

# Safety News

## ADS-B Expansion

U.S. officials have approved plans for the nationwide deployment of automatic dependent surveillance–broadcast (ADS-B), which provides for the tracking of aircraft by their satellite-based position reports instead of radar.

The European Union has inaugurated development of a similar air traffic management program using satellite navigation and data links. The SESAR system, founded by the European Community and Eurocontrol, also is supported by six regional and national air navigation service providers, manufacturers and major European airports.

The €2.1 billion SESAR system is expected to improve safety by 2020 “by a factor of 10” and to enable a threefold increase in capacity.

“The positive impact of SESAR’s goals on the day-to-day activities of the airspace users, passengers, air traffic controllers and citizens will include fewer delays, lower fuel consumption, improved efficiency, time gains and

increased airport capacity,” Antonio Tajani, vice president of the European Commission and commissioner for transport, said as the program was launched in early December.

In November, U.S. President George Bush signed an executive order to speed up implementation of the Next Generation Air Transportation System, or NextGen, as the satellite-based air traffic control system is called.

Bush’s action cleared the way for Robert A. Sturgell, acting administrator of the U.S. Federal Aviation Administration (FAA), to commission essential services for ADS-B in Florida, where 11 ground stations are being installed.

“The next generation of air travel has arrived,” Sturgell said. “ADS-B is the backbone of the future of air traffic control. NextGen is real ... and NextGen is now.”

Sturgell said that 310 ground stations are scheduled to be in operation by 2010; by 2013, plans call for the deployment to be complete, with 794 ground stations in operation. He said that by 2013, ADS-B



U.S. Federal Aviation Administration

services will be available everywhere in the United States where radar coverage exists today, and also in the Gulf of Mexico and mountainous portions of Alaska, which currently are without radar coverage.

Sturgell said ADS-B would reduce the risk of midair collisions and weather-related accidents, provide more efficient routes for flights during poor weather and improve pilots’ situational awareness.

## Aviation Job Growth Forecast

Despite the economic downturn, demand is likely to increase in the coming years for pilots, air traffic controllers and maintenance personnel, Roberto Kobeh González, president of the Council of the International Civil Aviation Organization (ICAO), says.

In remarks prepared for International Civil Aviation Day in early December, Kobeh said that the demand for workers would be fueled by “a massive wave of retirements” by current pilots, controllers and maintenance technicians, as well as the influx into the system of thousands of new aircraft and the development of new technologies that will “transform the very nature of aviation jobs.” In addition, although the current economic recession will slow air traffic, the situation is expected to turn around by 2010, and the industry is expected to begin growing again, according to ICAO projections.

“Human resource development is vital to a safe, efficient and sustainable air transport system,” Kobeh said. “ICAO recognizes that professional competence is a critical element in achieving optimum levels of safety and is developing training



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strategies to ensure that the future world air transport system is supported by enough competent and qualified professionals.”

ICAO’s plans call for an effort to help member states maintain high standards of training by identifying not only the number of pilots, controllers and maintenance personnel that will be needed but also the related training requirements, and ensuring that ICAO standards conform with modern training methods. Other elements of ICAO’s plans include identifying activities that can be initiated with partners in the aviation industry and uniting all segments of the industry around a common strategy.

## Upset Recovery Training

An aviation industry working group — headed by representatives of Airbus, The Boeing Co. and Flight Safety Foundation — has developed a supplement to its *Airplane Upset Recovery Training Aid* that focuses on issues associated with flight operations at high altitudes.

The *High Altitude Operations* supplement, available on the Flight Safety Foundation Web site at <[www.flightsafety.org](http://www.flightsafety.org)>, is intended as a training aid for jet airplane pilots who routinely operate at altitudes above Flight Level 250 (approximately 25,000 ft).

“The goal ... was to educate pilots so they have the knowledge and skill to adequately operate their airplanes and prevent upsets in a high altitude environment,” the industry working group wrote in the introduction to the supplemental training aid. “This should include the ability to recognize and prevent an impending high altitude problem and increase the likelihood of a successful recovery from a high altitude upset situation should it occur.”

The training aid, which discusses high altitude aerodynamics and flight techniques, was developed at the FAA’s request as a result of safety recommendations issued by the U.S. National Transportation Safety Board after its investigation of a high altitude loss of control accident, as well as other recent accidents and incidents that occurred in similar high altitude conditions.

“There have been ... recent accidents where for various reasons (e.g., trying to top thunderstorms, icing equipment performance degradation, unfamiliarity with high altitude performance, etc.), crews have gotten into a high altitude slowdown situation that resulted in a stalled condition from which they did not recover,” the working group said. “There have been situations where for many reasons (e.g., complacency, inappropriate automation modes, atmospheric changes, etc.), crews got into situations where they received an approach-to-stall warning. Some of the recoveries from these warnings did not go well.”

For example, the training aid cites a recent incident in which an airplane



“experienced an environmental situation where airspeed slowly decayed at altitude.” In response, the pilots selected maximum cruise thrust instead of maximum available thrust, “and that did not arrest the slowdown.” The pilots decided to descend but delayed long enough to obtain clearance from air traffic control; during that time, a slow speed buffet began. In response, “the crew selected an inappropriate automation mode, the throttles were inadvertently reduced to idle, and the situation decayed into a large uncontrolled altitude loss,” the training aid said. “This incident may easily have been prevented had the flight crew acted with knowledge of information and techniques as contained in this supplement.”

## EMS Changes Proposed

The U.S. Federal Aviation Administration (FAA) has published a plan to revise regulatory requirements for helicopter emergency medical services (HEMS) operations, including stricter weather minimums and specific preflight planning for many HEMS flights.

“The FAA has determined that safety in air commerce and the public interest [require] additional hazard mitigation for HEMS operations,” the agency said in its proposal, published in the *Federal Register*.

The plan says that if “any flight or sequence of flights” includes a segment conducted under Federal Aviation Regulations Part 135, “Commuter and On-Demand,” then all visual flight rules segments of the flight “must be conducted within the weather minimums and minimum safe cruise altitude determined in preflight planning.”

Pilots will be required during preflight planning to identify a minimum safe cruise altitude and minimum required ceiling and visibility for the flight.



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The plan also says that HEMS flights conducted under instrument flight rules will be permitted to land at locations without weather reporting “if an approved weather reporting source is located within 15 nm [28 km] of the landing area or if an area forecast is available.”

The FAA’s action follows a rash of fatal HEMS accidents in 2008 (*ASW*, 9/08, p. 12).

## Safety Audit Requirements

The International Air Transport Association (IATA) says that nine airlines have lost membership after failing to meet interim safety goals associated with the IATA Operational Safety Audit (IOSA) and, ultimately, as many as 20 may have their membership terminated.

IATA has made passing the audit a condition of membership, effective at the end of 2008. Airlines in eight countries currently are required by national law to meet IOSA standards.

IATA Director General and CEO Giovanni Bisignani said in mid-December that by the end of 2008, more than 260 airlines, including 210 IATA members, were expected to be placed on a registry of those in compliance with IOSA standards.

“IATA’s biggest satisfaction is to bring all our members on board, but



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for those that do not make the standard, there is no place in our association,” Bisignani said.

He said that IATA has begun to extend its auditing program to ground handling through the IATA Safety Audit for Ground Operations (ISAGO). At press time, 20 headquarters audits and 23 station audits were expected to be completed by the end of 2008, he said.

IATA data show that, on Dec. 1, the worldwide accident rate was 0.77 per 1 million flights, compared with 0.82 in 2007. For IATA members, the rate was 0.47 per 1 million flights, compared with 0.68 in 2007.

## Uncommanded Engine Rollback

The U.S. National Transportation Safety Board (NTSB) is investigating a Nov. 26, 2008, incident involving an uncommanded engine rollback on a Delta Air Lines Boeing 777 during the cruise phase of a flight from Shanghai, China, to Atlanta.

The airplane was at Flight Level (FL) 390 (approximately 39,000 ft) when the rollback occurred in the right Rolls-Royce Trent 895 engine. The crew conducted the applicable flight manual procedures and descended to FL 310; the engine recovered and functioned normally for the remainder of the flight.

A similar incident involving a 777 with the same engine type occurred Jan. 17, 2008, during final approach to London Heathrow International Airport. The airplane crashed short of the runway. An investigation is continuing.

## In Other News ...

**John McCormick** will succeed Bruce Byron as director of aviation safety and CEO of the Australian Civil Aviation Safety Authority (CASA) in March. McCormick has more than 20 years of top level experience in the industry, with the Royal Australian Air Force, Qantas and Cathay Pacific. ... New pilots in Australia will receive formal instruction in **critical thinking skills**, according to new requirements being implemented by CASA. Instruction will be designed to improve their communication, interpersonal dealings, judgment and decision making, and beginning in mid-2009, they will be tested on their knowledge of human factors and threat and error management. ... Bluebird Cargo, based in Iceland, has begun using Q-Pulse IMS software to manage **compliance** with national and international regulations and standards.

## Monitoring Pilot Brain Activity

The U.S. National Aeronautics and Space Administration (NASA) is conducting research to determine the best method of monitoring brain activity as part of a larger project to help pilots recognize if they are functioning with dangerously high levels of stress, fatigue or distraction.

The research, being conducted at NASA’s Glenn Research Center in Cleveland, uses a process called functional near infrared spectroscopy to measure both the flow of blood in the brain’s cortex and the oxygen level of the blood. Researchers say this technology is non-invasive, safe, portable and inexpensive, and that the project is intended to “improve the interaction between the increasingly sophisticated automation being used in aircraft and the humans who operate those aircraft. The goal is to aid pilot decision making to improve aviation safety.”

NASA biological engineer Angela Harrivel, who heads the project, said, “No matter how much training pilots have, conditions could occur when too much is going on in the cockpit. What we hope to achieve by this study is a way to sensitively — and ultimately, unobtrusively — determine when pilots become mentally overloaded.”



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