



TECH TALK

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Smoke, Snow, Gloom of Night Not a Problem



New aviation-safety sensor technology that relies on millimeter-wave radar and infrared imaging is permitting C-130H transport pilots to land their aircraft in zero visibility conditions – including heavy fog, smoke and snow.

A recent test at Edwards Air Force Base, Calif., proved the validity of BAE Systems' autonomous approach and landing capability, which was sponsored by the Air Force Research

Laboratory.

Clark Freise, vice president of defense avionics for the company, noted that the "technology essentially lets aircrews maintain their vision through all weather and obscuration." The system and demonstration, which reached fruition under an \$11.4 million contract, could be adapted for other military and commercial aircraft, he said.

U.S. Company Helps China Monitor Oil Spill



Following last December's environmental disaster off the coast of South Korea, Applied Science Associates Inc. of Narragansett, R.I., provided computer models and simulations to China's oil spill emergency response center.

The collision of a tanker and a crane-carrying barge 60 miles south of Seoul saw some 10,500 metric tons of oil flow into the sea.

ASA's contribution predicted the direction and scope of the spill both on Korea and China. Subsequent action by China and Japan under a United Nations emergency response plan significantly mitigated the damage caused by the pollution.

Polymer Magazine Developed for Assault Rifle



At the request of military and law enforcement agencies, Lancer Systems of Allentown, Pa., has developed a translucent polymer, 30-round magazine for the M16 rifle that is as durable as metal counterparts.

The magazine features steel feed lips and a removable rubber coated bottom with bullet count markers at 20 and 30 rounds.

Lightweight Fabric Blocks Radiation



Thanks to the acquisition of patents from Russia and Singapore for Demron, the U.S. now has its own source of a unique radiation blocking fabric that can be made into full body suits, gloves, boots, vests and other apparel.

Radiation Shield Technologies of Miami, Fla., will be producing the material that is composed of an advanced radiopaque nano-polymeric compound that is fused between layers of fabric.

Demron, says Dr. Ronald Demeo, company president and chief executive officer, "shields against X-ray and low energy Gamma emissions while providing full anti-chemical and biological protection." He also notes that it is a "lead free, toxin free and PVC free nuclear blocking material that allows heat dissipation and resists chemical permeation and cracks."

Tracking Devices Offer Path to Safety for Lost Firefighters



Each year about 100 U.S. firefighters die in the line of duty.

A German firm, Draeger Safety KG & Co., and Exit Technologies of Boulder, Colo., have joined forces to enhance the odds of survival for these first responders.

Draeger has developed two radios – the FRT 1000 which is a 457 kHz radio transmitter and receiver, and the ETR 1000 transmit-only unit – that are designed to assist lost, trapped or disoriented firefighters.

The FRT 1000 sends out a signal after 60 seconds if the firefighter stops moving. Similarly equipped colleagues then can locate and rescue the fallen firefighter. The device also comes with a Mayday button.

The low frequency signal penetrates walls and floors.

The ETR 1000 can be placed at doorways and other points in a burning building. These radios provide "electronic bread crumbs" that allow firefighters to find their way to safety, says a spokesman. About 40 U.S. fire departments are currently using these life saving systems, which were originally designed to locate avalanche victims.

Mapping Technology Helps Cope With Emergencies



An easy-to-use mapping tool, originally developed for the U.S. military, is now being used by first responders to pinpoint resources such as hospitals, transportation, water and food in regional emergencies.

The geographic tool for visualization and collaboration was developed by the Georgia Institute of Technology in conjunction with Emergency Visions of Atlanta.

The system can also track chemical and smoke plumes and assist in the selection of evacuation routes in other disasters including hurricanes, floods and fires.

A spokesman says that the mapping system alerts users to "new incidents and displays the location of the events on the map." Further, all users' actions are recorded for subsequent review, he notes. "We will soon be adding an option that allows users to provide their own custom topographic, photographic or aerial maps."

Game Lets GI's Make Friends, Not War



Soldiers not only must know how to fight in Iraq and Afghanistan, they also are expected to acquire the know-how that will enable them to get along with the home folk in those two troubled lands.

A computer game developed to train up to 20,000 ground troops a year would help them gain these social skills. The game was created by researchers from Sandia National Laboratories in Albuquerque, N.M., and BBN Technologies in Cambridge, Mass., via a Defense Advanced Research Projects Agency grant.

The game, which can handle up to 64 players in a computer network, focuses on interpersonal communication, negotiation and rapport training for soldiers who are expected to be under considerable stress when dealing with tribal leaders in dicey situations.

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