Satellite oceanic control trials to start

The first trials of the satellite-based automatic dependent surveillance (ADS) oceanic air traffic control system are to start in mid-1990, following the signing of an agreement between the US Federal Aviation Administration (FAA) and Northwest Airlines.

NWA Boeing 747-400s on Pacific routes will be equipped to communicate with Inmarsat satellites, and will feed position reports in data form to the FAA's New Jersey technical centre.

United Airlines is also likely to sign a memorandum of understanding (MoU) launching its involvement in the pre-operational trials, and the FAA already has a number of MoUs with the Japan Civil Aviation Bureau covering co-operation in the programme.

In separate trials, Air Canada and Transport Canada are co-operating on ADS development, using the airline's Datalink airborne data communication system on its Boeing 767 fleet to compare position reports with confirmed flight tracks.

In the FAA trials, position reports sent every five to six minutes will be assessed against radar returns. The report frequency will be increased later in the programme.

ADS project manager Peter Massoglia of the FAA's advanced systems service says that the Northwest Airlines aircraft will use Collins' satellite communications unit and Ball Aerospace antennae. The position information is taken directly from the aircraft's on-board navigation system with no crew interface, and is transmitted to the satellite in the L-band range.

ADS is intended to revolutionise oceanic ATC by allowing continuous real-time position reporting instead of hourly reports as at present. Massoglia says that it will allow reduced separation criteria, more flexible routing and level changes, improved conflict prediction, and enhanced communications. Efficiency improvements will provide fuel savings worth millions of dollars a year.


Massoglia explains that the full benefits will be realised only when ADS is integrated with the computer-based oceanic display and planning system (ODAPS). The system is due to enter service at the Oakland west coast ARTCC about now.

ODAPS has a computer-generated situation display for controllers, automated flight strips to replace the current manual system, and a conflict prediction function with a "what if" capability to allow controllers to investigate the results of flight-plan changes without affecting the database until the amended clearance is issued.

A limited version primarily performing flight data processing will also be located at the Honolulu ARTCC.

Safety monitor camera trials planned by CAA

Airframe safety cameras are to be tested by Britain's Civil Aviation Authority (CAA), following Air Accidents Investigation Branch recommendations after the Manchester and Kegworth 737 accidents. Both safety authorities believe that these tragedies might have been averted if the pilots had been able to see their engines.

The CAA is discussing proof-of-concept trials by the Royal Aerospace Establishment, possibly using the RAE's BAC One-Eleven. Four video suppliers have made presentations to CAA air-worthiness engineers. The charge-coupled digital cameras are very small (10cm³) and, by aerospace equipment standards, cheap. Several could be fitted to an airframe. One location being considered is backward-facing under the nose, with a good view of engines and wheels, which would keep the lens clear of insects. Certification of structural, systems, and operational aspects have still to be defined.

The cockpit display would probably require a dedicated screen and a black box, and the cameras might require de-icing.

For the longer term, the British are also studying the feasibility of cockpit crash cameras, to help accident investigators see what actually happened in the cockpit. The CAA favours the idea in principle and believes that modern video cameras have the definition to reproduce tiny instrument readings, including electronic flight instrumentation system alphanumerics, and to provide practical tape and storage capacity.

The major problem with cockpit cameras is industrial rather than technical: airline pilot unions are increasingly dismayed by media abuse of cockpit voice recordings (CVRs) after accidents and see cameras as representing a further invasion of their professional privacy. The technical committee of the British Air Line Pilots' Association has initiated a detailed study of the implications.

Last week the US National Transportation Safety Board voted for legislation to keep cockpit voice recordings secret, joining the FAA and ALPA in deploiring a US court order to release the tape from the Delta crash in Dallas a year ago. The pilots' union has threatened to order its 41,000 members to disable CVRs.

First order for Hughes workstation

Hughes Aircraft has won its first order for the AMD-44 air traffic control workstation.

The company is to supply 32 workstations and five software test stations for the Karlsruhe Upper Air Control Centre in West Germany.

Karlsruhe is the first German centre to initiate a new-generation display upgrade, but as many as 200 further workstations could be required throughout the country.

The AMD-44 has a full-colour, 20in x 20in Sony monitor with touch-screen control. Hughes is putting it forward as part of its bid to build the Canadian Automated Air Traffic System (CAATS)—a major part of the complete updating of Canadian air traffic control.