The Electronic Systems Division manufactures the PA3700 series of Integrated Health and Usage Monitoring Systems (IHUMS) which satisfies mandatory cockpit voice and flight data recording requirements, in addition to providing significant safety and maintenance benefits.

Core elements of the IHUMS hardware are:

- **Data Acquisition and Processing Unit (DAPU)**
- **Card Maintenance Data Recorder (CMDR)**
- **Control and Monitoring Unit (CMU)**
- **Cockpit Voice and Flight Data Recorder (CVFDR)**

The system architecture has been specifically designed to allow for individual operator requirements.

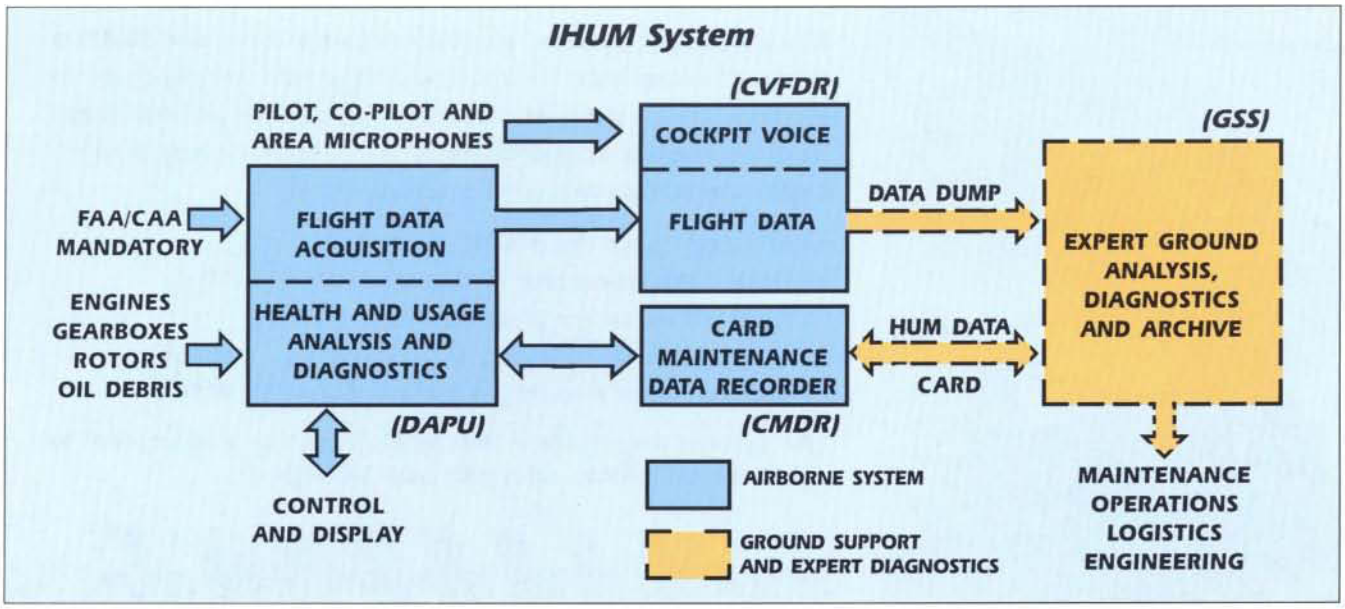
INTEGRATED HEALTH AND USAGE MONITORING SYSTEM IHUMS

The IHUM system records and analyses data on the performance and operational usage of the helicopter's dynamics systems including transmissions, rotors, engines and airframe.
This data is processed on board to provide exceedance alerting (in-flight or post-flight) and to advise maintenance actions so that the optimum operational performance and safety of the aircraft are maintained.

- ***On-aircraft diagnostics and monitoring of transmission, rotors and engines***
- ***Real time exceedance alerting***
- ***Comprehensive usage monitoring of life limited components***
- ***Integrated flight data/ cockpit voice recording capability to comply with CAA/FAA mandatory requirements***
- ***Expansion capabilities for advanced oil debris and engine monitoring systems***

PA3700 Series

Electronic Systems Division



PA3721 Data Acquisition and Processing Unit

INPUT CAPABILITY

Analogue signals

Synchro
DC voltage
AC and DC radiometric voltage
Potentiometer

Discrete Inputs (ARINC 573)

Shunt (0V or open circuit)
Series (open circuit or 28V)
Marker beacon
Latched shunt
Latched series

Digital

ARINC 429
Honeywell ASCB (optional)
MIL-STD-1553B (optional)

Frequency

Tacho (8 to 256 Hz)
Pulse probe (up to 32kHz)

HUM Sensors

Accelerometers
Azimuth Markers
Rotor tracker
Oil debris

OUTPUT CAPABILITY

FDR: Harvard bi-phase at 64/128/256 wps
CMDR: RS422
Test facility: RS232C
CDU: RS422

ENVIRONMENTAL

To RTCA DO—160C
Convection Cooling

POWER INPUT

Nominal 28V DC to DO—160C

DIMENSIONS

½ATR short — ARINC 404A

WEIGHT

6.2kg (13.6lb) typical

PA3722 Card Maintenance Data Recorder

INPUT/OUTPUT SIGNAL

RS422

MEMORY MEDIUM

PCMCIA compatible

ENVIRONMENTAL

To RTCA DO—160C

POWER INPUT

Nominal 28V DC to DO—160C

DIMENSIONS

Height: 38.1mm (1.5in)
Width: 146.0mm (5.75in)
Depth: 132.05mm (5.12in)

WEIGHT

0.5kg (1.1lb) typical

PA3723 Control and Monitoring Unit

INPUT/OUTPUT SIGNAL

RS422

DISPLAY TECHNOLOGY

Backlit LCD two rows of 16 alpha numeric

ENVIRONMENTAL

To RTCA DO —160C

POWER INPUT

Nominal 28V DC to DO—160C

DIMENSIONS

Height: 63.5mm (2.5in)
Width: 146.0 mm (5.75in)
Depth: 132.0mm (5.2in)
Weight: 0.5kg (1.1lb)

Solid state Cockpit Voice and Flight Data Recorder

INPUT CAPABILITY

Harvard bi-phase
3 audio (voice) channels

RETRIEVAL

High speed RS422

ENVIRONMENTAL

DO— 160C
Crash protection to ED55 and ED56A
TSO's C123 and C124

POWER INPUT

Nominal 28V DC to DO—160C

DIMENSIONS

½ATR short — ARINC 404A

WEIGHT

8.5kg (18.7lb) typical

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