

## FAA TESTING NEW INFRARED SENSOR FOR AIRPORT USE

### From Federal Aviation Administration

■(WASHINGTON) The Federal Aviation Administration (FAA) is testing a new infrared sensor that will enhance safety and security at our nation's airports by helping airport personnel see better in darkness, smoke and bad weather.

The prototype sensors, which the FAA is evaluating at Washington Dulles International Airport and Greater Pittsburgh International Airport, will let airport security teams detect human or animal intruders in total darkness and in light to medium fog. Firefighters can use them to see through smoke to produce the fastest, safest response in airport fire situations. Infrared sensors also enhance the overall situation awareness of airport personnel in degraded weather conditions.

Texas Instruments, headquartered in Dallas, markets the low-cost infrared cameras under the NightSight name and is providing the units for the tests.

"Development of this sensor is an example of government-industry cooperation at its best," said George Donohue, FAA associate administrator for research and acquisitions. "For a minimal investment in this project, the FAA will reap great rewards. As part of the development team, the FAA provided exper-

tise, advice and test facilities, and in return gains a product with immediate application."

Until now, the Department of Defense (DOD) has been the primary user of infrared sensors. While the technology let the U.S. military "own the night" and contributed to the country's victory in Operation Desert Storm, a high cost-per-unit previously prohibited widespread commercial use.

But a new program, supported by the FAA, has developed low-cost, easily manufactured infrared sensors that use an innovative combination of barium, strontium and titanate.

All objects emit energy at levels determined by their temperature. The new device focuses infrared energy — invisible to the human eye — on an electronic sensor with thousands of microscopic detectors. The device measures temperature differences between objects in the scene and electronically creates a thermal image for display using shades of gray. This permits users to separate people and other warm objects from a background in daylight or the darkest night.

This new technology is the result of a cooperative Technology Reinvestment Project created by the Night Vision Consortium. The group's industry members are Texas Instruments; Marlow Industries, Dal-

las; and Delco Electronics, Kokomo, Ind. It also includes a government technical advisory board composed of representatives from the FAA, the U.S. Coast Guard, the FBI, the Secret Service, the U.S. Army's Night Vision Electronic Sensors Directorate and the Department of Transportation's Research and Special Programs Administration.

## ENHANCED GROUND PROXIMITY WARNING SYSTEM USE BY AMERICAN AIRLINES APPROVED

### From Federal Aviation Administration

■(WASHINGTON) The Federal Aviation Administration (FAA) has approved use of AlliedSignal's enhanced ground proximity warning system (EGPWS) on all American Airlines Boeing 757 aircraft. The FAA Supplemental Type Certificate, issued to AlliedSignal, follows 24 months of engineering analyses, simulator evaluations and actual flight tests.

The new EGPWS provides a detailed map of the terrain in the vicinity of the aircraft. Using an existing navigation system, such as the Global Positioning System (GPS), the aircraft's position is correlated with a database-driven terrain map which provides the pilot with real time awareness of the aircraft's position. The moving map, which is displayed on a cockpit screen, will aid the pilot in maintaining proper altitude and terrain clearance.

"The enhanced ground proximity warning system is the latest tool for avoiding controlled flight into terrain, typically mountains," said FAA Administrator David R. Hinson. "The approval granted to American Airlines demonstrates this agency's commitment to use new technology to enhance aviation safety."

A four day demonstration flight to South America, crossing over Costa Rica, Peru and other Latin American countries tested the system. The purpose of the test flight was to validate the accuracy of the new system in a real-time environment. Following satisfactory performance during the test flight, American Airlines plans to install the system in its entire Boeing 757 fleet. FAA approval for EGPWS technical evaluation was granted to United Airlines in October.

## NEW AIRPORT RESCUE AND FIREFIGHTING TECHNOLOGY DEVELOPED

### From Federal Aviation Administration

■(WASHINGTON) The Federal Aviation Administration (FAA) is deploying new technology that helps airport rescue and firefighting crews safely, quickly and effectively respond to emergency situations at night and in adverse weather conditions. The Driver's Enhanced Vision System (DEVS), developed by the FAA's William J. Hughes Technical Center, Atlantic City, NJ, combines satellite navigation, digital data link and infrared technologies with easy-to-use software and onboard displays. The system lets emergency crews see through fog, rain, sleet and snow, as well as through smoke and flames.

Using DEVS, rescue teams immediately get critical information such as the condition of the aircraft, location of passengers and crew, presence and location of spilled or burning fuel and the position of other emergency personnel at the scene.

Boston Logan International Airport is the pilot site for a full DEVS installation. Logan's system, operational since September, includes five mobile rescue vehicles, two in-water res-

cue boats, two airport management vehicles and one airport security vehicle. A command center contains vehicle tracking and communications installations in the airport tower emergency management center.

"Post-crash rescue and fire fighting response during periods of adverse weather is difficult at best. DEVS gives airport emergency teams a vastly improved rescue response capability in darkness, fog and precipitation," said George Donohue, FAA associate administrator of research and acquisitions.

The new system uses computer displays driven by a differential Global Positioning System (GPS), a Geographic Information System and a forward-looking infrared sensor mounted in the vehicle for locating and navigating to emergency sites. A central data and command radio link lets vehicles receive and transmit vital messages.

The FAA can provide up to 90 percent of the purchase cost of new rescue vehicles equipped with DEVS through Airport Improvement Program (AIP) grants.

*"Every time history repeats itself, the price goes up."*

*Old saying*