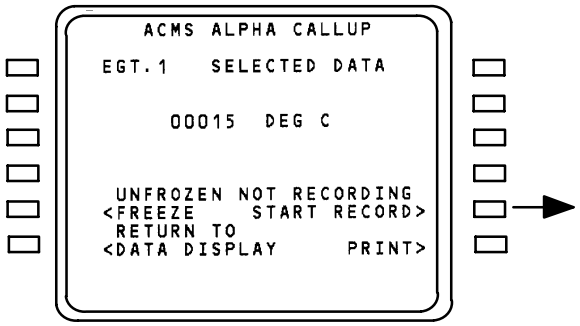
Figure 17 ALPHA CALLUP LIST

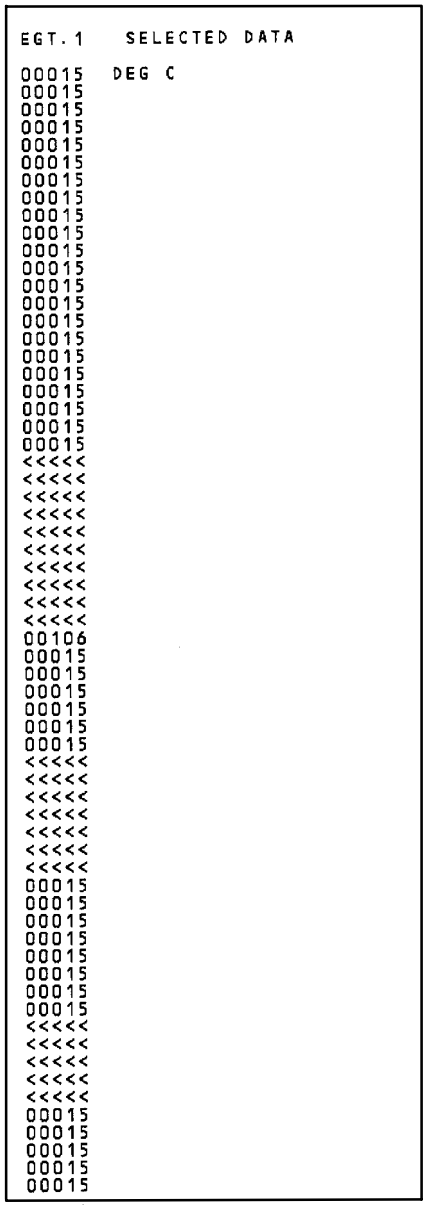
RECORD

START RECORD

When START RECORD is selected, the data will be recorded during the next 120 seconds and printed.

When you press STOP RECORD the storage will be finished.





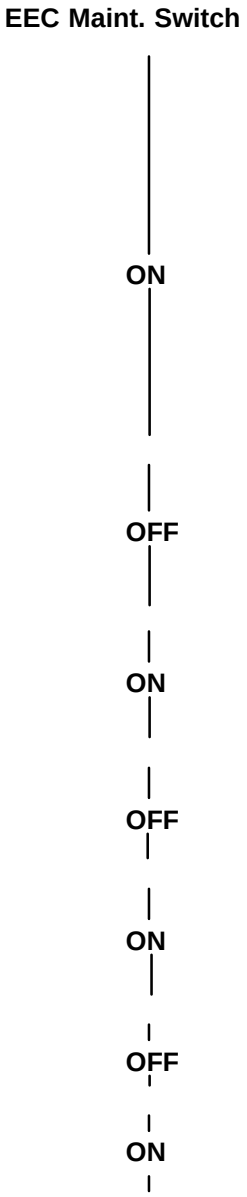


Figure 18 START RECORD

MAINT

With the MAINT-Menu you have following test functions:

- ACARS TEST, (Check the communication between the DMU and ACARS, and the ground station.

  Foolowing messages may appear:

  - BLOCK DELIVERT 01/02
  - BLOCK DELIVERT 02/02.
  - WAIT FOR ACK, the DMU waits for response by ACARS.
  - ACK RECEICED, transmission is confirmed, theprompt reappears.

When the test is started while ACARS is busy you receive the message:

- WAIT FOR MSG.

When the transmission is not successfull (for example the airplane is in the hangar), you receive the message:

- ACARS LINK BAD.

- MCDU-TEST, all possible signs are shown on the display

- ERROR HIST, a list of fault history (shop maintenance).

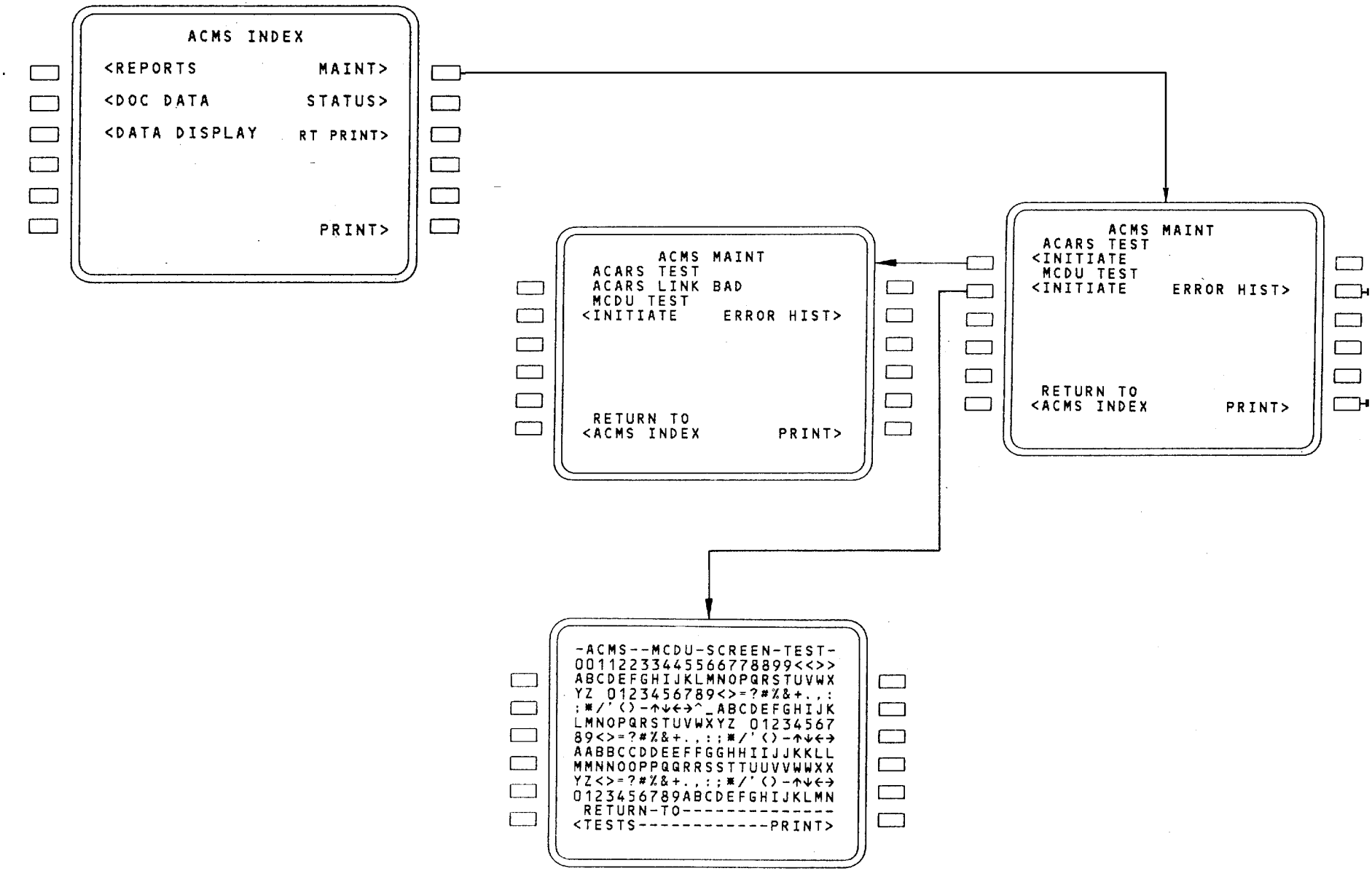


Figure 19 MAINT MENU

RT PRINT

The RT PRINT page provides trigger and reprogram functions for as many as five real-time print reports of the parameters.

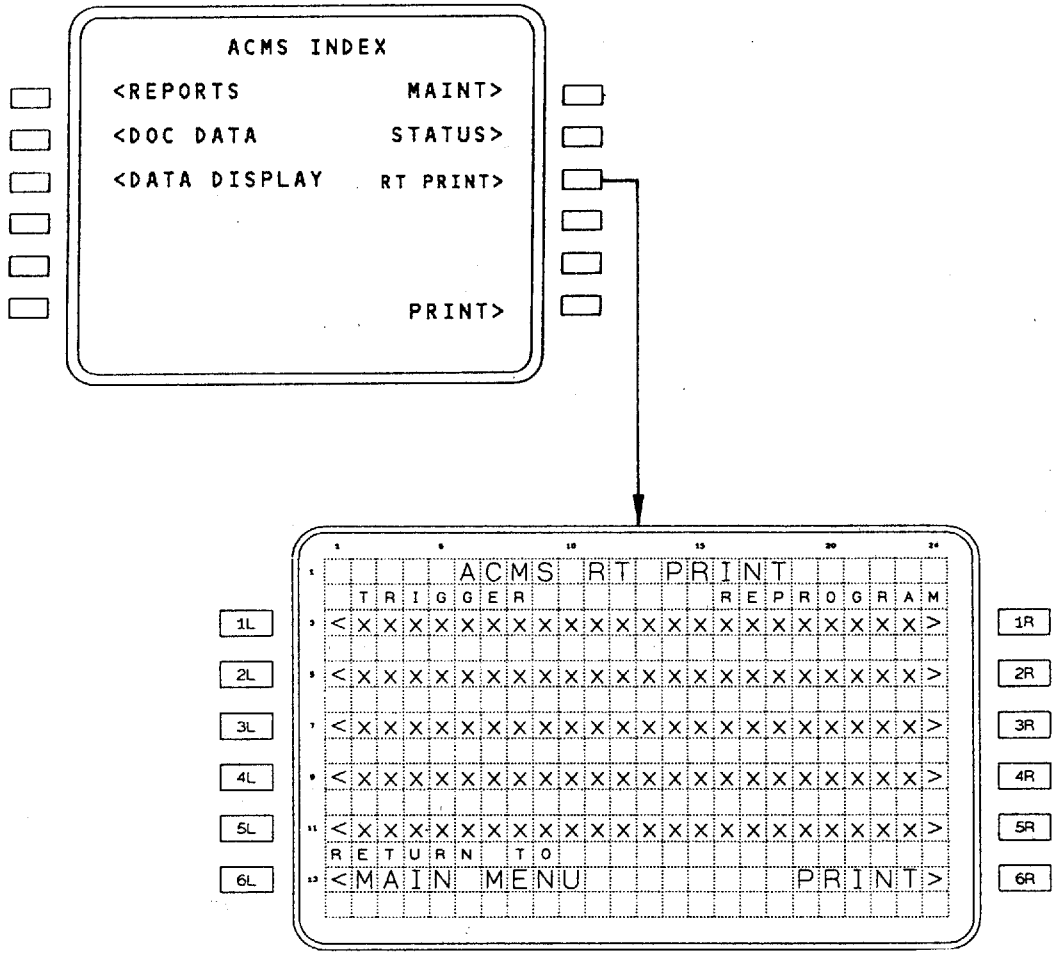


Figure 20 RT PRINT

ACMS DMU GROUND TEST

The DMU has no front panel BITE indications or test switches. A test of the DMU is done by the CMC on the CDU CMC ground tests menu.

From the ground test menu, select the LSK next to DMU.

If the airplane is on the ground and the engines are off, the test starts.

- If both conditions do not exist the test enable page shows.
- When the conditions are met, push the RETURN key.
- Push the LSK next to ACMS. This causes the DMU to start its test.
- If the DMU test passes, the word PASS is shown.
- If it fails, the word FAIL is shown. Select the LSK next to FAIL to show the DMU failures that occurred in the test.

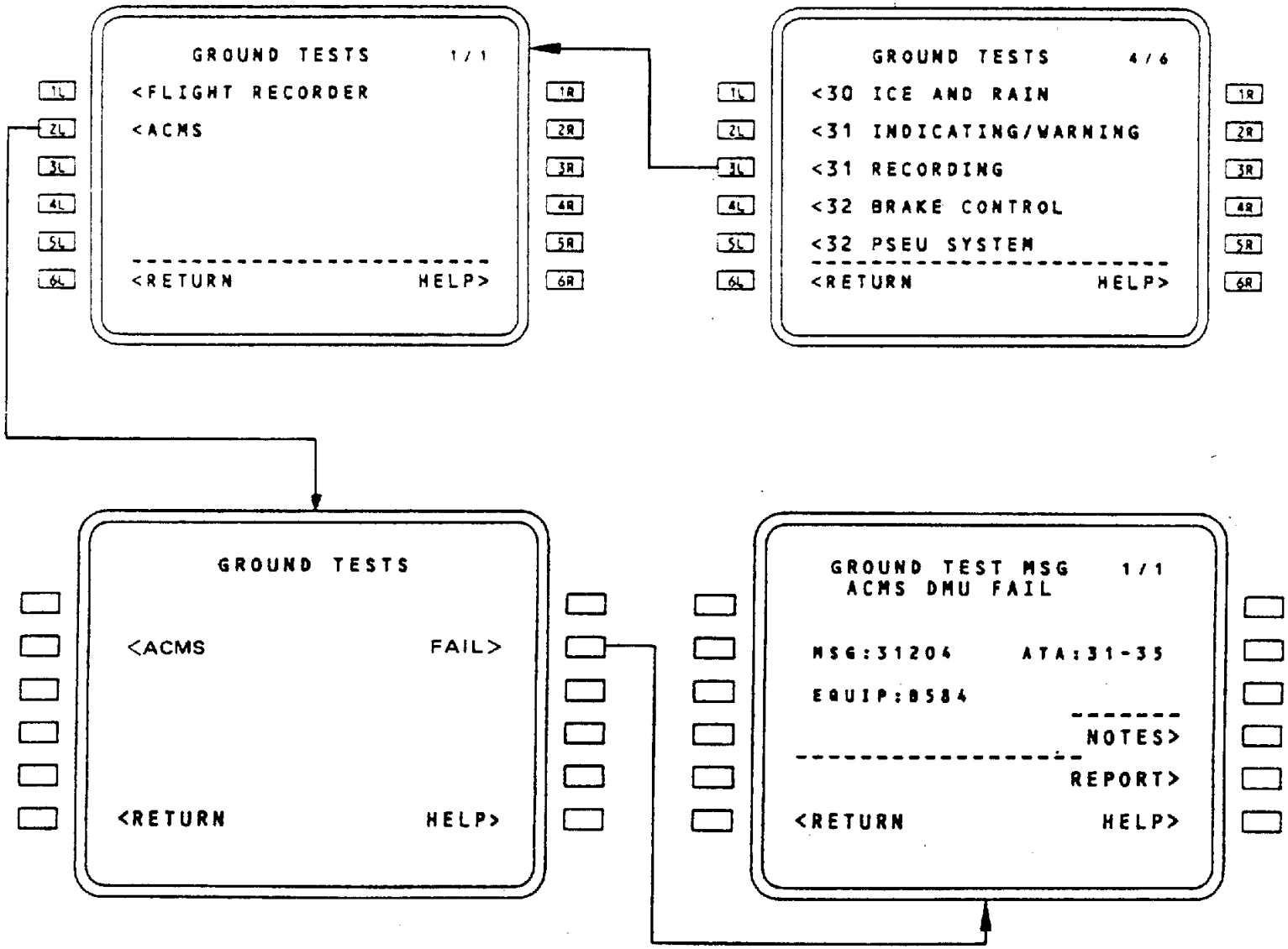


Figure 21 ACMS Ground Test

ANNEX

ALPHA CALL UP LIST

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
A	APU ISOLATION VALVE	DIS		OPEN	CLOSEI
A/G	AIRGROUND	DIS		AIR	GND
ACA	LOWER AFT CARGO ACTUAL TEMPERATURE	BNR	DEG C		
ACID	AIRCRAFT IDENTIFICATION	ASC			
ACT	LOWER Aft CARGO TARGET TEMP	BNR	DEG C		
ACW.1	APU STATUS WORD 1	HEX			
ACW.2	APU STATUS WORD 2	HEX			
ACW.3	APU STATUS WORD 3	HEX			
ACW.4	APU STATUS WORD 4	HEX			
ACW.5	APU STATUS WORD 5	HEX			
ACWA	APU STATUS WORD - 312	HEX			
ACWB	APU STATUS WORD - 313	HEX			
ACYC	APU CYCLES	BNR	STARTS		
ADP.1	AIR DRIVEN PUMP	DIS		OFF	ON
ADP.4	AIR DRIVEN PUMP	DIS		OFF	ON
AHRS	APU OPERATING HOURS	BNR	HOURS		
AIL.1	AILERON POSITION	BNR	DEGS		
AIL.2	AILERON POSITION	BNR	DEGS		
AIL.3	AILERON POSITION	BNR	DEGS		
AIL.4	AILERON POSITION	BNR	DEGS		
ALT	PRESSURE ALTITUDE	BNR	FEET		
AMBP	AMBIENT PRESSURE	BNR	PSIA		
AOA	INDICATED AOA	BNR	DEGS		
AOAH.1	AOA PROBE HEAT (LEFT)	DIS		OFF	ON
AOAH.2	AOA PROBE HEAT (RIGHT)	DIS		OFF	ON
AOAL	ANGLE OF ATTACK LEFT	BNR	DEG		
AOAR	ANGLE OF ATTACK RIGHT	BNR	DEG		
AP.1	AUTO PILOT STATUS	PKD		OFF	CMD
AP.2	AUTO PILOT STATUS	PKD		OFF	CMD
AP.3	AUTO PILOT STATUS	PKD		OFF	CMD
APD	AUTO PILOT STATUS - 272	HEX			
APD1.1	A/P G/A MODE OPER PITCH	DIS		OFF	ON
APD1.2	A/P FLARE MODE OPER	DIS		OFF	ON
APD1.3	A/P R/O MODE OPER	DIS		OFF	ON
APD2.1	A/P G/S MODE OPER	DIS		OFF	ON
APD2.2	A/P LAND 3 GREEN	DIS		OFF	ON
APD2.3	A/P LAND 2 GREEN	DIS		OFF	ON
APU	APU RUNNING STATUS	DIS		OFF	ON
ARS	ACTIVE ROUTE SELECT	DIS		0	1
ASN	APU SERIAL NUMBER	BNR			
ASW1.1	APU SHUTDOWN (N1 FAIL)	DIS		OFF	ON
ASW1.2	APU SHUTDOWN (H/W OSPD)	DIS		OFF	ON
ASW1.3	APU SHUTDOWN (H/W TEMP)	DIS		OFF	ON
ASW1.4	APU SHUTDOWN (IN FIRE)	DIS		OFF	ON
ASW2.1	APU SHUTDOWN (N1 OVER)	DIS		OFF	ON
ASW2.2	APU SHUTDOWN (N2 OVER)	DIS		OFF	ON
ASW2.3	APU SHUTDOWN (STEP MTR)	DIS		OFF	ON
ASW2.4	APU SHUTDOWN (N1 UNDER)	DIS		OFF	ON
ASW3.1	APU SHUTDOWN (EGTA)	DIS		OFF	ON
ASW3.2	APU SHUTDOWN (OTA)	DIS		OFF	ON
ASW3.3	APU SHUTDOWN (OIPA)	DIS		OFF	ON
ASW3.4	APU SHUTDOWN (DOOR CLS)	DIS		OFF	ON
ASW4.1	APU SHUTDOWN (T13)	DIS		OFF	ON
ASW4.2	APU SHUTDOWN (DUCTHEAT)	DIS		OFF	ON
ASW4.3	APU SHUTDOWN (T6 T1 N2)	DIS		OFF	ON
ASW4.4	APU SHUTDOWN (T12 T1 N2)	DIS		OFF	ON
ASW5.1	APU SHUTDOWN (RESOL N2)	DIS		OFF	ON
ASW5.2	APU SHUTDOWN (P1 N2)	DIS		OFF	ON
ASW5.3	APU SHUTDOWN (FIRESHUT)	DIS		OFF	ON
ASW5.4	APU SHUTDOWN (SURGE)	DIS		OFF	ON
ASW6.1	APU SHUTDOWN (CRL FAIL)	DIS		OFF	ON
ASW6.2	APU SHUTDOWN (ABNORMAL)	DIS		OFF	ON
ASW6.3	APU SHUTDOWN (START OIP)	DIS		OFF	ON
ASW6.4	APU SHUTDOWN (N2 ROTATE)	DIS		OFF	ON
ASW7.1	APU SHUTDOWN (EGV FAIL)	DIS		OFF	ON
ASW7.2	APU SHUTDOWN (N2 HUNG)	DIS		OFF	ON
ASW7.3	APU SHUTDOWN (T6 HOT)	DIS		OFF	ON
ASW7.4	APU SHUTDOWN (NO LIGHT)	DIS		OFF	ON
ASW8.1	APU SHUTDOWN (N1 NOTSP)	DIS		OFF	ON
ASW8.2	APU SHUTDOWN (N1 RANGE)	DIS		OFF	ON
ASW8.3	APU SHUTDOWN (N2 FAIL)	DIS		OFF	ON
ASW8.4	APU SHUTDOWN (T6 FAIL)	DIS		OFF	ON
ATA	ZONE AFT TEMP - B	BNR	DEG C		
ATB.1	ZONE AFT TEMP - C	BNR	DEG C		
ATB.2	ZONE AFT TEMP - D	BNR	DEG C		
ATB.3	ZONE AFT TEMP - E	BNR	DEG C		
ATB.4	ZONE AFT TEMP - AFT CARGO	BNR	DEG C		
ATD1.1	A/T THROTTLE HOLD	DIS		OFF	ON
ATD1.2	A/T SPEED MODE	DIS		OFF	ON
ATD1.3	A/T FMC MASTER	DIS		OFF	ON
ATD1.4	A/T T/O BUMP OPER	DIS		OFF	ON
ATD2.1	A/T MODE TAKEOFF	DIS		OFF	ON
ATD2.2	A/T MODE CLIMB	DIS		OFF	ON
ATD2.3	A/T MODE CRUISE	DIS		OFF	ON
ATD2.4	A/T MODE CONTINUOUS	DIS		OFF	ON
ATD3.1	A/T DISCONNECT	DIS		OFF	ON
ATD3.2	A/T ARMED	DIS		OFF	ON
ATD3.3	A/T FLCH MODE OPER	DIS		OFF	ON
ATD3.4	A/T TEMP DERATE STATUS	DIS		OFF	ON
AV.1	APU ISO VALVE - CLOSED	DIS		0	1
AV.2	APU ISO VALVE - OPEN	DIS		0	1
AVL	AFT OUTFLOW VALVE LEFT	BNR	PERCENT		
AVR	AFT OUTFLOW VALVE RIGHT	BNR	PERCENT		
BALT	ALTITUDE BARO CORRECTED	BNR	FEET		
BATC	APU BATTERY CURRENT	BNR	AMPERES		
BATV	APU BATTERY VOLTAGE	BNR	VOLTS		
BCA	BULK CARGO ACTUAL TEMP	BNR	DEG C		
BFLW.1	BLEED AIRFLOW	BNR	LBS/SEC		
BFLW.2	BLEED AIRFLOW	BNR	LBS/SEC		
BFLW.3	BLEED AIRFLOW	BNR	LBS/SEC		
BFLW.4	BLEED AIRFLOW	BNR	LBS/SEC		
BLDA.1	BLEED STATUS A -ON/OFF	DIS		0	1
BLDA.2	BLEED STATUS A -ON/OFF	DIS		0	1
BLDA.3	BLEED STATUS A -ON/OFF	DIS		0	1
BLDA.4	BLEED STATUS A -ON/OFF	DIS		0	1
BLDB.1	BLEED STATUS B -O/T SW	DIS		0	1
BLDB.2	BLEED STATUS B -O/T SW	DIS		0	1
BLDB.3	BLEED STATUS B -O/T SW	DIS		0	1
BLDB.4	BLEED STATUS B -O/T SW	DIS		0	1
BLDC.1	BLEED STATUS C -O/P SW	DIS		0	1
BLDC.2	BLEED STATUS C -O/P SW	DIS		0	1
BLDC.3	BLEED STATUS C -O/P SW	DIS		0	1
BLDC.4	BLEED STATUS C -O/P SW	DIS		0	1
BP.1	BLEED PRESSURE	BNR	PSIG		
BP.2	BLEED PRESSURE	BNR	PSIG		
BP.3	BLEED PRESSURE	BNR	PSIG		
BP.4	BLEED PRESSURE	BNR	PSIG		

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
BT.1	BLEED TEMPERATURE	BNR	DEG C		
BT.2	BLEED TEMPERATURE	BNR	DEG C		
BT.3	BLEED TEMPERATURE	BNR	DEG C		
BT.4	BLEED TEMPERATURE	BNR	DEG C		
BUS.1	ELECTRICAL BUS STATUS	DIS		OFF	ON
BUS.2	ELECTRICAL BUS STATUS	DIS		OFF	ON
BUS.3	ELECTRICAL BUS STATUS	DIS		OFF	ON
BUS.4	ELECTRICAL BUS STATUS	DIS		OFF	ON
CABP	CABIN PRESSURE	BNR	PSIA		
CALT	CABIN ALTITUDE	BNR	FEET		
CAR	CABIN ALTITUDE RATE	BNR	10FT/MIN		
CAS	COMPUTED AIR SPEED	BNR	KNOTS		
CCP	CONTROL COLUMN POSITION	BNR	DEGS		
CG	CENTER OF GRAVITY	BCD	%MAC		
CGI	I NITIAL CENTER OF GRAVITY AT ENG START	BNR	%MAC		
CHDG	HEADING	BNR	DEGS		
CNAV.1	CAPT NAV SEL 1 - RIGHT	DIS		OFF	ON
CNAV.2	CAPT NAV SEL 2 - LEFT	DIS		OFF	ON
CNAV.3	CAPT NAV SEL 3 - CENTER	DIS		OFF	ON
CONA.1	T/O CONFIG FLAPS	DIS		OFF	ON
CONA.2	T/O CONFIG PARK BRAKE	DIS		OFF	ON
CONA.3	T/O CONFIG SPOILERS	DIS		OFF	ON
CONA.4	T/O CONFIG STABILIZER	DIS		OFF	ON
CONB.1	UNSCHEDULED STAB MOVE	DIS		OFF	ON
CONB.2	LANDING CONFIG GEAR	DIS		OFF	ON
CONB.3	T/O CONFIG GEAR STEER	DIS		OFF	ON
CPO.1	COMP OUTLET TEMP	BNR	DEG C		
CPO.2	COMP OUTLET TEMP	BNR	DEG C		
CPO.3	COMP OUTLET TEMP	BNR	DEG C		
CWP	CONTROL WHEEL INPUT	BNR	DEGS		
DA	DRIFT ANGLE	BNR	DEGS		
DAOA	DELTA ANGLE OF ATTACK	BNR	DEGS		
DET.1	ICE DECTOR STATUS - LEFT	DIS		0	1
DET.2	ICE DECTOR STATUS - RIGHT	DIS		0	1
DH	DECISION HEIGHT	BNR	FEET		
DISA.1	LE FLAP DISAGREE	DIS		OFF	ON
DISA.2	GEAR DISAGREE	DIS		OFF	ON
DMED.1	DME DISTANCE	BNR	NM		
DMED.2	DME DISTANCE	BNR	NM		
DSA	APU SELECT DEFAULT - GLA	HEX			
DSB	APU SELECT DEFAULT - T13, T12	HEX			
DSC	APU SELECT DEFAULT - P17	HEX			
DSD	APU SELECT DEFAULT - EGTA	HEX			
DSE	APU SELECT DEFAULT - N2A	HEX			
DSF	APU SELECT DEFAULT - P1, T1	HEX			
DTA.1	ZONE DUCT TEMP - F/D	BNR	DEG C		
DTA.2	ZONE DUCT TEMP - U/D	BNR	DEG C		
DTA.3	ZONE DUCT TEMP - A	BNR	DEG C		
DTA.4	ZONE DUCT TEMP - B	BNR	DEG C		
DTB.1	ZONE DUCT TEMP - C	BNR	DEG C		
DTB.2	ZONE DUCT TEMP - D	BNR	DEG C		
DTB.3	ZONE DUCT TEMP - E	BNR	DEG C		
DTB.4	ZONE DUCT TEMP - AFT CAR	BNR	DEG C		
DYP	DYNAMIC PRESSURE	BNR	PSIA		
ECU.1	ECU MAINT WORD	PKD			
ECU.2	ECU MAINT WORD	PKD			
ECU.3	ECU MAINT WORD	PKD			
ECU.4	ECU MAINT WORD	PKD			

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
ECW6.1	ECU STATUS WORD 6	HEX			
ECW6.2	ECU STATUS WORD 6	HEX			
ECW6.3	ECU STATUS WORD 6	HEX			
ECW6.4	ECU STATUS WORD 6	HEX			
ECYC.1	ENGINE CYCLES	BNR	CYCLES		
ECYC.2	ENGINE CYCLES	BNR	CYCLES		
ECYC.3	ENGINE CYCLES	BNR	CYCLES		
ECYC.4	ENGINE CYCLES	BNR	CYCLES		
EE	E/E STATUS (EEA TO HEX)	PKD			
EEA.1	E/E STATUS	DIS		0	1
EEA.2	E/E STATUS	DIS		0	1
EEA.3	E/E STATUS	DIS		0	1
EEA.4	E/E STATUS	DIS		0	1
EGT.1	EXHAUST GAS TEMP	BNR	DEG C		
EGT.2	EXHAUST GAS TEMP	BNR	DEG C		
EGT.3	EXHAUST GAS TEMP	BNR	DEG C		
EGT.4	EXHAUST GAS TEMP	BNR	DEG C		
EGTA	APU EXHAUST GAS TEMP	BNR	DEG C		
EGTR	EGT REDLINE LIMIT	BNR	DEG C		
EHRS.1	ENGINE OPER HOURS	BNR	HOURS		
EHRS.2	ENGINE OPER HOURS	BNR	HOURS		
EHRS.3	ENGINE OPER HOURS	BNR	HOURS		
EHRS.4	ENGINE OPER HOURS	BNR	HOURS		
ELEV.1	ELEVATOR POS - LO	BNR	DEGS		
ELEV.2	ELEVATOR POS - LI	BNR	DEGS		
ELEV.3	ELEVATOR POS - RI	BNR	DEGS		
ELEV.4	ELEVATOR POS - RO	BNR	DEGS		
ELVI	INITIAL ELEVATION AT ENGINE START	BNR	FEET		
ESN.1	ENGINE SERIAL NUMBER	ASC			
ESN.2	ENGINE SERIAL NUMBER	ASC			
ESN.3	ENGINE SERIAL NUMBER	ASC			
ESN.4	ENGINE SERIAL NUMBER	ASC			
ETA.1	ETA AT DESTINATION (INDEX 0)	BNR	SEC		
ETA.2	ETA AT DESTINATION (INDEX 1)	BNR	SEC		
EVM.1	EVM MAINT WORD	HEX			
EVM.2	EVM MAINT WORD	HEX			
EVM.3	EVM MAINT WORD	HEX			
EVM.4	EVM MAINT WORD	HEX			
EVNT	EVENT BUTTON	SHN		OFF	ON
FANA	RECIRC FAN MODE	HEX			
FANB	RECIRC FAN STATUS	HEX			
FCA	LOWER FWD CARGO ACTUAL TEMP	BNR	DEG C		
FCV.1	AIR COND VALVE	PKD		OFF	NORM
FCV.2	AIR COND VALVE	PKD		OFF	NORM
FCV.3	AIR COND VALVE	PKD		OFF	NORM
FCVA.1	AIR COND VALVE	PKD			
FCVA.2	AIR COND VALVE	PKD			
FCVA.3	AIR COND VALVE	PKD			
FDIR.1	CAPT FLT DIR ON	DIS		OFF	ON
FDIR.2	F/O FLT DIR ON	DIS		OFF	ON
FDM1	FUEL DENSITY - MAIN 1	BNR	LBS/GAL		
FF.1	FUEL FLOW	BNR	KGS/HR		
FF.2	FUEL FLOW	BNR	KGS/HR		
FF.3	FUEL FLOW	BNR	KGS/HR		
FF.4	FUEL FLOW	BNR	KGS/HR		
FHDL	FLAP LEVER POSITION	BNR	DEGS		
FILA.1	FAIL STATUS - HPSOV	DIS		0	1
FILA.2	FAIL STATUS - HPSOV	DIS		0	1

Figure 22 Alpha Call Up List

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
FILA.3	FAIL STATUS - HPSOV	DIS		0	1
FILA.4	FAIL STATUS - HPSOV	DIS		0	1
FILB.1	FAIL STATUS - PRV	DIS		0	1
FILB.2	FAIL STATUS - PRV	DIS		0	1
FILB.3	FAIL STATUS - PRV	DIS		0	1
FILB.4	FAIL STATUS - PRV	DIS		0	1
FILC.1	FAIL STATUS - PRSOV	DIS		0	1
FILC.2	FAIL STATUS - PRSOV	DIS		0	1
FILC.3	FAIL STATUS - PRSOV	DIS		0	1
FILC.4	FAIL STATUS - PRSOV	DIS		0	1
FILD.1	FAIL STATUS - PRECOOLER	DIS		0	1
FILD.2	FAIL STATUS - PRECOOLER	DIS		0	1
FILD.3	FAIL STATUS - PRECOOLER	DIS		0	1
FILD.4	FAIL STATUS - PRECOOLER	DIS		0	1
FILE.1	FAIL STATUS - PRV PRC	DIS		0	1
FILE.2	FAIL STATUS - PRV PRC	DIS		0	1
FILE.3	FAIL STATUS - PRV PRC	DIS		0	1
FILE.4	FAIL STATUS - PRV PRC	DIS		0	1
FIRE.1	FIRE WARNING	DIS		OFF	ON
FIRE.2	FIRE WARNING	DIS		OFF	ON
FIRE.3	FIRE WARNING	DIS		OFF	ON
FIRE.4	FIRE WARNING	DIS		OFF	ON
FIRM.1	FIRE FWD CARGO	DIS		OFF	ON
FIRM.2	FIRE AFT CARGO	DIS		OFF	ON
FIRM.3	FIRE APU	DIS		OFF	ON
FIRM.4	FIRE WHEEL WELL	DIS		OFF	ON
FLAP.1	FLAP POSITION - LO	BNR	DEGS		
FLAP.2	FLAP POSITION - LI	BNR	DEGS		
FLAP.3	FLAP POSITION - RI	BNR	DEGS		
FLAP.4	FLAP POSITION - RO	BNR	DEGS		
FLAR	AIRPLANE FLARE OPER	DIS		OFF	ON
FLCT	FLIGHT COUNT	BNR			
FLP	OVERALL FLAP POSITION	BNR	DEGS		
FLRT	FLARE DURATION TIME	BNR	SECONDS		
FLT	FLIGHT NUMBER	ASC			
FMU	STEPPER MOTOR POSITION - APU	BNR	STEPS		
FMV.1	FUEL METERING VALVE	BNR	PERCENT		
FMV.2	FUEL METERING VALVE	BNR	PERCENT		
FMV.3	FUEL METERING VALVE	BNR	PERCENT		
FMV.4	FUEL METERING VALVE	BNR	PERCENT		
FNAV.1	F/O NAV SEL 1 - LEFT	DIS		OFF	ON
FNAV.2	F/O NAV SEL 2 - RIGHT	DIS		OFF	ON
FNAV.3	F/O NAV SEL 3 - CENTER	DIS		OFF	ON
FPA	FLIGHT PATH ANGLE	BNR	DEGS		
FQCT	CENTER TANK QUANTY	BNR	TONS		
FQHT	HORZ. STAB. QUANTITY	BNR	TONS		
FQM1	MAIN TANK 1 QUANTITY	BNR	TONS		
FQM2	MAIN TANK 2 QUANTITY	BNR	TONS		
FQM3	MAIN TANK 3 QUANTITY	BNR	TONS		
FQM4	MAIN TANK 4 QUANTITY	BNR	TONS		
FQR2	RESERVE TANK 2 QUANTITY	BNR	TONS		
FQR3	RESERVE TANK 3 QUANTITY	BNR	TONS		
FROM	LEAVE AIRPORT	ASC			
FSO.1	FUEL SHUTOFF VALVE	DIS		FLOW	NOFLOW
FSO.2	FUEL SHUTOFF VALVE	DIS		FLOW	NOFLOW
FSO.3	FUEL SHUTOFF VALVE	DIS		FLOW	NOFLOW
FSO.4	FUEL SHUTOFF VALVE	DIS		FLOW	NOFLOW
FTA	ZONE FWD TEMP -B	BNR	DEG C		
FTB.1	ZOEN FWD TEMP	BNR	DEG C		
FTB.2	ZOEN FWD TEMP	BNR	DEG C		
FTB.3	ZOEN FWD TEMP	BNR	DEG C		
FTB.4	ZOEN FWD TEMP	BNR	DEG C		
FTM1	FUEL TEMP TANK M1	BNR	DEG C		
GEAR	LANDING GEAR	DIS		UP	DOWN
GLA	SUM OF APU LOADS 1, 2	BNR	PERCENT		
GLAA.1	APU AC GENERATOR LOAD	BNR	PERCENT		
GLAA.2	APU AC GENERATOR LOAD	BNR	PERCENT		
GLS	GLIDESLOPE DEVIATION	BNR	DOTS		
GPWS	GROUND PROX. WARNINGS	PKD			
GRST	GEAR DISCRETE	DIS		OK	FAIL
GS	GROUND SPEED	BNR	KNOTS		
GWI	INITIAL GROSS WEIGHT AT ENGINE START	BNR	TONS		
GWT	GROSS WEIGHT	BNR	TONS		
HEAT.1	ENGINE OVERHEAT	DIS		OFF	ON
HEAT.2	ENGINE OVERHEAT	DIS		OFF	ON
HEAT.3	ENGINE OVERHEAT	DIS		OFF	ON
HEAT.4	ENGINE OVERHEAT	DIS		OFF	ON
HF.1	HF KEYING - LEFT	DIS		OFF	ON
HF.2	HF KEYING - RIGHT	DIS		OFF	ON
HPT.1	HIGH PRESSURE TURB COOL	BNR	PERCENT		
HPT.2	HIGH PRESSURE TURB COOL	BNR	PERCENT		
HPT.3	HIGH PRESSURE TURB COOL	BNR	PERCENT		
HPT.4	HIGH PRESSURE TURB COOL	BNR	PERCENT		
HYDP.1	HYD SYSTEM PRESSURE LO	DIS		NORM	LO
HYDP.2	HYD SYSTEM PRESSURE LO	DIS		NORM	LO
HYDP.3	HYD SYSTEM PRESSURE LO	DIS		NORM	LO
HYDP.4	HYD SYSTEM PRESSURE LO	DIS		NORM	LO
ICE.1	WING ICE DETECTED	DIS		0	1
ICE.2	WING ICE DETECTED	DIS		0	1
IDLE.1	ENGINE1 IDLE	DIS		FALSE	TRUE
IDLE.2	ENGINE2 IDLE	DIS		FALSE	TRUE
IDLE.3	ENGINE3 IDLE	DIS		FALSE	TRUE
IDLE.4	ENGINE4 IDLE	DIS		FALSE	TRUE
IGV	IGV ANGLE - APU	BNR	PERCENT		
ISO.1	ISOLATION VALVE LEFT	DIS		OPEN	CLOSED
ISO.2	ISOLATION VALVE RIGHT	DIS		OPEN	CLOSED
ISOV.1	ISO VALVE	DIS		0	1
ISOV.2	ISO VALVE	DIS		0	1
ISOV.3	ISO VALVE	DIS		0	1
ISOV.4	ISO VALVE	DIS		0	1
IVV	INIRTIAL VERTICAL SPEED	BNR	FT/MIN		
L001	EICAS LOGIC TREE L22001 (A/P DISC)	DIS		FALSE	TRUE
L102	EICAS LOGIC TREE L22102 (NO LAND 3)	DIS		FALSE	TRUE
L103	EICAS LOGIC TREE L22103 (NO AUTOLAND)	DIS		FALSE	TRUE
L403	EICAS LOGIC TREE L34103 (AUTOTHROTTLE DISC)	DIS		FALSE	TRUE
LALT	LANDING ALTITUDE	BNR	FEET		
LAND.1	NO AUTOLAND	DIS		OFF	ON
LAND.2	NO LAND 3	DIS		OFF	ON
LAT	LATITUDE POSITION	BNR	DEGS		
LATF	LATITUDE POSITION FROM FMC	BNR	DEGS		
LATG	LATERAL ACCELERATION	BNR	G		
LATI	IITIAL LATITUDE AT ENGINE START	BNR	DEGS		

Figure 23 Alpha Call Up List

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
LEFL.1	LEAD EDGE FLAP LEFT 1	DIS		NRET	RETR
LEFL.2	LEAD EDGE FLAP LEFT 2	DIS		NRET	RETR
LEFL.3	LEAD EDGE FLAP LEFT 3	DIS		NRET	RETR
LEFL.4	LEAD EDGE FLAP LEFT 4	DIS		NRET	RETR
LEFR.1	LEAD EDGE FLAP RIGHT 1	DIS		NRET	RETR
LEFR.2	LEAD EDGE FLAP RIGHT 2	DIS		NRET	RETR
LEFR.3	LEAD EDGE FLAP RIGHT 3	DIS		NRET	RETR
LEFR.4	LEAD EDGE FLAP RIGHT 4	DIS		NRET	RETR
LFDU	LEAD EDGE FLAP DRIVE UNIT	DIS		OFF	ON
LHV	LOWER HEATING VALVE	BNR	10BTU/LB		
LOC	LOCALIZER DEVIATION	BNR	DOTS		
LOCA	LOCALIZER DEV ALERT	DIS		FALSE	TRUE
LOIP.1	LOW ENGINE OIL PRESSURE	DIS		NORM	LO
LOIP.2	LOW ENGINE OIL PRESSURE	DIS		NORM	LO
LOIP.3	LOW ENGINE OIL PRESSURE	DIS		NORM	LO
LOIP.4	LOW ENGINE OIL PRESSURE	DIS		NORM	LO
LON	LONGITUDE POSITION	BNR	DEGS		
LONF	LONGITUDE POSITION FROM FMC	BNR	DEGS		
LONG	LONGITUDINAL ACCELERATION	BNR	G		
LPT.1	LOW PRESSURE TURB COOL	BNR	PERCENT		
LPT.2	LOW PRESSURE TURB COOL	BNR	PERCENT		
LPT.3	LOW PRESSURE TURB COOL	BNR	PERCENT		
LPT.4	LOW PRESSURE TURB COOL	BNR	PERCENT		
MARK.1	INNER MARKER	DIS		OFF	ON
MARK.2	MIDDLE MARKER	DIS		OFF	ON
MARK.3	OUTER MARKER	DIS		OFF	ON
MCA	MAIN CARGO ACTUAL TEMP	BNR	DEG C		
MCT	MAIN CARGO TARGET TEMP	BNR	DEG C		
MDIS.1	A/T GO AROUND MODE OPER	DIS		OFF	ON
MDIS.2	A/T FLARE MODE OPER	DIS		OFF	ON
MDIS.3	A/T VNAV MODE OPER	DIS		OFF	ON
MDIS.4	A/T REF ANNUNICATOR	DIS		OFF	ON
MES	APU MAIN ENGINE START	DIS		FALSE	TRUE
MHDG	MAGNETIC HEADING	BNR	DEGS		
MN	MACH NUMBER	BNR	MACH		
MP	MASTER TRIM AIR PRESSURE	BNR	PSID		
MPL	MANIFOLD PRESSURE LEFT	BNR	PSIG		
MPR	MANIFOLD PRESSURE RIGHT	BNR	PSIG		
MSQT.1	MAIN TILT SWITCH - LEFT WING	DIS		GRD	AIR
MSQT.2	MAIN TILT SWITCH - RIGHT WING	DIS		GRD	AIR
MT	MASTER TEMP SELECTION	BNR	DEG C		
MWAR.1	MASTER WARNING	DIS		OFF	ON
MWAR.2	AIRCRAFT OVERSPEED	DIS		OFF	ON
MWAR.3	STICK SHAKER	DIS		OFF	ON
MWAR.4	CABIN PRESSURE WARNING	DIS		OFF	ON
N1.1	LOW ROTOR SPEED	BNR	%RPM		
N1.2	LOW ROTOR SPEED	BNR	%RPM		
N1.3	LOW ROTOR SPEED	BNR	%RPM		
N1.4	LOW ROTOR SPEED	BNR	%RPM		
N1A	N1 ACTUAL APU	BNR	%RPM		
N1C.1	N1 COMMAND	BNR	%RPM		
N1C.2	N1 COMMAND	BNR	%RPM		
N1C.3	N1 COMMAND	BNR	%RPM		
N1C.4	N1COMMAND	BNR	%RPM		
N1CF	N1 COMMAND FROM FMC	BNR	%RPM		
N1M.1	N1 MAXIMUM	BNR	%RPM		
N1M.2	N1 MAXIMUM	BNR	%RPM		
N1M.3	N1 MAXIMUM	BNR	%RPM		
N1M.4	N1 MAXIMUM	BNR	%RPM		

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
N1MF	N1 MAXIMUM FROM FMC	BNR	%RPM		
N1R	N1 REDLINE LIMIT	BNR	%RPM		
N2.1	HIGH ROTOR SPEED	BNR	%RPM		
N2.2	HIGH ROTOR SPEED	BNR	%RPM		
N2.3	HIGH ROTOR SPEED	BNR	%RPM		
N2.4	HIGH ROTOR SPEED	BNR	%RPM		
N2A	N2 ACTUAL APU	BNR	% RPM		
N2R	N2 REDLINE LIMIT	BNR	%RPM		
NAI.1	ENGINE ANTI-ICE	DIS		OFF	ON
NAI.2	ENGINE ANTI-ICE	DIS		OFF	ON
NAI.3	ENGINE ANTI-ICE	DIS		OFF	ON
NAI.4	ENGINE ANTI-ICE	DIS		OFF	ON
NE	NUMBER OF ENGINES STARTING	BNR			
NSQT	NOSE SQUAT SWITCH	SHN		GRD	AIR
OIC.1	ENGINE OIL CONSUMPTION	BNR	LTR/HR		
OIC.2	ENGINE OIL CONSUMPTION	BNR	LTR/HR		
OIC.3	ENGINE OIL CONSUMPTION	BNR	LTR/HR		
OIC.4	ENGINE OIL CONSUMPTION	BNR	LTR/HR		
OIP.1	ENGINE OIL PRESSURE	BNR	PSIA		
OIP.2	ENGINE OIL PRESSURE	BNR	PSIA		
OIP.3	ENGINE OIL PRESSURE	BNR	PSIA		
OIP.4	ENGINE OIL PRESSURE	BNR	PSIA		
OIPH	OIP HIGH LIMI (AMB)	BNR	PSIA		
OIPL	OIP LOW LIMIT (RED)	BNR	PSIA		
OIQ.1	ENGINE OIL QUANTITY	BNR	QUARTS		
OIQ.2	ENGINE OIL QUANTITY	BNR	QUARTS		
OIQ.3	ENGINE OIL QUANTITY	BNR	QUARTS		
OIQ.4	ENGINE OIL QUANTITY	BNR	QUARTS		
OIT.1	ENGINE OIL TEMP	BNR	DEG C		
OIT.2	ENGINE OIL TEMP	BNR	DEG C		
OIT.3	ENGINE OIL TEMP	BNR	DEG C		
OIT.4	ENGINE OIL TEMP	BNR	DEG C		
OITA	OIT HIGH LIMIT (AMB)	BNR	DEG C		
OITR	OIP HIGH LIMIT (RED)	BNR	DEG C		
OQTY	APU OIL QUANTITY	BNR	PERCENT		
OTA	APU OIL TEMP	BNR	DEG C		
P1	APU PRESSURE 1.0	BNR	PSIA		
P14.1	FAN EXIT PRESSURE	BNR	PSIA		
P14.2	FAN EXIT PRESSURE	BNR	PSIA		
P14.3	FAN EXIT PRESSURE	BNR	PSIA		
P14.4	FAN EXIT PRESSURE	BNR	PSIA		
P17	MANIFOLD PRESSURE	BNR	PSIG		
P25.1	HPC INLET PRESSURE	BNR	PSIA		
P25.2	HPC INLET PRESSURE	BNR	PSIA		
P25.3	HPC INLET PRESSURE	BNR	PSIA		
P25.4	HPC INLET PRESSURE	BNR	PSIA		
P3.1	BURNER PRESSURE	BNR	PSIA		
P3.2	BURNER PRESSURE	BNR	PSIA		
P3.3	BURNER PRESSURE	BNR	PSIA		
P3.4	BURNER PRESSURE	BNR	PSIA		
P49.1	EXHAUST GAS PRESS	BNR	PSIA		
P49.2	EXHAUST GAS PRESS	BNR	PSIA		
P49.3	EXHAUST GAS PRESS	BNR	PSIA		
P49.4	EXHAUST GAS PRESS	BNR	PSIA		
PCAA.1	PACK STATUS -ON/OFF (CTL A)	DIS		0	1
PCAA.2	PACK STATUS -ON/OFF (CTL A)	DIS		0	1
PCAA.3	PACK STATUS -ON/OFF (CTL A)	DIS		0	1
PCAB.1	PACK STATUS -ON/OFF (CNTL B)	DIS		0	1
PCAB.2	PACK STATUS -ON/OFF (CNTL B)	DIS		0	1

Figure 24 Alpha Call Up List

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
PCAB.3	PACK STATUS -ON/OFF (CNTL B)	DIS		0	1
PCBA.1	PACK STATUS -HIGH FLOW (CTL A)	DIS		0	1
PCBA.2	PACK STATUS -HIGH FLOW (CTL A)	DIS		0	1
PCBA.3	PACK STATUS -HIGH FLOW (CTL A)	DIS		0	1
PCBB.1	PACK STATUS -HIGH FLOW (CNTL B)	DIS		0	1
PCBB.2	PACK STATUS -HIGH FLOW (CNTL B)	DIS		0	1
PCBB.3	PACK STATUS -HIGH FLOW (CNTL B)	DIS		0	1
PCCA.1	PACK STATUS -FCV FAIL (CTL A)	DIS		0	1
PCCA.2	PACK STATUS -FCV FAIL (CTL A)	DIS		0	1
PCCA.3	PACK STATUS -FCV FAIL (CTL A)	DIS		0	1
PCCB.1	PACK STATUS -FCV FAIL (CNTL B)	DIS		0	1
PCCB.2	PACK STATUS -FCV FAIL (CNTL B)	DIS		0	1
PCCB.3	PACK STATUS -FCV FAIL (CNTL B)	DIS		0	1
PCDA.1	PACK STATUS -PACK O/HEAT (CTL A)	DIS		0	1
PCDA.2	PACK STATUS -PACK O/HEAT (CTL A)	DIS		0	1
PCDA.3	PACK STATUS -PACK O/HEAT (CTL A)	DIS		0	1
PCDB.1	PACK STATUS -PACK O/HEAT (CNTL B)	DIS		0	1
PCDB.2	PACK STATUS -PACK O/HEAT (CNTL B)	DIS		0	1
PCDB.3	PACK STATUS -PACK O/HEAT (CNTL B)	DIS		0	1
PCEA.1	PACK STATUS -RAI FAIL (CTL A)	DIS		0	1
PCEA.2	PACK STATUS -RAI FAIL (CTL A)	DIS		0	1
PCEA.3	PACK STATUS -RAI FAIL (CTL A)	DIS		0	1
PCEB.1	PACK STATUS -RAI FAIL (CNTL B)	DIS		0	1
PCEB.2	PACK STATUS -RAI FAIL (CNTL B)	DIS		0	1
PCEB.3	PACK STATUS -RAI FAIL (CNTL B)	DIS		0	1
PCFA.1	PACK STATUS -RAE FAIL (CTL A)	DIS		0	1
PCFA.2	PACK STATUS -RAE FAIL (CTL A)	DIS		0	1
PCFA.3	PACK STATUS -RAE FAIL (CTL A)	DIS		0	1
PCFB.1	PACK STATUS -RAE FAIL (CNTL B)	DIS		0	1
PCFB.2	PACK STATUS -RAE FAIL (CNTL B)	DIS		0	1
PCFB.3	PACK STATUS -RAE FAIL (CNTL B)	DIS		0	1
PCGA.1	PACK STATUS -TBV FAIL (CTL A)	DIS		0	1
PCGA.2	PACK STATUS -TBV FAIL (CTL A)	DIS		0	1
PCGA.3	PACK STATUS -TBV FAIL (CTL A)	DIS		0	1
PCGB.1	PACK STATUS -TBV FAIL (CNTL B)	DIS		0	1
PCGB.2	PACK STATUS -TBV FAIL (CNTL B)	DIS		0	1
PCGB.3	PACK STATUS -TBV FAIL (CNTL B)	DIS		0	1
PCKA.1	PACK STATUS -ON/OFF	DIS		0	1
PCKA.2	PACK STATUS -ON/OFF	DIS		0	1
PCKA.3	PACK STATUS -ON/OFF	DIS		0	1
PCKB.1	PACK STATUS -HIGH FLOW	DIS		0	1
PCKB.2	PACK STATUS -HIGH FLOW	DIS		0	1
PCKB.3	PACK STATUS -HIGH FLOW	DIS		0	1
PCKC.1	PACK STATUS -FCV FAIL	DIS		0	1
PCKC.2	PACK STATUS -FCV FAIL	DIS		0	1
PCKC.3	PACK STATUS -FCV FAIL	DIS		0	1
PCKD.1	PACK STATUS -PACK O/HEAT	DIS		0	1
PCKD.2	PACK STATUS -PACK O/HEAT	DIS		0	1
PCKD.3	PACK STATUS -PACK O/HEAT	DIS		0	1
PCKE.1	PACK STATUS -RAI FAIL	DIS		0	1
PCKE.2	PACK STATUS -RAI FAIL	DIS		0	1
PCKE.3	PACK STATUS -RAI FAIL	DIS		0	1
PCKF.1	PACK STATUS -RAE FAIL	DIS		0	1
PCKF.2	PACK STATUS -RAE FAIL	DIS		0	1
PCKF.3	PACK STATUS -RAE FAIL	DIS		0	1
PCKG.1	PACK STATUS -TBV FAIL	DIS		0	1
PCKG.2	PACK STATUS -TBV FAIL	DIS		0	1
PCKG.3	PACK STATUS -TBV FAIL	DIS		0	1
PDC	CABIN DELTA PRESSURE	BNR	PSID		
PFLW.1	PACK FLOW	BNR	CFM		
PFLW.2	PACK FLOW	BNR	CFM		
PFLW.3	PACK FLOW	BNR	CFM		
PH	FLIGHT MODE(PHASE)	FMB			
PHF.1	PHASE ANGLE FAN	BNR	DEGS		
PHF.2	PHASE ANGLE FAN	BNR	DEGS		
PHF.3	PHASE ANGLE FAN	BNR	DEGS		
PHF.4	PHASE ANGLE FAN	BNR	DEGS		
PHT.1	PHASE ANGLE TURBINE	BNR	DEGS		
PHT.2	PHASE ANGLE TURBINE	BNR	DEGS		
PHT.3	PHASE ANGLE TURBINE	BNR	DEGS		
PHT.4	PHASE ANGLE TURBINE	BNR	DEGS		
PITH.1	PITOT PROBE HEAT (LEFT)	DIS		OFF	ON
PITH.2	PITOT PROBE HEAT (RIGHT)	DIS		OFF	ON
POT.1	PACK OUTLET TEMP	BNR	DEG C		
POT.2	PACK OUTLET TEMP	BNR	DEG C		
POT.3	PACK OUTLET TEMP	BNR	DEG C		
PREH.1	PRES STATUS - OUTFLOW L	DIS		0	1
PREH.2	PRES STATUS - OUTFLOW R	DIS		0	1
PREH.3	PRES STATUS PR UPPER	DIS		0	1
PREH.4	PRES STATUS PR LOWER	DIS		0	1
PRES	PRES STATUS	PKD			
PRT	PITCH RATE	BNR	DEGS/SEC		
PS	STATIC AIR PRESSURE	BNR	PSIA		
PSEG.1	PARAMETER SOURCE - EGT.1	BNR			
PSEG.2	PARAMETER SOURCE - EGT.2	BNR			
PSEG.3	PARAMETER SOURCE - EGT.3	BNR			
PSEG.4	PARAMETER SOURCE - EGT.4	BNR			
PSN1.1	PARAMETER SOURCE - N1.1	BNR			
PSN1.2	PARAMETER SOURCE - N1.2	BNR			
PSN1.3	PARAMETER SOURCE - N1.3	BNR			
PSN1.4	PARAMETER SOURCE - N1.4	BNR			
PSN2.1	PARAMETER SOURCE - N2.1	BNR			
PSN2.2	PARAMETER SOURCE - N2.2	BNR			
PSN2.3	PARAMETER SOURCE - N2.3	BNR			
PSN2.4	PARAMETER SOURCE - N2.4	BNR			
PT	TOTAL AIR PRESSURE	BNR	PSIA		
PTC.1	PACK TEMP CONTROL	PKD		ERR	A
PTC.2	PACK TEMP CONTROL	PKD		ERR	A
PTC.3	PACK TEMP CONTROL	PKD		ERR	A
PTCA.1	PTC CHANNEL IN CTL A	DIS		0	1
PTCA.2	PTC CHANNEL IN CTL A	DIS		0	1
PTCA.3	PTC CHANNEL IN CTL A	DIS		0	1
PTCB.1	PTC CHANNEL IN CTL B	DIS		0	1
PTCB.2	PTC CHANNEL IN CTL B	DIS		0	1
PTCB.3	PTC CHANNEL IN CTL B	DIS		0	1
PTCH	PITCH ANGLE	BNR	DEGS		
PXI.1	PRIM HEAT XCHG INLET TEMP	BNR	DEG C		
PXI.2	PRIM HEAT XCHG INLET TEMP	BNR	DEG C		
PXI.3	PRIM HEAT XCHG INLET TEMP	BNR	DEG C		

Figure 25 Alpha Call Up List

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
PXO.1	PRIM HEAT XCHG OUTLET TEMP	BNR	DEG C		
PXO.2	PRIM HEAT XCHG OUTLET TEMP	BNR	DEG C		
PXO.3	PRIM HEAT XCHG OUTLET TEMP	BNR	DEG C		
PYLV.1	ENG BLEED - PRSOV	DIS		OPEN	CLOSEI
PYLV.2	ENG BLEED - PRSOV	DIS		OPEN	CLOSEI
PYLV.3	ENG BLEED - PRSOV	DIS		OPEN	CLOSEI
PYLV.4	ENG BLEED - PRSOV	DIS		OPEN	CLOSEI
RAE.1	RAE DOOR POS-ECS	BNR	HEAT		
RAE.2	RAE DOOR POS-ECS	BNR	HEAT		
RAE.3	RAE DOOR POS-ECS	BNR	HEAT		
RAI.1	RAI DOOR POS-ECS	BNR	HEAT		
RAI.2	RAI DOOR POS-ECS	BNR	HEAT		
RAI.3	RAI DOOR POS-ECS	BNR	HEAT		
RALT	RADIO ALTITUDE	BNR	FEET		
RART	RALT RATE	BNR	FEET/SEC		
RATE.1	A/T RATING 1	DIS		OFF	ON
RATE.2	A/T RATING 2	DIS		OFF	ON
REVT.1	REVERSERS IN-TRANSIT	DIS		FALSE	TRUE
REVT.2	REVERSERS IN-TRANSIT	DIS		FALSE	TRUE
REVT.3	REVERSERS IN-TRANSIT	DIS		FALSE	TRUE
REVT.4	REVERSERS IN-TRANSIT	DIS		FALSE	TRUE
ROLL	ROLL ANGLE	BNR	DEGS		
RPP	RUDDER PEDAL POSITION	BNR	DEGS		
RRT	ROLL RATE	BNR	DEGS/SEC		
RUDD.1	RUDDER POSITION - UPPER	BNR	DEGS		
RUDD.2	RUDDER POSITION - LOWER	BNR	DEGS		
RWY	RUNWAY	BCD	DEG		
SADC.1	CAPT ADC SEL 2-C	DIS		OFF	ON
SADC.2	CAPT ADC SEL 3-R	DIS		OFF	ON
SADC.3	F/O ADC SEL 2-C	DIS		OFF	ON
SADC.4	F/O ADC SEL 3-L	DIS		OFF	ON
SAT	STATIC AIR TEMPERATURE	BNR	DEG C		
SAV.1	START VALVE	DIS		CLOSED	OPEN
SAV.2	START VALVE	DIS		CLOSED	OPEN
SAV.3	START VALVE	DIS		CLOSED	OPEN
SAV.4	START VALVE	DIS		CLOSED	OPEN
SBH	SPEED BRAKE HANDLE POS	BNR	PERCENT		
SDIR.1	CAPT FLT DIR SEL C	DIS		OFF	ON
SDIR.2	CAPT FLT DIR SEL R	DIS		OFF	ON
SDIR.3	F/O FLT DIR SEL C	DIS		OFF	ON
SDIR.4	F/O FLR DIR SEL L	DIS		OFF	ON
SEIU.1	CAPT EIU SOURCE LSB	DIS		OFF	ON
SEIU.2	CAPT EIU SOURCE MSB	DIS		OFF	ON
SEIU.3	F/O EIU SOURCE LSB	DIS		OFF	ON
SEIU.4	F/O EIU SOURCE MSB	DIS		OFF	ON
SELA.1	VALVE STATUS - HPSOV CL	DIS		0	1
SELA.2	VALVE STATUS - HPSOV CL	DIS		0	1
SELA.3	VALVE STATUS - HPSOV CL	DIS		0	1
SELA.4	VALVE STATUS - HPSOV CL	DIS		0	1
SELB.1	VALVE STATUS-HPSOV OP	DIS		0	1
SELB.2	VALVE STATUS-HPSOV OP	DIS		0	1
SELB.3	VALVE STATUS-HPSOV OP	DIS		0	1
SELB.4	VALVE STATUS-HPSOV OP	DIS		0	1
SELC.1	VALVE STATUS-PRV CL	DIS		0	1
SELC.2	VALVE STATUS-PRV CL	DIS		0	1
SELC.3	VALVE STATUS-PRV CL	DIS		0	1
SELC.4	VALVE STATUS-PRV CL	DIS		0	1
SELD.1	VALVE STATUS-PRV OL	DIS		0	1
SELD.2	VALVE STATUS-PRV OL	DIS		0	1
SELD.3	VALVE STATUS-PRV OL	DIS		0	1
SELD.4	VALVE STATUS-PRV OL	DIS		0	1
SELE.1	VALVE STATUS-FAV CL	DIS		0	1
SELE.2	VALVE STATUS-FAV CL	DIS		0	1
SELE.3	VALVE STATUS-FAV CL	DIS		0	1
SELE.4	VALVE STATUS-FAV CL	DIS		0	1
SELF.1	VALVE STATUS-FAV OP	DIS		0	1
SELF.2	VALVE STATUS-FAV OP	DIS		0	1
SELF.3	VALVE STATUS-FAV OP	DIS		0	1
SELF.4	VALVE STATUS-FAV OP	DIS		0	1
SELG.1	VALVE STATUS-PRESOV CL	DIS		0	1
SELG.2	VALVE STATUS-PRESOV CL	DIS		0	1
SELG.3	VALVE STATUS-PRESOV CL	DIS		0	1
SELG.4	VALVE STATUS-PRESOV CL	DIS		0	1
SELH.1	VALVE STATUS-PRSOV OP	DIS		0	1
SELH.2	VALVE STATUS-PRSOV OP	DIS		0	1
SELH.3	VALVE STATUS-PRSOV OP	DIS		0	1
SELH.4	VALVE STATUS-PRSOV OP	DIS		0	1
SELI.1	VALVE STATUS-PRSOV SEL	DIS		0	1
SELI.2	VALVE STATUS-PRSOV SEL	DIS		0	1
SELI.3	VALVE STATUS-PRSOV SEL	DIS		0	1
SELI.4	VALVE STATUS-PRSOV SEL	DIS		0	1
SELJ.1	VALVE STATUS-COWL TAI	DIS		0	1
SELJ.2	VALVE STATUS-COWL TAI	DIS		0	1
SELJ.3	VALVE STATUS-COWL TAI	DIS		0	1
SELJ.4	VALVE STATUS-COWL TAI	DIS		0	1
SHK.1	STICK SHAKER - LEFT	DIS		OFF	ON
SHK.2	STICK SHAKER - RIGHT	DIS		OFF	ON
SIRU.1	CAPT IRU SEL 2-C	DIS		OFF	ON
SIRU.2	CAPT IRU SEL 3-R	DIS		OFF	ON
SIRU.3	F/O IRU SEL 2-C	DIS		OFF	ON
SIRU.4	F/O IRU SEL 3-L	DIS		OFF	ON
SLNG	LONGITUDINAL ACCELERATION - DFDAC	BNR	G		
SLTG	LATERAL ACCELERATION - DFDAC	BNR	G		
SMOK.1	SMOKE EQUIPMENT BAY	DIS		OFF	ON
SMOK.2	SMOKE D6 CREW REST	DIS		OFF	ON
SMOK.3	SMOKE LAVATORY	DIS		OFF	ON
SPL.1	SPOILER POSITION - LEFT	BNR	DEGS		
SPL.2	SPOILER POSITION - RIGHT	BNR	DEGS		
SSEG.1	SELECTED SOURCE - EGT.1	HEX			
SSEG.2	SELECTED SOURCE - EGT.2	HEX			
SSEG.3	SELECTED SOURCE - EGT.3	HEX			
SSEG.4	SELECTED SOURCE - EGT.4	HEX			
SSFM.1	SELECTED SOURCE - FMV.1	HEX			
SSFM.2	SELECTED SOURCE - FMV.2	HEX			
SSFM.3	SELECTED SOURCE - FMV.3	HEX			
SSFM.4	SELECTED SOURCE - FMV.4	HEX			
SSHP.1	SELECTED SOURCE - HPT.1	HEX			
SSHP.2	SELECTED SOURCE - HPT.2	HEX			
SSHP.3	SELECTED SOURCE - HPT.3	HEX			
SSHP.4	SELECTED SOURCE - HPT.4	HEX			
SSLP.1	SELECTED SOURCE - LPT.1	HEX			
SSLP.2	SELECTED SOURCE - LPT.2	HEX			
SSLP.3	SELECTED SOURCE - LPT.3	HEX			
SSLP.4	SELECTED SOURCE - LPT.4	HEX			
SSN1.1	SELECTED SOURCE - N1.1	HEX			
SSN1.2	SELECTED SOURCE - N1.2	HEX			
SSN1.3	SELECTED SOURCE - N1.3	HEX			

Figure 26 Alpha Call Up List

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
SSN1.4	SELECTED SOURCE - N1.4	HEX			
SSN2.1	SELECTED SOURCE - N2.1	HEX			
SSN2.2	SELECTED SOURCE - N2.2	HEX			
SSN2.3	SELECTED SOURCE - N2.3	HEX			
SSN2.4	SELECTED SOURCE - N2.4	HEX			
SSP0.1	SELECTED SOURCE - P0.1	HEX			
SSP0.2	SELECTED SOURCE - P0.2	HEX			
SSP0.3	SELECTED SOURCE - P0.3	HEX			
SSP0.4	SELECTED SOURCE - P0.4	HEX			
SSP3.1	SELECTED SOURCE - P3.1	HEX			
SSP3.2	SELECTED SOURCE - P3.2	HEX			
SSP3.3	SELECTED SOURCE - P3.3	HEX			
SSP3.4	SELECTED SOURCE - P3.4	HEX			
SST2.1	SELECTED SOURCE - T2.1	HEX			
SST2.2	SELECTED SOURCE - T2.2	HEX			
SST2.3	SELECTED SOURCE - T2.3	HEX			
SST2.4	SELECTED SOURCE - T2.4	HEX			
SST3.1	SELECTED SOURCE - T3.1	HEX			
SST3.2	SELECTED SOURCE - T3.2	HEX			
SST3.3	SELECTED SOURCE - T3.3	HEX			
SST3.4	SELECTED SOURCE - T3.4	HEX			
SSTA.1	SELECTED SOURCE - TAT.1	HEX			
SSTA.2	SELECTED SOURCE - TAT.2	HEX			
SSTA.3	SELECTED SOURCE - TAT.3	HEX			
SSTA.4	SELECTED SOURCE - TAT.4	HEX			
SSVB.1	SELECTED SOURCE - VBV.1	HEX			
SSVB.2	SELECTED SOURCE - VBV.2	HEX			
SSVB.3	SELECTED SOURCE - VBV.3	HEX			
SSVB.4	SELECTED SOURCE - VBV.4	HEX			
SSVS.1	SELECTED SOURCE - VSV.1	HEX			
SSVS.2	SELECTED SOURCE - VSV.2	HEX			
SSVS.3	SELECTED SOURCE - VSV.3	HEX			
SSVS.4	SELECTED SOURCE - VSV.4	HEX			
STAB	STABILIZER POSITION	BNR	DEGS		
STABL	STABILIZER POSITION - LEFT	BNR	DEGS		
STABR	STABILIZER POSITION - RIGHT	BNR	DEGS		
STBY.1	STBY 1 OFF	DIS		OFF	ON
STBY.2	BUS 2 OFF	DIS		OFF	ON
STRM.1	STAB TRIM UP	DIS		OFF	ON
STRM.2	STAB TRIM DOWN	DIS		OFF	ON
STRM.3	STAB TRIM SOURCE LSB	DIS		OFF	ON
STRM.4	STAB TRIM SOURCE MSB	DIS		OFF	ON
STV.1	START VALVE POSITION	DIS		ON	OFF
STV.2	START VALVE POSITON	DIS		ON	OFF
STV.3	START VALVE POSITION	DIS		ON	OFF
STV.4	START VALVE POSITION	DIS		ON	OFF
SVTG	VERTICAL ACCELERATION - DFDAC	BNR	G		
SXO.1	SEC HEAT XCHG OUTLET TEMP	BNR	DEG C		
SXO.2	SEC HEAT XCHG OUTLET TEMP	BNR	DEG C		
SXO.3	SEC HEAT XCHG OUTLET TEMP	BNR	DEG C		
T1	APU TEMPERATURE 1.0	BNR	DEG C		
T12	APU TEMPERATURE 1.2	BNR	DEG C		
T13	APU TEMPERATURE 1.3	BNR	DEG C		
T25.1	HPC INLET TEMP	BNR	DEG C		
T25.2	HPC INLET TEMP	BNR	DEG C		
T25.3	HPC INLET TEMP	BNR	DEG C		
T25.4	HPC INLET TEMP	BNR	DEG C		
T3.1	HPC EXIT TEMP	BNR	DEG C		
T3.2	HPC EXIT TEMP	BNR	DEG C		

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
T3.3	HPC EXIT TEMP	BNR	DEG C		
T3.4	HPC EXIT TEMP	BNR	DEG C		
T55.1	LPT DISCHARGE TEMP	BNR	DEG C		
T55.2	LPT DISCHARGE TEMP	BNR	DEG C		
T55.3	LPT DISCHARGE TEMP	BNR	DEG C		
T55.4	LPT DISCHARGE TEMP	BNR	DEG C		
TAS	TRUE AIRSPEED	BNR	KNOTS		
TAT	TOTAL AIR TEMP	BNR	DEG C		
TATH.1	TAT PROBE HEAT ON (LEFT)	DIS		OFF	ON
TATH.2	TAT PROBE HEAT ON (RIGHT)	DIS		OFF	ON
TBV.1	TBV POSITION-ECS	BNR	PERCENT		
TBV.2	TBV POSITION-ECS	BNR	PERCENT		
TBV.3	TBV POSITION-ECS	BNR	PERCENT		
TFQ	TOTAL FUEL QUANTITY	BNR	KGS		
TH	TRUE HEADING	BNR	DEGS		
THD	TRUE HEADING - BCD	BCD	DEGS		
TN.1	NACELLE TEMPERATURE	BNR	DEG C		
TN.2	NACELLE TEMPERATURE	BNR	DEG C		
TN.3	NACELLE TEMPERATURE	BNR	DEG C		
TN.4	NACELLE TEMPERATURE	BNR	DEG C		
TO	ARRIVE AIRPORT	ASC			
TOGA	TOGA SWITCH	DIS		FALSE	TRUE
TTA.1	ZONE TARGET TEMP	BNR	DEG C		
TTA.2	ZONE TARGET TEMP	BNR	DEG C		
TTA.3	ZONE TARGET TEMP	BNR	DEG C		
TTA.4	ZONE TARGET TEMP	BNR	DEG C		
TTAK	TRUE TRACK ANGLE	BNR	DEGS		
TTB.1	ZONE TARGET TEMP	BNR	DEG C		
TTB.2	ZONE TARGET TEMP	BNR	DEG C		
TTB.3	ZONE TARGET TEMP	BNR	DEG C		
TTB.4	ZONE TARGET TEMP	BNR	DEG C		
TVPA.1	TRIM VALVE POS	BNR	HEAT		
TVPA.2	TRIM VALVE POS	BNR	HEAT		
TVPA.3	TRIM VALVE POS	BNR	HEAT		
TVPA.4	TRIM VALVE POS	BNR	HEAT		
TVPB.1	TRIM VALVE POS	BNR	HEAT		
TVPB.2	TRIM VALVE POS	BNR	HEAT		
TVPB.3	TRIM VALVE POS	BNR	HEAT		
TVPB.4	TRIM VALVE POS	BNR	HEAT		
TVS	TRIM AIR VALVE STATUS	PKD			
TVSB	TRIM AIR VALVE STATUS-B	DIS		0	1
V2	TAKEOFF/CLIMB SPEED	BNR	KNOTS		
VB.1	ENGINE VIBRATION - BROADBAND	BNR	UNITS		
VB.2	ENGINE VIBRATION - BROADBAND	BNR	UNITS		
VB.3	ENGINE VIBRATION - BROADBAND	BNR	UNITS		
VB.4	ENGINE VIBRATION - BROADBAND	BNR	UNITS		
VBV.1	VARIABLE BLEED VALVE	BNR	PERCENT		
VBV.2	VARIABLE BLEED VALVE	BNR	PERCENT		
VBV.3	VARIABLE BLEED VALVE	BNR	PERCENT		
VBV.4	VARIABLE BLEED VALVE	BNR	PERCENT		
VF.1	ENGINE VIBRATION - N1 (FRONT PICKUP)	BNR	UNITS		
VF.2	ENGINE VIBRATION - N1 (FRONT PICKUP)	BNR	UNITS		
VF.3	ENGINE VIBRATION - N1 (FRONT PICKUP)	BNR	UNITS		
VF.4	ENGINE VIBRATION - N1 (FRONT PICKUP)	BNR	UNITS		
VGMN	VRTG MINIMUM	BNR	G		

Figure 27 Alpha Call Up List

ALPHA_NAME	DESC	CVN_TYPE	UNITID	LABEL0	LABEL1
VGMX	VRTG MAXIMUM	BNR	G		
VH.1	ENGINE VIBRATION - N2 (REAR PICKUP)	BNR	UNITS		
VH.2	ENGINE VIBRATION - N2 (REAR PICKUP)	BNR	UNITS		
VH.3	ENGINE VIBRATION - N2 (REAR PICKUP)	BNR	UNITS		
VH.4	ENGINE VIBRATION - N2 (REAR PICKUP)	BNR	UNITS		
VHF.1	VHF KEYING - LEFT	DIS		OFF	ON
VHF.2	VHF KEYING - RIGHT	DIS		OFF	ON
VHF.3	VHF KEYING - CENTER	DIS		OFF	ON
VL.1	ENGINE VIBRATION - N1 (FRONT PICKUP)	BNR	UNITS		
VL.2	ENGINE VIBRATION - N1 (FRONT PICKUP)	BNR	UNITS		
VL.3	ENGINE VIBRATION - N1 (FRONT PICKUP)	BNR	UNITS		
VL.4	ENGINE VIBRATION - N1 (FRONT PICKUP)	BNR	UNITS		
VMIN	VELOCITY MINIMUM	BNR	KNOTS		
VMO	MAXIMUM ALLOWABLE CAS	BNR	KNOTS		
VMX	VELOCITY MAXIMUM	BNR	KNOTS		
VORF.1	VOR FREQUENCY (LEFT)	BCD	MHZ		
VORF.2	VOR FREQUENCY (RIGHT)	BCD	MHZ		
VREF	VELOCITY REFERENCE	BNR	KNOTS		
VRTG	VERTICAL ACCELERATION	BNR	G		
VS	VERT SPEED CMD	BNR	FT/MIN		
VSV.1	VARIABLE STATOR VANE	BNR	PERCENT		
VSV.2	VARIABLE STATOR VANE	BNR	PERCENT		
VSV.3	VARIABLE STATOR VANE	BNR	PERCENT		
VSV.4	VARIABLE STATOR VANE	BNR	PERCENT		
WAI.1	WING ANTI-ICE LEFT	DIS		OFF	ON
WAI.2	WING ANTI-ICE RIGHT	DIS		OFF	ON
WBFL	WEIGHT AND BALANCE SYSTEM FLAG	DIS			
WC	WIND COMPONENT	BNR	KNOTS		
WD	WIND DIRECT TRUE	BNR	DEGS		
WS	WIND SPEED	BNR	KNOTS		
WSP.1	WATER SEP DELTA PRESSURE	BNR	PSID		
WSP.2	WATER SEP DELTA PRESSURE	BNR	PSID		
WSP.3	WATER SEP DELTA PRESSURE	BNR	PSID		
YAWD.1	YAW DAMPER UPPER	DIS		OFF	ON
YAWD.2	YAW DAMPER LOWER	DIS		OFF	ON
ZD	ZONE DEMAND	BNR	DEG C		
ZTA.1	ZONE ACTUAL TEMP	BNR	DEG C		
ZTA.2	ZONE ACTUAL TEMP	BNR	DEG C		
ZTA.3	ZONE ACTUAL TEMP	BNR	DEG C		
ZTA.4	ZONE ACTUAL TEMP	BNR	DEG C		
ZTB.1	ZONE ACTUAL TEMP	BNR	DEG C		
ZTB.2	ZONE ACTUAL TEMP	BNR	DEG C		
ZTB.3	ZONE ACTUAL TEMP	BNR	DEG C		
ZTB.4	ZONE ACTUAL TEMP	BNR	DEG C		

Figure 28 Alpha Call Up List

ACMS INTERFACE

The DMU interfaces with many airplane systems to receive the parameters it records.
The DMU receives digital data from the following inputs:

AFCS Mode Control Panel (MCP) (AMM 22-10-00/001)

Flight Control Computers (FCCs) (AMM 22-10-00/001)

Fuel Quantity Processor Unit (FQPU) (AMM 28-41-00/001)

Captain's and First Officer's Clocks (AMM 31-25-00/001)

Digital Flight Data Acquisition Card (DFDAC) (AMM 31-31-00/001).

EFIS/EICAS Interface Units (EIUs) (AMM 31-61-00/001).

Bus Control Units (BCUs) (AMM 32-42-00/001)

Air Data Computers (ADCs) (AMM 34-12-00/001)

Inertial Reference Units (IRUs) (AMM 34-21-00/001)

AIRPLANES WITH ILS RECEIVERS;
Instrument Landing System (ILS) Receivers (AMM 34-31-00/001)

AIRPLANES WITH MULTI-MODE RECEIVERS;

Multi-Mode Receivers (MMR) (AMM 34-31-00/001)

Radio Altimeter (RA) Receiver/transmitters (AMM 34-33-00/001)

AIRPLANES WITH GPS SENSOR UNITS;

Global Position System Sensor Units (GPSSU) (AMM 34-58-00/001)

Flight Management Computers (FMCs) (AMM 34-61-00/001)

The processing and recording of the above parameters are determined by individual airline's requirements. These can be controlled by programming in the DMU software.

The DMU has the following discrete inputs:

HF transceiver key event (AMM 23-11)

VHF transceiver key event (AMM 23-12)

Primary nose gear squat relay (FIM 31-01)

EICAS Event/Record switch (AMM 31-61)

AIR/GND relay (AMM 32-09)

Airborne data loader (ADL) switch (AMM 34-61)

The DMU collects data from airplane systems, analyzes the data, and distributes the data to the output devices. The ACMS reports are produced and can be shown on the center CDU (AMM 34-61) or can be downloaded to the following components:

Quick Access Recorder (if installed)

ACARS Management Unit (if installed) (AMM 23-27)

Airborne Data Loader (ADL) (AMM 34-61)

Multi-input printer (AMM 45-10)

The DMU also transmits airplane status data to the central maintenance computer (CMC). The CMC monitors the DMU for failure and other DMU inputs port status. The CMC messages of the ACMS can be displayed on any CDU.

Power Supply

The ACMS circuit breaker is on P415 Power Distribution Center - Right. The power supply to the DMU is 115v ac, 400 Hz single-phase power.

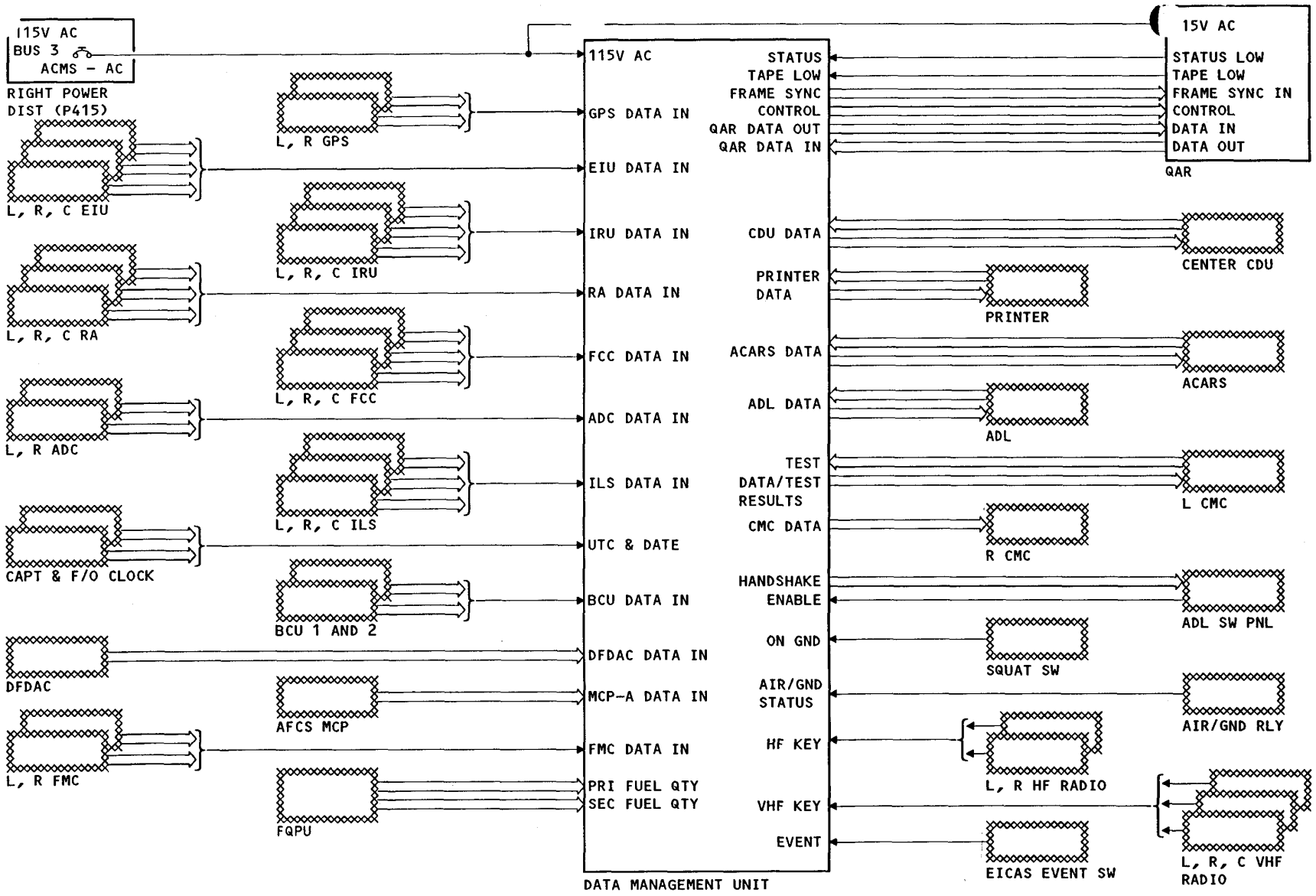


Figure 29 ACMS - INTERFACE DIAGRAM

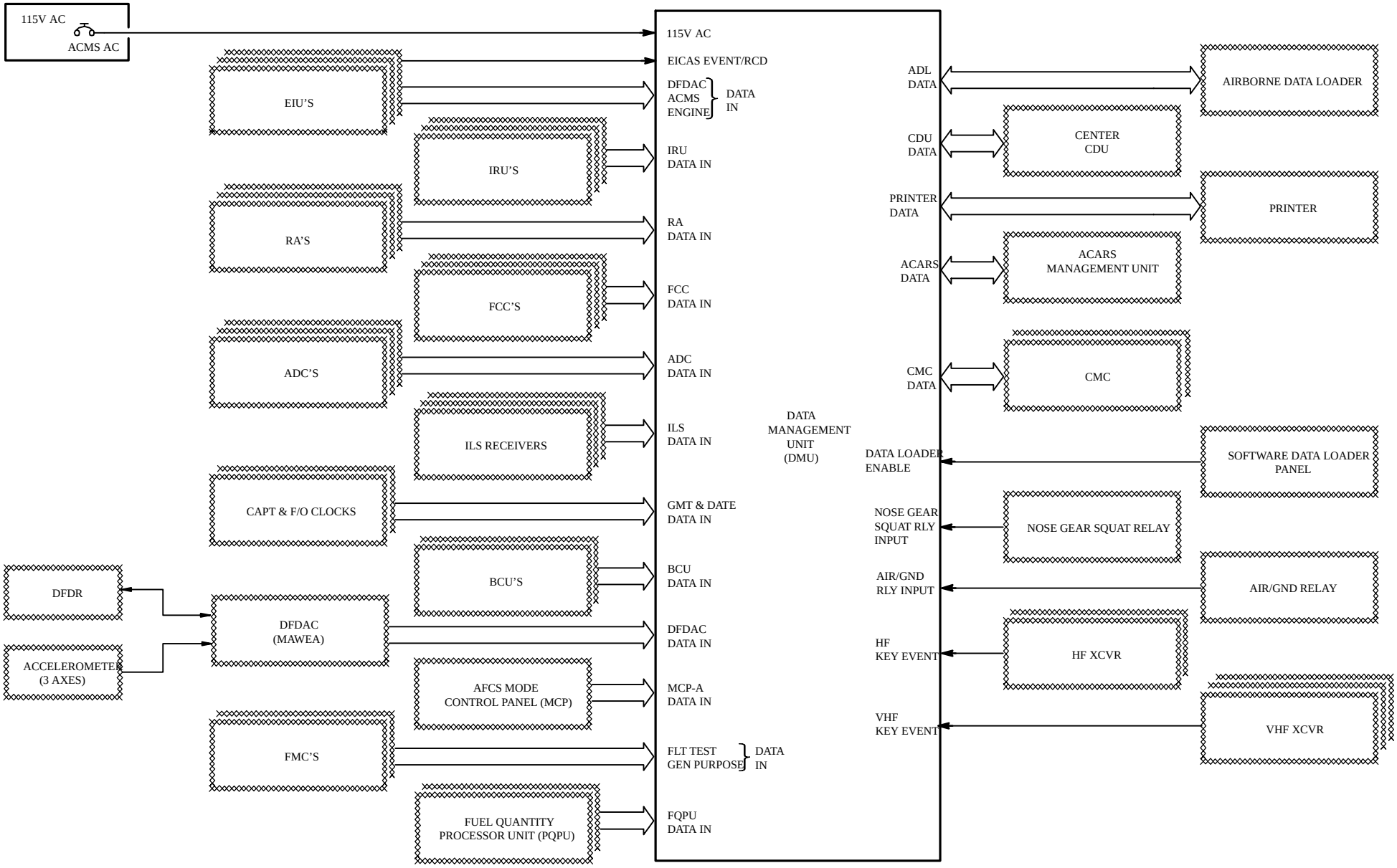


Figure 30

ABBREVIATIONS

Clocks

CHR	CHRONOGRAPH
CMC	CENTRAL MAINTENANCE COMPUTER
DMU	DATA MANAGEMENT UNIT
ET	ELAPSED TIME
FMC	FLIGHT MANAGEMENT COMPUTER
GMT	GREENWICH MEAN TIME
HLD Y	HOLD/YEAR
HS D	HOUR SLEW/ DAY
MS M	MINUTE SLEW/ MONTH
UTC	UNIVERSAL TIME COORDINATED

Flight Data Recorder System

ACARS	AIRCRAFT COMMUNICATION ADRESSING AND REPORTING SYSTEM
BOT	BEGINNING OF TAPE
CMCS	CENTRAL MAINTENANCE COMPUTER SYSTEM
DMU	DATA MANAGEMENT UNIT
DFDAC	DIGITAL FLIGHT DATA AQUISITION CARD
DFDR	DIGITAL FLIGHT DATA RECORDER
EICAS	ENGINE INDICATING AND CREW ALERTING SYSTEM
EIU	EFIS/ EICAS INTERFACE UNIT
EOT	END OF TAPE
MAWEA	MODULARIZED AVIONICS WARNING ELECTRONIC ASSEMBLY
ULD	UNDERWATER LOCATING DEVICE

ACMS

ACMS	AIRPLANE CONDITION MONITORING SYSTEM
ADL	AIRBORNE DATA LOADER
CDU	CONTROL/ DISPLAY UNIT
DMU	DATA MANAGEMENT UNIT
OQAR	OPTICAL QUICK ACESS RECORDER
QAR	QUICK ACESS RECORDER

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