Safer Skies

IT is November 15, 2001, and I am aboard a specially outfitted Challenger 604 aircraft. This airplane took off from Dulles Airport for a press demonstration flight of a new aviation security system. This flight and the news conference that I attended were created to introduce the press and the aviation industry to a new satellite-enhanced airplane security system by Qualcomm that is now under final review by the Federal Aviation Administration.

As you know, confidence in flying has been terribly shaken since the terrorist attacks of September 11th. In fact, 14 percent of the Americans who were recently polled indicated that they are now afraid to fly. To restore confidence in flying, the United States government is mandating many new systems. It is hoped that upgraded security such as armored cockpit doors, better trained ground security person-

Photos courtesy of Qualcomm Inc.

Controllers on the ground can observe full-motion, real-time video of a flight, as the pilot demonstrates here.

nel, enhanced people- and luggage-search systems, Air Marshals, and airplane flight monitoring will make passengers feel that it is once again safe to fly.
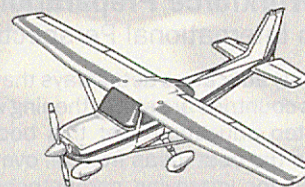
The Qualcomm MDSS aviation security system uses advanced high-speed bi-directional communications technology to increase airplane safety, allowing flight controllers on the ground or an Air Marshal on the plane to view full-motion, real-time videos of a plane during flight.

Security monitoring, in a less conspicuous manner, can also be carried out using a special PDA or cell phone. I had the opportunity to try out the PDA during the flight. You can compare the video and audio part of the Qualcomm system to a security control room in a public building or shopping mall. Using this part of the system, Air Marshals and even ground security personnel can run security checks of the airplane by switching between different cameras in the system. The system in its present format can handle 3,000 planes. Ground personnel would view the cabin and cockpit of a plane if either the pilot, hijack alert system, flight data recorder, cockpit recorder, or airplane transponder signaled an alert.

The Qualcomm Globalstar Satellite Communications System is the backbone of Qualcomm's new MDSS aviation security system. Globalstar has provided high-speed bi-directional terrestrial communication since 1999. This aviation safety subsystem of Globalstar has been under development for the last two years.

Globalstar consists of 48 low earth-orbiting satellites positioned into eight orbital planes. The equal spacing of the satellites blankets our planet in a reflective communications web that will capture and retransmit an airplane's signal-to-ground stations. Each airplane would have a 128 kbps "pipeline" that could carry passengers' phone calls, emails, and provide internet access. Cockpit enhancements could include air traffic control data, Doppler weather, views of the cabin, GPS data, a backup transponder, and video and audio communication with the ground or Air Marshal. For ground control, the system would also relocate flight data and the cockpit voice recorders to a ground station where they can be constantly monitored by computers for early warning of mechanical or other airplane problems.

Qualcomm indicates that future advances in this system could allow for true fly-by-wire aviation, where con-trol of an airplane could be switched from the flight deck to a ground control pilot or even an auto-pilot landing system if the crew is incapacitated. You can view a webcast on the system at **www.qualcomm.com/press/webcast/**.

Just as Alan Pierce does here, an Air Marshal can simultaneously monitor an airplane's cockpit and cabin, in full-motion, real-time video.

Recalling the Facts

1. Do you feel that the Qualcomm system will make it safer to fly? Why?

2. What do you feel will be the advantages and disadvantages of having a cockpit control system that can be switched from airplane control to ground control?