

ACARS

ARINC Communications Addressing & Reporting System

ACARS



A new development in communications for the airlines will automatically provide vital flight information to ground personnel over an ARINC VHF network at a cost, speed, and accuracy not possible through present manual/voice communications. ACARS is an addressable digital data link system which permits routing of messages to and from a particular aircraft.

The advances in computer technology coupled with increasing labor costs have made this equipment economically attractive. ACARS will handle auto-

matically, more accurately, and at greatly reduced cost, the routine communications between flight crews and ground personnel that now account for 70% of all air carrier voice transactions. Included in these reports will be the flight out/off/on/in times, flight crew identification numbers, departure/destination stations, flight number, fuel quantity, and various ETA reports. There is also the capability of tailoring the basic system to individual airline needs through modification of the control microprocessor software. Additionally, growth provisions have been made to allow incorporation (without modifying the basic system) of cockpit printer and/or card reader as well as complete cabin passenger service terminals.

The diagram (reverse side) depicts the functional operation of the ACARS network and the various types of messages which can be exchanged. The cockpit-mounted control unit (shown on this page) for use by the crew provides control of the basic ACARS functions. Nearly 80% of all control unit operations may be accomplished while the aircraft is at the gate. A typical flight scenario would consist of the following activities:

- Pre-Flight
 - • Link Test – Check of the display and loopback of message through the ground network and back to the aircraft.
 - • Data Entry – Flight number, destination station, fuel on-board, crew identity numbers, ETA.
- Flight
 - • Automatic Reports – Out/off/on/in times with flight number, destination station, departure station, updated ETA, wind vector included in the reports.
- Post-Flight – Fuel on-board, coded reason for delays, etc.

HF ACARS

ARINC plans to extend the VHF ACARS capability to High Frequency (HF) to furnish the international air transport industry with a long range air/ground/air data communications capability. The plan includes installation of operational HF ACARS facilities at ARINC's communications centers located in New York, San Juan, San Francisco, and Honolulu to provide Airlines Operational Control (AOC) communications.

The objective of ARINC's ACARS HF Data Link plan is to furnish support for automation of air/ground/air information exchange under any circumstances that requirements dictate. Achievement of this goal may result in a worldwide industry standard for air/ground/air communications serving requirements of the air transport system as they emerge.

