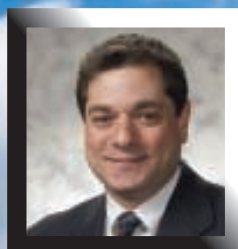
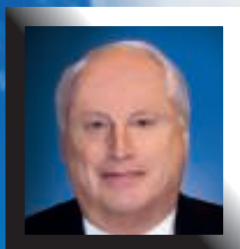
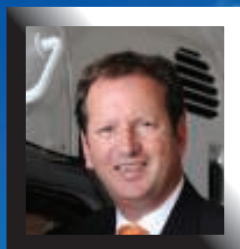
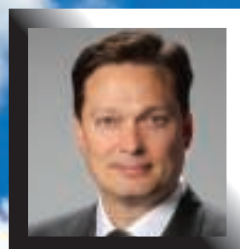
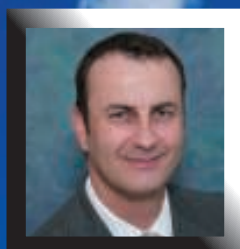


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## ROTORCRAFT OUTLOOK PANEL ANNUAL REPORTS

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- Mário Araujo, V-P Engineering, TAP Portugal-
- Lieut.-Colonel (RNLAF) J.A.M. Laarhoven, NLD ATM military representative to NATO, EU
- Eric Stefanello, EADS Representative and Prosky CEO (an Airbus Company)

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# Editor's Notebook



## Appetite Suppressant

aparker@accessintel.com

By Andrew Parker

Conflict is an inevitable part of today's world. Soldiers need the right tools—including the unique air support that helicopters provide—to fight and defend the country and its allies. Providing the right tools requires a defense budget that is approved with enough foresight and guidance to prepare for future equipment and support needs.

If you believe these three statements are true, the current budget and national debt crisis playing out in Washington is not only concerning because of all the direct economic impacts from passing 'band-aid' continuing resolutions, but also for the many areas that it affects, including the air support units of the U.S. military.

As this issue went to press, a \$1-billion budget bill made its way through Congress headed for the President. But will this bill simply extend the problem out until another group of incapable politicians passes the buck so that another generation has to figure out the long-term solution? What will the impact of a large-scale budget compromise—whether it comes weeks, months or years from now—have on the defense budget, including efforts to modernize the thousands of helicopters that provide air support to troops stationed in conflict-stricken areas like Afghanistan and Iraq, as well as throughout the world?

Many people would like to know more details—not just the interested observers, but the professional soldiers, sailors, pilots and support crew that depend on the military to support their livelihood.

At this point (admittedly, things might change by the time this is printed), it's just a waiting game, as there are not many people even inside the military who have a handle on the ramifi-

cations from the financial impasse.

Col. Richard Koucheravy, Chief of the Aviation Division for the Office of the Deputy Chief of Staff, provided an update on the Army's efforts to modernize and sustain its aerial fleet, which includes around 4,000 helicopters, "in a time of declining resources." He presented the update during IDGA's Helicon Summit East on December 14 in Baltimore.

"I don't think anybody at the Defense Department right now, including the Secretary, really knows what's going on with the defense budget, so we're all trying to figure that out and read the tea leaves," he said.

Koucheravy, who remarked that he "reads enough to be glad that I'm not a politician," said that "you'd have to be hiding under a rock" to have missed that "the prevailing subject in domestic American politics right now is our deficit and our debt—and that is the driving force behind what is happening with our military and how we're going to shape what goes on in Army Aviation."

The Budget Control Act of 2011 and the failure of the bipartisan "Super Committee" to reach an agreement "are hanging over our heads, and we don't know what they mean," Koucheravy explained. Army Aviation officials "have recently seen some thoughts from the appropriations committees, and they're telling us what they intend to do with the FY2012 budget," he said, adding this caveat: "We're already well into fiscal year 2012 and operating off a continuing resolution because of all that uncertainty."

With the reduction of forces in Iraq, "common sense would tell you that level of Defense Department spending is going to be reduced," he continued, noting that there are two

things going on—the recent impetus to control the deficit and the idea that as combat operations are reduced, more "normal" levels of defense spending will return.

"I think we've all gotten quite a bit complacent—many of us that work in the Department of the Army, the Department of the Navy, and OSD—look at recent spending and think that's normal, and that's not normal," Koucheravy explained. "I think we're going to see a return to normalcy, so we're going to have to start taking some appetite suppressants in what we intend to accomplish in terms of modernizing equipment and buying new stuff." He reminded attendees that "somewhere out there, whether in Afghanistan or Iraq or the Horn of Africa, soldiers are fighting, and so everything we do every day with these platforms and equipment is about getting into the hands of the user—a soldier out in the battlefield, either flying or riding in an aircraft. We have to challenge ourselves to remember that at all times and make sure that's our primary goal."

If only the politicians would adopt that philosophy. With the worldwide financial climate likely to cause additional belt-tightening for the U.S. military, the short-term results may not involve more than an adjustment here or there, but the long-term picture remains cloudy. Joint helicopter designs that are used across all services may be the answer (see "Joint is the Only Way Forward," page 66), but in the mean time, put the pressure where it should properly reside—on the politicians in Washington, whose inability to reach a compromise threatens to push the financial health of the military—not to mention the country and world as a whole—to the brink. ☞



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# 14



(Above) One of the Black Hawks of the UAE HQ Presidential Guard Aviation Group/18 on display during the Dubai Airshow. (Bottom) First production Malaysian Air Force Eurocopter EC725. (Right) AAR Airlift's Sikorsky S-61 currently serving in Afghanistan.

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Top industry leaders answer the questions: "What are the most interesting projects that your company is working on for next year; What are the new and emerging opportunities for rotorcraft operations in 2012; and What issue or issues concern you most about the immediate future of the rotorcraft industry?" *Compiled by Rotor & Wing staff*

### 33 ■ Annual Reports

Up-to-date information about some of the most dynamic helicopter companies in the industry.

**On the Cover:** This year's Rotorcraft Outlook Panel features 14 industry leaders that responded to our questions regarding the future of the rotorcraft industry. *Cover layout by Joy Park, graphic designer*

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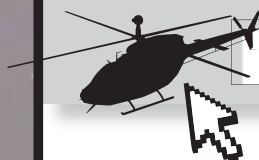
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### VIDEO: WINDOW RESTORATION SYSTEM

- View a demo of 3M's Aviation Window Restoration System developed by Clearfix Aerospace. The demo illustrates how the system repairs acrylic helicopter windows damaged from debris, dirt and sand and is available at [rotorandwing.com](http://rotorandwing.com)



### WHAT DO THE EXPERTS THINK?

- Ask questions to three experts on the topics of helicopter aerodynamics, AS9100 quality management systems audits and night vision goggle (NVG) certification at [rotorandwing.com](http://rotorandwing.com). Che Masters, certification engineer for NSF-ISR, discusses aerospace quality registration. Frank Lombardi, test and evaluation pilot, provides insights about the science behind helicopter flight. NVG certification expert Jessie Kearby fields questions about NVGs for both military and commercial uses.

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- Digital edition of *Rotor & Wing* January 2012. Electronic version with enhanced web links makes navigating through the pages of *Rotor & Wing* easier than ever.

#### WEEK OF JANUARY 23

- HOT PRODUCTS for Helicopter Operators—Latest in equipment upgrades, performance modifications, training devices and other tools for the rotorcraft industry.

#### WEEK OF JANUARY 23

- *Rotor & Wing's* Military Insider. Get the latest updates from helicopter defense companies around the world, from Military Editor Andrew Drwiega.

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# Feedback

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## Operational Lessons Learned from Lost Chinook

The helicopter, for all its unique capabilities, still remains a large soft and noisy target, especially in the case of the Boeing CH-47.

In these very pages in November 2008 we collectively discussed the major shortfalls of the CH-47 as a replacement platform in the CSAR role (noise and size). Tragically, all of these major shortfalls came to pass in August 2011 with the downing of Extortion 17 ([www.armyaircrews.com](http://www.armyaircrews.com)) and its valuable load of SEALs and special operatives. All one has to do is look at that website to see the number of CH-47 that have been downed by RPGs in this conflict. A large, slow and noisy weapon system will always be a juicy target for even the most challenged gunner.

When the U.S. Army shoot down assessment team issues its final report, it will find that not only did an RPG hit the aircraft, but it had numerous small arms hits as well, which no doubt contributed to the downing of this helicopter. Helicopters will always be a soft target, but taking a large, soft and noisy target into a known hot area where RPGs are prevalent is asking for disaster and unfortunately, that's what happened.

Very few if any soft targets can withstand a hit from an RPG and continue, without suffering a major malfunction causing mission degradation.

It is obvious even to the most casual observer that the TTPs (tactics, techniques and procedures) and lessons learned from Takur Ghar shoot down of a CH-47 in March of 2007 were ignored, and we paid a price for that.

Those of us who have flown helicopters in combat know that you cannot fully eliminate the threat entirely, but you can mitigate it with lessons learned! Senior commanders need to re-think the use of large slow rotor-

## R&W's Question of the Month

Looking ahead, what are your expectations for the helicopter industry in 2012? What issues concern you most about the immediate and long-term future for the rotorcraft industry?

Let us know, and look for your and others' responses in a future issue. You'll find contact information below.

craft assets, or they will suffer the same tragic loss of life again, something we can ill afford in this conflict.

Col. Clyde Romero (USAF Ret)  
UH-1/OH-6/RF-4  
Marietta, Ga.

## Upgrading Legacy Designs

Thanks for the interesting piece on Chinook's 50th anniversary (*Chinook Upgrades Take Hold*, November 2011) at Boeing's Ridley Park complex (formerly the Baldwin Locomotive Works). Judging from the sad state of Army ground-vehicle modernization efforts, it makes more sense to upgrade proven combat systems than to start over with new designs. Chinook, Apache, Black Hawk and Kiowa all seem to be thriving.

Loren Thompson  
Lexington Institute  
Arlington, VA

## Telling the Difference

Having been a military helicopter inspector and now a law enforcement helicopter inspector you can tell the difference pretty quick. The mili-

tary are all the same, on each model you know where everything is. On a civilian aircraft you find electrical diagrams are similar but not always the same. That the aircraft was more "hand made" than production line.

Darrell Condry  
Aircraft Maintenance Quality Control Inspector  
Maryland State Police Aviation Command

## From Facebook

The following comments appeared on Rotor & Wing's Facebook page: [www.facebook.com/rotorandwing](http://www.facebook.com/rotorandwing)



(Responding to the question, "Based on visual appeal alone, in your opinion what's the best looking helicopter or helicopters?")

Well, difficult to say! For me, MD500E, Aerospatiale Gazelle, E-Sky Lama, Bell 214B1 and the AgustaWestland AW109 Grand.

Seb Diemaz

The Eurocopter EC365 Dolphin hands down is the sexiest, especially in Coast Guard skins.

Justin Swanson

Do you have comments on the rotorcraft industry or recent articles and viewpoints we've published? Send them to: Editor, Rotor & Wing, 4 Choke Cherry Road, Second Floor, Rockville, MD 20850, fax us at 301-354-1809 or email us at [rotorandwing@accessintel.com](mailto:rotorandwing@accessintel.com). Please include a city and state or province with your name and ratings. We reserve the right to edit all submitted material.



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■ MILITARY | ATTACK

## Boeing Offers AAS Competitor to Military Forces in the Middle East



Photo by Douglas Nelms

Boeing AH-6i "Little Bird" soaks up some sun in between demonstrations at the Dubai Airshow.

Boeing demonstrated the AH-6i at the Dubai Airshow in late November. The manufacturer has conducted demonstrations, including live firing, for the UAE, Jordan "and a couple of others," Burke said. The first international order for the AH-6i is expected soon, with Jordan and Saudi Arabia as the possible customer. Boeing had been expecting an order from Iraq, but that went to Bell's IA407. Burke said that there are roughly 2,000 helicopters in the attack/reconnaissance class that need to be replaced in the Middle East, and the AH-6i would fit that requirement easily. The AH-6i is the export version of the A/MH-6 Mission Enhanced Little Bird, using the Rolls Royce 250-C30R/3 engine rated at 650 shp, plus a six-bladed rotor system to allow the drive train to handle the extra power.

A major element of the AH-6i's success is its glass cockpit and mission computer capabilities, Burke said. The aircraft shares 83 percent of the software currently used on the AH-64 Apache Block III, including the capability to go to Level IV for UAV control. "We haven't demonstrated Level IV yet on the AH-6i," Burke said. "But since [the AH-6i] shares 83 percent of the Block III's software, it's just a matter of putting it on and demonstrating it, then taking it through the certification process." However, he noted that at this time, Boeing would not be allowed to sell Level IV capabilities to foreign customers.

He also noted that all the avionics are located in the nose of the aircraft, making them easy to access for maintenance and leaving the cabin free for other options. All the avionics are military qualified, commercial off-the-shelf (COTS) and ITAR (international trade and armament regulations) compliant. "So we don't have to have a special waiver from the U.S. government to sell this." —By Douglas Nelms

■ COMMERCIAL | AIRFRAMES

## AW Takes 609 Controls

Bell Helicopter has finalized the sale of the BA609 tiltrotor (now AW609) to AgustaWestland. The transaction marks the end of a months-long regulatory approvals process, with AgustaWestland announcing its intent to take over the program in March 2011. Civil certification of the AW609 is projected in late 2015, with deliveries scheduled to begin in early 2016. AgustaWestland will incorporate two additional prototypes into the program for icing certification and avionics implementation. The manufacturer plans to introduce updated avionics and a new satellite-based navigation system to increase the AW609's operational capabilities.

■ MILITARY | COMPLETIONS

## Malaysian EC725 Debuts at LIMA

Representatives from the Royal Malaysian Air Force received a first-hand look at its initial Eurocopter EC725 during the LIMA Exhibition in December. Eurocopter provided a live video feed to the Langkawi, Malaysia-based show from its manufacturing plant in Marignane, France. The helicopter, part of a 2010 agreement that involves a dozen EC725s, is intended for SAR and utility operations. Eurocopter plans to start deliveries in 2012 and continue through early 2014.



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## ■ PRODUCTS | AVIONICS

## S-76D to Feature Thales TopDeck



Thales

Sikorsky has announced plans to incorporate the Thales TopDeck avionics system and glass cockpit into the S-76D. TopDeck allows pilots to 'click to fly' by using an intuitive cursor control device (iCCD) with cockpit displays. The system eases pilot workload and improves reaction time during flight, according to Thales. 🚁

## ■ PUBLIC SERVICE | SAR

## UK Seeks Civil SAR Force

UK Secretary of State for Transport, Justine Greening, said in late November that the government intends to procure a new search and rescue (SAR) helicopter service using civilian crews. Following the cancellation of the SAR-H private finance initiative in February 2011, the Department of Transport decided to re-bid the 10-year contract with civilian crews. She praised Royal Navy and Air Force crews for delivering the SAR service for many years, stating that, "a fully civilian service will be able to maintain the same standards in the future." The effort will keep intact the Ministry of Defence's plans to retire its fleet of Sea Kings by March 2016. Contract award is expected in early 2013. 🚁

## ■ TRAINING | SIMULATORS

## ADA, Horizon Establish Training Venture

Horizon Flight Academy, a subsidiary of Mubadala Aerospace, has entered into a joint venture with Abu Dhabi Aviation (ADA), the largest operator of commercial helicopters in the Middle East, to establish a training center in Abu Dhabi. The new training center is part of a plan by Mubadala to create a "local and international aerospace industry in the UAE and surrounding region built on mutually beneficial partnerships," said Mubadala Aerospace Executive Director Homaid Al Shemmari. The joint venture was announced at the Dubai Air Show in November.

Horizon has also ordered a CAE 3000 Series full flight simulator (FFS) based on the AgustaWestland AW139. ADA currently operates 16 AW139s as part of its fleet of 54 helicopters. (The remaining 38 consist of Bell 412s, 212s and 206s.) The joint venture will own and operate the new CAE simulator, which will be contracted through Horizon. It is scheduled for delivery in late 2013.

The simulator will feature the CAE True six degree-of-freedom electric motion system, as well as a high-performance vibration platform. It will use CAE Tropos-6000 visual system and a direct projection 210-degree by 80-degree field of view dome display. AgustaWestland CEO Bruno Spagnolini explained that the Horizon/ADA venture has received AgustaWestland authorized training center status "to support type conversion, recurrent and operational role training for our AW139 customers from the Middle East."

ADA reported earlier this year that net profits had increased by 150.4 percent over the corresponding six-month period compared to last year, reporting a net profit of Dh181.61 million (approximately \$49.45 million) from January to June 2011, compared to Dh72.54 million (\$19.75 million) from January to June 2010. The majority of ADA's helicopter operations are in support of the Abu Dhabi offshore oil and gas industry, along with engineering and construction. —By Douglas Nelms 🚁

## ■ COMMERCIAL | AIRFRAMES

## Russian Helicopters Creates Ka-226T Variant for Winter Olympics

In preparation for the 2014 Winter Olympics in Sochi, Russian Helicopters recently assisted EMERCOM with training in response to natural disasters and terrorist attacks. The Kamov Ka-226T experimental prototype—a new firefighting, medevac and rescue variant created with the Olympics in mind—performed limited area landings and full touchdown evacuations. EMERCOM's new search and rescue (SAR) Ka-32A11BC also took part in the training, performing evacuations in hover mode. The Ka-226T's Turbomeca Arrius 2G1 engines received EASA approval earlier this year. 🚁



This Ka-226T was created for the 2014 Winter Olympics in Sochi, Russia. The helicopter assisted with EMERCOM training in preparation for the event.

The Ka-226T's Turbomeca Arrius 2G1 engines received EASA approval earlier this year. 🚁

## MILITARY | PRODUCTS

### Bell Aims Armed 407 Variant at Foreign Militaries

Bell Helicopter Textron displayed its militarized 407AH at the Dubai Airshow, promoting it and the IA407 being developed for the Iraqi Armed Forces. Both aircraft use the civilian-certified Bell 407 modified to carry an array of aerial weapons. However, the major difference between them is that the IA407 is strictly an Army program, with Bell selling the civil 407 to the U.S. Army, which will militarize it for sale to Iraqi forces through the Department of Defense's foreign military sales (FMS) program.

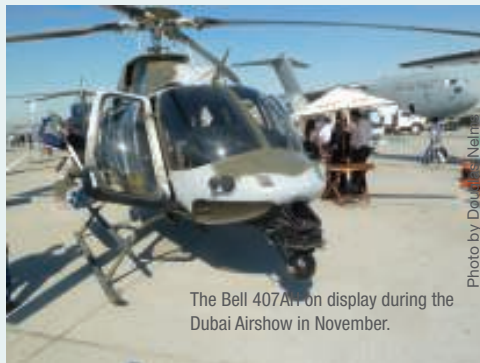
Bell has commitments for 27 IA407s for the U.S. Army for resell to the Iraqi forces. Of these, three are to be strictly trainers without weapons, which the Army has now delivered to the Iraqis. The rest will be weaponized. The U.S. Army is still in the process of qualifying these aircraft.

"The 407AH starts with a certified 407, just as with the IA407," said Steve Schultz, director of Middle East/Africa for Bell. "But in this case, we've done the design, the development, the platform we certified. We believe that we've developed an aircraft that is much more flexible, much more capable because of the broad range of missions that can be done with it. We call it a multi-mission aircraft."

Schultz noted that some of the technology for the militarized 407 comes from the OH-58 program. "For example, using the universal weapons pylon—the arms that hold the weapons—we are able to install and attach a multitude of weapons and systems without disturbing the cabin, so that you retain your seating. For a law enforcement role, it's absolutely perfect—border patrol, light insertions or extractions, that sort of thing."

Bell also went with weapons "that are light, that are modular, that are simple," he continued. These include the Dillon Aero M134D 7.62mm mini-gun, the three-barreled GAU-19 50BMG mini-gun, and the 2.75-inch rocket. It also has the capability to manually dispense chaff and flares. The weapons management system uses a very simple targeting sight system, with the idea being "to keep it affordable," Schultz said. "We did that with law enforcement customers in mind. We've seen a lot of interest from foreign militaries that don't have the big budgets." The helicopter is aimed at international military and paramilitary forces, he said.

Bell feels that it can sell a significant number of the 407AHs, with "a number of interested parties looking for the light reconnaissance helicopter," Schultz said. The feeling is that the 407AHs would be sold in large programs, rather than just in twos or threes. "The number that would be needed for an operational squadron," Schultz pointed out. Flight specifications for the aircraft are currently being developed, although Bell has not found any degradation in



The Bell 407AH, on display during the Dubai Airshow in November.

Photo by Douglas Nelms

weight or speed by putting weapons on the aircraft. "The beauty of the universal weapons pylons is that they have been fully tested and qualified on the OH-58. The max gross weight of the aircraft is 5,250 lbs. That hasn't changed, and it doesn't matter if it is a person sitting in the cabin or a mini-gun hanging from a pylon. The only difference would be the loss of streamlining, and that is negligible."

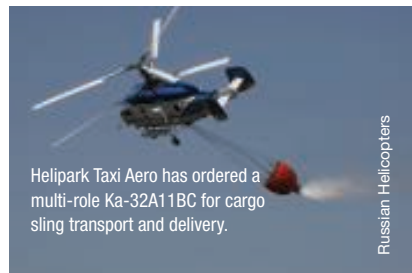
The FLIR electro-optical/infrared sensor and target designation system is currently certified for the aircraft, although Bell is evaluating a number of other systems, such as L-3 Wescam. "The system is not integrated, which means that if the customer wants a different target acquisition sensor, we can easily install it."

The 407AH uses the Garmin G500H with synthetic vision with a Garmin com/nav suite in its cockpit. Bell is also offering the 407GX, which uses the Garmin G1000H. Schultz noted that customers can also opt for the use of BAE Systems advanced precision kill weapon system (APKWS), which allows the DASALS semi-active laser seeker to be installed in the 2.75-inch rockets, converting them from unguided rockets to guided rockets, capable of locking on to a lasered target and taking it out. —By Douglas Nelms

## COMMERCIAL | HEAVY LIFT

### Brazil Certifies Ka-32A

Russian Helicopters has obtained a type certificate for its Ka-32A11BC from the National Civil Aviation Agency of Brazil (ANAC). Helipark Taxi Aero has already ordered the multi-role helicopter for cargo sling transport, with delivery slated for 2012.



Helipark Taxi Aero has ordered a multi-role Ka-32A11BC for cargo sling transport and delivery.

Russian Helicopters

■ **MILITARY | AIRFRAMES**

## V-22 Tests Middle East Waters

Bell Boeing showcased the V-22 at the Dubai Airshow for the first time in November, promoting the advantages of the tiltrotor concept to governments in the Middle East. With orders from the U.S. Marine Corps and U.S. Air Force winding down, the joint venture partners are looking to foreign sales to keep the production line going.

Bell Boeing and NAVAIR are in the process of negotiating a new five-year contract for 122 aircraft. If signed, that contract would begin in FY 2013. However, Defense Department budget cuts could reduce the number of aircraft ordered. The contract may depend on Bell Boeing meeting requirements for a reduction in costs of the aircraft. That reduction could be jeopardized if the number of aircraft ordered is significantly reduced.

However, foreign sales could increase the number of aircraft coming down the production line enough to allow the price of the aircraft to drop. Any V-22s ordered would be available for delivery in 2015. Production rate is currently set at three per month.

Bell Boeing has noted interest among Middle East countries, with Saudi Arabia hinted as a possible buyer. The presence of the V-22 at the Dubai Airshow indicates that the

Bell Boeing's V-22 flies past the helipad-equipped Burj al Arab hotel in Dubai while en route to making its first appearance at the Dubai Airshow in November.



company is seriously involved in trying to find a place for the aircraft in the Middle East. Through November, Bell Boeing has delivered more than 150 Ospreys to 10 squadrons within the U.S. Marine Corps and two within U.S. Air Force Special Operations Command. USMC has ordered a total of 360 MV-22s, while the USAF has ordered 50 CV-22s. Another 48 are planned for the U.S. Navy. —By Douglas Nelms

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■ PUBLIC SERVICE | SAR

## AW101 Wins 2011 Cormorant Trophy



AgustaWestland

The winner of the 2011 Cormorant Trophy is the Canadian Forces' AW101.

Canadian Forces' 442 Squadron is the recipient of the 2011 Cormorant Trophy for Helicopter Rescue. The trophy, presented annually by AgustaWestland, is awarded to a "Canadian civilian, government or military crew that has performed the most demanding helicopter rescue of the year" as determined by a panel of judges from the Canadian Forces and journalists. This year's Cormorant recognizes the December 2010 night rescue of a hiker stranded more than 5,000 feet up on a mountainside during 52 mph winds with a winter storm approaching. Aircraft commander Capt. Jean Leroux told Canadian Forces at that the rescue, which employed an AW101, "was one of the most challenging missions of my career." 🚁

■ COMMERCIAL | UTILITY

## RTE Establishes Airborne Power Support Operations with Eurocopter EC225



Eurocopter

Airtelis EC225 features a Class C sling system designed for work on high-voltage overhead power lines.

Airtelis, Eurocopter designed an integrated sling system for the EC225 cabin, which deploys electrical cables during flight. EASA certification of the sling is pending and Eurocopter expects operations to start in 2012. 🚁

■ SERVICES | COMPLETIONS

## Air2 Gets Wysong-Restored MD500D

Blountville, Tenn.-based Wysong Enterprises has handed over the third of four refurbished MD500Ds to Air2, a utility operator based in Timonium, Md. The helicopter underwent a rewiring process and received new avionics, windows, panels and exterior paint. Air2 uses the MD500Ds for power transmission line services. The fourth helicopter is slated for delivery in 2012. 🚁

■ MILITARY | HEAVY LIFT

## DoD Renews AAR Airlift Contract



AAR Corp.

AAR will use Sikorsky S-92s for airlift support in Afghanistan. The helicopters will transport mail and cargo.

Wood Dale, Ill.-based AAR Corp. has obtained two renewal options from the U.S. Transportation Command (USTRANSCOM) for airlift support in Afghanistan assisting U.S. and NATO operations. The \$150-million contracts run through October 2012. AAR Airlift will use two Sikorsky S-92s, three S-61s and seven Bell 214STs for transporting cargo, mail and personnel in Afghanistan. 🚁



■ TRAINING | SIMULATORS

## FSI Provides RLC Pilot Training

Broussard, La.-based RLC has contracted FlightSafety International to train more than 100 of its pilots. The FAA-licensed pilots will travel to FlightSafety's learning center in Lafayette, La., taking courses that employ advanced flight training devices (FTDs). RLC pilots receive annual recurrent training, along with continual in-house training under an FAA-approved program. ✈

■ COMMERCIAL | CERTIFICATION

## EASA Grants Bell 407GX Approval

Bell Helicopter has received certification from the European Aviation Safety Agency (EASA) for the 407GX. The helicopter has already earned FAA and Transport Canada approvals, following its official launch during the Heli-Expo in March 2011. The first of 60 helicopters on order was slated for delivery in late 2011. ✈

■ COMMERCIAL | OFFSHORE

## SFS Aviation, Sampoerna Purchase AW139, GrandNew

Thailand-based SFS Aviation has contracted with AgustaWestland for an AW139. The helicopter will conduct offshore transport missions out of the SFS Songkhia base in the Gulf of Thailand. Pilot training and support services are provided via AgustaWestland Malaysia's support center in Kuala Lumpur.

Indonesia's Sampoerna has also purchased a GrandNew for VIP transport throughout the region. Delivered late last year, the helicopter becomes the second to enter service with an Indonesian operator during 2011. ✈



AgustaWestland

SFS Aviation added an AW139 for offshore transport missions.

■ MILITARY | COMPLETIONS

## Sweden Receives Fourth Black Hawk

The U.S. Army has taken delivery of its fourth Sikorsky UH-60M Black Hawk for transfer to the Swedish Defence Material Administration (FMV). The FMV has procured 15 Black Hawks through the U.S. Government's foreign military sales (FMS) program. The first seven are scheduled for delivery by the end of 2011, with the remaining eight helicopters arriving through fall 2012. ✈



Sikorsky

The fourth of eight Black Hawks destined for the Swedish Defence Material Administration.

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## ■ PRODUCTS | MISSION EQUIPMENT

### Breeze Eastern Revitalizes to Re-engage Operators

The improving financial position of U.S. rescue hoist and winch specialist Breeze Eastern was one of the reasons that the company decided to hold its first user conference in five years during the fall. Hailed by President and CEO Mike Harlan as an indication that the company is moving ahead positively in both product development and customer service, the Breeze Eastern User Conference took place September 14–15 in Newark, N.J.

This belief was seemingly borne out a month later when Breeze Eastern's second quarter 2011 and first half 2012 sales were announced at the end of October 2011—the company's debt had been reduced by \$4.9 million over the year to stand at \$10.7 million. The inherited debt, said Harlan, had once stood at more than \$60 million. Backed by the board, Harlan, who joined the company in 2009, has led Breeze Eastern forward in its bid to strengthen its financial position with an improving balance sheet.

Sales for the first six months of 2012 were \$36.1 million (a record figure for the period), up 14 percent on the previous first half in 2011. This also followed a record sales figure of \$17.9 million for the second quarter of 2011, a rise of 18 percent over \$15.1 million for the period. According to Harlan, Breeze Eastern invested \$5.5 million to move the company into its new facilities at Whippany, N.J. from its old base in Union. This had been completed in August 2010.

"There is a new mindset at our company now," said Harlan. "We are taking a fresh look at all aspects of our business with more focus on customer centricity." He said that the company's 50 years in the industry had resulted in reliable products that were used in over 50 nations, including Russia and China.

Harlan also understands that the company needs to improve its turnaround time in getting products back



A U.S. Coast Guard team carefully deploys a rescue swimmer using a Breeze Eastern hoist.

Breeze Eastern

to customers, and the new facility gives the company that opportunity, he says. "We want to improve process—to get faster. Past performance has not been consistent."

There are numerous areas that the company needs to address, including ensuring that operators have the opportunity to engage in quality hoist training and that technical questions that are generated by customers operating 'in the field' are responded to quickly. Other issues being addressed include more localized spares around the world, the need to support service centers and especially the need to keep customers current in terms of technology and service provision.

Money is also being invested in new development. Breeze Eastern is close

to developing a new DC rescue hoist, which will be the first in a new line of digital hoists. Harlan called it "a new 'smart hoist' family for better availability and cost."

Future business includes the development of a cargo winch for Sikorsky's CH-53K, and away from rotorcraft Breeze has completed development of a cargo winch for the C-27J JCA with in-house production. Harlan also mentioned a prototype weapons handling system for the Predator-C program. Existing programs include hoists for the USMC and Air Force Bell Boeing V-22 Ospreys.

#### User Group Conference

Senior vice president of customer connection, Gary Olsen, helped to

bring together a collection of hoist and winch operators for both closed-door discussions and the two-day open user conference.

The main conference was introduced by keynote speaker John Piasecki of Piasecki Aircraft Corp., who discussed the drive that his company had inherited from his father, Frank Piasecki, one of the pioneers of the global helicopter industry and designer of the H-21 tandem rotor helicopter (flying banana), the forerunner of the CH-47.

The operator community was represented by members from numerous hoist/winch including: the U.S. Coast Guard, the 160th Regiment (SOAR), Erickson Air-Crane, the Israeli Air Force and the New York State Police, although numerous other international operators were present who did not make presentations.

While operator perspectives proved interesting, the main line of the

conference was to give Breeze management the opportunity to get their collective 'we've changed' message out.

In detailing more on Breeze Eastern programs, Andy Midkiff, vice president of production engineering and program management said that the new CH-53K cargo winch would take a 4,000-lb load, and would feature 90 feet of cable. The flight test of the hardware was scheduled for the third quarter of CY2012 with production hopefully beginning in the fourth quart of 2015. The Alenia C27J cargo winch system would be capable of a 2,200-lb load and would have 98 feet of cable.

Roger Hahneman, senior vice president of operations, stated that the company had previously gotten into a 'backlog hole' and that it got caught out and left wanting when there was a surge of product being returned for maintenance issues: "[We have] 15-20 units coming in that we aren't

expecting." He said communication was being improved internally and externally to identify: a) when is a unit coming in, b) what condition is it in, and c), what materials will it need. He added that the company had invested in more inventory (\$357,000 now on hand) as well as new cell layouts for each type of unit.

There was also a drive to increase test capacity for hoists by up to 50 percent and introduce a barcode scanning system. The main ambition was to generate faster turn-around times. The current target is 60 days although the eventual aim is to reduce that figure to 45 days for every customer by April 1, 2012—a significant reduction on the 100 days or longer that customers had experienced.

Delegates received a tour of the Whippany facility on the last day of the conference to see how the company is putting its plans into action. —By *Andrew Drwiega, Military Editor* 🇺🇸

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## PEOPLE



Finmeccanica's Board of Directors has named former AgustaWestland CEO **Giuseppe Orsi** (left) as chairman and CEO. He replaces **Pier Francesco Guarguaglini**, who has served as chairman and CEO for the company since 2002. COO **Alessandro Pansa** was also elected as a board member for Finmeccanica.

The National Defense Industrial Association (NDIA) has appointed EADS North America CEO **Sean O'Keefe** as its chairman. The association currently has more than 90,000 members within the defense and national security sectors. O'Keefe has been chief executive of EADS North America since 2009.

Broussard, La.-based Rotorcraft Leasing Company (RLC) has selected **Joan McCarthy** (right) as its new chief financial officer. Prior to joining RLC, McCarthy oversaw financial operations for Moreno Group and Offshore Logistics. RLC also added **Travis Latiolais** (left) as vice president of business development. Latiolais spent 11 years with Bristow Group before joining RLC.



Universal Avionics has promoted **Michelle James** to director of marketing and communications, a newly created position. James joined



the company in 2000 and was most recently the relationship marketing manager for Universal Avionics' marketing department.

**William Jolly** is the new president and CEO of Huntsville, Ala.-based WestWind Technologies. Jolly



has more than 25 years of experience and has worked with Tyonek Manufacturing Group subsidiaries, ITT Systems and Pratt & Whitney.

FlightSafety International has promoted **Danny Robayo** to assistant manager of its learning center in Teterboro, N.J. Robayo has been with FlightSafety since 1991 and was most recently the director of training for the center. ☐

## coming events

### 2012:

**Jan. 18–20: AHS Specialists' Conference on Future Vertical Lift Aircraft Design**, San Francisco, Calif. Contact AHS Intl., phone 1-703-684-6777 or visit [www.vtol.org](http://www.vtol.org)

**Jan. 24–26: International Military Helicopter 2012**, London, England. Contact Defence IQ, phone +44 (0) 20 7368 9737 or visit [www.militaryhelicopterevent.com](http://www.militaryhelicopterevent.com)

**Jan. 25–26: Aerial Firefighting**, Sacramento, Calif. Contact Tangent Link, phone +44 (0) 1628 660400 or visit <http://www.tangentlink.com/events>

**Feb. 11–14: Helicopter Association International Heli-Expo 2012**, Dallas, Texas. Contact HAI, 1-703-683-4646 or visit [www.rotor.com](http://www.rotor.com)

**Feb. 12–15: 1st Asian/Australian Rotorcraft Forum and Exhibition (ARF & Exhibition 2012)**, Busan, South Korea. Contact Asian Rotorcraft Forum, phone +82-42-350-5756 or visit <http://www.arf2012.org/>

**Feb. 22–24: Association of the U.S. Army (AUSA) Winter Symposium**, Fort Lauderdale, Fla. Contact AUSA, 1-703-841-4300, toll free 1-800-336-4570 or visit [www.ausa.org](http://www.ausa.org)

**March 16–18: Helicopter Association of Canada (HAC) 16th Annual Convention and Trade Show**, Ottawa, Canada. Contact HAC, phone 1-613-231-1110 or visit [www.h-a-c.ca](http://www.h-a-c.ca)

**March 15–16: SAR Europe 2012**, Dublin, Ireland. Contact Shephard Group, phone +44 (0) 1753 727015 or visit [www.shephard.co.uk/events](http://www.shephard.co.uk/events)

**April 3–6: 55th Annual AEA International Convention & Trade Show**, Washington, D.C. Contact AEA, phone 1-816-347-8400 or visit [www.aea.net/convention](http://www.aea.net/convention)

**April 22–27: Medical Transport Leadership Institute**, Wheeling, W.V. AAMS, 1-703-836-8732 or visit [www.aams.org](http://www.aams.org)

**May 1–3: AHS Intl. 68th Annual Forum and Technology Display**, Fort Worth, Texas. Contact AHS Intl., phone 1-703-684-6777 or visit [www.vtol.org](http://www.vtol.org)

**May 17–19: 5th International Helicopter Industry Exhibition**, Moscow, Russia. Contact HeliRussia, phone +7 (0) 495 958 9490 or visit [helirusia.ru/en](http://helirusia.ru/en)

**May 23–24: Heli & UV Pacific 2012**, Queensland, Australia. Contact Shephard Group, phone +44 (0) 1753 727015 or visit [www.shephard.co.uk/events](http://www.shephard.co.uk/events)

**Sept. 4–7: European Rotorcraft Forum 2012**, Amsterdam, The Netherlands. Contact National Aerospace Laboratory NLR, phone +31 88 511 3165 or visit <http://erf2012.nlr.nl/index.html>

**Sept. 26–27: The Helicopter Show**, Luffield Abbey, England. Contact The Helicopter Show, phone +44 (0) 20 8330 4424 or visit [www.thehelicoptershow.com](http://www.thehelicoptershow.com)

**Oct. 30–Nov. 1: Helicopter Military Operations Technology Specialists' Meeting (HELMOT XV)**, Williamsburg, Va. Contact AHS Intl., phone 1-703-684-6777 or visit [www.vtol.org](http://www.vtol.org)

**Nov. 6–8: Dubai Helishow 2012**, Dubai, United Arab Emirates. Contact Mediac Communications and Exhibitions, phone +44 (0)1293 823 779 or visit [www.dubaihelishow.com](http://www.dubaihelishow.com) ☐

## ■ SERVICES | REPAIRS

## HEATCON Wins Army Contract

Seattle, Wash.-based HEATCON Composite Systems has received a U.S. Army contract to supply materials for repairing composite helicopters and fixed-wing aircraft. The equipment will allow flight crews to follow a “cure cycle” on composite aircraft while in remote locations with difficult environments. Deliveries on the \$2.6-million order for portable hot bonders, silicone heat blankets, tap hammers and vacuum-bagging consumable materials are slated for completion in Spring 2012. 🚁

## ■ PRODUCTS | AVIONICS

## MSP Aero Adds WireWatch

Sandel Avionics has provided Minneapolis, Minn.-based MSP Aero with its WireWatch system for a fleet of AgustaWestland AW109s. North Memorial Medical Center (NMMC) of Robbinsdale, Minn. operates the helicopters, which are already equipped with Sandel HeliTAWs. The shipment of the wire-strike avoidance system marks the first delivery for Sandel. 🚁

## ■ SERVICES | DISTRIBUTORS

## Mi-34C1 Signs UAE Distributor

Russian Helicopters has designated Emirates Corporation Trading Agencies as a regional distributor of the single-engine Mi-34C1. The agreement, signed during the Dubai Airshow, includes flight training, technical support, marketing and sales for the helicopter. The Dubai Airshow also marked the Mi-34C1's debut in the region. 🚁

## ■ COMMERCIAL | OFFSHORE

## Weststar Aviation Orders 10 AgustaWestland Helicopters

AgustaWestland has received a contract from Malaysia's Weststar Aviation Services to provide a package of 10 helicopters. The order consists of five offshore transport-configured AW139s, one VIP-ready AW139, two AW169s and two AW189s.

The purchase follows a Weststar order from 2010 for 10 AW139s in the offshore oil configuration. It will also represent the initial operation of the AW169 and AW189 in Malaysia. The manufacturer plans to open a training academy at Kuala Lumpur's Sultan Abdul Aziz Shah Airport. The center, scheduled to open in January 2012, will offer pilot and technician training, with the expected arrival of an AW139 full flight simulator (FFS) in 2013. 🚁



Weststar Aviation will use the AW139s for offshore and VIP transport in Malaysia.

## ■ MILITARY | AIRFRAMES

## Boeing Expands AH-64 Apache Block III Market for Overseas Militaries

Boeing is close to signing a deal with another international defense force as a new customer for the AH-64D Block III, although it is premature to say which one, when or how many, according to Mike Burke, director of business development for attack helicopter programs. During presentations at the Dubai Airshow in November, Burke said the company is also in discussions with another Middle Eastern armed forces to upgrade its Block II Apaches to the Block III level. UAE currently operates 30 Apaches that were recently upgraded to Block II.

Burke also noted that the AH-64D Block III is the “last man standing” in an Indian Defense Ministry competition for a new attack helicopter. The Defense Ministry has reportedly eliminated all other competitors, with the latest being the Russian Mi-28N. However, no contract for the Indian attack helicopter Block III aircraft had been signed as of mid-November. India is seeking a fleet of 22 new attack helicopters, according to reports.

Taiwan, Boeing's first export customer for the Block III Apache, has ordered 30 of the attack helicopters, with the first one—a trainer—scheduled for handover in mid-2012. Deliveries of the remaining 29 aircraft are scheduled to begin in 2013. Burke noted that the U.S. Army has received the first two AH-64D Block III Apaches a month ahead of schedule under the low rate initial production (LRIP) program. The LRIP calls for 51 Block III Apaches to be delivered, with a total acquisition plan for 690 aircraft.

A major change to the Block III over previous versions is an upgraded transmission that is 20 percent stronger, featuring a split-torque face gear transmission, which allows an increase in thrust of the twin T700-701D engine from 2,800 to 3,400 shp. Boeing has also integrated an enhanced digital electronic control unit into the engine. The increase in thrust, combined with a new, stronger composite blade, also allows a 25-knot increase in speed and more than 560-lb increase in payload at 6K/95F. —By Douglas Nelms 🚁

# HOT PRODUCTS

for Helicopter Operators

## Heliport Lighting Equipment

FEC Heliports designs and manufactures high quality heliport lighting that is manufactured to meet heliport guideline recommendations worldwide. With the very finest quality, fully warranted and best-priced options on the market, FEC can be reached at [sales@heliportsequipment.com](mailto:sales@heliportsequipment.com) to discuss your needs, however large or small, and provide you with a free, no obligation quote for your heliport lighting system.

Heliportsequipment.com also offers a range of portable helipads right through to helipad lighting, landing dollies, fire and rescue equipment, helipad crash rescue equipment lockers and much more. The company endeavors to supply you with a full range of products and are constantly researching others that would bring value to their customers worldwide. For more information, call +44 (0) 1494 775226, fax +44 (0) 1494 775227 or visit [www.heliportsequipment.com](http://www.heliportsequipment.com)



## Rockwell Collins Launches Panorama Glass Front Projection

Rockwell Collins has introduced its Panorama Glass Front Projection (GFP) display, which complements the avionics manufacturer's EP-8000 Image Generator, providing students with a high-fidelity training experience. The GFP features enriched scene content for realistic terrain views and high-resolution images. The Panorama GFP display can also be used for night vision goggle (NVG) crew training when combined with a Rockwell Collins 2015HC projector. For additional information, call 1-319-295-1000 or visit [www.rockwellcollins.com](http://www.rockwellcollins.com)

## Navy Tests HeliTAWS on SH-60

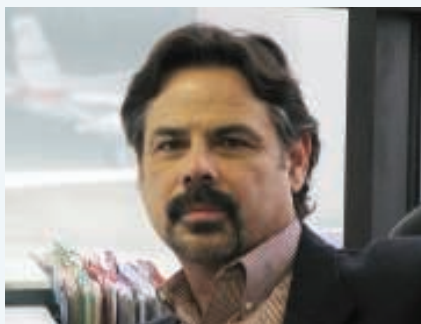
Sandel Avionics has wrapped up U.S. Navy ground testing of its ST3400H HeliTAWS using a Sikorsky SH-60 test bed. The wire and terrain avoidance system was integrated with the helicopter's existing avionics and electrical systems. The system incorporates WireWatch with TrueAlert, allowing pilots to take off, cruise, hover and land at off-airport locations without encountering nuisance alerts, while still being able to receive Class-A terrain and obstacle warnings during the flight. Now that ground tests are complete, Sandel plans to install a commercial off-the-shelf (COTS) HeliTAWS unit on an SH-60F for flight testing. Contact Sandel Avionics at 1-760-727-4900 or visit [www.sandel.com](http://www.sandel.com)



## Honeywell Reaches Middle East Distribution Agreements

Under new distribution agreements with civil and military suppliers, Honeywell is expanding in the Middle East. Transworld Aviation, a support services supplier in the Middle East and Africa, will now be able to provide parts and maintenance to civil, commercial and military helicopter operators. Honeywell also signed with Global Aerospace Logistics (GAL) to service operators in the United Arab Emirates. GAL clients include the Presidential Guards for UAE and other military operators in the country. For more details contact Honeywell at 1-877- 841-2840 or visit [www.honeywell.com](http://www.honeywell.com)

# rotor & wing's Annual Reports



## What's New for 2012: Rotorcraft Outlook Panel

Welcome to the 2012 Annual Reports issue and the inaugural launch of the Rotorcraft Outlook Panel. This issue is very different than every other issue we produce during the year. This is the one issue each year where we open up our pages and provide a forum for the vendors who regularly provide you the products and services that are essential to your operations, and allow them to address you directly and let you know how their company is doing, and what new or interesting things you might expect from them in 2012.

I'm not going to lie to you—this sort of format is a bit disturbing to our editorial staff. As professional journalists, they are trained to take the information they receive from vendors, edit it for accuracy and clarity, and then provide you the filtered version with their own additional insight.

But then again, it is always equally disturbing to most editors when they discover that advertising in business publications such as our own ALWAYS ranks higher than editorial content whenever readers are asked to rate their most valued sources of new product and service information. So, if you get the opportunity and feel so inclined, please let these vendors know that you appreciate their efforts to provide you even more information about their plans for the year within these pages.

We also decided to do something a bit different this year. We decided that, as long as we already had their attention as part of the Annual Reports issue, we would try to dig a bit deeper into the minds and plans of the top executives across the helicopter industry. So instead of asking everyone to answer a single, very broad question about what they see on the horizon for the coming year, we instead approached this in much the same manner that we might approach any CEO interview during the year—with just a bit of a twist.

We sent three different questions to our participants and asked them each to answer at least two. But the “twist” is that we instructed our participants to keep their answers in total to under 500 words. We then handed those answers over to our editorial staff and asked them to review the answers, provide additional context or insight if necessary, and present them mixed together in an interview format, rather than in the format we have used in this issue in recent years, which we referred to as the Executive Outlook section. And thus, the 2012 Rotorcraft Outlook Panel is born.

By expanding the format to include additional questions and topics this year, I believe we are able to provide a great deal more insight into what we might all expect to see in the coming months. And of course the comparison and contrast of the answers provided by CEOs and managing directors of very large multi-national corporations, juxtaposed with the answers from the top management and owners of somewhat smaller companies, all taken within the context of the wide range of organizations represented, provides very interesting forecast fodder, when taken as a whole.

We will continue to tweak and evolve this format in coming years based on the feedback you provide us, and I'm very excited and pleased to provide this new forum, and to see where it goes from here!

**As we embark on another new year filled with promise and uncertainty, we decided to ask three questions:**

*“What are the most interesting projects that your company is working on for next year?”*

*“What are the new and emerging opportunities for rotorcraft operations in 2012?”*

*“What issue or issues concern you most about the immediate and long-term future of the rotorcraft industry?”*

**Randy Jones**  
Publisher  
*Rotor & Wing*

# Rotorcraft Outlook Panel: 2012

Predicting the future is kind of like throwing a game of darts. Every once in a while you hit the bull's eye (for the majority of the non-professionals among us), but most of the time it's just blind luck whether you're accurate, get somewhere near the intended target, or miss altogether. Successful strikes go up dramatically with professionals, as with almost any field of work. With that in mind, think of the 14 executives that participated in our 2012 Rotorcraft Outlook Panel (starting on page 25) as the experts—with a significantly higher chance of predicting what the future of the industry holds.

"Right now the global economy as a whole is unstable and, like every other industry, lack of direction in the stabilization is our concern," observes Jim Sensale, president of Aviation Instrument Services.

"Many segments of the rotorcraft industry will feel significant financial pressures in 2012, which will impact the purchase of new helicopters as well as fleet retrofits," says David Ashton, vice president of Cobham Commercial Systems. "Global military spending is likely to remain flat or decline."

Mark Tattershall of Kaman Helicopters notes that beyond unmanned opportunities, "we see demand growing for small ship maritime helicopters that provide nations with a cost-effective capability. This is driven primarily by territorial disputes, anti-piracy operations, submarine concerns and drug and other smuggling operations."

Presagis is seeing "a significant increase in demand from the defense side and from commercial applications related to offshore and remote area operations," according to President Guillaume Hervé.

"On the defense side, the drive is for highly accurate and effective training and mission rehearsal solutions in single and multi-domain environments. On the commercial side, the demand is for easily deployable and accessible solutions that will help the industry reduce the current excessive levels

of accidents and incidents," he adds.

Curtis Reusser, president of Goodrich's Electronic Systems segment, notes that "mission readiness, improving performance and reducing operational costs" are among the chief concerns for the company heading into 2012. "Current budgetary limitations have surfaced at a time when we see an unprecedented combination of an increasing need for helicopter operations and services, global cost-saving initiatives, and ongoing political instability."

Precision Aviation Group "continues to believe that energy exploration and support will remain a growth area for helicopter operations," notes President & CEO David Mast. "The Australasia market has continued to be an area of expansion for our companies in the rotary wing market. Our support of government programs presents an increasing opportunity for growth," he adds.

George Ferito, director of Rotorcraft Business Development for FlightSafety International, points out that a "succession of industry and government-sponsored task forces have, in recent years, offered a number of proposals to improve helicopter operational safety. While these have been wide-ranging and, in some cases, far-reaching, they share a common denominator: they all recommend increased training as a fundamental and essential step."

Aviall CEO Dan Komnenovich explains that the company is preparing for "emerging opportunities this year in the BRIC countries (Brazil, Russia, India, China), the Gulf of Mexico, and operations around the globe." He adds that other issues facing rotorcraft operators include aging fleets and the growth of the practice of "just-in-time" inventory deployment.

"The economy and the existing instability in the U.S. and across Europe remains a major concern for all of us," notes Markus Schmitz, CEO of Becker Avionics. "We believe that 2012 will stay flat for most of the year but

hopefully we will see improved economic conditions thereafter that will allow for stronger demand of goods and services. In any case, it will be a slow recovery to pre-recession levels."

Aero Dynamix General Manager Dennis Trout sees airworthiness certification, specifically FAA N8900.152, as a major issue heading into 2012. "Many of these provisions were in effect previously, but enforcement has been sporadic and uneven across the country. The robust inspection and enforcement of these new standards will severely challenge many of the NVIS product suppliers and integrators."

Mike Scimone, president of Donaldson St. Louis, notes that "recent history has shown the rotorcraft industry has been secure. The unique ability of rotorcraft to meet many needs, especially with the military, has allowed us to weather some rough times. But the reality of reduced spending on both the commercial and military side will have its effects."

Aspen Avionics President & CEO John Uczekaj points to standardizing the approvals process as an obstacle ahead. "The rotorcraft industry needs to address how to gain federal acceptance of standardized processes in certification and implementation of new technologies in a timely fashion," he says. "Without it, game-changing ideas will not be available to this market."

Cost containment "is a major challenge as we look to the future of the rotorcraft industry," notes Dave Marone, a vice president with BLR Aerospace.

"Despite the efforts of industry groups and government regulators, significant improvement in safety seems elusive, and the result is an ever-increasing cost to insure rotorcraft assets and operations. ... All factors combined, if left unchecked, will result in a greater number of helicopter missions that are no longer economically viable."

—Compiled by Rotor & Wing staff

## 25 Rotorcraft Outlook Panel Annual Reports

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### **Question 1:** *What are the most interesting projects that your company is working on during 2012?*

#### Becker Avionics



Becker Avionics has exciting product news and milestones coming up and we believe that 2012 will be another great year. We

are continuing to strive to provide innovative solutions for new fit, as well as retrofit, modification and upgrade programs. Some of our new products will be specifically tailored to the demanding environments of the rotary wing industry and will be introduced in "Dzus" fastener format for ease of integration in a variety of aircraft platforms. Over the past three years we have consistently gained market share against the competition, particularly in the audio and intercom segment.

Today we are recognized as the market leader when it comes to airborne digital audio and intercom systems to meet the requirements for a multitude of rotary wing applications, including helicopter emergency medical services (HEMS), airborne law enforcement (ALE), forestry and wildlife management, search and Rescue (SAR), and corporate missions.

As digital audio technology is still not that well known to the rotary wing industry, we will continue to devote a significant amount of time to inform and train customers and operators, crew members and decision makers on the benefits of airborne digital audio technology, in order to help the industry to transition from legacy analog to digital audio technology.

**Markus Schmitz**  
Becker Avionics CEO

#### Aero Dynamix



In March 2011 the U.S. Army awarded Aero Dynamix a \$12.5-million, five-year IDIQ contract to provide NVG compatible

IFR upgrade kits for up to 650 AH-64 Apache helicopters. The NVG-compatible IFR kits supplied to the U.S. Army will include avionics upgrades required for IFR certification, which includes Night Vision Imaging System (NVIS) upgrades that ensure optimum night vision performance. 75 aircraft have been completed and another 108 aircraft are scheduled for completion in 2012. Aero Dynamix is the preferred supplier of NVIS upgrades for Customs and Border Protection (CBP) aircraft. These aircraft include 20 EC120, 25 AS350B2 and 45 AS350B3 helicopters. ADI will continue to support CBP in 2012 with ongoing aircraft avionics upgrades on approximately 25 aircraft.

Los Angeles County Sheriff's Department (LACSD) awarded Hangar One a contract to complete and modify new AS350 helicopters for use in law enforcement operations. Aero Dynamix was selected by LACSD to provide complete cockpit modifications for the fleet including new NVG Edge Lit Panels, instrument panel overlays, and spec-compliant NVIS avionics modifications. This project is in its final stage of completion with 14 aircraft delivered.

LACSD has now purchased three AS332 Super Pumas and awarded Heli-One a contract to perform modifications and integration. Aero Dynamix will provide complete cockpit modifications including external lighting for these Super Pumas in 2012. Aero Dynamix will continue to grow its fixed-wing capabilities in 2012 after being awarded two complete CASA-235s NVG upgrades and a Cessna 182 NVG cockpit upgrade.

**Dennis Trout**  
Aero Dynamix General Manager

#### Presagis



Presagis continues to focus on delivering cutting-edge simulations to the rotorcraft market by delivering innovative,

off-the-shelf solutions. Recently announced, SEGen Server will become available in February 2012.

SEGen Server addresses the need for realistic, low-cost training and mission rehearsal environments for pilots.

SEGen Server is a cost-effective server-based software solution for the low-cost generation of high-fidelity, highly-realistic synthetic environments for training. It enables the user to save valuable time, money, and resources by eliminating the need to invest in costly imagery, database development, and storage.

Ideal for use in high flight, low flight, and ground simulations, SEGen Server quickly generates highly realistic ground environments of any location in the world, making it ideal for helicopter training.

At higher altitudes, SEGen Server generates terrain with appropriate lower amounts of detail, based on the requests it receives from our own high-fidelity flight model, HeliSIM, or any other flight model, allowing for a wide variety of simulations to take place.

**Guillaume Herve**  
Presagis President

#### FlightSafety International



We recently reached an agreement with AgustaWestland to offer factory-authorized training for the increasingly popular AW139.

During 2012, we will be engineering and manufacturing a Level D full flight simulator while simultaneously

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working closely with AgustaWestland to develop mission-specific training programs, including full courseware. We plan to install the simulator in our dedicated helicopter Learning Center in Lafayette, La., and will offer training beginning in early 2013. As with all new FlightSafety simulators, this one will feature electric motion and control loading—attributes we pioneered—and our exclusive VITAL X visual system.

VITAL X is optimized for low-level flight operations training, and offers increased scene content, greatly improved weather features and enhanced levels of detail for optimum cueing. The AW139 is a staple of the offshore industry but also sees significant use for executive transport, HEMS, law enforcement and other missions. FlightSafety customers receive training specific to their mission, using realistic scenarios that prepare them for the type of routine, abnormal and emergency situations they might actually face in the aircraft. We also can tailor training for full or partial crews, allowing them to develop and hone teamwork and work on crew resource management issues. We're extremely pleased to be working with AgustaWestland and look forward to the same long association with them as we enjoy with many other OEMs.

**George Ferito**  
Director, Rotorcraft Business  
Development  
FlightSafety International

### Precision Aviation Group



Precision Aviation Group (PAG) continued to expand and grow in 2011. We completed two acquisitions—Gardner

Aviation Services (GAS)—located in Peachtree City, Ga., and Aero Technology, Inc. (ATI), which is located in Long Beach, Calif. These acquisitions greatly enhance our MRO capabilities, expand our

geographic footprint, and gives PAG two “on-airport” locations with expansive hangar facilities. With these acquisitions, our total employment has grown to over 160, and our four facilities now encompass more than 150,000 square feet.

For 2012, we will be expanding our capabilities at all of our facilities, but our primary focus will be expanding our Rotary Wing services at our newly acquired companies. ATI and GAS will launch helicopter-specific programs which will expand the type of services that we can provide to our Global customer base. At ATI, we will be expanding their MRO capabilities to include helicopter-specific Accessories, Avionics and Instruments. In addition to this, we will be adding customer service and support staff to specifically support the West Coast Helicopter market for ATI. In January, we will launch the Rotorcraft Services Division at GAS. The Rotorcraft Services Division will provide airframe maintenance, avionics upgrades/installations, and aircraft retrofits for the helicopter market. PAG hired two helicopter industry veterans to run this division in November, and we have already seen a dramatic increase in the number of helicopters serviced at GAS. We are excited about the future opportunities this division creates for our commercial and government customer base.

In our continuing efforts to expand our geographic footprint, in 2011 we hired a Regional Sales Manager in Lafayette, La., to better serve our customer base in the Gulf region. In 2012, we will be opening a facility in Lafayette that will include MRO services. In addition to this, we will continue to selectively pursue acquisitions that enhance the MRO services we provide to our customers.

In addition to the above, we will continue to focus on expanding our proven customer focused business model—Inventory Supported Maintenance Repair and Overhaul (ISMRO), and we will make substantial capital investments in all of our facilities. However, as previously mentioned, the emphasis in 2012 will be on our Peachtree

City and Long Beach locations. In direct support of ISMRO, we will continue investing in inventory that supports the aircraft our customers operate, and we have doubled our capital expenditure budget over 2011. Our capital investments will include tooling/equipment, logistics, technology-based customer service improvements, ERP software upgrades, and various facility enhancements.

**David Mast, Precision Aviation  
Group President and CEO**

### Aspen Avionics



Aspen is working on several very interesting projects in the coming year. We will continue to expand our

helicopter STC list, providing more opportunities for both civilian and military helicopter operators around the world to transition from steam gauge cockpits to glass cockpits—at a sensible price point. Aspen offers all of the glass panel features that reduce pilot workload and increase situational awareness; features that make flying safer for helicopter operators today. We are also working on a Connected Panel product. It provides inter-connectivity between hand held devices (like the iPad, for example) and the onboard avionics. We have signed up several partners who are developing applications that range from performance monitoring to flight planning.

**John Uczekaj**  
Aspen Avionics President & CEO

### Donaldson Aerospace & Defense

As helicopters expand their operating envelope so must our air filtration technology. In 2012 we will be developing new filtration technologies to overcome two past obstacles, high-engine airflow and

## Rotorcraft Outlook Panel



high airspeed. Going faster and larger introduces additional challenges, and Donaldson will continue to be the

industry leader with high-technology solutions. Flexible architecture systems will be introduced this coming year in the form of universal filtration units that can provide a solution for multiple platforms with limited integration. This technology was recently proven and will be available in 2012 for various applications.

**Mike Scimone**  
President, Donaldson St. Louis,  
Donaldson Aerospace & Defense

### Kaman



Unmanned or optionally piloted technologies for military and civil missions are going to drive our industry

and Kaman Helicopters' growth for many years to come. Our Lockheed Martin/Kaman team is very excited about the Afghanistan deployment contract for unmanned aerial truck (UAT) K-MAX helicopters from the U.S. Marine Corps. The challenging environment in Afghanistan is the ideal opportunity to showcase the tremendous capabilities of our UAT, and give testament to Charlie Kaman's vision and innovative development of unmanned systems that goes back to the early 1950s.

As you would expect, Kaman has many new innovative ideas and long-term solutions that will ensure its unmanned heritage is applied to the next generation of rotorcraft for the U.S. military and our allied nations.

Additionally, Kaman will be expanding its manufacturing operations into Asia, bringing the AH-6 Little Bird composite main

rotor blade to market, re-opening the K-MAX production line, and achieving additional SH-2G Super Seasprite multi-mission maritime helicopter sales. All of these activities help drive Kaman's growth and meet strategic objectives during these challenging times.

**Mark Tattershall**  
Kaman Helicopters

### BLR Aerospace



Many of BLR's original Fast Fin (R) STCs were certified with no change to performance. Over the past 18 months BLR

has certified significant increases in hover performance for the UH-1H, Bell 412, and most recently the Bell 212. Over the next 18 months, additional helicopter models will be added to that list.

**Dave Marone**  
BLR Aerospace

### Cobham



Avionics from Cobham are fully digital for higher dispatch rates and increased mission completion and success,

and our technologies deliver greater situational awareness for reduced pilot workload and enhanced flight safety. Cobham's 3D synthetic vision EFIS is the lightest, most comprehensive Electronic Flight Instrument System in the world due to integrated HTAWS, FMS, HITS, and hover vector functionalities. Our HelisAS autopilot and stability augmentation system is incredibly lightweight, easy to install, and offers hands-free flight at the industry's most affordable price. Audio and radio systems from Cobham deliver enhanced communication and

navigation performance at reduced weight, complexity, and installation cost. End-to-end, an integrated Cobham cockpit offers a reduced panel box count and lighter weight to enable increased helicopter payload capabilities.

With avionics from Cobham, operators of Part 27 and Part 29 rotorcraft will realize best-in-class capabilities throughout the cockpit, an extended useful airframe life, and superior performance versus standalone or ad hoc avionics solutions.

**David Ashton, Vice President,**  
Cobham Commercial Systems

### Aviation Instrument Services



AIS is working on several new projects for 2012. One is continuing to expand our large and wholly owned major

component rotables pool, in order to support our many customers who operate Bell 206, 407, 212, 412, Eurocopter AS350, 355, 365, EC155, BK117 and Sikorsky S-76 helicopters. Our ever growing inventory includes main, combining, intermediate and tail gearboxes, hydraulic servos, dampers, main and tail hubs, etc.

**Jim Sensale**  
AIS President and Founder

**Question 2:**  
*Where are the new and emerging opportunities for rotorcraft operations in 2012?*

### Aviall



Aviall's commitment to the rotorcraft industry factors prominently in its plans for 2012. We will continue

to look for products to add to the offerings in our product market basket, extend and enhance our reach around the world, and work with OEMs to strengthen our supply chain capabilities—all in an effort to support the operations of our customers in this industry.

Aviall is preparing for emerging opportunities this year in the BRIC countries (Brazil, Russia, India, China), the Gulf of Mexico, and operations around the globe. We are supporting Aviall customers operating in major oil fields off the coasts of Nigeria and Brazil, and providing supply chain services for rotorcraft used to transport security personnel in densely populated cities with traffic congestion.

There are opportunities for the industry in the Gulf of Mexico. The U.S. Department of Interior has reorganized and reformed its offshore energy management into the Bureau of Safety and Environmental Enforcement (BSEE) and Bureau of Ocean Energy Management (BOEM). Contracts have been awarded that will double the bureau's fleet size to regulate and enforce energy management in the Gulf of Mexico. Aviall remains dedicated to serving its customers operating on the U.S. outer continental shelf and aiding efforts in this region to improve efficiency and effectiveness, enhance safety, and support job creation and economic development in coastal communities.

Other issues faced by rotorcraft operators and Aviall, as their supply chain partner in 2012, include aging fleets and the growth of the practice of "just-in-time" (JIT) inventory deployment. There are emerging requirements in many countries for newer twin-engine aircraft fleets, which will increase costs to already financially-challenged rotorcraft

operators. These operators have also been driven in this economic environment to maintain JIT inventory systems throughout their operations, which places additional strain on the supply chain to maintain correct levels of inventory in times of fluctuating demand. Aviall offers services to operators facing these issues that will help control costs and improve business efficiency.

**Dan Komnenovich, Aviall  
President and CEO**

### Presagis

We are seeing a significant increase in demand from the defense side and from commercial applications related to offshore and remote area operations.

On the defense side, the drive is for highly accurate and effective training and mission rehearsal solutions in single and multi-domain environments. On the commercial side, the demand is for easily deployable and accessible solutions that will help the industry reduce the current excessive levels of accidents and incidents.

In all cases, the challenge is to deliver highly realistic, easily reconfigurable, and scalable solutions at reasonable costs.

Helicopters are complex to handle, to pilot, and to operate in often challenging environments; including in military and civilian operations.

Helicopter pilots must continually develop the skills needed to fulfill their mission and/or job. Because every situation is different, and in many cases too difficult or too dangerous to replicate in live training, virtual environments are required to effectively train for any scenario, including military missions, evacuation scenarios, as well as landing on ship decks or oil rigs.

With cost reduction pressures being felt on both the defense and commercial side, there is an increased need for lower-cost simulation options to meet the needs of helicopter operators and pilots. Live-training is costly and not always accessible.

Presagis off-the-shelf modeling and simulation tools are a cost-effective way to develop high-fidelity simulation systems quickly—enabling the pilots to maintain a degree of readiness between periods of downtime. Moreover, Presagis off-the-shelf software enables you to build real-time visual systems, helicopter flight motion and dynamics, create mission scenarios, and develop high fidelity sensor displays.

Presagis off-the-shelf tools have been used to build or enhance simulations by the likes of The Boeing Company, which uses Lyra IG to enhance features of the Block III Apache simulator, Oktal, that works with HelisIM for its Tiger simulator, ESG's SeaLynx helicopter simulator for the German Navy which used STAGE, and AMST's Airfox DISO simulator, rotary-wing disorientation trainer, which uses Creator and Vega Prime.

**Guillaume Hervé  
Presagis President**

### Kaman

Beyond the unmanned opportunities, we see demand growing for small ship maritime helicopters that provide nations with a cost-effective capability. This is driven primarily by territorial disputes, anti-piracy operations, submarine concerns, and drug and other smuggling operations.

**Mark Tattershall  
Kaman Helicopters**

### Aviation Instrument Services

As the U.S. and European economies work to stabilize, the current markets seem to be more concentrated in domestic helicopter emergency medical service (HEMS), Latin American oil exploration and Asia. We are always looking for quality inventory and offer several consignment programs that can be very lucrative for the consignor.

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Our inventory of consignment stock from our many operators such as PHI, Air Methods, and Lider Air Taxi will expand as their fleets are continually changing to newer models. AIS will continue to support its international partners, and bring our unique services to new emerging markets around the globe.

**Jim Sensale**  
AIS President and Founder

### BLR Aerospace

BLR will continue to invest in technology to improve the performance and capabilities of existing fielded fleet aircraft. Over time, the gap has been widening between the incremental cost and the incremental capability of new production aircraft. For many business models, the expense of new aircraft is not viable. Innovative modifications that increase safety and capability play an important role in containing cost and increasing efficiency. An aggressive development program to meet this challenge represents a significant growth opportunity for the future.

**Dave Marone**  
BLR Aerospace

### Aspen Avionics

We see providing affordable synthetic vision and HTAWS solutions to all levels of the helicopter market as a major opportunity for Aspen. Up until now, the expense of glass cockpits and their advanced features have been prohibitive for rotorcraft operators. As Aspen approvals expand in the helicopter market, all operators will be able to take advantage of safety-enhancing technologies that up to now have been reserved for new helicopters at the very high end of the market. Aspen will continue to expand into the helicopter space and will continue to create more opportunities for civilian, military, and public use operators to upgrade helicopters with the latest technology.

**John Uczekaj**  
Aspen Avionics President & CEO

### Aero Dynamix

Aerial firefighting at night is a relatively recent advancement. The Los Angeles County and LA City Fire Departments have been using NVIS systems the longest, beginning operations in 1999 with Aero Dynamix NVG cockpits. Pilots report not only dramatic improvements in their ability to fight fires at night, but also point out safety improvements in water refilling operations. The Ventura County Fire Department, Orange County Fire Authority and San Diego Fire-Rescue Department have followed suit. All of the above now use Aero Dynamix NVG-equipped helicopters as significant assets in their firefighting inventory.

Under pressure from California legislators, the U.S. Forestry Service is now considering ending its decade-long ban on using firefighting aircraft after dark. Generally, winds die down at night and provide a much improved opportunity to suppress wild fires than during daytime operations. Interest in the use of night vision technology in aerial firefighting is likely to be huge in coming years.

**Dennis Trout**  
Aero Dynamix General Manager

### Donaldson Aerospace & Defense

New platforms are on drawing boards or in development with most rotorcraft manufacturers; these will offer new opportunities for 2012. Recent history has proven the vitality of increased inlet protection and old paradigms have been broken, and the documented return on investment data provides a compelling argument for customers to implement our inlet filtration solutions. With our core competencies in barrier and inertial filtration solutions we can provide the most flexible design configurations to meet our customer's requirements.

**Mike Scimone**  
President, Donaldson St. Louis,  
Donaldson Aerospace & Defense

### Becker Avionics

Becker Avionics has significant opportunities and growth potential in the rotary wing market. We are working on improving the capability of existing technologies through strategic development, to offer new capabilities, reduce risk, enhance safety, and enable rapid technology introduction. Currently the most important rotary wing segments for Becker are helicopter emergency medical services (HEMS), airborne law enforcement (ALE), and search and rescue (SAR). Further, we see that due to increased budget pressures, military organizations are adopting current, off-the-shelf technologies in order to save time and money. Becker Avionics is uniquely positioned to meet the upgrade and modification requirements of these organizations. Our new audio technology provides significant improvements for most aircraft audio systems on military or commercial aircraft.

**Markus Schmitz**  
Becker Avionics CEO

**Question 3:**  
*What issue or issues concern you most about the immediate future of the rotorcraft industry?*

### Goodrich Corporation

The key issues facing the rotorcraft industry that concern Goodrich are increasing mission readiness, improving performance and reducing operational costs for our commercial and military customers. Current budgetary limitations have surfaced at a time when we see an unprecedented combination of an increasing need for helicopter operations and services, global cost

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saving initiatives and ongoing political instability.



For our military customers throughout the world, budgetary challenges often result in a reduction of fleet readiness. Militaries may defer maintenance due to a limited ability to fund spare parts purchases or helicopter repairs. In addition, training time for pilots and maintainers is often cut back to save operating costs.

On the commercial side, operators are challenged by an economy that creates large fluctuations in both demand and fuel costs, while their business model is based upon a need to maximize the usage and performance of their helicopters.

In the face of these issues, we recognize that rotorcraft have robust long-term market performance in production and aftermarket areas. Goodrich has invested in the development of innovative products that directly address these challenges across a wide spectrum of aircraft. We are focused on providing increased value that helps lower total system cost, reduces operating costs, and improves mission readiness and success. For example, our advanced rescue hoists increase mission success because they can operate in adverse conditions such as high winds; now we have further improved them with a version that can operate through a lightning strike. Newer products like our lightweight ballistic-tolerant drive systems provide a simple and complete solution for the helicopter OEM. HUMS—health and usage management systems—are saving millions in maintenance and operating costs for commercial and military users alike. We have lowered the weight and increased the performance of our laser warning systems. As we grow through acquisitions, our newest businesses—Winslow Life Rafts and Microtecnica—are providing helicopter float systems and reversible life rafts, as well as actuation and hydraulic systems which provide reliable performance under extreme conditions.

Goodrich has developed complete integrated ice detection and protection systems that allow helicopters to safely fly in known ice conditions, executing missions that were not practical before. New Goodrich SmartProbe air data systems, widely used on fixed-wing aircraft due to their low weight and advanced functionality, are finding new applications on helicopter platforms. Advanced engine control concepts in development feature more prognostic capability, to deliver better information for improved readiness and mission success rates while lowering operating costs. On the horizon, we are ready to help customers equip for NextGen ADS-B capability with our SmartDisplay electronic flight bags, which have the potential to lower operating costs for the entire fleet while providing improved situational awareness of other nearby aircraft.

Helicopters perform certain activities and missions better than any other vehicle. Larger market and economic forces require industry to invest in continuous improvements to performance and lower operating costs. Goodrich is committed to providing systems that address these drivers and offer increased value in these challenging times.

**Curtis Reusser, Segment President, Electronic Systems, Goodrich Corporation**

### Precision Aviation Group

We continue to believe that Energy exploration and support will remain a growth area for Helicopter operations. In addition to this, the Australasia market has continued to be an area of expansion for our companies in the Rotary Wing market. Our support of Government programs presents an increasing opportunity for growth.

We are well positioned for continued growth, and look forward to a strong 2012.

**David Mast, Precision Aviation Group President & CEO**

## Cobham

Many segments of the rotorcraft industry will feel significant financial pressures in 2012, which will impact the purchase of new helicopters as well as fleet retrofits. Global military spending is likely to remain flat or decline. Municipal airborne law enforcement and air medical transport agencies will face decreased budgets as a result of falling tax revenues. Opportunities abound, however, for avionics component and system manufacturers capable of delivering significant value in the form of lighter, highly-integrated, highly-functional avionics.

Cobham is uniquely positioned to deliver such value, as evidenced by our selection by Carson Helicopters to provide avionics retrofits for Sikorsky S-61, S-76, and UH-60 aircraft, and by our selection as EFIS provider to the Los Angeles Police and Los Angeles County Sheriff's Departments.

**David Ashton, Vice President, Cobham Commercial Systems**

## FlightSafety International

A succession of industry and government-sponsored task forces have, in recent years, offered a number of proposals to improve helicopter operational safety. While these have been wide-ranging and, in some cases, far-reaching, they share a common denominator: they all recommend increased training as a fundamental and essential step. For example, the International Helicopter Safety Team has set a goal to reduce the helicopter accident rate by 80 percent by 2016. While it remains well short of that goal, IHST remains optimistic that it can be reached, and concludes that training is key. Large operators know this and for the most part adhere to regular training schedules. At FlightSafety, we're gratified to see a growing number of smaller operators embrace the value of simulation-based training, and we hope to see that trend continue.

On another issue, we're concerned that government-sponsored operations—chief among them law

## Rotorcraft Outlook Panel

enforcement—are being significantly affected by severe budget constraints. Increasingly, these cutbacks affect budgets for both training and travel for training. This could become a serious issue as funding cuts grow deeper and more widespread.

**George Ferito, Director,  
Rotorcraft Business Development  
FlightSafety International**

### Aero Dynamix

Airworthiness Certification—on April 9, 2011 the FAA issued N8900.152, to be used as guidance for FAA personnel to use for inspection of NVIS installations, with special emphasis on lighting. Many of these provisions were in effect previously, but enforcement has been sporadic and uneven across the country. The robust inspection and enforcement of these new standards will severely challenge many of the NVIS product suppliers and integrators. Aero Dynamix has completed over 500 cockpit modifications on 32 aircraft platforms without certification issues. Each civil aircraft modified by ADI is fully certified and STC'd by the FAA, and is optimized for NVG, non NVG night operations and fully usable in daylight—a major step ahead of our competitors.

**Dennis Trout  
Aero Dynamix General Manager**

### Donaldson Aerospace & Defense

Recent history has shown the rotorcraft industry has been secure, the unique ability of rotorcraft to meet many customers' needs especially the military's needs has allowed us to weather some rough times. But the reality of reduced spending on both the commercial and military side will have its effects. Return on investment only counts if rotorcraft are working, not if they are accumulating low yearly operating hours. At Donaldson St. Louis we try very hard to provide operating performance benefits with our filtration solutions that make that "improved inlet filtration solution"

argument even more compelling. Donaldson Aerospace and Defense offers the most extensive rotorcraft platform inlet protection solutions based on core competency in both inertial and barrier filtration solutions.

**Mike Scimone  
President, Donaldson St. Louis,  
Donaldson Aerospace & Defense**

### Kaman

Beyond the obvious budget and economic concerns, overcapacity and additional competition from emerging nations such as China are the most pressing challenges.

Investment in technology development is a must for the U.S. to remain one of the industry leaders. The main concern, as always, is how can we collectively improve safety, and I think unmanned technologies can significantly contribute to that important goal.

**Mark Tattershall  
Kaman Helicopters**

### BLR Aerospace

Cost containment is a major challenge as we look to the future of the rotorcraft industry. Despite the efforts of industry groups and government regulators, significant improvement in safety seems elusive, and the result is an ever-increasing cost to insure rotorcraft assets and operations.

In the certification cycle, burdensome regulation hinders innovation and drives up delivered costs of aviation products. Energy costs, over the past decade, add another \$400-\$500 per flight hour. All factors combined, if left unchecked, will result in a greater number of helicopter missions that are no longer economically viable.

**Dave Marone  
BLR Aerospace**

### Aviation Instrument Services

Right now the global economy as a whole is unstable and like every other industry lack of direction in the stabilization is our concern.

**Jim Sensale  
AIS President and Founder**

### Aspen Avionics

Standardizing the approval process. The rotorcraft industry needs to address how to gain Federal acceptance of standardized processes in certification and implementation of new technologies in a timely fashion. Without it, game-changing ideas will not be available to this market.

**John Uczekaj  
Aspen Avionics President & CEO**

### Becker Avionics

The economy and the existing instability in the U.S. and across Europe remains a major concern for all of us. Yes, we have seen positive trends in 2011 and the new rotary wing market has somewhat stabilized, but things remain fragile. We believe that 2012 will stay flat for most of the year but hopefully we will see improved economic conditions thereafter that will allow for stronger demand of goods and services. In any case it will be a slow recovery to pre-recession levels. It is clear that national and international fiscal and deficit reduction policies will impact budgets and demand in the public and governmental rotary wing sectors. These impending cuts will have a direct impact on the rotary wing industry and can re-intensify the market pressure. Overall, we remain cautiously optimistic about the growth potential over the next 1-2 years in the rotorcraft industry.

**Markus Schmitz  
Becker Avionics CEO**

### Eurocopter



2012 will be a special and joyful year for Eurocopter as we are celebrating our 20th anniversary. Since the creation in 1992—as before in the founding companies—innovation has been and will remain a key pillar of our strategy.

We have engaged a very dynamic innovation policy to continue to set the standard in today's highly challenging operational and economic environment. Our product range will be expanded to the EC175 with the first delivery end 2012. And just now we have announced improved performances for the EC175, that will allow operators to reach 90 percent of the global Oil & Gas rigs with full payload/16 pax. The EC145T2 will go toward certification and has already today an overwhelming market success. Both helicopters will offer to our customers and unmatched productivity, and both will have our new HELIONICS avionics on board. And for tour and EMS operators preferring single-engine helicopters, we will have good news at the Heli-Expo in February.

The X4 will go on to develop the successor of the Dauphin family. This extremely ambitious program will incorporate breakthrough technologies developed by Eurocopter and our partners, in terms of performance levels, operating costs, environmental impact and the overall way of how to fly and control a helicopter.

Focus will equally remain on safety and as you may know we have

opened the door to a major evolution for single-engine helicopters with the first flight of the AS350 hybrid helicopter demonstrator. This electric engine backup system will deliver assistance in case of a main engine failure to ease the autorotation maneuver. Decision about implementation should be taken in 2012. Last but not least, the X<sup>3</sup> will resume flights again and achieve its top speed potential in 2011.

We will equally focus on the other pillars that have made the success of our business model in particular by further developing our services offer and expanding our international network. In parallel, we have launched major industrial projects to continue to rationalize and strengthen our industrial capacities in our founding countries and expand on emerging markets.

In regards to new and emerging opportunities for rotorcraft operations in 2012, the market recovery starts to be there and is very strong in some segments already.

We still expect a full recovery in 2012. The positive net order trend has been led in particular by renewed strength of the oil and gas market. In the U.S. light and medium helicopter markets, both the emergency medical airlift and law enforcement segments are pacing the business.

We have achieved remarkable commercial successes on the civil market in particular with the EC225, which has become the reference in the most demanding conditions, as for oil and gas and SAR operations.

The dynamic market development in regions like Asia or Latin America is confirmed and we will continue to strengthen our activities in these fast growing markets. The continued increase of the military market will equally create new

opportunities, even if we will face strong pressure on governmental budgets in Europe. In both markets, constant work to increase cost-effectiveness, improve safety and performance levels will ensure that we will continue to meet the most demanding customers' needs. The impact of the global economic crisis is a major issue for the future of the helicopter industry. The impact was global, even if the situation was contrasted depending on geography and mission segments, and affected mainly the civil market.

Our business model has limited the impact of the crisis and Eurocopter Group not only managed to continue growing despite the global economic downturn, but also continued investing in innovation and product policy.

With this, we are today well positioned for a recovery in the market in 2012 and beyond. However we closely monitor the latest financial crisis (Greece, Ireland, Portugal, etc.) in order to mitigate possible effects on its activities. Should we have to face a new economic downturn, our order backlog, our significantly increased services business as well as the important improvement measures implemented in the last few years will keep the company in good shape.

The competitive landscape will remain very dynamic and be marked by the growing importance of new competitors in civil and military markets. For us, in this fierce competitive environment, continued investment in innovation, services and international deployment will be key to achieve our Vision 2020 objectives.

**Lutz Bertling**  
President & CEO  
Eurocopter Group



# Eurocopter

## *EADS Division Spreads Its Wings Worldwide*



Established in 1992, the Eurocopter Group is a division of EADS, a world leader in aerospace, defense and related services. Employing approximately 17,500 people, Eurocopter Group designs, develops, produces and markets the most comprehensive range of civil and military helicopters in the world.

One of the standout highlights of 2011 occurred on May 12, when Eurocopter's X3 (X-cube) hybrid helicopter demonstrator reached speeds of 232 knots (430 km/h) true airspeed in level, stabilized flight. This occurred during only the third mission after a scheduled upgrade that integrated the X3's definitive gearboxes.

"Future helicopters incorporating the X3 configuration will offer our customers about 50 percent more cruise speed and range at very affordable costs, therefore defining the future of high productivity rotary-wing aircraft," noted CEO Lutz Bertling.

Another new member of Eurocopter's helicopter family—the EC145 T2—was formally launched during Heli-Expo in March. An evolved version of the popular twin-engine EC145 that incorporates new Turbomeca Arriel 2E engines, along with the company's Fenestron shrouded tail rotor, upgraded main and tail rotor gear boxes, the T2 has an innovative new digital avionics suite and a four-axis autopilot. With deliveries scheduled to start in 2013, the EC145 T2 will offer significantly improved performance, increased flight safety, enhanced human-machine interface, improved maintainability and lower operating costs. It benefits from the heritage of Eurocopter's EC145 and its BK117 predecessor, which together have logged over 2.8 million flight hours in service around the world.

Also announced during Heli-Expo 2011 is the enhancement of four variants—the AS350, EC135, AS365/AS565 and AS332. The first of Eurocopter's enhanced helicopters is the single-engine AS350 B3e. This updated version of the best-selling Ecureuil family has a more powerful

Arriel 2D turboshaft engine, along with a new-generation digital FADEC and an engine data recorder for condition monitoring. Eurocopter's EC135 T2e and P2e are evolved versions of its popular EC135 twin-engine helicopter, with an increased maximum takeoff weight of up to 2,950 kg, which offers a 40-kg gain in payload and allows an extra passenger to be carried with a load margin extension from its previous weight rating.

Enhancements for the AS365 N3e/AS565 MBe of Eurocopter's medium-weight Dauphin family respond to market requests for improved hot-and-high performance, along with new technologies and systems. Primary changes are the introduction of Arriel 2N engines with dual-channel FADEC, use of the main gearbox from Eurocopter's EC155 helicopter, the incorporation of a new Starflex rotor head, and the application of a reinforced main rotor mast. Improvements for the AS332L1e Super Puma are focused on the integration of Eurocopter's advanced cockpit and automatic flight control systems employed on its EC225/EC725. This will offer enhanced flight envelope protection and increased safety levels, along with full compatibility for such new-generation mission equipment as FLIR sensors, H-TAWS, digital map units, and TCAS.

In October, Eurocopter unveiled another new concept with the first flight of a hybrid helicopter that combines a turboshaft internal combustion engine with an electric motor. The manufacturer is using the supplemental electric system to increase maneuverability of a single-engine helicopter during an autorotation landing—which is performed by helicopters in the event of a main engine failure. The demonstrator helicopter is a production version of Eurocopter's light single-engine AS350, which has been equipped with a supplementary electric motor.

During EBACE in May, Eurocopter debuted the EC145 Mercedes-Benz Style, which features an easily trans-

formable interior tailored for high-end corporate, executive and private operations. Conceived in a styling project led by the Mercedes-Benz Advanced Design Studio in Como, Italy, the interior of the EC145 Mercedes-Benz Style is inspired by the automaker's range of high-end vehicles. It features deluxe materials, elegant woods and ambient cabin lighting, along with multi-function boxes.

Another major development at Eurocopter during 2011 was its acquisition of Vector Aerospace. The purchase of the Canadian MRO will help increase the growth of Support & Services activities for Eurocopter and EADS in both the civil and governmental markets. Vector Aerospace will also strengthen EADS' presence in North America and the UK, in alignment with the company's strategic goals as outlined in EADS' Vision 2020 plan. EADS North America surpassed the halfway mark for deliveries of the U.S. Army UH-72A Lakota in August. The Army has received more than 50 percent of the planned 345 Lakotas involved in the light utility helicopter (LUH) program.

The latter stages of 2011 brought two advancements within Eurocopter Group divisions, with the November approval of the NH90 in the final tactical transport helicopter (TTH) configuration and Australian Aerospace's delivery of the final production Tiger ARH to the Australian Defence Force (ADF) in December.

The NH90 approval marks the completion of the TTH development, and allows delivery of the initial NH90 TTH in the final operational configuration to the French Army. It will be followed by the startup of deliveries in 2012 to Italy, Belgium and Germany. Australian Aerospace handed over Tiger ARH022, the last of 22 helicopters, to ADF at its Final Assembly plant on Brisbane Airport. Acquired under Project Air 87, the Tiger replaces ADF's existing rotary-wing force comprising Bell 206B-1 (Kiowa) reconnaissance and UH1-H (Iroquois) gunship helicopters.

# AgustaWestland

*Powerful Force in the Helicopter Industry*

**A**gustaWestland, a powerful force in the helicopter industry, is capable of satisfying the widest range of customer requirements with a modern range of high performance civil and military rotorcraft encompassing all the main weight categories. Products range from the innovative light single 1.8-ton SW-4 to the 16-ton three-engine AW101 helicopter. Other products include the AW119Ke single engine, AW109 Power, AW109 LUH and GrandNew light-twin; the T129 combat helicopter; the multi-role Super Lynx 300 and AW159; the best-selling AW139 medium twin; the AW609 tiltrotor and the NH90 11-ton.

New products recently launched include the AW149 military twin engine helicopter, the AW169 light intermediate 4.5-ton class and the AW189 twin engine 8-ton class helicopters, further expanding the product range. Through a wide range of joint ventures and collaborative programs with major aerospace and defense companies, AgustaWestland is increasing its helicopter offerings and opening up new business opportunities. A large variety of initiatives and industrial co-operations have in fact been set up in several countries also including the U.S., Turkey, China, Russia, Japan, India, South Africa and Canada.

## Working for Customers

AgustaWestland is focused on helping its customers reduce their costs



of ownership while improving operational capabilities. Integrated Operational Support (IOS) solutions are delivering increased aircraft operational effectiveness to the military while driving down through-life costs. The company also offers its commercial customers a wide range of service plans and industry leading warranty programs. That's not all. AgustaWestland is expanding its network of supply and service centers around the world to be close to its customers. The supply and service centers stock spares and are authorized to carry out repair and overhaul services for AgustaWestland helicopters.

## Training and Future Plans

AgustaWestland is an established provider of professional training services and solutions to a wide range of civil, military and industrial customers around the world. Building on core competencies in high quality rotary wing and systems training, AgustaWestland is committed to developing and expanding its training portfolio to meet the current and future training needs of all customers. The company provides integrated

training solutions that support the complete pipeline, from basic training to beyond utilizing classrooms, simulators and aircraft. Emphasis is placed on producing a range of cost-effective options aimed at supporting the user as close to the front line as possible, while providing central high-value services delivering training courses and simulation for all customers.

Rotorsim, a joint venture with CAE, delivers simulator training for a range of AgustaWestland helicopters, including the AW109 Power, AW109 LUH and AW139; and has Level D certified simulators located in both Italy and the U.S. In the UK, Aviation Training International Ltd., a joint venture with Boeing, provides a comprehensive training service for the British Army Apache AH Mk.1 fleet.

Finally, AgustaWestland is investing in advanced technologies right now that will make future rotorcraft more efficient, quieter and greener. In addition to new helicopter designs, the company is also studying revolutionary tiltrotor and tilt wing rotorcraft, combining turboprop performance and rotorcraft flexibility in a single vehicle.





# AW139

Versatility for your missions  
Value for your budget

Designed to achieve the multi-mission demands of homeland security

Maximum survivability, built-in safety and superior performance

Excellent value for money in terms of operating and maintenance costs

# TAKE YOUR TRAINING TO NEW HEIGHTS

COST-EFFECTIVE ROTARY-WING SIMULATION

PRE-LIVE THE FUTURE



Your training programs maintain pilot and operator readiness; our integrated off-the-shelf software allows you to build applications that address your unique needs. Working with Presagis enables you to develop high-fidelity, cost-effective rotary-wing training and simulation systems on time and on budget. With proven software solutions and expert technical services, Presagis can help take your training programs to new heights.



SIKORSKY BLACKHAWK



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MERLIN



EUROCOPTER  
SUPER PUMA



EUROCOPTER TIGER



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# PRESAGIS

# Presagis

## *Develop Low-Cost, High-Fidelity Simulation Systems*

**P**resagis is a leading global provider of off-the-shelf modeling & simulation software for the helicopter training market. Leading organizations implement Presagis software in development of low-cost, tailored training and simulation applications to help ensure pilot readiness. Flexible, out-of-the-box solutions from Presagis allow you to build your application from scratch or upgrade your existing training application with ease.

### **Save Time & Cost When Developing Your Helicopter Training Application**

Saving time and cost and having an easily deployable solution is critical when developing your training program.

Providing pilots with training and experience within difficult conditions which would otherwise be too difficult or dangerous to replicate in live training exercises is also paramount.

Presagis off-the-shelf software tools enable the development, modification, and re-use of simulation systems that can help to maintain pilot and operator readiness during downtime, when it may not be possible to train on a helicopter. With built-in flexibility to “mix and match” features and levels of fidelity required from different simulations, Presagis helps developers rise to the challenge of building truly immersive and effective pilot training systems.

### **Developing Deployable Helicopter Simulators**

With requirements to operate on a global scale, the demand for lightweight, deployable simulation has gained significant interest in the helicopter market. With the integration of Presagis software and helicopter hardware, including cockpit and flight controls, customers can design affordable and conveniently transportable simulation systems, without the need

to operate large dedicated training facilities.

### **Real-time Visual Systems**

Presagis visualization tools, such as Vega Prime, empowers developers to create immersive and high-performance simulations that are critical to effectively train helicopter pilots. Primary scene content, such as visual target detection, orientation, recognition, and identification (DORI), as well as secondary visual scene cues can be accurately represented when developing the simulation. Users can enhance their simulations with other Presagis and 3rd-party software to develop additional functionality, such as high-fidelity physics-based flight dynamics, accurate Night Vision Goggles (NVG) and Infrared (IR) views, maritime capabilities, and 2D graphical overlays and instrumentation.

### **Helicopter Flight Motion and Dynamics**

Presagis HeliSIM can add high-fidelity flight dynamics to any simulation in order to accurately represent helicopter motion and performance. Using HeliSIM, developers can leverage an extendible and flexible software environment to create and deploy a complete 6 degree of freedom (6DoF) aerodynamic model for any rotorcraft platform. It can also simulate blade element models for helicopters with either rigid or flexible blade models that are driven by either turboshaft, advanced turboshaft, or by a user customized performance engine. The tool enables users to test both aircraft design and performance under controlled, simulated conditions.

### **High-Fidelity Sensor Displays**

Presagis Sensor Products allows customers to develop high-fidelity sensor applications for pilots and weapons operators to familiarize themselves with friendly and enemy target signatures by simulating



imagery from Electro-optical (EO), Forward Looking Infrared (FLIR), and Search and Rescue (SAR) sensors. Sensor Products delivers the realism and fidelity required to accurately simulate real-world visual sensor displays, including EO, NVG and IR.

### **Mission Scenarios**

In order to provide easily accessible, dynamic and interactive simulation environments in which pilots can train, helicopter tactics and operational scenarios are available within Presagis STAGE. STAGE can be configured and enhanced in order to meet your application requirements. STAGE Mission Editor and built-in artificial intelligence capabilities allow users to develop immersive training environments by creating rich scenarios with intelligent vehicle and human entities, including complex crowd and vehicle behaviors. STAGE supports weapon and sensor profiles that can be simulated as an entity within the synthetic environment or simulated statistically. Users can also specify environmental conditions by modeling weather profiles that affect the motion and dynamics of entities within scenarios.

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# Aeronautical Accessories

*Known Around the World for Superior Rotorcraft Accessories and Parts*

The Aeronautical Accessories brand offers advanced helicopter parts and accessories that are designed, manufactured, warehoused and distributed at two state-of-the-art facilities spanning 150,000 square feet.

## Incredible variety, global distribution

With a product line consisting of more than 360 unique STCs, Aeronautical Accessories develops and distributes over 4,000 products and replacement parts. By maintaining inventory levels to meet demand, we are able to minimize customer downtime for repairs, refurbishments, and completions.



## Advancing mission capabilities through innovation

Designed to enhance operation, safety and versatility, Aeronautical Accessories' exciting innovations help expand the helicopter's capabilities – allowing customers to accomplish a wide variety of missions. With our advanced engineering team listening to customer feedback, the group is able to predict emerging needs and applications, and respond swiftly with custom solutions.



## The trusted leader since 1979

As the most trusted leader in helicopter accessories and replacement parts, Aeronautical Accessories has been designing and producing quality rotorcraft items since 1979. Other brands can promise quality and reliability, but only Aeronautical Accessories has decades of experience and dedicated specialists delivering on that promise. Achieving ISO 9001 with AS9100 Revision C certification reinforces what customers have always known about Aeronautical Accessories – a brand that provides superior products to people who depend on quality and performance every day.



## Stringent quality control, exceptional service

Every Aeronautical Accessories component must meet FAA requirements as well as exacting internal standards. Backed by an exceptional warranty and a reputation for excellent service with unparalleled reliability, Aeronautical Accessories continues to be known around the world for superior rotorcraft parts and innovative accessories.



## For more information contact:

[www.aero-access.com](http://www.aero-access.com),  
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or 1-800-251-7094



## Innovation. Reliability. Performance.

At Aeronautical Accessories, we believe providing you with reliable, quality rotorcraft products is more than a profession, it's a personal commitment! Our team is dedicated to helping customers complete some of the toughest jobs in the world by advancing mission capabilities through innovative products and accessories. Experience the personalized support that sets us apart from other brands and see how we can help you complete your unique missions more successfully.

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# Goodrich Corpo

*Customer-Focused Systems for the Helicopter Industry*

**W**ith a respected leadership position in the helicopter industry, Goodrich Corporation serves commercial and military operators with advanced system technology and tailored service offerings.

Its history of improving safety, operational cost, reliability and functionality for helicopter operators and manufacturers around the world, combined with its reputation as a flexible business partner, have made the company a trusted source for original

helicopter equipment and aftermarket solutions.

## **Broad Portfolio of Proven Helicopter Capabilities**

Goodrich Corporation's broad portfolio of field-proven products for the helicopter industry includes, but is not limited to, the following systems:

- Health and usage management systems (HUMS)
- Flight control actuators
- Rescue hoists
- Terrain warning and avoidance systems
- Mission data recorders
- Electric power generation and distribution
- Engine controls
- Laser detection systems
- Ice detection and protection systems
- Light-weight flexible drive systems
- SmartProbe<sup>®</sup> air data systems
- Life rafts and floats



The U.S. Army's Sikorsky Black Hawk fleet is equipped with Goodrich HUMS.



# ration

With Goodrich as a systems provider, customers enjoy many advantages. OEMs manage fewer suppliers, lowers costs and experiences the benefits of greater accountability backed by a long-standing industry leader. Operators benefit from increased capability and system simplicity with bundled multi-function solutions, plus integrated customer support.

## Field-Proven Success

Goodrich products and systems are on nearly every helicopter that flies today, as well as those currently in development. Service-proven HUMS, electronic engine controls, actuation systems, laser warning systems, rescue hoists, drive systems and ice protection systems are among the products on key frontline military helicopters such as the Bell-Boeing V-22 Osprey, Boeing AH-64, Eurocopter UH-72 Lakota, NH Industries NH90, and Sikorsky UH-60 models. Active commercial applications include the AgustaWestland AW139 and Sikorsky S-76 and S-92 models. Goodrich products are present on a number of diverse platforms in development today, such as the AgustaWestland AW609 and Sikorsky CH-53K.

## From Advancing Technologies to Providing Comprehensive Lifecycle Solutions

Innovation is the hallmark of Goodrich. Its advanced SmartProbe<sup>®</sup> air data system, drive system components and electronic engine control helped the Sikorsky X2 make its record-breaking flight to win the prestigious Collier Trophy. Advanced lightweight, low-cost one-piece flexible couplings transmit power so the V-22 can safely fly with one engine out. The company's extensive experience, innovative advances and continually evol-



Goodrich is a preferred hoist provider for the Bell 412.

ing product lines have positioned the company as a frontrunner in the development of mission-critical helicopter technology. Further, the company is dedicated to providing comprehensive, custom-tailored life-

cycle support of its products.

Goodrich Corporation's headquarters is located at 2730 West Tyvola Road, Charlotte, NC 28217. Contact Goodrich at 704-423-7000 or visit [www.goodrich.com](http://www.goodrich.com).

# FlightSafety

*The World Leader in Simulation-Based Helicopter Training*

**F**lightSafety International, the world's foremost aviation training company, stays Ahead of the Curve with groundbreaking simulation-based helicopter training. The company pioneered both Level D simulation and Level 7 flight training devices for helicopters and continually responds to changing industry demands.



## A Training Trendsetter

FlightSafety also was the first to offer electric motion and control loading for the most precise and realistic simulator experience possible. The company's VITAL visual systems deliver the most precise and realistic training experience available, with unmatched fidelity, extensive visual database and a broad range of environmental conditions including brownout and whiteout. Currently the company is building a Level D simulator to initiate training in Lafayette, La., in early 2013 for AgustaWestland AW139 operators.

## A New Training Vision

FlightSafety's Tucson, Ariz.-based Level 7 Eurocopter AS350 FTD – the first simulator of any type qualified for night vision goggle training – offers in-depth NVG scenarios far superior in scope and realism to anything that could be attempted in a helicopter. The company continues to expand its NVG capability, with the goal of making this important instruction available for the majority of its helicopter training programs.

## The Level 7 Advantage

FlightSafety fielded the world's first Level 7 helicopter FTD and now operates several of these type-specific devices for Bell and Eurocopter models.

These advanced FTDs incorporate the latest visual realism and other components from full flight simulation while allowing the economy of fixed-base training. Level 7, the highest qualification level for an FTD, offers maximum training and checking credits.

## Multiple Centers for Training Excellence

FlightSafety offers training at six Learning Centers for helicopter models from most major manufacturers.

- Dallas/Fort Worth Learning Center: Level D pilot training for Eurocopter EC135
- Fort Worth Bell Learning Center: Full flight simulator pilot training for Bell 212, 412 and 430
- Lafayette Learning Center: Level 7 FTD pilot training for Bell 206/TH-67 and Bell 407; Level D pilot training for Sikorsky S-76C and S-92
- London Farnborough Training Center: Level D pilot training for Sikorsky S-92
- Tucson Learning Center: Level 7 FTD pilot training for Eurocopter AS350
- West Palm Beach Learning Center: Full flight simulator pilot and maintenance training for Sikorsky S-70, S-76B-C and S-92

In addition, the company offers factory-authorized maintenance training on the full range of Pratt & Whitney Canada engines at Learning Centers and training locations worldwide.

## Mission-Specific Training

FlightSafety's mission-oriented approach provides a major advantage

in helicopter training. EMS pilots train to convincing scenarios drawn from real-life challenges. Offshore crews face training scenarios that replicate their particular situation. The company also offers mission-specific training for law enforcement and newsgathering. Programs can be customized to emphasize scenarios specific to any operation. A full complement of specialty training courses meet helicopter pilots' specific training requirements, including – beginning in early 2012 – Air Medical Resource Management.

- Inadvertent IMC procedures
- Night and NVG operations
- Instrument procedures
- EMS flight operations
- Law enforcement flight operations
- Crew resource management
- Approach and landing accident reduction
- Aviation decision-making

## Training Leadership

FlightSafety offers factory-authorized training for Bell, Sikorsky and, in 2013, AgustaWestland. It is the world's premier professional aviation training company and supplier of flight simulators, visual systems and displays to commercial, government and military organizations. The company provides more than a million hours of training each year to pilots, technicians and other aviation professionals from 154 countries. FlightSafety operates the world's largest fleet of advanced full flight simulators at Learning Centers and training locations in the United States, Canada, Europe, South Africa and Asia. ■



✓ First to Deploy Level 7 Helicopter FTDs

✓ Programs Tailored to Your Individual Needs

✓ Inadvertent IMC Training

✓ Mission-Specific Training

- Emergency Medical
- Corporate/Executive Transport
- Law Enforcement
- Newsgathering
- Offshore

✓ New Helicopter-Dedicated Lafayette Learning Center

✓ Exceptional Overall Value

✓ eLearning Convenience

✓ Training to Proficiency

✓ First to Develop Level D Helicopter Simulators

✓ 1,400 Highly Qualified Instructors

✓ Dedicated to Enhancing Safety Since 1951

✓ Integrated Customer Training System

✓ Worldwide Network of 40 Learning Centers

✓ Online Training Program Management

✓ Flexible and Convenient Scheduling

✓ Outstanding Customer Service

Enhancing Safety by Delivering Superior Helicopter Training in the Areas That Matter Most

Quality • Value • Service • Technology



C H E C K   O U T   T H E   F L I G H T S A F E T Y

# Advantage

When you choose to train with FlightSafety International, you receive much more than just basic instruction. You leverage the unmatched resources of the world's leading aviation training company. More courses, more instructors, more top-level fully qualified simulators, more training locations. We're the authorized trainer for the majority of aircraft manufacturers, including Bell Helicopter and Sikorsky Aircraft.

Simulation-based training from FlightSafety is the single most effective way to enhance safety in helicopter flight operations. We were the first to bring Level D performance to full flight helicopter simulation and the first to introduce the quiet precision of simulator electric motion and control loading. We continue our decades-long helicopter safety leadership with the world's first Level 7 helicopter flight training devices for effective and economical training, and the world's only Level D Eurocopter EC135 simulator. And we are the only source for simulation-based night vision goggle training, which delivers comprehensive instruction night or day, allowing wide-ranging scenarios not possible in the aircraft while leaving your helicopter free for its intended mission.

Mission-specific training uses realistic scenarios to prepare pilots and crew for the conditions and situations they encounter in the field. Whether your mission is corporate/executive transportation, emergency medical transport, offshore support, law enforcement or newsgathering, our industry-leading training focuses on your particular challenges, helping ensure that you're prepared when the routine turns into the unforeseen.

We offer training for Bell helicopters at Fort Worth, Texas, and Lafayette, Louisiana, and for Sikorsky helicopters at West Palm Beach, Florida; London Farnborough, England; and Lafayette. Our Lafayette Learning Center dedicates its efforts wholly to helicopter safety training, offering Customer-specific training supporting multiple aircraft manufacturer product lines. The center's training programs serve all sectors of the industry, including the large and diverse fleet operating in the Gulf of Mexico.

Our Eurocopter training includes cost-effective AStar training on a Level 7 FTD in Tucson, Arizona, and Level D full flight simulator EC135 training at DFW Airport, Texas.

For information, contact Scott Fera, Vice President Marketing • 718.565.4774 • sales@flightsafety.com  
flightsafety.com • A Berkshire Hathaway company



**FlightSafety**  
international



## Precision Aviation Group Subsidiaries

### **Precision Accessories & Instruments (PAI) & Precision Heliparts (PHP) - Atlanta, GA**



- FAA Repair Station #'s PY8R545X & ZV4R714M / EASA 145.5051
- Sales, Repairs, Exchanges, & MRO Services
- 75,000 Square Foot Facility
- 15 Sales Professionals
- Unlimited FAA/EASA Ratings on Accessories, Avionics, & Instruments
- 8,500 Repair Capabilities
- 50,000 Line Item Rotable Inventory
- Live - 24/7/365 Worldwide AOG Support (Adjacent to ATL)

### **Precision Accessories & Instruments Canada (PAI-C) & Precision Heliparts Canada (PHP-C) - Vancouver, BC**

- Transport Canada/EASA Repair Station 145.7185 / AMO #96-04 / DOT #92-02
- Sales, Repairs, Exchanges, & MRO Services
- 25,000 Square Foot Facility
- 6 Sales Professionals
- Unlimited Ratings on Accessories, Avionics, & Instruments
- 35,000 Line Item Rotable Inventory
- Live - 24/7/365 Worldwide AOG Support (Adjacent to YVR)



### **Gardner Aviation Services (GAS) - Peachtree City, GA**

- FAA Repair Station #G3SR222J
- Avionics Installs, "Glass Panel" Upgrades, Aircraft Maintenance, & MRO Services
- 35,000 Square Foot Facility on Falcon Field (KFFC)
- 15 Technicians with Over 275 Years of Experience
- Fixed & Rotary Wing Aircraft Supported
- 24/7/365 Mobile Response Team

### **Aero Technology, Inc. (ATI) - Long Beach, CA**

- FAA Repair Station #DQ3R458L / EASA 145.4052
- MRO Service Provider of Accessories, Avionics, & Instruments
- 25,000 Square Foot Facility on Long Beach Int'l Airport (LGB)
- Commercial Transport, Military, & Regional Airlines Supported
- Recipient of Boeings Coveted Gold Supplier Award 2009, 2010 & Lufthansa's 2010 MRO Excellent Supplier Award



# Precision Aviation Group

*"Others Sell Parts, We Sell Support"*

*Precision Heliparts (PHP)*

*Precision Heliparts-Canada (PHP-C)*

*Precision Accessories & Instruments (PAI)*

*Precision Accessories & Instruments-Canada (PAI-C)*

*Gardner Aviation Services (GAS)*

*Aero Technology, Inc. (ATI)*

## **2012 Executive Outlook from David Mast, President and CEO of Precision Aviation Group:**

**P**recision Aviation Group (PAG) continued to expand and grow in 2011. We completed two acquisitions—Gardner Aviation Services (GAS)—located in Peachtree City, Ga. and Aero Technology, Inc. (ATI)—located in Long Beach, Calif. These acquisitions greatly enhance our MRO capabilities, expands our geographic footprint, and gives PAG two “on-Airport” locations with expansive hangar facilities. With these acquisitions, our total employment has grown to over 160, and our four facilities now encompass more than 150,000 square feet.

For 2012, we will be expanding our capabilities at all of our facilities, but our primary focus will be expanding our Rotary Wing services at our newly acquired companies. ATI and GAS will launch Helicopter-specific programs that will expand the type of services we can provide to our Global customer base. At ATI, we will be expanding their MRO capabilities to include Helicopter-

specific Accessories, Avionics and Instruments. In addition to this, we will be adding customer service and support staff to specifically support the West Coast Helicopter market for ATI. In January, we will launch the Rotorcraft Services Division at GAS. The Rotorcraft Services Division will provide Airframe maintenance, Avionics upgrades/installations, and Aircraft retrofits for the Helicopter market. PAG hired two Helicopter Industry veterans to run this division in November, and we have already seen a dramatic increase in the number of Helicopters serviced at GAS. We are excited about the future opportunities this division creates for our Commercial and Government customer base.

In our continuing efforts to expand our Geographic footprint, in 2011 we hired a Regional Sales Manager in Lafayette, La. to better serve our customer base in the Gulf region. In 2012, we will be opening a facility in Lafayette that will include MRO services. In addition to this, we will continue to selectively pursue acquisitions that enhance the MRO services we provide to our customers.

In addition to the above, we will continue to focus on expanding

our proven customer focused business model—Inventory Supported Maintenance Repair and Overhaul (ISMRO), and we will make substantial capital investments in all of our facilities.

However, as previously mentioned, the emphasis in 2012 will be on our Peachtree City and Long Beach locations. In direct support of ISMRO, we will continue investing in inventory that supports the aircraft our customers operate, and we have doubled our capital expenditure budget over 2011. Our capital investments will include tooling/equipment, logistics, technology based customer service improvements, ERP software upgrades, and various facility enhancements.

We continue to believe that Energy exploration and support will remain a growth area for Helicopter operations. In addition to this, the Australasia market has continued to be an area of expansion for our companies in the Rotary Wing market. Our support of Government programs presents an increasing opportunity for growth.

We are well positioned for continued growth, and look forward to a strong 2012.

# Aspen Avionics

*Solid State. Solid Reliability.*

**A**spen Avionics specializes in making reliable, solid-state avionic technologies for helicopter applications. Our products increase situational awareness and reduce pilot workload, making it easier and safer to fly every mission.

Our philosophy is that investing in the latest avionics technology shouldn't always mean spending a lot of money—on equipment or on installation.

Aspen's flagship Evolution Flight Displays are lightweight and compact—under 4 pounds—eliminating the need for heavy remote mount boxes and wiring.

## Flexible and Compatible

The Evolution system is built with an open architecture offering broad compatibility with legacy systems already installed in your cockpit.

The Aspen system is customizable to your needs and budget. Flexible installation options of one, two, or three displays allow you to choose the configuration that best works for you. Additionally, bezel-loading micro SD cards make software upgrades and optional features easy to install. This all adds up to future-proofing your investment in glass panel technology.

## Affordable

The Evolution Flight Display is the most affordable certified EFIS display technology available in the helicopter market today with options starting around \$15K.

With upcoming FAA mandates for NVG, Heli TAWS, and NextGen, Aspen is committed to delivering upgrades that will make these transitions easier and more cost-effective for your operation.

## Perfect fit for every mission

Law enforcement, search and rescue, military, medevac or IFR training—every mission requires reliable, easy to use tools to get the job done and these are what Aspen delivers.

Aspens' Primary Flight Displays (PFDs) are an approved replacement for your mechanical flight instruments. The Multi-function Flight Displays (MFDs) allow you to expand your glass panel and enhance your flight mission with features such as high resolution digital moving map, terrain and obstacle awareness, datalink weather, traffic, and more.

System features include:

- Brilliant, direct sunlight-readable, 6-inch 760x400 TFT active matrix LCD display
- Reliable solid-state Attitude and Heading Reference Sys-



tem (AHRS)

- Emergency GPS and backup battery with 30 minutes of backup time
- Electronic HSI with moving map that displays GPS flight plan legs, waypoints, nav aids and airports (PFD)
- Electronic Attitude Director Indicator (ADI) with easy to read air-speed and altitude tapes (PFD)
- Altitude alerter (PFD)
- High resolution digital moving map with relative terrain and obstacle awareness (MFD)
- Traffic and weather interface (MFD)

## About Aspen Avionics

Aspen Avionics is based in Albuquerque, New Mexico and was founded by pilots and aviation enthusiasts in 2004. Our customers tell us our service and support are top-notch and we work hard to maintain that level of trust.



## Approvals

Aspen has over 4,000 installations and more than 900 aircraft approved for installation.

The Bell 206 STC is available today. Additional STCs are in process, including the Robinson R22/R44, Bell 407, AS350, MD500 and the Enstrom 480B.

For the most current information regarding availability, installation, and certification, please contact Aspen Avionics Inc. at 5001 Indian School Road NE, Albuquerque, NM 87110, by phone at 1-505-856-5034 or visit [www.aspenavionics.com/helicopter](http://www.aspenavionics.com/helicopter)



# Solid State. Solid Reliability.

Aspen's reliable, solid-state AHRS technology meets the challenges of your most demanding missions and ensures your critical flight data is there when you need it.

The Evolution Flight Display's flexible intuitive interface enhances mission safety: Aspen's unique PFD/MFD window layout flexibility allows you to prioritize critical flight data. Multiple views at your command significantly enhance situational awareness.

Lightweight, robust, and equipped with built-in 30-minute battery backup, the Evolution Flight Display system is the most affordable, reliable EFIS system on the helicopter market today.



EFD500H MFD

EFD1000H Pro PFD

**EVOLUTION**  
FLIGHT DISPLAY SYSTEM

**Evolution 1500H:**  
Unrivaled Reliability Made Affordable.



ASPEN AVIONICS™

[www.aspenavionics.com/helicopter](http://www.aspenavionics.com/helicopter)

# Aero Dynamix

## *Balanced Cockpit Solutions for Night Vision*

**F**ounded in 1994, Aero Dynamix, Inc. (ADI) is the industry leader and principle innovator of "INTEGRATED" Night Vision Instrument Systems (NVIS) solutions for both commercial and military aircraft. Focused on quality, service and customer satisfaction, ADI specializes in complete cockpit modifications designed to achieve a "BALANCED SOLUTION" that is optimized for both NVIS and daylight readability performance. To date, Aero Dynamix, has earned 25 multi-ship Supplemental Type Certificates (STCs) on 36 different aircraft model types in addition to three EASA validations. ADI has

completed over 500 cockpit modifications without certification issues. Each civil aircraft modified by ADI is fully certified and STC'd by the FAA, thus meeting or exceeding all regulatory standards.

Product offerings include Edge Lit Panels (ELPs), NVIS panel overlays, NVIS instrument modifications and repairs for a wide range of avionics manufacturers. ADI is also a stocking distributor for L-3 Night Vision Goggles (NVGs) and certification repair station for L-3 and ITT NVGs, offering 48-hour turnaround time on NVG re-certification. ADI currently employs approximately 100

full-time night vision professionals who all work at one location in a new 23,200-square-foot facility located in Euless, Texas that incorporates the very latest in high-tech manufacturing technology and equipment. At its new facility, ADI has complete manufacturing and instrument modification/repair capabilities that are all accomplished to strict adherence to the guidelines established by the FAA and its Quality Assurance Department. ADI recently achieved internal certification under MIL-DTL-7788G for Edge Lit Panel manufacturing and is pursuing QPL-7788 certification for its ELP products.



Balanced Cockpit Design for Bell 429.





Aero Dynamix Certified FAA/EASA Avionics Repair Station.

Aero Dynamix, Inc. is a certified FAA/EASA avionics repair station (C73R723N & EASA.145.6260) with Part Manufacturing Approval (PMA) for thousands of NVIS products. Since avionics equipment oftentimes require internal light source modifications in order to achieve NVIS compatibility and performance without sacrificing daylight readability, ADI works closely with avionics and equipment OEMs such as Garmin, Honeywell and Aspen Avionics, just to name a few, to achieve maximum lighting performance in such a manner to ensure the OEM warranty service is maintained. All assembly, modification and repairs are performed in-house and are subject to a thorough and comprehensive FAA/QA process to ensure both physical appearance and technical performance of each and every product going out the door.

ADI has full-time Engineering and Research & Development departments with a complete in-house NVG test lab, which includes a Radio Spectrometer for measuring light transmissions. ADI also has an in-house FAA certification team that includes a



Aero Dynamix Manufactured NVIS ELPs and Overlays.

Designated Engineering Representative (DER), Designated Airworthiness Representative (DAR) and a full-time NVG qualified DER pilot.

ELPs and NVIS Overlays are manufactured in-house with capabilities that include water cutting, Computer Numerical Control (CNC) machining, silk screen, laser marking, a robotics aided paint facility, and a Coordinate Measuring Machine (CMM), which allows ADI to perform automated

parts inspections (first article inspections) on manufactured products.

Dennis Trout, General Manager of Aero Dynamix, states: "As the industry leader, we will continue to grow and support our customers in a way that no other company can." Trout also stresses that crew safety, mission performance and total life-cycle support to the customer is crucial to and entrenched within the Aero Dynamix brand and company culture.

# CAE

## Global Leadership in Helicopter Training, Simulation and Mission Rehearsal

CAE has an unparalleled breadth of experience in helicopter simulation, training and mission rehearsal. In fact, no other company has designed training systems for a greater variety of rotary-wing platforms. CAE has simulated helicopters from virtually all the major manufacturers, including AgustaWestland, Bell Helicopter Textron, Boeing, Eurocopter, Hindustan Aeronautics Limited (HAL), Kaman, MD Helicopters, NHIndustries, and Sikorsky. CAE is also the industry pioneer in designing and developing a comprehensive turnkey training service for helicopter training, as evidenced at CAE's Medium Support Helicopter Aircrew Training Facility (MSHATF) in the UK.

### Military Highlights

CAE is responsible for the design and development of some of the most sophisticated and capable helicopter training systems in the world. For the U.S. Navy MH-60S "Sierra" and MH-60R "Romeo," CAE is providing operational flight trainers (OFTs), which are full-mission simulators used to train pilots and co-pilots. CAE is also providing weapons tactics trainers (WTTs) to replicate the back-end of the helicopter for training sensor operators. When integrated, the front- and back-end trainers become a tactical operational flight trainer (TOFT) to provide a comprehensive solution to train flight and tactical skills together. CAE has delivered or is under contract to develop seven MH-60S OFTs, five MH-60S WTTs, eight MH-60R TOFTs and two MH-60R avionics maintenance trainers.

CAE and HAL established a joint venture company in Bangalore, India called the Helicopter Academy to Train by Simulation of Flying (HATSOFF). The HATSOFF training center includes a CAE-built full-mission helicopter simulator that features CAE's revolutionary roll-on/rolloff cockpit design, which enables cockpits representing various helicopter types to be used in the simulator. The HATSOFF

training center currently offers training on three helicopter types—the Bell 412, the civil/conventional HAL Dhruv, and the Eurocopter AS365 N3 Dauphin. An additional cockpit for the Indian Army/Air Force variant of the HAL-built Dhruv will be added in 2012.

CAE and AgustaWestland have a joint venture company called Rotorsim that offers comprehensive AW109 and AW139 at several locations globally. CAE is also developing, in partnership with AgustaWestland, AW139 full-flight simulators for Professional Way in Malaysia as well as a joint venture of Abu Dhabi Aviation and Mubadala Aerospace in the Middle East.

### Civil Highlights

CAE is significantly expanding its global presence in civil helicopter training. By the end of 2012, CAE and its partners will offer training on 17 helicopter simulation in 11 locations, including Bengaluru, India (HATSOFF); Dubai (Emirates-CAE Flight Training); Sesto Calende, Italy (Rotorsim); Stavanger, Norway; Aberdeen, Scotland, UK; Morristown, New Jersey and Phoenix, Arizona USA; Vancouver, Canada; Toluca, Mexico; Sao Paulo, Brazil; and Zhuhai, China.

These locations include simulators for the AgustaWestland AW109 and AW139, Bell 212/412, Eurocopter AS332L/L1 Super Puma, AS332L2 Super Puma, AS350B2 Astar, AS365 Dauphin, HAL Dhruv, and Sikorsky S61, S-76B, S-76C+ and S-76C++.

In 2011, CAE acquired the helicopter flight training operations of CHC Helicopter, a global leader in helicopter services, and agreed to become CHC's long-term training provider, responsible for training more than 2,000 helicopter pilots and maintenance engineers.

CAE also formed a joint venture with Lider Aviacao, the largest helicopter operator in Brazil. The new JV is purchasing the first full-motion Level D CAE 3000 Series full-flight simulator (FFS), replicating the S-76C++,

which will be installed at CAE's training center in Sao Paulo in Spring 2012.

CAE and JV partner China Southern Airlines will also install an S-76C++ FFS in 2012 in Zhuhai, the first CAE 3000 Series civil helicopter flight and mission simulator in Asia.

In December 2011, CAE opened a new training center near Mexico City in Toluca, including a Bell 412 FFS.

The Airports Authority of India and CAE are also establishing an ab initio helicopter pilot training program at CAE Global Academy Gondia. The program will lead to a commercial helicopter pilot license (CHPL). CAE Global Academy Gondia is the newest and most modern flight school in India.

The CAE 3000 Series helicopter flight and mission simulators provide an immersive training experience for civil helicopter pilots. This new CAE simulation capability offers unprecedented realism for helicopter-specific mission training, including offshore, emergency medical services, law enforcement, high-altitude, corporate, and other operations.

The U.S. FAA has qualified the first CAE 3000 Series helicopter simulator, a Eurocopter AS350 located in Phoenix, for Level 7 flight training device credits. FAA has also approved CAE to deliver the pilot training ground school for the AS350 helicopter through a CAE Simfinity e-Learning program, enabling pilots to reduce their time at the training center for both initial and recurrent training.

### CAE: Uniquely Qualified

CAE is uniquely qualified to handle all helicopter simulation, training and mission rehearsal needs. From entry level training devices to the networking of advanced multi-mission helicopter simulators operating in an interactive threat environment, we've earned our reputation as the leader in helicopter simulation. CAE's experience, technology leadership, and focus help ensure aircrews always stay one step ahead to achieve mission readiness.





one step ahead

# CAE Global Helicopter Training Solutions for Safety and Efficiency

We can help you achieve your goals – safer flights and reduced operational costs. High-fidelity simulation training enhances pilot and technician skills without risk and at lower cost than training on the helicopter.

- ▶ Largest civil simulation training fleet worldwide – 17 helicopter trainers in 11 locations by 2012
- ▶ Immersive training scenarios for oil and gas, emergency medical, law enforcement and other missions, customized to your operating procedures
- ▶ The most extensive flight simulator experience – more than 100 military and civil helicopter simulators developed across 10 OEMs

***Have a conversation with CAE about your helicopter pilot and maintenance technician training needs***



## Civil Helicopter Training Programs

AgustaWestland AW109 – Sesto Calende  
AgustaWestland AW139 – New York, Sesto Calende  
Bell 212 / 412 – Bengaluru, Dubai, Mexico City (Now Open)  
Eurocopter AS332L/L1 Super Puma – Stavanger  
Eurocopter AS332L2 Super Puma – Aberdeen  
Eurocopter AS350B2 Astar – Phoenix  
Eurocopter AS365 Dauphin – Bengaluru (Now Open)  
HAL Dhruv – Bengaluru  
Sikorsky S-61 – Stavanger  
Sikorsky S-76B, S76C+ – New York  
Sikorsky S-76C++ – São Paulo (2012), Vancouver, Zhuhai (2012)

# Donaldson Aerospace and Defense

## *New Barrier Filter Products, Growth and Leadership*

**A**erospace companies and military forces around the world have relied for decades on Donaldson Aerospace and Defense, a division of the Donaldson Company (NYSE: DCI), for high-performance filtration systems for commercial and military propulsion systems.

In 2011, Donaldson reinforced its industry leadership by adding new customers, introducing new products, conducting extensive research, participating more broadly in industry events, expanding its facilities and contributing to the communities it serves.

### **Milestone IBF Deliveries**

Filtration system deliveries reached several important milestones in 2011, most notably the 5,000th Inlet Barrier Filtration (IBF) System delivery, installed on a Bell 429 helicopter and celebrated at Heli-Expo 2011 in Orlando, Fla. The company also completed many other critical deliveries and installations:



- Delivered AW139 and AW109E/S/SP Barrier Filter Systems to Saudi Aramco to assist in critical engine protection needs.
- Delivered the first ever Barrier Filter System for the AgustaWestland AW109SP to U.S. launch customer Intermountain Healthcare's IHC LifeFlight.



- Donaldson IBFs help ensure optimal service to Florida residents and visitors who need emergency aero-medical transport from the Lee County MEDSTAR Bell 430 twin-engine helicopter.
- Delivered the first Barrier Filter System available for the Eurocopter AS350B3e to various international operators as well as Papillon Grand Canyon Helicopters.
- Donaldson helped the Sonoma County, Calif., Sheriff's Office improve aerial rescue, patrol and support operations by installing an inlet barrier filter on "Henry-1," the Sheriff's Office Bell 407 helicopter.
- During the 2011 Super Bowl in Dallas, Texas, Dallas Police Department Helicopter Unit Bell 206Bs equipped with Donaldson IBFs provided continuous security.
- The Los Angeles City Fire Department added IBF systems to its AgustaWestland 139 twin-engine medium helicopter fleet, ensuring safe flight while conducting rescues, fire-fighting support and other vital missions in hazardous, debris-filled environments.
- Completed delivery of first AW109E IBF to Chilean National Police.



- The Los Angeles County Sheriff Department's Aero Bureau's 12 new American Eurocopter AS350B2 AStar helicopters are equipped with Donaldson IBFs to prevent ingestion of airborne contaminants during flight operations without affecting the rotorcraft's engine power and life capabilities.
- Donaldson systems also serve many international customers. The company is providing IBF systems and avionics bay filtration for 26 new Bell 407 Trainers and Armed Scout Helicopters deployed with Iraq's Security Forces.

### Impressive Cost Savings

Donaldson's participation at Heli-Expo 2011 also showcased its new IBF system for the AgustaWestland AW109 Power, Grand, and Grand New (E/S/SP) helicopters. Donaldson also sponsored its first Heli-Expo presentation on Inlet Barrier Filters for rotary-wing operators. In addition, Donaldson published findings of major research that shows installation of advanced-technology IBFs provide impressive cost savings, enabling helicopter operators to recoup installation investments in a year or less and to save on engine maintenance costs by reducing engine overhauls, saving millions of dollars over several years.

Also in 2011, Donaldson Aerospace and Defense lengthened its list of Federal Aviation Administration (FAA), European Aviation Safety Agency (EASA) or Transport Canada (TC) Supplemental Type

Certificates (STCs) for IBF installation in helicopters including the:

- AgustaWestland AW139
- AgustaWestland AW109 Power, Grand, and Grand New (E/S/SP)
- AgustaWestland A119/AW119 Ke
- Eurocopter AS350B3e with the Turbomeca Arriel 2D engine
- Bell 230

### Continued Growth

Thanks to strong business, Donaldson relocated its St. Louis, Mo., office and manufacturing plant to a much larger facility. The new location enables Donaldson to handle more extensive operations, including a broader product line, and prepare for future growth.

Finally, Donaldson and its team of employees made numerous financial contributions to, and provid-

ed personal support for local and national charitable organizations. For example, the Donaldson Foundation donated \$15,000 to the Army Aviation Association of America (AAAA) Scholarship Foundation for an endowed college scholarship of at least \$1,000 annually at AAAA's Lindbergh chapter in St. Louis.

Donaldson provides certified IBF solutions for the AgustaWestland AW109E/S/SP, AW119, AW119Ke and AW139; Bell 205A1, 206B, 407, 206L-3/4, 206L-1(C30), 429 and 430; Eurocopter EC130, AS350 B/BA/B1/B2/B3, AS350s with Soloy or Heli-Lynx Honeywell engine conversions and MD Helicopters MD 369H Series, MD 500D/E/F and MD 900/902.

Donaldson's 12,500 employees support customers at more than 100 sales, manufacturing, and distribution locations around the world.



Additional information is available at [www.donaldsonaerospace-defense.com](http://www.donaldsonaerospace-defense.com)

# Aviation Instrument Services

## Putting Customers First

In 1977, Aviation Instrument Services, Inc. (AIS) was founded with one goal in mind: to build a reputation of excellence in service. Just ask AIS' customers and they'll tell you that this company meets this goal—time and time again. When AIS's experience is joined with our buying power, our customers receive a level of value that is unbeatable.

Specifically, AIS delivers excellent service in a variety of areas, such as quality helicopter instrumentation and repair, and serving as a convenient consignment 'clearing house' for its customers' excess inventory. "In the pursuit of our goal, we have grown into a multi-dimensional company that provides a variety of services to meet our customers' needs," explains AIS President and Founder Jim Sensale. "These services include offering quality instrumentation to the general/cor-

porate aviation and helicopter markets through both outright and exchange sales, as well as providing an efficient, single source management of component repairs and overhauls through our approved repair shop network."

By sourcing repairs through AIS, managers can avoid warranty headaches! This is because "when a warranty problem arises with a unit and the shop you used does not carry any exchanges or loaners, you must send the unit back and wait for repair," Sensale says. "With repairs handled by AIS, you are sent an exchange at no charge, provided that we have it in our inventory, or in the inventory of any of the shops with which we deal." As a result of AIS' long-term relationships with a network of more than 30 highly qualified repair facilities, the company is highly successful in finding the exchange parts that its customers

need. "To aid many of our customers with their surplus inventory problems, we have established a very attractive consignment program that allows companies to offload their surplus to our facility for us to manage and sell," he adds, allowing customers to "free up large sections in their warehouses of maturing inventory and fill them with more desirable inventory." From parts acquisition and sales to managed component repair and replacement, AIS does it all. In fact, it is fair to say that AIS looks out for its customers' interests every step of the way. Proof can be found through customer testimonials at [www.aviation-instrument.com](http://www.aviation-instrument.com).

"Parts and service you can trust, every step of the way!" At AIS, this isn't just a slogan, it's a commitment backed by 35 years of experience—and more important than ever during tough economic times.

**PLEASE VISIT US AT THE 2012 HELI-EXPO • BOOTH #1951**

## **PARTS AND SERVICES YOU CAN TRUST... EVERY STEP OF THE WAY!**

### **EXCHANGES • SALES • REPAIR • OVERHAULS**

**Flight, Navigation and Engine Instruments • Transmitters • NAV/COM • Radar  
Inverters • Control Heads • Actuators • Fuel Controls • Governors • Grimes Lighting**

### **Extensive Inventory of Rotor/Fixed Wing Spares**



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INSTRUMENT  
SERVICES, INC.**

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email: [sales@aviation-instrument.com](mailto:sales@aviation-instrument.com)  
[www.aviation-instrument.com](http://www.aviation-instrument.com)

#### **IN HOUSE CONSIGNMENTS FROM:**



**smthS**

**Air Methods**

**GOODRICH**



**AERO  
MERCANTIL  
S.A.**

**LIDER**



# Cobham

*The Most Important Thing We Build is Trust*

No manufacturer offers a more complete suite of integrated, end-to-end component and integrated system solutions for rotorcraft applications than Cobham.

The requirements of a variety of airborne applications are met through platform-specific implementation of the following helicopter technologies:

- HD & SD video downlinks
- Airborne FM/AM radio communications systems
- Digital audio systems
- Audio/radio management systems
- Tactical radios
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*Game-Changing FastFin Technology Takes the Industry by Storm*

**F**rom a leading rotorcraft OEM to premier owners and operators worldwide, the industry has taken notice of BLR Aerospace and its game-changing FastFin<sup>®</sup> System. Despite a challenging economy, BLR logged record sales in 2011, with FastFin leading the way.

## The OEM Choice

Available for a range of Bell medium helicopters, FastFin is a simple modification that delivers big performance advantages. As a result, Bell Helicopter is now installing FastFin on factory-new Bell 412s, as are high-profile operators such as the New York Police Department and a range of other notable commercial and military operators.

## Measurable Improvements

FastFin is certified for Bell 204, 205, 212, 412, Huey II, and most UH-1 derivatives as an aftermarket upgrade that delivers measurable gains in payload and stability. Depending on conditions, some Bell 412 operators could realize useful load increases up to 1250 pounds (more than 90 percent). Additionally, FastFin installation can reduce operating costs by up to 45 percent or more.

## How it Works

The FastFin system modifies the tail boom with two parallel stall strips, known as Dual Tail Boom Strakes, and a reshaped vertical fin, optimizing airflow around the tail boom for dramatic improvements in tail rotor efficiency and wind azimuth tolerance. With these simple changes, operators can do—and earn—more than ever before.

## About BLR Aerospace

BLR is focused on developing the highest performance aerodynamic solutions in the industry. BLR, now in its 21st year, holds patented technologies for both fixed- and rotary-wing aircraft, and has certified over 70 Supplemental Type Certificates. BLR remains focused on the development of products

that increase gross weight and landing weight, reduce critical V-speeds, increase cruise speeds, reduce fuel burn, increase hover loads and improve

handling qualities. BLR Aerospace is a NASA Technology Transfer Licensee.

**Dave Marone**

[www.BLRaerospace.com](http://www.BLRaerospace.com)

## HOW GOOD IS THE FastFin<sup>®</sup> SYSTEM?



Larry Roberts, Senior VP, Commercial Business, Bell Helicopter

**“How good...? We’ve made it standard on the Bell 412, and I think that speaks volumes.”**

Providing complete mission solutions is a **top priority** for Bell Helicopter. Adding the FastFin tail rotor enhancement and stability system at the factory or aftermarket delivers an **FAA-certified 1,250-pound** increase in useful load.

How good is **FastFin**? Just ask Bell Helicopter.

Visit us at Heli-Expo, Exhibit 8846.



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# Kaman Helicopters

## *It's TIME to Take a Bow.*

*"Marines are sending unmanned helicopters to Afghanistan to test a safer way to supply troops deep inside hostile territory. The 3-ton, twin-rotor K-MAX, built by Lockheed and Kaman, will be capable of ferrying up to 3 tons of supplies. Human controllers will guide it from its main base to isolated forward-operating bases. The goal: replacing risky truck convoys that are exposed to ambushes and roadside bombs."*

**W**ith these four short sentences, TIME Magazine named the Unmanned Kaman K-MAX<sup>®</sup> as one of its "50 Best Inventions" of 2011. It was an important moment for the Helicopters Division and its hard-working team of employees who have always known, as one senior executive said, that "Kaman is something special. From the day Mr. Kaman opened the doors, the company has represented the best of what people can do when they work toward a common goal."

With a focus on customer and product differentiation through low-cost and technology-based innovative solutions, Kaman Helicopters is well positioned to meet its growth plans and visionary objectives. Here's a recap of 2011 highlights.

### **UAV? It's a K-MAX UAT**

The K-MAX Unmanned Aerial Truck (UAT) developed by Team K-MAX – Lockheed/Kaman, is now deployed to Operation Enduring Freedom. Two aircraft and three ground control stations are in Afghanistan providing unmanned resupply for the U.S. Marine Corps, helping to offload trucks that are so frequently targeted with Improvised Explosive Devices. The trucking operation is moving from the ground to the air with this latest UAV technology capable of carrying 6,000 pounds of payload, and rugged enough for extreme environments. The K-MAX UAT is expected to operate around-the-clock, easily lifting one million pounds a day.

New technologies are rapidly developing, and the K-MAX UAT

has the payload capacity, power, and strength to take on multiple missions for the U.S. Military. The U.S. Army has contracted with Kaman's partner Lockheed Martin to develop those technologies using the Unmanned K-MAX to further the autonomy of Unmanned Aircraft Systems allowing them to do more, at lower cost and most importantly with less threat to human life.

### **Rotor Blades: Focused Expertise**

Innovation in helicopter composite rotor blade technology is a rapidly growing business at the Helicopters Division Blade Center of Excellence (BCE) and Subcontracting (HeliworX<sup>™</sup>) Center. The BCE is a full-service aerospace innovation and manufacturing support center and a growth engine for the future.

In addition to establishing a low-cost manufacturing facility and expanding its BCE, the company is producing the initial production standard composite rotor blades for the AH-6 "Little Bird," with the MD 500 and MD 600 Series blades to follow. Kaman is also building helicopter blade assemblies for Bell helicopters and the MD 900 rotor system.

With its partner Hontek, the company has successfully introduced a three-layer, color-specific (for visual inspection) sprayable erosion coating that has significantly extended the lifespan and reduced the life cycle costs of U.S. Army BLACK HAWK helicopter main rotor blades. Approximately 100 BLACK HAWK helicopter blades are being coated at Kaman each month, with over 2,300 blades coated to date. U.S. Army, U.S. Navy and international customers are evaluating the coating to protect blades on Apache, CH-53E, and UH-72 Lakota helicopters. Kaman is the only certified facility authorized to apply the Hontek coating and is





currently installing a robotic spray facility at its Bloomfield, Conn. site.

Backed by Kaman's infrastructure and expertise, HeliworX is the only subcontractor with the OEM advantage capable of offering design/analysis, manufacturing, upgrade, modifications and test and flight solutions. Other capabilities include integration, composite and metallic bonding, final assembly, rotor blade whirl towers, and sand erosion test facility and flight test.

### Aftermarket: Leveraging Unrivaled Expertise

With the increased SH-2 Seasprite and K-MAX fleet sizes, Kaman continues to expand its Aftermarket business by supporting existing and new customers worldwide. Upgrades to the Egyptian SH-2s, a new SH-2

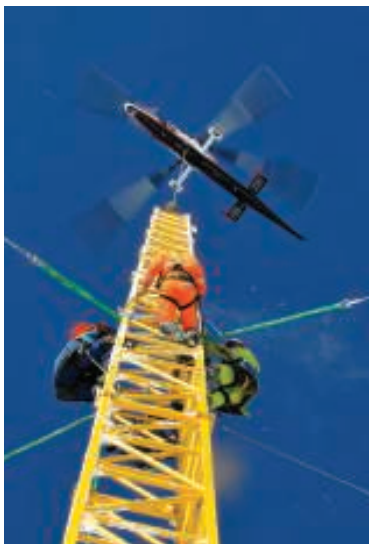
ASW variant, the Unmanned K-MAX USMC deployment, and the migration of Kaman's tremendous expertise to other platforms is driving the strategic growth of this important business segment.

### Seasprite: Affordable Multi-Mission Maritime Capability

Kaman continues to actively market the highly capable and mission-ready Seasprite SH-2G(I) helicopters to international naval customers. These aircraft offer an affordable small ship capability for conventional naval missions of anti-surface and anti-submarine warfare, and can effectively engage asymmetric threats characteristic of today's maritime operations.

The Egyptian Air Force is entering its 13th year of successful robust performance of its SH-2G(E) helicopter fleet. Other international militaries using the Super Seasprite include the Royal New Zealand Air Force and the Polish Navy.

For more information:  
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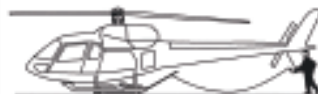


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# Public Service

By Lee Benson

## Orphan Treatment

One of the companies that I consult with afforded me the opportunity to attend the recent National Transportation Safety Board (NTSB) Public Aircraft Forum held in Washington D.C., on November 30th and December 1st. The conference was well attended, with representatives of all the three letter organizations such as FAA, HAI, GSA, etc., as well as representation from commercial operators who contract to government, and government operators who own, operate and maintain their own fleets.

The conference was interesting and, yet, frustrating to me personally. The frustration comes from the board's Chairperson, Deborah Hersman, who has referenced public aircraft operators as "orphans," and in past published statements, associated them with children. This implies in my mind that regulatory agencies then become the adults in the relationship between the regulators and the regulated.

I reject this notion completely and without hesitation. In the area of safety, my experience—and I believe most aviation professionals would agree—that a coequal partnership between the operator and FAA leads to the proper safety relationship. Both sides must earn the respect of the other and proceed from that standpoint forward. I've seen the FAA and its inspectors on a few occasions try to become the "adult" in the conversation. Usually this breaks down into a "because I said so" position by the regulator. We all have history in our personal and professional lives on both sides of that conversation, and tell me again how well did that work? I truly believe that Hersman is sincere in her intellectual desire to do the right thing, but words have meanings—

sometimes not well-expressed.

Board member Mark Rosekind asked several operators to express what was needed in the public aircraft community. Although the presenters provided a snapshot about what they do, I felt that no one really went on the offensive and said this is how we affect the lives of our constituents in a positive manner and here are some examples of why changes in the Public Operations rules will adversely affect our ability to perform for the "public good."

John Allen, FAA's Director of Flight Standards, gave an insightful, realistic description of the issues at hand from a positive perspective. It's a rare day when I completely agree with anyone from the FAA. I was glad the meeting was indoors so that I didn't feel the need for a lightning rod above my head.

I was also frustrated by the elephant in the room that nobody wanted to directly address—public aircraft operations as defined by public law are not under the preview of the FAA, and that will not change without Congressional action.

Furthermore, the scope of the conflicting interests and unintended consequences of trying to change this law without a great deal of attention to details by Congress is frightening. HAI President Matt Zuccaro put forth the idea of a working group to study this issue. I applaud his suggestion but remain very cautious of the amount of influence that commercial operators exert over HAI's thinking when it comes to the operator's position regarding making money.

There are commercial operators who feel that all public aircraft should be eliminated with the exception of combat aircraft in the military. There are public operators who feel they

should be able to operate as a for-profit entity. They are both wrong.

So, if Zuccaro's suggestion is followed and a study group is formed, what issues should be addressed? The way NTSB assigns accidents as public or civil needs to be addressed. I've written about this before, safety is defined by culture. Those operations that are government owned, maintained and operated should be assigned into one category. Those operations that are owned, maintained and operated by a contractor, for a government entity are a different culture and should be listed separately. All pilots who are compensated for flying an aircraft with passengers on board should be required to hold a commercial pilots certificate.

The argument that while you are flying an aircraft that your primary duty is your mission—whether it's firefighting or police work, etc.—and that flying is secondary, is ludicrous. Today if you operate a non-certificated aircraft there is no requirement for an approved maintenance program.

Somehow there should be a structure in place that requires submittal of a program to the FAA or perhaps an independent entity that approves the program. In most instances this would be the manufacturer's suggested maintenance program. For those aircraft where such guidance is not available, standard industry best practices would prevail. I could see the independent authority being the equivalent of a Designated Engineering Representative (DER) with a background in maintenance instead of engineering.

It's a complicated subject, but thoughtful consideration could enhance public operations to the betterment of the crews involved and the public they serve. ✈





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# Military Insider

By Andrew Drwiega



## Joint is the Only Way Forward

**T**he transformation that no military wants, yet financial restraint is pushing everyone inexorably toward, is now upon us. Multi-role must now be the way forward. Not because it is better, but because it is rapidly becoming the only financially acceptable choice.

Collaboration is a vital part of competition in terms of winning defense contracts. This is already part of the fabric around the procurement game—if you don't win with one partner, 'switch horses' and ride with the more likely winner in the next race, or the same race if it is re-run (CSAR-X, SAR-H, Armed Aerial Scout, Presidential helicopter, etc).

There are no friendships and cozy alliances in the current climate—just the need to keep winning business.

But the lack of development money is making it increasingly likely that the larger OEMs are going to have to find ways of collaborating together. There

needs to be a fundamental step-change in corporate thinking which, incidentally, is also going to have to be mirrored throughout each arm of the military—Army, Navy and Air Force.

Like it or not, individuality of asset is going to have to make way for multi-role and generalization. The trend has already been going for two decades if not longer. Military forces around the world have been reducing the number of types owned to save money.

Now that is going to come down to the unified procurement across national forces, and eventually across alliances.

The challenge for each section of the military is to break with tradition. The sooner the realization hits that its assets, in our case helicopters, are going to have to be joint—the sooner real progress can be made in research and development.

Better to be in the game early and shape the future rather than be a late adopter and get what you are given (does that apply to the British position towards a financially integrated Europe? I digress).

It is difficult to see how resistance to the concept of a Joint Multi-Role (JMR) helicopter from all branches of the United States military will be able to continue in the face of financial austerity in defense. With initial contracts already being awarded to Bell/Boeing, Boeing, Sikorsky and AVX to pursue the U.S. Army's quest for further

analysis into the program, it must surely now be in the interest of industry to cooperate more closely as the cost is certainly going to be high, almost certainly beyond the financial risk-taking of any one industrial heavyweight.

Industry should take a moment to stand back and look towards the 'end game' of this process and familiarize itself with 'the bigger picture' that would likely result from such a development.

If a family of rotorcraft (light, medium, heavy and ultra-heavy) can be conceived, sold at a fair price, and put into production for procurement across the U.S. military at some point in the future, the prospects of a widespread and previously unmatched buy-in from international military customers looking to standardize on platforms to keep in step with the U.S. military is likely to be unprecedented.

But to do this the rotorcraft industry is going to have to think of itself more as a semi-cohesive unit, sharing some of the challenges, so that everybody who participates will win a slice of the pie.

This is going to result in uncomfortable unions at first, but the restrained financial conditions of the global economy seem to offer little choice over the coming years. Make no mistake, the 'good old days' have gone.

The challenge ahead is for the rotorcraft industry and the military customer to think beyond the usual limited horizons of tradition and alter the dynamic to forge future potential. 🚁



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