

aircraft with wing spans of less than 2 ft. that can descend below rooftop level and operate in cluttered urban canyons. This requires flight testing in urban terrain, in a controlled environment, says Dr. Gregory Parker, MAV team lead. The indoor facility will ultimately allow AFRL researchers to generate controlled wind conditions, to determine how MAVs can operate in the complex airflows around buildings and through doors and windows.

## Early Waverider Findings

Initial data from the partially successful May 26 X-51A Waverider hypersonic demonstrator flight reveals the scramjet engine was still running normally when the vehicle began experiencing control difficulties prior to termination. Hailed as an overall success for achieving several key hypersonic test milestones, the flight was halted early when telemetry was lost at around 200 sec. into the test. "From what we saw, the engine was not the cause of the failure," says Charles Brink, U.S. Air Force Research Laboratory program manager.

## Boeing's NextGen Win

A contracting team headed by Boeing has been awarded a five-year, \$1.7-billion contract from the FAA for the

Next-Generation Air Transportation System. The contract, which has a five-year option, covers two major areas: air traffic management modeling and simulation and integration of ground and airborne technologies and operations. Aircraft to be covered include all those used by airlines, the military and general aviation, besides helicopters and unmanned aerial vehicles. Two more contracts are to be awarded under NextGen, which has a ceiling of \$7 billion, making it the largest set of awards in FAA history.

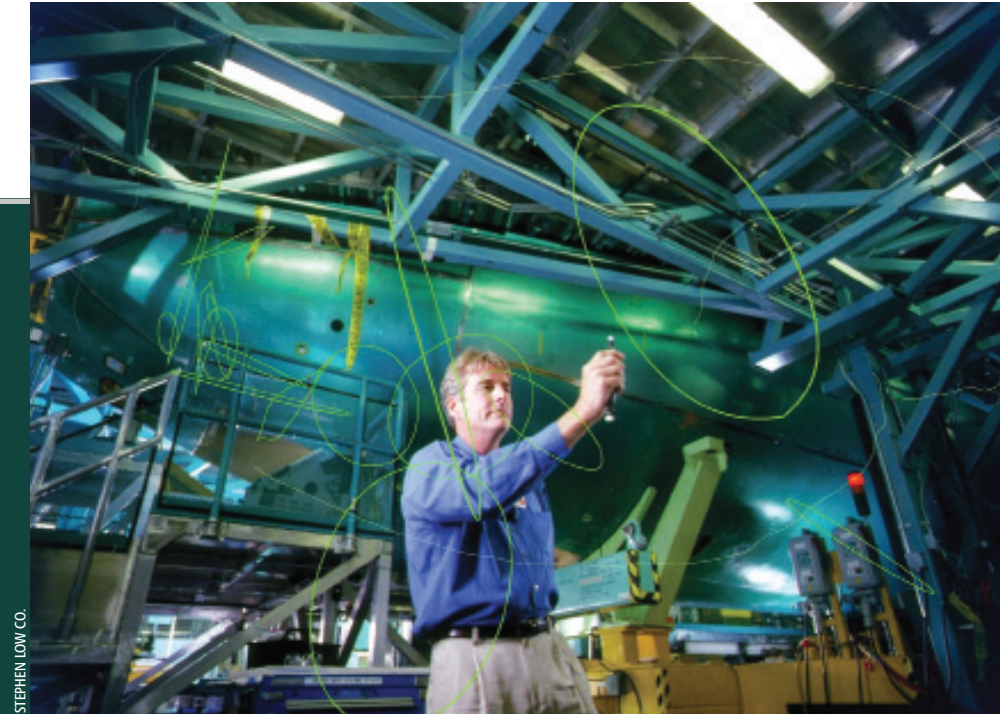
## Composites Consortium

Boeing is joining with Canadian industry to form the Canadian Composites Manufacturing Research and Development consortium to strengthen that country's position in manufacturing advanced composite materials for aerospace and other industries. The consortium was formed in cooperation with the Composites Innovation Center in Winnipeg, home to Boeing Canada Operations, which is headquarters for composite parts-making for the 787 and other programs. Founding companies include Bell Helicopter and Avior Integrated Products of Quebec, Comtek Advanced Structures in Ontario, Convergent Manufacturing Technologies and Profile

## NEW DIMENSION

The first 3D aviation film produced in a 15/70-mm. Imax format is scheduled to premier on June 8, and focuses on a behind-the-scenes look at the design and development of Boeing's 787 to illustrate key aerospace milestones over the past century. *Legends of Flight* is the latest Giant Screen Films feature from Canadian filmmaker Stephen Low, whose credits include *Fighter Pilot: Operation Red Flag* and *Titanica*. The film, narrated by 787 Chief Test Pilot Mike Carriker, also uses advanced digital animation techniques to help describe basic principles of structural and systems design, as well as fundamentals of propulsion. "The original idea was simply to follow the story of the 787, but the idea of it expanding into looking at 100 years of aviation grew out of

Mike Carriker's broader interest in aviation," says Low. The film highlights key aeronautical developments by focusing on hallmark aircraft including the Boeing Stearman, Lockheed Constellation, BAE Systems-McDonnell Douglas Harrier and Airbus A380. However, the development of the 787 forms the backbone for the story, says Low. "It is a marvelous setting for a 3D movie because the whole industrial process is rich, complex and dimensionally interesting. We use engineering (Catia) software to do wonderful, crazy flights through the structure where we dissolve the foreground and go through it like a ghost." Special digital effects include the use of a stereo animation drawing device (Sandde), says David Keighley, Imax vice president and DKP 70MM president. "Using Sandde, the artist draws on the screen in three-dimensional space and talks about how



STEPHEN LOW CO.

Boeing looked into designing the Sonic Cruiser and then the 787." Keighley says the film is designed to educate and inspire, as well as

entertain. "This movie has all the science in it. It is very cool stuff and the Imax experience is one of the best ways to engage young people."

Composites in British Columbia, and Bristol Aerospace and Cormer Group Industries in Manitoba.

## Thwarting Terrorism

The U.S. and France last week agreed to implement the Immigration Advisory Program (IAP) to identify high-risk passengers before they board flights to the U.S., according to the U.S. Homeland Security Department. The formal signing is planned for August. Under the IAP, specialized U.S. Customs

and Border Protection personnel at foreign airports would examine passenger analysis information or travel documentation to make "no board" recommendations to airlines and host governments. The IAP is also expected to help combat use of fraudulent travel documents and disrupt human smuggling.

## Bird Watching

About 300 representatives from industry, regulatory bodies and wildlife

groups plan to discuss advances in bird-strike mitigation at the June 21-24 Joint Meeting of the Bird Strike Committee USA/Canada at Salt Lake City. US Airways Flight 1549 First Officer Jeffery Skiles will be the keynote speaker at the conference, which is held in collaboration with the American Association of Airport Executives. For details, go to <http://events.aaae.org/sites/100610/agenda.cfm>

the air force chief, Gen. Andrzej Blasik, who was in the cockpit during the final part of the flight, that he would attempt to land but would likely have to divert to Minsk or Vitebsk because of adverse weather conditions. The captain had received warnings of low visibility from controllers at Smolensk and the crew on another Polish delegation Yak-40, which landed there previously. The transcript suggests the air force chief was unhappy with the potential need to divert.

## RADAR-CARRYING ANTI-CRUISE-MISSILE AEROSTATS PREPARE FOR TESTS

The first radar-equipped balloon designed to help counter cruise missiles is being prepared for flight tests at Dugway Proving Ground in Utah.

The first of two tethered aerostats for the U.S. Army's Raytheon-developed Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (Jlens) system has been flown at Dugway, and components for the surveillance radar are arriving for integration, says Army Program Director Dean Barten.

Located at the Delta site at Dugway, the 550-km. (342-mi.) range surveillance radar will be calibrated using light aircraft flown by the Civil Air Patrol, Barten says. The second aerostat has been shipped by manufacturer TCOM and will be inflated and integrated with



U.S. ARMY

the fire-control radar after arrival at the Echo site 5 mi. away.

Operating at 10,000 ft., the tethered aerostats will provide look-down surveillance and targeting of cruise missiles and

other low-altitude targets for air-defense missile systems including the Army's Patriot. Jlens development is costing more than \$1.4 billion.

Both aerostats and their associated ground

stations are to be integrated by November, when the team plans to begin passing aircraft tracks between the surveillance and fire-control radars. "In the 2011 time frame, we will coordinate a couple of shots with Patriot, passing data to them so they can engage the target," says Barten.

Early in 2013, a demonstration firing of a Jlens-targeted SM-6 missile is planned under the Navy's Integrated Fire Control Counter-Air program. This will use "Desert Ship" at White Sands Missile Range in New Mexico. "It's a simulated Aegis ship, with no water," Barten says.

The Army's first Jlens unit is to be equipped by December 2014. Plans call for procurement of 14 systems at a rate of one a year beginning in Fiscal 2012, but Barten says that number is being reviewed by the Army and is likely to decrease.

## EUROPE

### Hylas-1 Ready for Delivery

EADS Astrium has completed testing of Hylas-1, an advanced broadband satellite intended to bring high-speed Internet services to rural areas across Europe. Avanti Communications, which owns the spacecraft, says Hylas-1 is to be launched in the third quarter by ArianeSpace, probably on an Ariane 5. The unit was initially set to be orbited by a Soyuz 2.1 launcher from its new pad in Kourou, French Guiana, but the pad is not expected to be ready until the fourth quarter.

### Crash Transcript

The official 41-page transcript from the cockpit voice recorder in the Polish air force Tu-154M that crashed April 10 killing the country's president and 95 others on approach to Smolensk, Russia, indicate that the pilot notified

## RUSSIA

### Russia Loses Mitten

A Yak-130 Mitten jet trainer, tail No. 93, crashed on May 22 during takeoff from the Lipetsk Air Force Training Center. Both pilots ejected; one was injured. The aircraft involved was piloted by air force Col. Alexander Kotov and Senior Lt. Evgeny Gostev. The Yak-130 fleet was temporary grounded as a result of the accident. The trainer was the last of the initial batch of three serial aircraft handed over to the Russian air force in 2009. The Sokol plant in Nizhny Novgorod is due to deliver another batch of nine Yak-130s this year, completing the order of 12 aircraft to be shipped in 2009-10. One Yak-130 prototype was lost during the flight-test program in 2006 due to a digital flight control system malfunction.