

August 2011

Serving the Worldwide Helicopter Industry

rotorandwing.com

# rotor & wing



**Dousing the Flames**  
**Changes at Boeing**  
**Reports from Paris**

# BRISTOW ACADEMY

## FOUNDATION IN TRAINING



*Your mission: keep them alive*

There's nothing you wouldn't do to help save a life. We share your dedication and commitment. So much so we invented aerial EMS almost 60 years ago. So when your mission is to maximize the golden hour and save lives, the Bell 429 stands ready to serve your heroic measures with extraordinary means. *On a Mission.*

**Bell Helicopter**

A Textron Company



## EDITORIAL

Andrew Parker Senior Editor, aparker@accessintel.com  
Chris Sheppard Associate Editor, csheppard@accessintel.com  
Ernie Stephens Editor-at-Large, estephens@accessintel.com  
Andrew Drwiega Military Editor, adrwiega@accessintel.com  
Claudio Agostini Latin America Bureau Chief  
Barney O'Shea Pacific Rim Correspondent  
Joe West United Kingdom Correspondent  
Contributing Writers: Chris Baur; Lee Benson; Shannon Bower; Igor Bozinovski; Tony Capozzi; Keith Cianfrani; Steve Colby; Frank Colucci; Dan Deuterma; Pat Gray; Frank Lombardi; Vicki McConnell; Robert Moorman; Douglas Nelms; Mark Robins; Dale Smith; Terry Terrell; Todd Vorenkamp; Richard Whittle.

## ADVERTISING/BUSINESS

Joe Rosone VP & Group Publisher, jrosone@accessintel.com  
Randy Jones Publisher, 1-972-713-9612, rjones@accessintel.com

## Eastern United States & Canada

Carol Mata, 1-512-607-6361, cmata@accessintel.com

## International Sales, Europe/Pac Rim/Asia

James McAuley +34952 118 018, jmcauley@accessintel.com

## DESIGN/PRODUCTION

Joy Park Graphic Designer  
Tony Campana Production Manager,  
1-301-354-1689 tcampana@accessintel.com  
Tasha Blett Web Production Manager

## AUDIENCE DEVELOPMENT

Sarah Garwood Audience Development Director,  
sgarwood@accessintel.com  
George Severine Fulfillment Manager, gseverine@accessintel.com  
Customer Service/Back Issues 1-847-559-7314 rw@omeda.com

## LIST SALES

Statistics  
Jen Felling, 1-203-778-8700, j.felling@statistics.com

## REPRINTS

Wright's Media, 1-877-652-5295  
sales@wrightsmedia.com

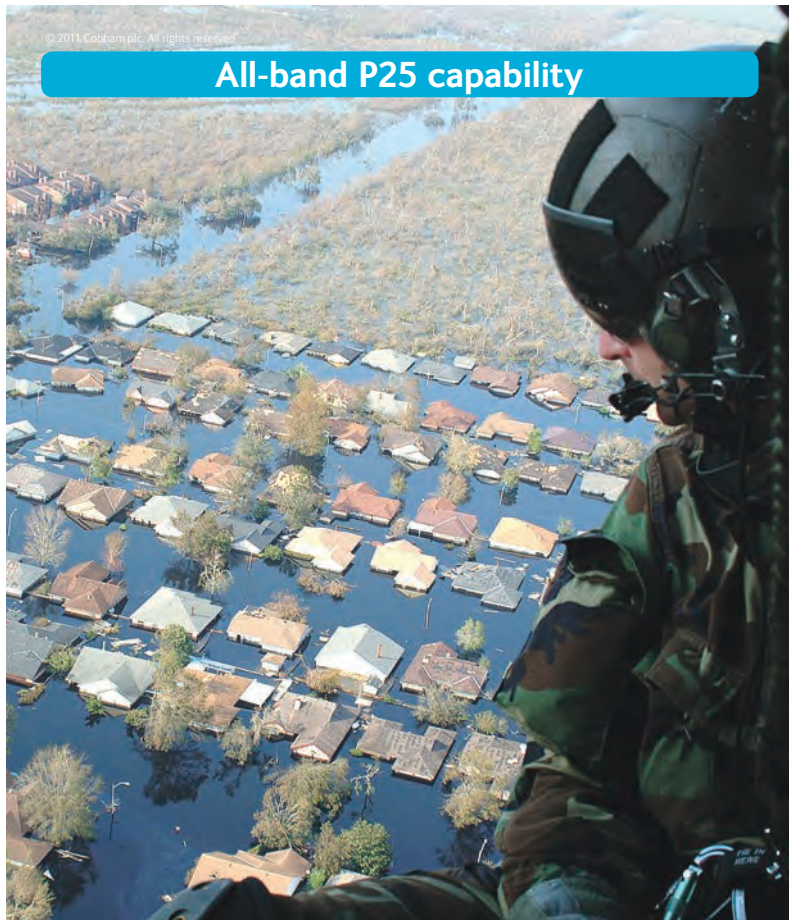
## ACCESS INTELLIGENCE, LLC

Donald A. Pazour Chief Executive Officer  
Ed Pinedo Executive Vice President/ Chief Financial Officer  
Macy L. Fecto Executive Vice President, Human Resources & Administration  
Heather Farley Divisional President, Business Information Group  
Sylvia Sierra Senior Vice President of Corporate Audience Development  
Robert Paciorek Senior Vice President/ Chief Information Officer  
Michael Kraus Vice President of Production & Manufacturing  
Steve Barber Vice President, Financial Planning and Internal Audit  
Gerald Stasko Vice President/ Corporate Controller  
Alison Johns Vice President, E-Media, Business Information Group

For photocopy or reuse requests:  
1-800-772-3350 or info@copyright.com



Access Intelligence, LLC  
4 Choke Cherry Rd., 2nd Floor  
Rockville, Md. 20850 - USA  
Phone: 1-301-354-2000, Fax: 1-301-354-1809  
E-mail: rotorandwing@accessintel.com



© 2011 Cobham plc. All rights reserved.

## All-band P25 capability

We didn't invent tactical radios. We just keep perfecting them.

**COBHAM**

The most important thing we build is trust.



The new RT-5000P is the only all-band P-25 transceiver in one radio.

Ask about upgrading your existing RT-5000. It's easy.

### Introducing the Cobham RT-5000P.

- Covers all current and future P-25 public service frequency bands with one radio.
- Front Panel Programmable (FPP) of all AM/FM/P-25 channel information. No computer required!
- The new and powerful SCAN function monitors any frequency, any mode.

Communication Without Limits.

### Cobham

6400 Wilkinson Drive  
Prescott, AZ 86301 USA  
1-928-708-1550  
sales.prescott@cobham.com  
[www.cobham.com/avionics](http://www.cobham.com/avionics)

# Editor's Notebook

## Importance of Training

aparker@accessintel.com



By Andrew Parker

This month's issue features a variety of themes from different sectors of the helicopter industry—new airframes and updates on existing models from the Paris Air Show (see Rotorcraft Report starting on page 12); offshore (“*Training Profile: Bristow Academy*,” page 26 and “*Inside FlightSafety Lafayette*,” page 50); firefighting (“*Dousing the Flames*,” page 32 and “*Around the World: Australia Preps for Fire Season*,” page 52); and military updates including an interview with three Sikorsky presidents (“*Sikorsky's Comet*,” page 12), transfer of the BA609 tiltrotor to full AgustaWestland control (page 16) and a visit with a major helicopter manufacturer (“*All Change for the Better at Boeing*,” page 36).

But one topic that filters through all these subjects—and the primary theme of this month's issue—is training. In addition to the Bristow Academy cover story, there's an article that focuses on IS-BAO for helicopters (“*Should the Rotary World Invest in IS-BAO?*”) on page 41, a Helicopter Safety & Training column on page 46 and a Training News section on page 40, as well as a visit to FlightSafety Lafayette mentioned in this month's Offshore Notebook. On top of regularly occurring feature articles and news briefs on training, we include a training-focused issue every other month in *Rotor & Wing*. At least once or twice a year we expand our coverage to dedicate much of an issue to training, and this is one of them (some other recent examples include the March 2010 and June 2010 editions).

But why is it necessary to focus on training on such a frequent basis? Because of the importance of keeping it fresh in the minds of all those involved in a helicopter organization. As many have pointed out in the pages of this magazine, training is the

responsibility of everyone involved in an operation—including management and ownership—and not just the pilots or crew who fly the aircraft.

When I was young, my dad—who is very good at building and fixing things, both in the handyman, fixer-upper sense but also with electronics from his career as a computer network engineer—always stressed the value of not only putting in the hard work required to complete a task, but the importance of doing things right—starting with gathering “all the research” before making a decision, and paying attention to the sometimes-monotonous tasks that make up a bigger project.

“Work hard now or you'll have to work harder later,” he says. But it isn't just his words that struck a chord, but his actions in showing me how to approach continual learning and be persistent in completing all the little things required to get a larger goal done. This advice applies well to training in the helicopter world, in that the approach needs to be judicious, relentless and recurrent.

Do your homework, pay attention to all the small details and take training seriously—whether sitting down at the simulator, running through a checklist, reading through a manual or any other task—and it will significantly increase your chances of avoiding mishaps and accidents. This is especially true in the helicopter world, where having to “work harder later,” could potentially lead to a string of events that results in a damaged aircraft, injuries or worse.

For many people, this approach to training is second-nature and just a refresher, but I've included a few training quotes from around the web that seem to fit into this discussion.

Murphy's Law ensures that accidents will continue to happen, and for

that reason, no one should feel they are ever “fully trained” on a particular subject, because there's always more to learn and ways to sharpen your skills.

What are some of the unique “tricks of the trade” that your helicopter operation uses to approach training? Send me a note at [aparker@accessintel.com](mailto:aparker@accessintel.com) and we'll include it in a future issue. ✉

Don't forget to check out our expanded Paris Air Show coverage on the web and on our social media channels: [www.facebook.com/rotorandwing](http://www.facebook.com/rotorandwing) and [twitter.com/rotorandwing](http://twitter.com/rotorandwing) 

“Excellence is an art won by training and habituation. We do not act rightly because we have virtue or excellence, but we rather have those because we have acted rightly. We are what we repeatedly do. Excellence, then, is not an act but a habit.”

—Aristotle

“It's all to do with the training: you can do a lot if you're properly trained.”

—Elizabeth II

I hated every minute of training, but I said, “Don't quit. Suffer now and live the rest of your life as a champion.”

—Muhammad Ali

“Education is not the piling on of learning, information, data, facts, skills, or abilities—that's training or instruction—but is rather making visible what is hidden as a seed.”

—Thomas Moore

“Training and education are two different things. Training gives you a skill set to perform a specific task. Education provides you with academic theory for problem-solving issues.”

—Master Sgt. Juan Lopez, USMC



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

Quality • Value • Service • Technology



- ✓ 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

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 comprehensive 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.

- ✓ 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

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



**FlightSafety**  
international

- ✓ Outstanding Customer Service

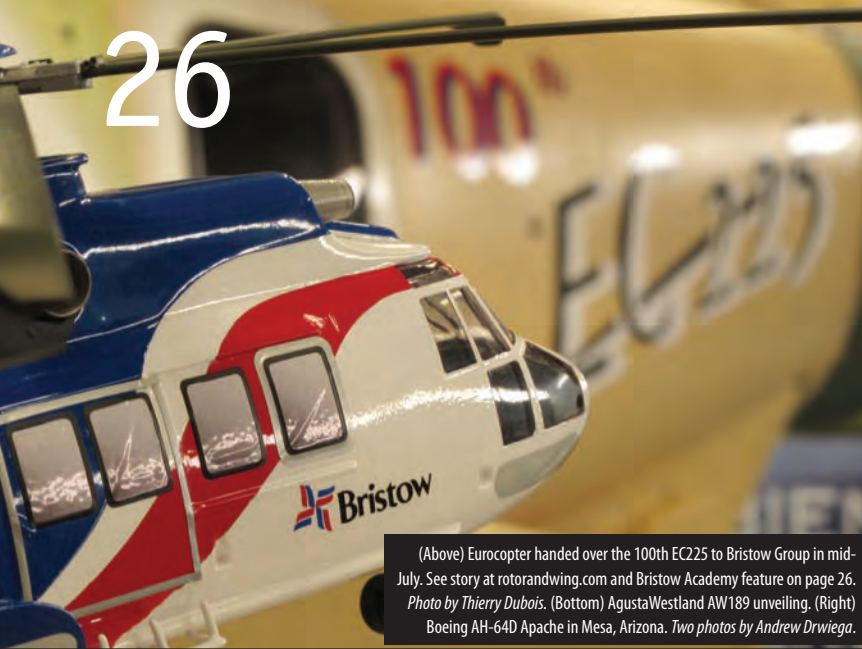
Personal|Corporate

Commercial

Military

Pub

# 26



(Above) Eurocopter handed over the 100th EC225 to Bristow Group in mid-July. See story at [rotorandwing.com](http://rotorandwing.com) and Bristow Academy feature on page 26. Photo by Thierry Dubois. (Bottom) AgustaWestland AW189 unveiling. (Right) Boeing AH-64D Apache in Mesa, Arizona. Two photos by Andrew Drwiega.

## FEATURES

### COVER STORY

#### 26 ■ **Bristow Academy**

Whether it's flying offshore in the North Sea, SAR in western Africa or just for the fun of it, Bristow Academy provides pilots with a strong foundation in training. *By Dale Smith*

#### 32 ■ **Dousing the Flames**

Operator profile of San Diego Fire-Rescue Department, which flies one Bell 212 and one Bell 412EP and uses an Erickson S-64 under an agreement with San Diego Gas & Electric. *By Ernie Stephens*

#### 36 ■ **Change for the Better at Boeing**

*Rotor & Wing's* Military Editor toured Boeing's facilities in Philadelphia and Mesa, Ariz. to get an update on rotorcraft developments from the manufacturer. *By Andrew Drwiega*

#### 41 ■ **Rotary Investment in IS-BAO?**

Despite its strong focus on fixed-wing, the rotorcraft world should seriously consider using the IS-BAO model as a safety and operating tool. *By Rick Christoffersen*

## DEPARTMENTS

### 12 **Rotorcraft Report**

22 People

22 Coming Events

24 Program Insider  
Sikorsky CH-53K

40 Training News

47 Classified Ads

51 Ad Index

## COLUMNS

4 Editor's Notebook

8 Feedback

10 Meet the Contributors

46 Safety & Training

48 Leading Edge

50 Offshore Notebook

52 Around the World

54 Military Insider

# 16





36

ONLINE



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

### SIGN UP FOR THE ROTOR & WING COLLECTIVE

- Subscribe today for our new channel for helicopter news—The *Rotor & Wing* Collective. This free weekly e-letter features an in-depth Story of the Week, Top News Picks, Helicopter Jobs and links to *Rotor & Wing's* Facebook and Twitter pages. Sign up now and we'll keep you up-to-date about all the happenings in the helicopter world. [www.aviationtoday.com/rw/collective\\_form.html](http://www.aviationtoday.com/rw/collective_form.html)



### EXPANDED PARIS AIR SHOW COVERAGE

- Miss the Paris Air Show? Check out our expanded coverage, including the complete Sikorsky interview with President Jeff Pino, at [rotorandwing.com](http://rotorandwing.com). Look for exclusive photos from the show at: [www.facebook.com/rotorandwing](http://www.facebook.com/rotorandwing)



### ASK-THE-EXPERT

- 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.

### DIRECT TO YOUR DESKTOP: CHECK YOUR E-MAIL

#### AUGUST 1

- Digital edition of *Rotor & Wing* August 2011. Electronic version with enhanced web links makes navigating through the pages of *Rotor & Wing* easier than ever.

#### WEEK OF AUGUST 29

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

#### WEEK OF AUGUST 29

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

TO SUBSCRIBE TO ANY OF OUR EXCLUSIVE EMAIL PRODUCTS, GO TO:  
[WWW.ROTORANDWING.COM](http://WWW.ROTORANDWING.COM)

## Get connected:

Become a fan of *Rotor & Wing* on [Facebook](#)

Follow us on [Twitter](#) @rotorandwing

The editors welcome new product information and other industry news. All editorial inquiries should be directed to *Rotor & Wing* magazine, 4 Choke Cherry Rd., 2nd Floor, Rockville, Md. 20850, USA; 1-301-354-1839; fax 1-301-762-8965. Email: [rotorandwing@accessintel.com](mailto:rotorandwing@accessintel.com). *Rotor & Wing* (ISSN-1066-8098) is published monthly by Access Intelligence, 4 Choke Cherry Rd., 2nd Floor, Rockville, Md. 20850, USA. Periodical postage paid at Rockville, Md. and additional mailing offices. Subscriptions: Free to qualified individuals directly involved in the helicopter industry. All other subscriptions, U.S.: one year \$99; two years \$188. Canada: one year \$129; two years \$228; Foreign: one year \$149; two years \$278. POSTMASTER: Send address changes to *Rotor & Wing*, P.O. Box 3089, Northbrook, Ill. 60065-3089, USA. Change of address two to eight weeks notice requested. Send both new and old address, including mailing label to Attn: *Rotor & Wing* magazine, Customer Services, P.O. Box 3089, Northbrook, Ill. 60065-3089, USA or call 1-847-559-7314. Email: [RW@omeda.com](mailto:RW@omeda.com). Canada Post 40612608. Return Undeliverable Canadian Addresses to: PitneyBowes, P.O. BOX 25542, LONDON ON N6C 6B2

©2011 by Access Intelligence, LLC. Contents may not be reproduced in any form without written permission.  
Publication Mail Sales Agreement No. 40558009

# Feedback

Personal|Corporate

Commercial

Military

Public Service

Training

Products

Services

## Fatal Denial?

Not approving the chief pilot's request for relief of the public information officer duties was criminal (see "NTSB: Fatigue, Organizational Pressure Factors in Crash," July 2011, page 18). He obviously had previous cases in which late night calls prevented him from getting his needed crew rest. The denial by the New Mexico State Police was unforgivable and fatal. Case closed.

Ralph Corsi  
Sea Isle City, N.J.  
Atlantic Regional Consulting, LLC

## Secret Helicopter Hidden Behind Closed Doors

The helicopters involved in the Bin Laden raid would not have been seen at Fort Campbell. (See June 2011, "Stealth: Just Part of the Story?" page 4 and "Helicopter Experts: Stealth Not Only Reason for Secret Mods," page 10). It would have been kept in a remote location such as in Florida, where missions are practiced. [Within] 24 hours, the mission would be planned, briefed, practiced and executed. The aircraft would have been repositioned to an operational distance, [with] teams from the U.S. Army's 160th and Navy Seal Team Six pulled from remote and local assets. The helicopter would have been put in hangars in day, brought out at night. Not until the mission would they be seen, and then only by affected parties.

Randy White  
Norman, Okla.

## Ragged Edge of The Performance Envelope

I retired as an aircraft mechanic in 2005 after 29 years with the Utah National Guard. Since we have a Special Forces unit in the Guard here in Utah, and the terrain is very similar to Afghanistan (not quite as high), we have been involved in training these

## R&W's Question of the Month

What is your take on the current state of the worldwide helicopter industry following the Paris Air Show and heading into Helitech in September?

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

types of missions. (See "Helicopter Experts: Stealth Not Only Reason for Secret Mods," June 2011, page 10). I can say that you are operating on the very ragged edge of the performance envelope any time you are attempting to hover. I have the utmost respect for the pilots of the 160th, they are indeed the very best. Unfortunately, no one has yet repealed the laws of physics. The tiniest miscalculation or unforeseen change can put you over the edge in a hurry.

Farrin Wild  
American Fork, Utah

## De-icing Issue?

The AW169 looks like a decent helicopter. However, AgustaWestland has also said it will not be equipping this model with optional de-ice capabilities like the AW139. This could pose a big issue with the winter weather in Quebec and other cold-weather locations. However, it is a start for Quebec, which has been lagging behind in medvac services.

Gordon Dale  
Maintenance Manager  
AW139 Fleet  
London Air Services  
Richmond, B.C.  
Canada

## From Facebook

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



(Responding to a photo of the Schiebel S-100 Camcopter UAV on display at the Paris Air Show):

Now we know what the factory workers felt like when they where replaced! Aircraft need pilots (inside).

Jim Hickman

(After seeing an artist's rendering of the Eurocopter X4 design):

Wow ... did I just throw away €80K on a commercial license? Flying one of those would really make my life!

Ricardo Garces

(Reacting to a story and photo about the Sikorsky X2's final test flight):

Only a bit over 20 flight hours, but she did her part! Sikorsky has made a milestone in rotary wing flight.

Marc Raglin

Amazing top speed. I hope to see a Coast Guard edition soon!

John Thomas Starrett Moran

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.



# Your glass cockpit has arrived.



## Reliable, Affordable EFIS Technology

Investing in the latest avionics technology shouldn't always mean spending a lot of money — on equipment or on installation. Aspen's Evolution Flight Display system is the most affordable, modern EFIS system on the helicopter market today.

Flexible, upgradable and compatible, the Evolution system will future-proof your avionics investment. Modular installation options allow you to choose a configuration that meets your operational needs and budget.

Go confidently on every mission with Aspen's reliable, solid-state AHRS technology.



**EVOLUTION**  
FLIGHT DISPLAY SYSTEM

ASPEN AVIONICS

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

# Meet the Contributors



**RICK CHRISTOFFERSEN** is the director of safety for The Squadron, Inc., a retired U.S. Coast Guard pilot, and a graduate of the Naval Aviation Safety Officer School. He has extensive experience as a CRM, risk management and maintenance resource management instructor, providing training to USCG and international SAR agencies. Rick is a certified IS-BAO auditor. He has accumulated more than 4,700 hours of flight experience in helicopters and holds an FAA helicopter ATP.

**KEITH CIANFRANI** is a retired U.S. Army lieutenant colonel, master aviator and Army instructor pilot, rated in both helicopters and fixed-wing aircraft. He holds a master's degree in aerospace safety from Embry-Riddle Aeronautical University. Keith is a certificated flight instructor and has flown commercial aircraft for more than 20 years in and around the New York City area.



**ANDREW DRWIEGA**, Military Editor, is a senior defense journalist with a particular focus on military rotorcraft. He was the editor of *Defence Helicopter* for seven years. Andrew has reported on attachment from Iraq three times (the latest of which was with a U.S. Marine Corps MV-22 squadron), and three times with British forces in Afghanistan (Kandahar and Camp Bastion), as well as from numerous NATO and British exercises.

**THIERRY DUBOIS** is a long-time contributor to Access Intelligence publications. He has been an aerospace journalist for 12 years, specializing in helicopters since 2006. He writes on technical subjects, both for professional media and a popular science magazine in France.



**PAT GRAY** is the "Offshore Notebook" contributor, having flown in Gulf of Mexico helicopter operations for 20-plus years. Prior to that, he was in Vietnam in 1958 as a young paratrooper. He retired from the Army Reserve as a chief warrant officer 4, with more than 30 years active and reserve service. Gray's civil helicopter experience covers crop dusting and Alaska bush, corporate, pipeline and offshore flying.

**FRANK LOMBARDI**, an ATP with both fixed-wing and rotary-wing ratings, began his flying career in 1991 after graduating with a bachelor's of science in aerospace engineering, working on various airplane and helicopter programs as a flight



test engineer for Grumman Aerospace Corp. Frank became a police officer for a major East Coast police department in 1995, and has been flying helicopters in the department's aviation section since 2000. He remains active in test and evaluation, and holds a master's degree in aviation systems-flight testing from the University of Tennessee Space Institute.



**DOUGLAS NELMS** has more than 30 years of experience as an aviation journalist and currently works as a freelance writer. He has served as managing editor of *Rotor & Wing*. A former U.S. Army helicopter pilot, Nelms specializes in writing about helicopters.

**EMMA KELLY** has been an aviation journalist since the late 1980s, starting her career with *Air Cargo News International*. Following a number of years working on regional airline publications and for Inmarsat, Emma served in various editor roles at *Flight International*. In 2003 Emma emigrated to Australia and became a freelance aviation journalist where she contributes regularly to aviation and defense publications around the world.



**CHRIS SHEPPARD** is the Associate Editor of *Rotor & Wing*. Coming from a strong background in journalism and public relations, she was an editor for a leading online newswire for several years. She is currently pursuing her master's degree in Journalism at Georgetown University in Washington, D.C. She can be reached at [csheppard@accessintel.com](mailto:csheppard@accessintel.com).

**DALE SMITH** has been an aviation journalist for 24 years specializing in business aviation. He is currently a contributing writer for *Rotor & Wing* and other leading aviation magazines. He has been a licensed pilot since 1974 and has flown 35 different types of general aviation, business and WWII vintage aircraft.



**ERNIE STEPHENS**, Editor-at-Large, began flying in the 1980s, earning his commercial pilot's license and starting an aerial photography company as a sideline. In his regular job as a county police officer, he was transferred to the department's newly established aviation unit, where he served as the sergeant in charge and chief pilot until his retirement in 2006. 🇺🇸



# 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



AGUSTAWESTLAND  
MERLIN



EUROCOPTER  
SUPER PUMA



EUROCOPTER TIGER



BOEING CHINOOK



BOEING APACHE

SEE FOR YOURSELF ONLINE AT [WWW.PRESAGIS.COM/HELI](http://WWW.PRESAGIS.COM/HELI)

© Presagis Canada Inc. and/or Presagis USA Inc. 2011. All rights reserved. All other trademarks contained herein are the property of their respective owners.

# PRESAGIS

# Rotorcraft Report

Personal | Corporate

Commercial

Military

Public Service

Training

Products

Services

■ MILITARY | COMMERCIAL

## Sikorsky's Comet; Boldly Funding the Future

*Andrew Drwiega, Rotor & Wing's Military Editor, talked exclusively to three of Sikorsky's presidents on the eve of the Paris Air Show 2011. The meeting occurred hot-on-the-heels of the Australian Defence Force's long-awaited decision to buy the MH-60R Seahawk for its Air 9000 Phase 8 requirement for 24 multi-role maritime helicopters. But the conversation was much more about how Sikorsky is taking its enterprise forward in a changing world. Present during the interview were Sikorsky Aircraft President Jeffrey Pino, Military Systems President Mick Maurer and Sikorsky Global Helicopters President Carey Bond, who is also chief marketing officer.*

**Rotor & Wing:** There is a widespread international concern today over the direction and pace of rotorcraft development in order to meet future needs. A main focus of concern seems to be the lack of government funding. Sikorsky appears to have created its own solution witnessed by the X2/S-97 development process. This seems to be the first step in developing a capability for the future. I'm also thinking of the potential for scalability—is growth ingrained in the program as well?



**Jeff Pino:** If someone isn't willing to pay for development, then we feel that we can gain an advantage by doing it ourselves—and there are a couple of us doing that [meaning Eurocopter's X<sup>3</sup>]. Sikorsky has been focused on this for around five years. X2 is a solution to

a set of problems. The demonstrations did a little better than we thought, so it made sense to move into a development based on a Request for Proposal that may not exist anymore, but there is a set of requirements that look like a Light Attack/Armed Aerial Scout.

We are learning things with X2 and S-97 that we are backward deploying into products that will generationally look like the current products, but will link that technology back. For example, we are learning a lot about vibration, fly-by-wire and drag reduction on a hub (whether one rotor or two), and electricity usage. We will still have conventional-looking products but they will have tremendous advantage over current capability because we've been out on the edge. We are making the leap forward while bringing the technologies back.

**Rotor & Wing:** So it's like a comet—you're getting the benefit from the tail but the technology is still going forward. And it is company funded.

**Pino:** Exactly. The Raider will fly in three and a half years. We are building two and we are doing something that we couldn't do if we were developing with the government, in that we have decided that the mission equipment lifecycle is much shorter than that of the aircraft, so we aren't worrying about mission equipment. We are holding space, weight and power, so when it is time—perhaps 18 months from now—we will start to figure out what mission equipment will be needed because the

technology will have changed by then. By then there might be government interest because it is closer to what they want. It's discovery-driven and at the moment we have a plan.



**Carey Bond:** We also have some supplier partners who are in this with us—and will have preferred status when it all moves forward.

**Pino:** So now we have this 'comet' streaking out there, and we will take some of that technology, but don't think we have stopped looking at conventional helicopters. And that is not our only comet either. By the end of the year we will fly a Black Hawk autonomously in the vertical supply mission. And then without any change, put a pilot in there and have them do the exact same mission.

**Rotor & Wing:** How fundamental are UAS developments to Sikorsky? Do you see a commercial side?

**Bond:** That gets talked about a lot. I think the technology will get us there. It comes down to how the FAA views the airspace and the ability to avoid an unexpected obstacle—sense and avoid. There may be parts of the world not as frequently traveled, border patrol perhaps, that may lead the charge towards acceptance.



For daily and breaking news involving helicopters, go to: [www.aviationtoday/rw](http://www.aviationtoday/rw)  
Become a fan of Rotor & Wing on [Facebook](#)  
Follow us on [Twitter](#) @rotorandwing

**Rotor & Wing:** Can you just remind me where Sikorsky is on the UK's SAR-H program? [Note: SAR-H was the UK government's competition to award a Private Finance Initiative led-team a contract to provide the UK with SAR helicopters over 25 years.]



**Mike Maurer:** We were disappointed when things folded. We think what is going to happen is that two requests

will come out; an interim program [the Maritime Coastguard Agency contract with CHC Scotia for the provision of four S-92s runs out in 2012] then the main program to extend the service to the other bases to meet the 24-helicopter requirement [providing total UK SAR coverage]. The need has not gone away. We think it will be different to the last bidding process—possibly more of a traditional supplier-service type agreement for a shorter period of time instead of the long one. There is also the potential that the MoD might buy the aircraft themselves and then have a service provider operate their fleet—but there are several different scenarios. What is constant is that the program will go forward as those aircraft [the current RAF/RN S-61 Sea Kings] still need to be replaced. We think that the initial contract will come out in September as the clock is running on the MCA contract, but they are working hard to shore that up. There may be a selection later this year for the intermediate program. There is not a lot of talk about extending the Sea Kings as there were big cost savings based around the original path.

**Rotor & Wing:** So how far is the S-97 Raider scalable?

**Pino:** We are scalable from Raider size to Black Hawk++ size. We are convinced that the rotor and dynamic system can be used for dedicated attack. When you get up to those higher, heavier classes do they really want the distances



Sikorsky displayed its S-70i Black Hawk for the first time in public during the Paris Air Show.

and payload they are talking about? If so then they are probably getting into fixed-wing supported solutions, which aren't on our drawing board. Our pre-design team has checked the affordability of the very heavy and we are talking monies we've never talked about before for transport aircraft, much less vertical. So maybe they need changes to short-take-off and landing, but there needs to be a lot more group thinking on what they are really looking for. We are going out on our own dime but not past the 30,000-lb-plus point—after that it gets really expensive.

**Rotor & Wing:** How does a company respond to the suggestion that the world's economy is moving towards the east?

**Bond:** There are portions of the world that still have not developed, whether eastern Europe, China or parts of Africa. As the economic wealth of the world moves we are trying to position ourselves to take a share of the worldwide commercial growth.

**Pino:** We don't talk enough about the fact that China builds a major component for all of our major commercial helicopters—the tail of the S-92, they now build a full fuselage

for the S-76 and virtually all of our components for the S-300 helicopter. You have to start by having a presence in a country [Shanghai Sikorsky and Shanghai Little Eagle in China are both subsidiaries of Sikorsky]. Now we are in discussions with AVIC II (the Chinese state owned organization) about taking those bases and expanding them for use in our worldwide supply chain and in terms of what they do in supporting [China's] own ambitions—as there is going to be a big market. In India too, we moved the S-92 cabin production there from Japan. We have a joint venture with Tata Industries that builds many aviation components.

**Rotor & Wing:** How does manufacturing in Europe fit into your overall plan?

**Pino:** The aircraft at the Paris Air Show is a Polish-built version—the S-70i from PZL Mielec (shown above). The aim of getting them to build from one to two a month over the next couple of years is on plan. Then we will have to see where the Turkey deal integrates with that. Turkey is going to be a major partner with us over the T-70i. Each is likely to bring a different customer base. ✈️

**Read the full interview online at [www.rotorandwing.com](http://www.rotorandwing.com)**





■ COMMERCIAL | AIRFRAMES

## Eurocopter Launches Dauphin Replacement; Preps for X3

During the Paris Air Show in June, Eurocopter CEO Lutz Bertling said that the AS365/EC155 Dauphin medium twin-replacement program, codenamed X4, is now fully launched. In an unusual arrangement, two versions are planned to enter the market successively. The other X factor in Eurocopter's projects, the X3 ("X Cube"), was a highlight of the flying display; its applications are promised to market success in the offshore and commuter segments, according to Bertling.

In 2016, the first X4 will use technologies that are today at technology readiness level (TRL) 6, meaning they have been ground tested. Then, in 2020, a second version will feature systems that are now much more at a feasibility stage—TRL 2. This upgraded X4 will "completely change the way of flying," Bertling said. He asserted that a pilot would not recognize the cockpit and its controls. Indeed, an artist rendering of the cockpit, copyrighted by Eurocopter but released by equipment and engine manufacturer Safran (and with no mention of whether it is the X4's first or second iteration), shows a radical departure from what we are used to (see the rendering at [www.rotorandwing.com](http://www.rotorandwing.com)). The way information is displayed is just as different from today's glass cockpits as they are from classic clock-and-gauge arrangements. The windshield seems to be the primary flight display, with a highway-in-the-sky-type depiction of the flight-path. A relatively conventional display, in the center, holds navigation maps and engine parameters. An additional display (likely to be a touchscreen) is located between the pilots, on the pedestal. Sidesticks clearly indicate that the flight controls use a fly-by-wire system, probably made by Sagem. Eurocopter and Sagem have been working on fly-by-wire controls for a long time for the NH90 military transport. For at least four years, Eurocopter also has studied

use on civil applications. The remaining challenges are weight and cost, Bertling admitted.

From the exterior, the X4 looks like a sleeker successor of the EC155/AS365, with large transparent surfaces. It keeps Eurocopter's signature shrouded tailrotor, the Fenestron. The main rotor uses Blue Edge, a double-swept blade that Eurocopter has been evaluating for some time but only unveiled in 2010. The idea is to reduce blade-vortex interaction and thus, noise.

On the engine side, Turbomeca is working on the TM800, in the 1,100-shp class. The turboshaft company is planning on a 20 percent cut in fuel consumption. The TM800 is to replace the Arriel 2 family and the TM333. The first component rig tests should take place by the end of 2011.

The X4 may be Eurocopter's newest program but the company's main attraction in Paris was a demonstrator—the X3. The compound helicopter is a modified AS365 Dauphin with a conventional main rotor, two propellers on wingstubs and a conventional empennage. While helicopters usually fly at 140-150 knots in cruise, the concept is aimed at proving that 220 knots is a sweet spot where speed is profitable. It was unveiled in September 2010 at Istres' military flight-test center in France, near the helicopter manufacturer's factory in Marignane. Since then, Eurocopter officials have several times hinted that the first application of the concept will be for offshore oil and gas operations. At the show, Bertling added that it will likely be in the 12- to 19-seat category. Program launch may take place next year (2012) or even by the end of this year. But the next application may be a 30-plus-seat commuter. "In future, airports will face severe slot scarcity; a vertical takeoff and landing aircraft does not use the runway and thus, needs no slot," Bertling asserted. Therefore, "a lot of commuting services



will go vertical." In the 2020s, it will be time to develop such a big module, he said.

Bertling admitted that Eurocopter shares this vision with AgustaWestland. The latter, however, is developing a tiltrotor, the AW609, rather than a compound. Bertling finds the tiltrotor architecture too expensive. Except if "one day, it could be an all-electric aircraft, because you would save the gearboxes," he suggested. Bertling expects the price premium for the X3 concept to be about 25 percent, while the operating cost per passenger-mile would be 20 percent lower than that of a conventional helicopter.

During the second flight-test campaign, which started in May, the X3 demonstrated a rate of climb greater than 5,000 feet per minute. The crew flew pitch-up attitudes in the 30- to 50-degree range. Turns were performed at 80 degrees of bank angle. A true airspeed of 232 knots was sustained during approximately five minutes at 8,200 feet on May 12. Further flights this year will dig deeper into vibration phenomena and wingstub aerodynamics. —By *Thierry Dubois* 飛



## Situational awareness is all about visualizing what you may not be seeing.

That's why you need **Garmin HSVT™**. This safety-enhancing 3-D synthetic vision technology is now optionally available with Garmin's G500H glass cockpit helicopter display system. And it can make a world of difference when weather and outside visibility are less than ideal. Creating a virtual landscape on the G500H PFD, **Garmin HSVT™** provides a database-generated view of ground and water features, airports, obstacles, traffic and more. Plus, HTAWS helicopter terrain alerting<sup>1</sup> is supported with compatible GNS 400W/500W series WAAS navigators (if option-enabled). HTAWS voice callouts audibly announce one's height above terrain when descending below 500 feet. And a special Garmin HTAWS database adds over 30,000 lower-height structures – showing some 25% more obstacles that might be hazardous to helicopter operations<sup>2</sup>. No wonder more pilots look to Garmin technology for cues that translate to confidence.

Follow the leader.

NASDAQ **GRMN**

©2010 Garmin Ltd. or its subsidiaries

<sup>1</sup>NOTE: Optional HTAWS functionality for GNS sold separately.

<sup>2</sup>Compared to standard Garmin TAWS database for fixed-wing aircraft.

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

**GARMIN**®

■ PRODUCTS | AIRFRAMES

## AgustaWestland Unveils AW189; Targets Offshore and SAR Missions



At the Paris Air Show in June Bruno Spagnolini (below at left), AgustaWestland's new CEO, with former CEO and now Finmeccanica CEO Guisepppe Orsi (below right), unveiled the AW189, a commercial civil version of its military AW149.

Described by Spagnolini as being the 'ideal platform' for global offshore and maritime SAR missions, as if to prove the point its launch platform mimicked a steel

sheet landing platform complete with rusted brace supports and water underneath. Whether AgustaWestland put the water there or it fell complimentary from the heavens is open to discussion. The main feature of the weather during the first day of the airshow resembled the sweeping rain showers often experience by offshore rigs. The AW189 is a twin-engine eight-ton class helicopter. Spagnolini said that the prototype will fly in Italy by November this year and that certification is projected during the end of 2013,

probably six months after the military certification of the AW149. AW189 service entry is projected in 2014. —By Andrew Drwiega, Military Editor

■ COMMERCIAL | AIRFRAMES

## Sikorsky Ceases S-76C++ Production

Sikorsky Aircraft is closing out production of the S-76C++, replacing it with the S-76D. Aero Vodochody is producing the fuselages for the S-76D, which will have Pratt & Whitney Canada PW210S engines and Thales avionics and autopilot. FAA sea-level certification is expected later this year with deliveries projected to start in 2012. Prior to the transition, Sikorsky sold six of S-76C++ helicopters to SonAir Servico Aereo (shown above) for offshore oil operations in Angola; two to Dublin, Ireland-based Milestone Aviation; and one to China Southern Airlines Company's Zhuhai Helicopter branch, which also purchased two S-92s. The Milestone order also includes one S-92. The Zhuhai fleet will include three S-92s and 13 S-76s following delivery, which is scheduled to start in November 2011.



■ MILITARY | AIRFRAMES

## BA609 Now Under Full AW Control

AgustaWestland has bought out Bell's share in the BA609 tiltrotor program and is now expecting certification in 2015—12 years after the first flight—with deliveries beginning "immediately afterwards." After years of discussions, the two helicopter manufacturers signed an agreement in June. The European company is saying it is now "fully committed to proceed rapidly."

Bell Agusta Aerospace Co. (BAAC) will be renamed but will remain a U.S. company, being the type certificate applicant to the FAA. AgustaWestland will take full ownership of BAAC under the agreement, which is subject to regulatory approvals from European and U.S. authorities. The civil tiltrotor program, the first of its kind, will be renamed AW609.

Bell will "remain involved in the design and certification of AW609 components," according to Larry Roberts, senior vice president of the manufacturer's Commercial business unit. When the aircraft reaches the production phase, the U.S. firm will be a supplier. Roberts said that, according to the agreement, Bell will provide "engineering support" to AgustaWestland. He made it clear that no "V-22 technology will be transferred to the BA609."

As soon as this autumn, a single "integrated development team" will manage the program in Cascina Costa, near Milan, Italy, where one of the two prototypes is based. In Arlington, Texas, where the other prototype is located, AgustaWestland will open "a new operational base."

Two more aircraft will be assembled at Cascina Costa. Prototype #3 will be used for icing certification testing, for both EASA and FAA approvals. AgustaWestland says it is targeting commercial and government markets.

The BA609 made its first flight in 2003 in Arlington. Since then, the program's schedule has repeatedly moved to the right. —By Thierry Dubois



## ■ COMMERCIAL | AIRFRAMES

## HeliVert Created

AgustaWestland and Russian Helicopters are planning to establish a joint venture, HeliVert, which will produce AW139s for civilian use in Russia. The assembly line plant will be located in Tomilino and is expected to open later this year. Russian Helicopters will appoint HeliVert's management positions, with AgustaWestland selecting the company's general and deputy directors. HeliVert anticipates production of 15 AW139s per year. ✈

## ■ PUBLIC SERVICE | EMS

## Ornge Opens New Med Base

Ornge has taken the first steps toward opening its newest helicopter base in Ontario, Canada. The facility will house a new AgustaWestland EMS-equipped AW139 for servicing patients in the southeastern Ontario region. The base is scheduled to open later this year. ✈

## ■ SERVICES | MILITARY

## Bell Hands Over First A2D Cabin

Fort Worth, Texas-based Bell Helicopter has delivered the initial OH-58 "A2D" wartime replacement cabin to the U.S. Army. During a conference call on June 30 with reporters, Army and Bell officials provided an update on the progress of the program, which converts existing OH-58A models with a 3,500-lb max gross weight to D models, with a max gross weight of 5,500 lbs.

U.S. Army Lt. Col. Matthew Hannah, incoming Kiowa Warrior product manager, noted that the cabin "will be the foundation" for producing the wartime replacement aircraft. The prototype will be shipped to Corpus Christi Army Depot (CCAD) for re-installation of the avionics and other dynamic components. Bell performed the first cabin conversion at its Xworx rapid prototyping facility in Arlington, Texas. The remaining 18 conversions under the existing \$76.2-million contract will take place at Bell's military assembly center in Amarillo.

According to Jim Schultz, Bell Helicopter program manager for Army programs, handover of the remaining 18 cabins will start in January 2012, with one delivered per month afterward, starting in March 2012. Hannah said that the Army spends about six months depopulating the aircraft before sending it to Bell, then CCAD puts in around six months for final assembly and post-production modifications after it returns from Bell. "Total [conversion] time from nose to tail is approximately two years, currently." That timeframe includes about 12 months in Amarillo—a number that is likely to decrease, according to Schultz. "Obviously, as we gain experience and go down the learning curve, that will shorten up considerably," he said. "We've just started the effort again and we've moved that work up to Amarillo, so they're getting used to working on OH-58 aircraft, where they've been working on H-1s and V-22s in the past." —By Andrew Parker, Senior Editor ✈

Look for a full-length feature on the Bell Helicopter OH-58 A2D conversion program in the October 2011 issue of *Rotor & Wing's Military Insider*.

OEM/FAA APPROVED AVIONICS MODS AND ACCESSORIES FOR ALL YOUR NIGHTTIME FLIGHT OPERATIONS

**AERO DYNAMIX**  
NIGHT VISION

OEM NVG Mods for...  
**Honeywell** **GARMIN** **Rockwell Collins** **L3 Avionics Systems** **SHADIN AVIONICS** **COBHAM** **Sagem Avionics Inc.** **MID-CONTINENT INSTRUMENTS**

**WHELEN** **UNIVERSAL AVIONICS SYSTEMS CORPORATION** **MetaMAP** **ASPEN AVIONICS** **ASPEN AVIONICS** **BECKER AVIONICS** **BMS**

817.571.0729 Fax: 817.283.5432 | sales@aerodynamix.com | www.aerodynamix.com | FAA/EASA Approved Repair Station

## ■ SERVICES | COMPLETIONS

### URS Finishes Aero Tech Bell 407



United Rotorcraft Solutions

United Rotorcraft Solutions has completed a custom Bell 407 (above) for New Mexico-based Aero Tech, including new avionics (right), airframe modifications and an exterior paint scheme. URS installed a Garmin G500H cockpit display system, GDL6A satellite weather and GTX330 transponder, NAT audio control and other avionics and communication equipment. Other additions for the Bell include cargo kits, cargo hook capable of carrying a water bucket, and an Aerospace Filtration Systems inlet barrier filter (IBF). Aero Tech will operate the Bell 407 in a number of roles, including aerial surveying, firefighting, charter and film production support. United Rotorcraft Solutions has also obtained a supplemental type certificate (STC) for Aspen Avionics' Evolution flight display on the Eurocopter AS350B2/B3. The Aspen EFIS was installed on an AS350B3 for Memphis, Tenn.-based Hospital Wing for the STC program. 🚁



United Rotorcraft Solutions

## ■ SERVICES | MAINTENANCE

### Sikorsky Signs Service Agreements

Saab has teamed with Sikorsky on a maintenance agreement for the Swedish Defence Materiel Administration (FMV) fleet of UH-60M Black Hawks. FMV purchased the 15 helicopters last month through the U.S. Government's foreign military sales program. The HKP 16 service program will be located at the Linköping Swedish Air Force base. The Black Hawks will conduct medevac, utility and search and rescue (SAR) operations. The first UH-60M is scheduled for delivery later this year. Sikorsky has also designated RUAG Aviation's Alpnach facility as an S-76 customer service center. The Swiss center will provide aftermarket support, including inspections and spare parts. RUAG also supplies in-service support for the Swiss Air Force's helicopter fleet. 🚁

## ■ MILITARY | AIRFRAMES

### OH-58 Block II Tests Hot & High

Bell Helicopter has wrapped up flight tests of the OH-58 Block II demonstrator under high and hot conditions in Colorado. Test pilots flew the helicopter at several different altitudes and temperatures to test its performance at a minimum altitude of 6,000 feet on a 95-degree day (6K/95), according to Bell. The manufacturer is testing the OH-58 Block II in anticipation of future 6K/95 performance requirements from the U.S. Army. 🚁

## ■ COMMERCIAL | OFFSHORE

### Paradigm Receives First WAAS EC135

Eurocopter has delivered its first wide area augmentation system (WAAS)-capable EC135 to Houston, Texas-based Paradigm Helicopters. The EC135 will support offshore operations in the Gulf of Mexico. In addition to being WAAS-capable, the helicopter comes equipped with night vision goggles and is single-pilot IFR capable. Paradigm now has three Eurocopter variants in its fleet, including an EC120 and an AS350. 🚁

## ■ MILITARY | ENGINES

### MH-60 Flies on Algae-based Fuel

The U.S. Navy has completed a successful test flight of an MH-60 Seahawk flown with a 50/50 blend of algae-based and petroleum-based jet fuels. It marks the first time a military aircraft has flown on a 100 percent algal-derived jet fuel. The biofuel, Solajet RJ-5 from San Francisco, Calif.-based Solazyme, is a drop-in replacement to traditional jet fuels and does not require engine modification for use. 🚁



■ SERVICES | MAINTENANCE

## JV Established in Kazakhstan

Eurocopter has established a joint venture with Kazakhstan Engineering for a new facility in Astana. The center will assemble and complete the first six of 45 EC145s on order with the government of Kazakhstan, which will use the helicopters for medevac and SAR operations. Eurocopter Kazakhstan Engineering will provide maintenance and training for Kazakhstan, Russia and Belarus. The facility will also serve as the sales hub for central Asia. ✈

■ TRAINING | POLICE

## ARS Trains Shanghai Police

Air Rescue Systems has completed its second operations and rescue training school for the Shanghai Police Aviation Force. The eight graduates trained with MD helicopters and flew 560 hours over 70 days at the ARS facility in Ashland, Ore. ARS held the first training school for the unit in 2010. ✈

■ SERVICES | ENGINES

## Turbomeca Teams with HeliPartner in Malaysia



Turbomeca CEO Olivier Andries and Nonee Ashirin, Chairman of HeliPartner Engines.

Kuala Lumpur, Malaysia-based HeliPartner Engines has expanded its cooperation with Turbomeca as part of a continuation from a 2009 agreement that established a joint service and maintenance center. The memorandum of understanding allows for Turbomeca to invest a financial stake in HeliPartner Engines, which currently supports the Makila 2 engines on the Eurocopter EC725 in operation with the Malaysian military. ✈

■ PRODUCTS | AVIONICS

## FAA Approves HeliTAWS on Bell 412EP

Vista, Calif.-based Sandel Avionics has obtained an FAA supplemental type certificate (STC) for its ST3400H HeliTAWS wire and terrain safety system on the Bell 412EP. This adds to Sandel's FAA agreement that designates Part 27 and Part 29 helicopters that operate under Part 91 or Part 135 rules as eligible for field approval installation of the HeliTAWS unit. The system integrates Sandel's WireWatch wire-strike avoidance feature with TrueAlert. ✈

Left to right, the Part 29 certification team of Karl Garman, Jim Slattery, Dan Weisz, Chip Adam and Tom Short.



## The Leader in Digital Airborne Intercom and CNS Solutions

### DVCS6100

- Lower weight
- Reduced maintenance
- Crystal clear communication
- Intercom System flexibility
- Over 800 systems in operation
- Readily available and in-stock



LEADER IN AIRCRAFT DIGITAL AUDIO TECHNOLOGY

BECKER AVIONICS, INC. • 954.450.3137

dvcs6100@beckerusa.com • www.beckerusa.com

**BECKER**  
AVIONICS  
INTERNATIONAL  
*we bring you home*



■ COMMERCIAL | AIRFRAMES

## 50s Theme for Bell 429, 407GX

On the left display, the pilot can have a camera view of the tailrotor for obstacle clearance.



Thierry Dubois Photo

Between commercial launch in February and the Paris Air Show in June, Bell Helicopter is reporting sales of around 50 examples of its 407GX, the newest version of the light single, fitted with a Garmin G1000H avionics suite. Meanwhile, the manufacturer is planning to deliver the 50th copy of its newest light twin—the Bell 429—by the end of 2011.

Larry Roberts, Bell's senior vice president for commercial business, insisted the new cockpit for the 407GX brings enhanced situational

awareness. "This is practically IFR equipment in a VFR aircraft," he said. The G1000 had so far only been installed in fixed-wing aircraft in the light and business aviation markets. Safety information (such as traffic collision avoidance and ground proximity warning), navigation graphics and engine parameters are grouped on two large displays.

It only took 18 months for Bell and Garmin engineers to develop the 407 version of the G1000H and get it certified. From a commercial standpoint, it is deemed a success. Roberts said the 50-or-so sales are firm orders. For the list price of \$2.795 million, customers also get a camera looking at the tailrotor. It is useful both close to the ground for obstacle clearance and, in flight, to check the health of the tailrotor after a bird strike.

According to Roberts, the 429 is "continuing to do very well." At the Paris Air Show, the company signed at least one firm order. "We have sold between 40 and 50 Bell 429s," Roberts said. Delivery plans seem to have been downgraded as, in March, he was expecting to have delivered between 70 and 80 examples of the 429 by the end of 2011. Before certification in July 2009 and before the downturn hit the helicopter industry—particularly the light segment—Bell claimed to have sold over 300 Bell 429s.

Deliveries to European customers will start this year, Roberts predicted in June. Globally, about 40 percent of the customers are EMS operators. Roberts would not put a number on the 429's production rate at the Montreal, Quebec factory. Nevertheless, he reflected on the difficulties that impeded the helicopter's early production phase. "Some needed changes were discovered along the production process; it took some time to correct these problems," he explained.

Moreover, "certification issues" appeared on the kits customers had asked for. The hoist, the cargo hook, the dual evaporator for the air conditioning system and WAAS capability (augmented GPS) were among those kits that were not easily certifiable. They are now certified, Roberts noted.

The 429 is approved for single-pilot IFR operations under Part 27 airworthiness rules by Canadian, U.S. and European authorities. The 429's maintenance program is so far the only one in the helicopter industry that is based on Maintenance Steering Group 3 (MSG-3) standards. For example, in case some unscheduled maintenance is required, the technician may also perform some scheduled tasks and take credit for them, thus alleviating the next check. Roberts claimed the Bell 429 is "the most advanced light twin" on the market today. —By *Thierry Dubois*

■ PRODUCTS | ENGINES

## Eurocopter Restarts Diesel Engine Project

Led by Eurocopter, the project for a diesel engine designed for light helicopters the size of an EC120 has started again, now aiming for the first engine to test in 2014. The name of the partners, Austro Engine and TEOS Power Engineering, were unveiled at the Paris Air Show, as part of the Clean Sky joint technology initiative—a major European research program. The main challenge is the power-to-weight ratio. Today's turboshafts are praised for their compactness. In other words, their power-to-weight ratio is very favorable. However, they work on the same physics as turbofans. Therefore, their fuel consumption is high. For relatively small power requirements, a diesel engine is much better from that standpoint.

Eurocopter hopes to reduce this fuel burn by 40 percent. The first demonstrator, built according to the manufacturer's specifications, should run on the ground towards the end of the 39-month project. The technology used is expected to yield a power-to-weight ratio between those found on trucks and those found in diesel-equipped racecars. The program's budget is €19.4 million (about \$28 million). This amount includes ground testing. However, Eric Dautriat, the Clean Sky joint undertaking's executive director, is counting on Eurocopter to continue to flight demonstration. Eurocopter CEO Lutz Bertling has had this goal in mind for a few years. But finding the right partner proved tricky. In particular, for the first call for proposals, Eurocopter had underestimated the budget to allot for such an effort. The second attempt, with an increased budget, seems to be the right one. Austro Engine is best known as a diesel engine provider for Diamond light fixed-wing aircraft. —By *Thierry Dubois*



# Helitech

27-29 Sept 2011  
Duxford

Helitech Duxford is Europe's largest dedicated helicopter event, encompassing every tier of the supply chain in one exhibition.

No other helicopter event offers you a face to face business platform which brings together helicopter solutions providers with senior buyers of helicopters and helicopter products, services, parts and accessories.

Find out more and register free at  
[www.helitechevents.com/rotorwing](http://www.helitechevents.com/rotorwing)

Supported by



Organised by:

 **Reed Exhibitions®**  
Aerospace & Aviation Group

Join our social  
media networks



## PEOPLE

**Larry Alexandre** is the new president of Heli-One, replacing **Neil Calvert**. Calvert is retiring after a 30-year career and will remain with the company in an advisory role. Alexandre was previously CEO of Sagem Avionics and was also the chief operating officer for Turbomeca.



Alexandria, Va.-based Helicopter Association Intl (HAI) has selected **Karen Gebhart** as vice president

of business development and exhibitions. She will have responsibility for planning and oversight of Heli-Expo and other trade shows. Gebhart was most recently president of the Aircraft Owners and Pilots Association (AOPA) Foundation. She had been with AOPA in a variety of leadership roles for more than 16 years.

Col. **David Eadie** has been named as the UK regional director for Cubic

Defense Applications. He will replace Brig. **David Williams**, who is retiring. Eadie will supervise all business development, programs and marketing in the UK. He was honored as the Commander of the Order of the British Empire in 2010 for his service with the British Army in Afghanistan.

FAA has chosen **David Grizzle** as its chief operating officer of the Air Traffic Organization. Grizzle was formerly FAA chief counsel and came to the organization after 22 years with Continental Airlines.

Portland, Ore.-based Flightcom has appointed **Reed Stager** as executive vice president. Stager was most recently CEO of Pinnacle Licensing Group, a San Francisco-based technology licensing company, and has almost 30 years of experience in high-technology marketing and business development. Stager has also held executive and management positions with Digimarc, Merant, In Focus Sys-

tems, Tektronix and Mentor Graphics.

Milestone Aviation Group has added **Brian Humphries** to its advisory board. Humphries is currently chairman of the British Helicopter Association and president and CEO of the European Business Aviation Association (EBAA).



**Marija Zink**, a specialist with the 8th Attack Reconnaissance Battalion, 229th Aviation Regiment station in Camp Taji, Iraq has received a battlefield promotion to sergeant for her work as a production control clerk for the Flying Tigers. As a production clerk, Zink assists with managing maintenance for over 50 aircraft from four battalions.

Atlanta, Ga.-based Precision Aviation Group (PAG) has promoted **Ketan Desai** to vice president of sales and marketing. Desai was previously director of sales and marketing. 🇺🇸

## coming events

### 2011:

**Aug. 17–19: 8th Australian Pacific Vertiflite Conference on Helicopter Technology**, Gladstone, Australia. Contact AHS Intl, phone 1-703-684-6777 or visit [www.vtol.org](http://www.vtol.org)

**Aug. 25: Aerial Firefighting Conference and Exhibition**, Melbourne, Australia. Contact Tangent Link, phone +44 (0)1628 550047 or visit [www.tangentlink.com](http://www.tangentlink.com)

**Sept. 13: Avionics for NextGen Conference**, Atlantic City, NJ. Contact Access Intelligence, phone 1-301-354-1813 or visit [www.AvionicsforNextGen.com](http://www.AvionicsforNextGen.com)

**Sept. 27–29: Helitech Duxford 2011**, Duxford, UK. Contact Reed Exhibitions, phone +44 (0) 208 439 8886 or visit [www.helitechevents.com](http://www.helitechevents.com)

**Oct. 10–12: AUSA Annual Meeting**, Washington, D.C. AUSA, phone 1-703-841-4300, 1-800-336-4570 or visit [www.ausa.org](http://www.ausa.org)

**Oct. 10–12: National Business Aviation Association (NBAA) 64th Annual Meeting & Convention**, Las Vegas, Nev. Contact NBAA, phone 1-202-783-9000 or visit [www.nbaa.org](http://www.nbaa.org)

**Oct. 17–19: Association of Air Medical Services (AAMS) Air Medical Transport Conference (AMTC)**, St. Louis, Mo. Contact AAMS, 1-703-836-8732 or visit [www.aams.org](http://www.aams.org)

**Oct. 25–27: American Helicopter Society (AHS) Intl Specialists' Meeting on Propulsion**, Williamsburg, Va. Contact AHS Intl, phone 1-703-684-6777 or visit [www.vtol.org](http://www.vtol.org)

**Nov. 28–Dec. 1: Interservice/Industry Training, Simulation and Education Conference (I/ITSEC)**, Orlando, Fla. Contact I/ITSEC, phone 1-703-247-2569 or visit [www.itsec.org](http://www.itsec.org)

**Dec. 6–7: SAR Asia 2011**, Singapore. Contact AHS Intl, phone 1-703-684-6777 or visit [www.vtol.org](http://www.vtol.org)

### 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)

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

**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)

**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 22–24: European Business Aviation Association and NBAA's EBACE 2012**, Geneva, Switzerland. Contact EBAA, +32 2 766 0073 or visit [www.ebaa.org](http://www.ebaa.org) 🇺🇸



■ COMMERCIAL | EMS

## Metro Gets EC155, Completes EC130s

Eurocopter has transferred the University of Michigan's first EC155 to Shreveport, La.-based Metro Aviation for completions. It is the first of three EC155s scheduled for delivery to the university's Survival Flight program this year. After the project is complete in October, the helicopter will become the first EMS-outfitted EC155 in the U.S., according to Eurocopter. Among the upgrades from Metro will be a customized University of Michigan paint scheme. Metro Aviation has also completed supplemental type certificate (STC) upgrades on two EC130s for Medflight Ohio, based in Columbus. Medflight is scheduled to receive six additional helicopters in October from Metro. ✈



Artist's rendering of the University of Michigan EC155 paint scheme.

■ PRODUCTS | FIREFIGHTING

## Simplex AW139 Fire System STC'd

Simplex Manufacturing has received a supplemental type certificate (STC) for its fire attack system on the AgustaWestland AW139. The Model 326 is the first firefighting water tank for the AW139. It features a tank-mounted video camera that gives the pilot views of the tank doors and hover pump. The water tank is operating under FAA field approval in Los Angeles, Calif. Simplex is planning multiple Model 326 deliveries this summer for use in Asia. ✈

■ MILITARY | AIRFRAMES

## S-70i Black Hawk Going to Mexico

The state of Jalisco in Mexico has purchased an S-70i Black Hawk. The helicopter is part of an initiative to increase security for the upcoming Pan American Games in Jalisco's capital of Guadalajara. The country is set to have 23 Black Hawks in service with Jalisco, the Federal Police, the Air Force and the Mexican Navy by the end of 2011. ✈

An S-70i Black Hawk on display during the Paris Air Show in late June.



■ PRODUCTS | COMPONENTS & ACCESSORIES

## Able Offers Bell 206 Components

As part of an effort aimed at reducing operator costs, Phoenix, Ariz.-based Able Aerospace Services has developed two new components for the Bell 206. Able has received FAA and EASA approvals for its oil cooler blower, pillow block assemblies and related wear disks for the 206. The company says the components are a cost-efficient alternative to OEM replacement parts. ✈

# FAA PMA MD 500 Parts

Same-Day Shipping

Aerometals

Ph: 1.916.939.6888      www.aerometals.aero

## First Sikorsky CH-53K Enters Final Assembly

Sikorsky has begun final assembly of the first CH-53K prototype test aircraft, with the sponsons and main rotor pylon now attached to the basic airframe. As of mid-July, all landing gears had successfully completed a trial fit check and were ready for final installation. The company says the program has entered the assembly and test phase with all the program milestones on track and with the key performance parameters (KPPs) and technical performance measures (TPMs) being met.

This first of seven prototypes is the ground test vehicle (GTV) and was started on Jan. 1, 2011. It is scheduled to start ground-flight testing early next year. The CH-53K will replace the CH-53E currently in operation with the U.S. Marine Corps. Assembly of the GTV and four other prototypes, or System Development and Demonstration (SDD) aircraft, will be at Sikorsky's new Florida Assembly and Flight Operations (FAFO) facility in West Palm Beach. Two of the seven test aircraft will be assembled in Stratford, Conn.

The second aircraft will be the static test article, used to conduct structural load test and analysis. This will be followed by four engineering development models (EDMs)—labeled simply EDM One, Two, Three and Four, according to David Zack, CH-53K program manager.

Sikorsky will instrument EDM1 to support airframe structure and dynamics testing, and the first flight aircraft. "This will see that all the systems prove out and will be fully instrumented to gain data to prove that it is flight worthy," Zack said. EDM2 will be used for aircraft handling qualities, performance and propulsion testing, with EDM3 for structural analysis and avionics testing and EDM4 for avionics and mission system testing. All four EDM prototypes will be flight capable. First flight is scheduled for the second quarter of FY14. The seventh test aircraft is the fatigue test article



Final assembly of the first CH-53K is taking place at Sikorsky's new Florida Assembly and Flight Operations (FAFO) center in West Palm Beach.

and will be assembled in Stratford. The eighth will be the first of the low rate initial production (LRIP) aircraft, starting after the Milestone C decision scheduled for FY15.

Greg Hames, CH-53K deputy program manager, noted that the new version is not "just upgrading the CH-53E. It is not a rebuild or remanufacture like most other new military helicopter programs." He said that the airframe is changed from metallic to composite materials, that it is totally digital fly-by-wire, and that Sikorsky is using "brand new technologies" in the CH-53K. The aircraft was designed in Sikorsky's design reality lab "that we have for reducing risks and overall costs to the program," Zack said. This uses CAD/CAM protocol to create a full 3D rendering of the aircraft, allowing design teams to lay down systems such as fuel lines, hydraulics and harnesses, and to look for potential interferences, he continued. The design is then "imported into the digital operation sheets that we use to build the aircraft. It goes from paper to two-dimensional, then three-dimensional to a tablet that the mechanics and electricians—the artisans—can view right from their handheld tablets

in a three-dimensional perspective." Zack noted that the main rotor pylon has roughly a thousand interfaces, and was dropped down on top of the airframe "with a 99.99 percent precision. It had one hole that required a minor rework." Wichita, Kan.-based Spirit AeroSystems built the major airframe (cockpit, cabin and airframe join), with the main rotor pylon from Aurora Flight Sciences, headquartered in Manassas, Va. Other major subcontractors include: ITT Integrated Structures (tail rotor pylon and sponsons); UK-based GKN Aerospace (aft transition); Onboard Systems (external cargo hook system); Hamilton (secondary power system, actuation and flight control computers); BAE (active inceptor systems and cabin armor, pilot/co-pilot seats); Triumph Aerospace (various dynamic components), Heroux-Devtek (landing gear systems); Sanmina-SCI Corporation (intercom system); and DRS Technologies (cabin floors/cargo handling system). The helicopter will have fully digital glass cockpit avionics from Rockwell Collins. According to Zack, the avionics "gets integrated into the systems integration lab (SIL) in Stratford, along with the flight control

*Continued on Next Page*

## ■ SERVICES | AIR TRAFFIC CONTROL

## Europe's Augmented GPS is Operational

At last, Europe's aviation can rely on the European geostationary navigation overlay service (EGNOS), the continent's equivalent of the U.S. wide area augmentation system (WAAS) GPS, and the helicopter industry is expected to reap major benefits from the satellite-guided precision approaches it supports. As EGNOS was approved in March for so-called "safety of life" applications, a number of airports currently without a precision approach will be quickly fitted with a localizer precision with vertical guidance (LPV) approach, giving ILS Cat 1-like minima. The first helicopter equipped with an EGNOS receiver will be the in-development Sikorsky S-76D medium twin.

Thales has designed a receiver, the T200NG, that will be integrated into its Top Deck avionics suite. The LPV unit is described as "a high-precision tool that helps pilots optimize their landing approach." It offers "extremely accurate altitude readings." It therefore enables helicopters "to land with an equivalent ILS Cat 1 safety in rural or non-ILS equipped locations." Basic certification of the S-76D is pegged for the fourth quarter of this year and the LPV capability is expected for approval in 2012.

With EGNOS, guaranteed lateral accuracy is 52 feet. Vertical accuracy is 66 feet. Availability stands at 99 percent, according to the European Space Agency. These are said to be consistent with ICAO requirements. The actual performance, three to six feet, is so good that Thales has received comments from pilots wondering whether this reflects their location in the cockpit, the receiver's position or the nose landing gear's position.

In France alone, three LPV approaches have been published so far. One of them is Paris Le Bourget business airport, where EGNOS will serve as a backup. In fact, the local civil aviation authorities (DGAC) also hope that busy traffic at Le Bourget will help rapidly increase the number of crews familiarized with EGNOS approaches. The DGAC is aiming at adding 15 to 20 per year and thus cover all airports by 2020. The first EGNOS approach with vertical guidance was flown at Pau airport, in the southwest of the country, by a Dassault Falcon 900LX business jet. In addition to airport and helipad approaches, helicopter pilots are expected to enjoy a host of benefits from EGNOS. For example, in SAR ops, the greater accuracy will allow the crew to reduce the overlap areas in search patterns. This will save valuable time, EGNOS promoters point out.

European research projects, included one dubbed GIANT, had previously used EGNOS at the experimental stage to confirm its value for helicopters. For example, a Eurocopter EC155 conducted approaches to a hospital rooftop helipad in Lausanne, Switzerland. It thus brought evidence that EGNOS enables more precise and thus safer and lower-noise procedures. —By *Thierry Dubois* 🇫🇷

*Continued from Page 24*

fly-by-wire control log development that is also occurring in Stratford, still with Rockwell Collins avionics management system loaded into the SIL. We have roughly three million lines of code, and 80 percent of that is functional in our SIL." Three General Electric GE38-1 engines, each rated at 7,332 shp, will power the CH-53K. This compares to the three 4,750 shp GE-T64-GE-419 engines that power the CH-53E. This will provide a maximum gross weight of 74,000 lbs with internal payloads, or a MGW of 88,000 lbs with external payload, compared to the CH-53E MGWs of 69,750 lbs and 73,500 lbs, respectively. Zack noted that the CH-53K will have a payload of 27,000 lbs over 110 nautical miles under "high and hot" ambient conditions, nearly triple that of the CH-53E (see *Rotor & Wing*, June 2011, page M16). "The GE engines now have more than 700 test hours, of which 300 are endurance tests," Zack said. The first of the three engines for the GTV aircraft is scheduled for delivery at the end of July. The remaining two engines are scheduled for delivery later this year.

Sikorsky is now "actively working" to get under contract for the initial operational test and evaluation (IOT&E) phase, which is for the first four LRIP aircraft. The company has expanded its West Palm Beach facility by an additional 60,000 square feet to handle initial production of the CH-53K. The manufacturer is planning to produce 24 aircraft per month once full production begins, although the production site for those aircraft has yet to be determined. Total program at this time includes production of more than 200 aircraft. Initial operational capability (IOC) is projected in 2018. —By *Douglas Nelms* 🇺🇸

## ■ PRODUCTS | UAVS

## Schiebel Camcopter Displayed at Paris

Austrian UAV manufacturer Schiebel exhibited its Camcopter S-100 at the Paris Air Show in June. Schiebel claims to have sold over 100 copies of the S-100. Almost all these aircraft have been delivered, to 12 customers. The production rate has hit two per month but the capacity is 10 per month. Adaptation of the engine for it to use heavy fuel is under way, which could bring in more sales. Managing director Neil Hunter pointed out the Camcopter can be used for both civil and military operations. The S-100 has a cruise speed of 55 knots, which gives an endurance of about six hours. It can dash at 120 knots. The rotary engine provides 50 hp MTOW stands at 440 lbs, for a typical payload of 110 lbs. —By *Thierry Dubois* 🇫🇷

Read the full story at [www.rotorandwing.com](http://www.rotorandwing.com)





Line 'em up: Bristow Academy has a fleet of around 50 helicopters based at its largest campus in Titusville, Fla.

Photos courtesy Bristow Academy

# TRAINING BRIS ACAD

Whether flying offshore in the North Sea, SAR in Western Africa or just for the fun of it, Bristow Academy gives its helicopter pilots a strong foundation of confidence, competence and safety.

*By Dale Smith*





# BIG PROFILE: BRISTOW DEMY

**2** 1:30 Local time. Your Sikorsky S-92 is two hours out of Bergen, Norway. Tonight's destination is the company rig's 50-by-50 helipad located 225 feet above the churning North Sea. OAT: -5° C. Wind Direction: 290. Speed: 30 kts, gusting to 57 kts. Ceiling: 800 broken. Visibility: Partially obscured by blowing snow and fog. The weath-

er isn't your friend, but you've seen worse. Cold. Wind. Fog. Darkness. Big helicopter. Small helipad. It's a challenge many pilots wouldn't want. But delivering your 17 passengers safely is who you are. It's what you've been trained to do.

As a major provider of personnel and equipment transportation, search and rescue, and practically all things

helicopter related to the oil and gas industry, Bristow Group is a big helicopter operation. The company currently flies more than 520 helicopters and 40 fixed-wing aircraft to support the global exploration and production of this valuable resource. But Bristow's philosophy is that while providing rapid, consistent response for their customers are key, the most important

thing they can offer their customers is safety.

Bristow Group's safety culture starts at the top and works its way throughout the entire organization. Its "Target Zero" program is aimed directly at "zero accidents, zero complaints from customers and zero downtime." It's working. Bristow recently received the National Ocean Industries Association's (NOIA) coveted 2011 Safety in Seas Award.

Part of the program's success is, no doubt, based on everyone, especially upper management, understanding what the company's pilots do every day. "At the end of 2006, Bristow's senior management team spent a week at the Titusville Campus receiving ground and flight instruction," explained Samantha Willenbacher, director of Bristow Academy. "Bill Chiles, our CEO, wanted everyone to have a greater understanding and appreciation for what they were asking our frontline pilots to do on a daily basis."

During this visit, "it also became apparent that there was a strategic advantage in having an ab initio flight school as part of the Group," she added. "Bristow recognized that there was a need for creating safe, skilled and knowledgeable pilots for our rapidly growing commercial operations."

In fact, filling the need for the huge numbers of qualified, professional pilots to crew their aircraft 24/7 in some of the most extreme environments on the planet is a challenge that even Bristow would find hard to overcome. So rather than compete with other global operators for the few qualified helicopter pilot candidates available, Bristow decided to groom pilots to meet its own strict standards.

Bristow Academy was formed in April 2007, with the acquisition of Helicopter Adventures, Inc., with which Bristow had contracted to provide its training for European and Nigerian operations in 1998. "Soon after its creation, the Academy acquired two other helicopter schools. Now we have four training locations


with three in the U.S. and one in the UK," Willenbacher said. "We are an FAA Part 141 flight training academy with a full range of approved programs from private through the commercial/instrument helicopter rating. Our largest campus is here in Titusville, where we have 50 helicopters based. Our other major U.S. location is in the heart of Gulf of Mexico operations" in New Iberia, La.

Gregory Popp, business development manager, added that, "From a program perspective, there are no other 'one-source' providers that offer our array of FAA-approved courses and can add specialty programs like external load, mountain operations and night vision goggle training." The academy is also the only Joint Aviation Authority-licensed rotorcraft training provider outside of the European Union, he added. Since its creation, the academy has placed 106 graduates into Bristow Group's commercial operations around the world.

Currently the Academy has a mix of both self-pay and company/government sponsored students. "All of the students go through the same ground school basics for six to seven weeks," explained Francois Ganswyk, chief flight instructor (FAA) for Bristow Academy. "They have ground school in the morning and they fly in the afternoon."

Ganswyk said that all students undergo basic training in the Sikorsky S-300CBi and have the option to transition to the Robinson R22 or R44 for instrument and commercial training. Turbine work is done in either the Bell 206 or Eurocopter AS355, depending on the student's needs or location.

"We stress professionalism in all aspects of our training," he said. "We are in no hurry to solo anyone here. We average 15 to 20 hours of time before approving a student to solo. We spend considerable time making sure the students achieve a higher level of proficiency than you would have seen five years ago." Ganswyk also explained that the students are given more time



Bristow Group Sikorsky S-92 landing on an offshore platform in the Gulf of Mexico. Bristow Academy trains for a wide variety of helicopter markets in addition to pilots that serve in the offshore industry.

to get familiar with the avionics in the helicopters than in past years.

"Helicopters are unstable enough. You can't be spending your time staring inside at the equipment. We have Garmin 430s in our basic helicopters. It's not a complicated piece of equipment, but you have to be knowledgeable about how to use it before you take off," he said. "We know that we don't have the same equipment that our students will find when they go to work, but we can lay down a great foundation for them now to make their upgrades faster and safer."

It's clear that no matter what aspect of training is being discussed, the key differentiator for Bristow Academy is always looking to provide the best foundation of knowledge and confidence. That's critical because it's never clear where or what type each student will end up flying. "We provide a lot of different people the opportunity to pursue their dream of becoming a heli-





**Aerospace**

**INVITES YOU TO**

# **THE 14TH ANNUAL INTERNATIONAL SEA KING MAINTENANCE SYMPOSIUM**



**19 – 22 SEPTEMBER, 2011**

**ATLANTICA HOTEL  
HALIFAX, NOVA SCOTIA,  
CANADA**

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

[www.seakingsymposium2011.com](http://www.seakingsymposium2011.com)





Instructors from Bristow Academy use Sikorsky S-300s for flight training.

copter pilot," Willenbacher said.

Unfortunately, while the recent economic downturn hasn't dampened prospective students enthusiasm about attending the Bristow Academy, the difficulty of finding financing has. "Interest in flight training has never died down. But, since the beginning of this year, it's really picked up," explained Anisha Hopkinson, student services manager. "Especially when there are so many of the first-time commercial jobs available, it gives students the confidence that there are a lot of good jobs available."

"About 60 percent of our students are coming from overseas with funding from back home," she added. "For everyone else, finding funding is the biggest problem they face."

Hopkinson continued that Bristow Academy has "seen the numbers of our self-funded students reduce over the past few years. Funding is a huge hurdle. We need the helicopter indus-

try to come together to explore ways to find a solution to the funding crisis or there won't be anyone to fly the new-generation helicopters."

### Offshore and More

While Bristow Academy's primary focus is to give pilots a strong foundation to build an offshore, SAR, EMS or other helicopter career, the school has grown beyond its roots. There are no other training providers with a U.S. Army-based initial entry rotary wing (IERW) program that meets both Department of State and Department of Defense standards, according to Popp. "We are doing direct training of that nature to a number of U.S. allied military customers. We do a lot for countries in Central and South America—drug interdiction, counter narcotics efforts, counter narco-terrorism. This is highly specialized training."

The academy "also provides civil-

## BUYING A HELICOPTER IS COMPLICATED. WE KNOW. WE'VE DONE IT 365 TIMES.

**BOWER HELICOPTER: HELPING HELICOPTER BUYERS AROUND THE WORLD.**

Ron Bower is a respected columnist in numerous aviation publications. He's logged over 8,000 flight hours. He holds two world speed records for circumnavigating the globe in a helicopter. Ron has been buying and selling helicopters worldwide for the last 18 years, and has been involved in the purchasing of over 362 helicopters. With the founding of Bower Helicopter, Inc., Ron Bower can now share that expertise with helicopter buyers worldwide.

Bower Helicopter, Inc. knows the helicopters of the industry — Sikorsky, Bell, Agusta, Eurocopter and M.D. BHI knows the value of new and used helicopters, and how to help judge the maintenance records and history of any helicopter on the market. BHI is the owner of one of the world's largest helicopter databases, tracking the movement and ownership of the world's helicopters. BHI can help find the right helicopter for you, and negotiate the best price and conditions of sale.

Call BHI today. We'll be happy to talk with you about our services. Save money, save time and have a great helicopter buying experience with Bower Helicopter, Inc.



Ron Bower, World Speed Record Holder and founder of Bower Helicopter, Inc.



Bower Helicopter, Inc. 512-345-1292 USA  
 Email: [ronbower@bowerhelicopter.com](mailto:ronbower@bowerhelicopter.com)  
 Visit our web site at: [www.bowerhelicopter.com](http://www.bowerhelicopter.com)

ian qualification training for military pilots," he continued. "This FAA/military program takes the pilot through FAA commercial qualifications, then they can continue through specific military training programs such as military tactics, night vision goggle (NVG), formation flight or mountain flying—specific programs to meet specific needs."

Oddly, the one type of training that you'd expect the Bristow Academy to offer as a mainstay isn't even a stand-alone program. "We don't really offer offshore operation training because that is so specific to the needs of the company they will be flying for," Willenbacher said. "Once they get hired that will be covered in their LOFT [line oriented flight training] program. We do have a helipad out in one of our practice areas in Titusville. Our commercial students can get some practice to understand how to set up an approach to land on a helipad."

For more advanced training needs within its JAA instrument program at its facility in Gloucester, U.K., "we have flight training devices that can simulate landings on oil rigs and other sites," she added. "We also offer advanced training for commercial pilots including synthetic instructor qualification, CRM training, LOFT, and introductory training for offshore, and police operations," Willenbacher said. "We can create training packages to meet practically any special operator requirements."

Whether it's offshore or in the jungles of South/Central America, Bristow Academy reviews the types of programs it provides and tailors its courses to use the best of available training styles and technologies.

"You hear a lot about situational based training (SBT)," Ganswyk said. "Some schools see it as an all-or-nothing prospect. We see it a combination. A private pilot student would not

benefit from SBT because they lack the experience to make high-level decisions. But, you can conduct instrument or commercial training almost purely as SBT."

Safety is critical at the Bristow Group and Academy. "We have an extremely robust safety management systems here," Popp said. "We recognize, that in a very real sense we are able to influence the helicopter industry one graduate at a time. Quite frankly, it's probably one of the most rewarding aspects of what we're doing here," he added.

Of the pilots flying in Bristow's Norway operations in the North Sea, nearly 50 percent come from the academy, Willenbacher added. "Among all of these graduates, not one has had a serious helicopter accident or incident," she said. "There is no better testimony than that to show how well the academy prepares pilots for real-world operations." ✈

# Aviation Today's Newsletters

Your comprehensive resources for industry news, analysis and business information.

## Aircraft Value News™

Trends and Market Analysis of Aircraft Values

### AIRCRAFT VALUE NEWS

Learn the details behind current and anticipated joint ventures and mergers, get the latest in purchasing and leasing trends, discover emerging markets and profit from exclusive **Aircraft Value Tabulation & Index** and **Aircraft Value Analysis** tables.

Receive a free trial subscription at: <http://info.accessintel.com/avn>



## Air Safety Week

Air Safety & Aviation Security Trends and Critical Analysis

### AIR SAFETY WEEK

Discover the only award-winning newsletter devoted exclusively to news and analysis of aviation safety. Timely coverage of key safety issues, FAA regulations, and NTSB investigations. Trends in aviation law, news and analysis of aviation safety technology.

Receive a free trial subscription at: <http://info.accessintel.com/asw>



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

17692



# DOUSING THE FLAME


# San Diego Fire Department Air Ops Program

Southern California unit combats fires with a Bell 212 and a 412EP, in addition to an Erickson S-64 under a partnership with utility operator San Diego Gas & Electric.

*By Ernie Stephens, Editor-at-Large*

Photo by Ernie Stephens

S:



The crew of San Diego Fire Department's Bell 212 demonstrates a water drop over a remote part of the city. The aircraft's orange snorkel can be seen dangling near the skid. When necessary, water can also be mixed with a special gel that allows it to adhere to potential fuel sources the fire might feed upon.

**F**ire. Never mind that we cook with it, warm ourselves with it, and even drive massive turbines with it. The word “fire” still brings to mind pictures of houses reduced to ashes, picturesque landscapes charred until black and gray, and towering plumes of thick, black smoke. But ask a firefighter, and they’ll add one more image to that list—a low-flying beast-of-a-helicopter rolling over a smoky ridgeline, releasing hundreds of gallons of water. In its wake, the sound of sizzling wood and the sight of white steam rising from extinguished material.

Nothing delivers a one-two punch to a wildfire like a firefighting helicopter. They are the stars of the show when news cameras spot them discharging loads with graceful climbing turns, and feverous runs back and forth across the face of burning brush—and standing as the last line of defense between the relentless flames and someone’s home.

Don’t let the word “city” in City of San Diego fool you. While this southern California metropolis boast a densely populated downtown area with well over 100 tall buildings, a significant part of its 324 square miles consists of residential neighborhoods that are surrounded by areas prone to accidentally and deliberately set fires. And when lightening and human carelessness—two major causes of fires—ignite a flame, it can quickly and easily engulf an entire community, unless swiftly attacked.

This is why the San Diego Fire-Rescue Department (SDFD) operates one 1980 Bell 212 and one 2008 Bell 412EP (N807JS) out of its small base at Montgomery Field (MYF), seven miles north of the heart of the city. Commanding the unit is Perry Esquer, the chief of air operations.

“We have one helicopter operating 24/7, 365 days a year for multi-mission use,” explained Esquer, who has been the unit’s commander since 2009. “We do firefighting, hoist rescue, search and rescue, and at times, medical transport as well.”

SDFD aircraft, which log approximately 400 hours per month (cumulative), launch with a standard crew compliment of three, consisting of one pilot, one crew chief and one paramedic. And since San Diego sits adjacent to several bodies of water, including the Pacific Ocean, the paramedic is also a trained rescue swimmer.

When dispatched to a fire, the SDFD crew will hustle to their ship, plug the coordinates into the GPS, and head out to assess the situation. If a water drop is in order, the crew will go to the nearest natural body of water, dip its hover snorkel—so named because it’s designed to work while the aircraft is held stationary—and draw 300 gallons of water into its external, Simplex-brand belly tank. With the water separated by baffles to minimize sloshing while in flight, the water can be carried to the scene and released all at once through all three doors, or in stages via one door at a time. The aircrew, in conjunction with ground personnel, will decide if the flames should be doused directly, or if the water should be used to help make a fire break. Sometimes, it is even dumped directly on a structure as a preemptive measure.

“We were going gangbuster last month,” said Esquer of the unit’s June 2011 stats. “We put out two or three fires a day.”

Esquer described most of the fires the helicopters fought as “little,” but every huge fire, such as the one that destroyed 80,000 acres near Douglas, Ariz. during a four-week period between May and June 2011, began as a small one. Getting to them and attacking quickly is the key to putting fires out before they can entrap people, level neighborhoods and cause tens of millions of dollars in damage.

With that in mind, fires in southern California are particularly dangerous, thanks in no small part to the state’s dry, sometimes-hard-to-reach terrain, and





San Diego's Bell 412EP (red and blue) poses with an Erickson S64E Air Crane similar to one owned by San Diego Gas & Electric. The helicopters work side by side fighting large fires under a partnership between the city and the power company.

strong, flame-fanning Santa Ana winds. With conditions such as those arriving during the dry months—particularly between July and November—the more aircraft there are available to drop water and gel-water mixtures, the better. Enter San Diego Gas & Electric (SDG&E), the area's primary utility company.

SDG&E purchased an S64F from Portland, Ore.-based Erickson Air Crane (EAC) for lifting heavy power equipment, such as wind turbines and transmission towers. But beginning in 2009, the company partnered with the City of San Diego to make the helicopter available to the SDFD for use in attacking fires.

When the plan was first suggested, government officials were concerned over what SDG&E would want in exchange for the use of the expensive Air Crane, which costs several thousand dollars per hour to operate. David Geler, vice president of SDG&E, said that the power company would provide the helicopter and its crew, all of whom are experienced in using the

S64F as a firefighting platform, free of charge for the first two hours that the city uses it. After that, San Diego would pay SDG&E \$7,500 for every additional hour of use.

When asked what SDG&E's motivation was for absorbing the first two hours of the Air Crane's operation, Geler replied, "Our motivation is to stop catastrophic fires. We've been working very hard at that, and we feel this partnership we put together is a great tool..."

With its detachable, 2,650-gallon water tank, the \$30-million Air Crane can use its hover snorkel to draw a full load of water in 45 seconds, said Patrick Pilolla, technical manager for EAC. When it pulls the scoop snorkel through the water, it can fill the tank in 25 seconds. "But with density altitude," added Pilolla, "they'll probably only go out with 1,600 to 1,800 gallons."

Deputy Chief Brian Fennessy, SDFD's second in command, and one of the driving forces behind establishing his department's six-year old helicopter unit, was very pleased with

the agreement struck between the city and the power company. "Having this available in our county for initial attack absolutely provides the kind of protection that our citizens deserve," he said.

Maintenance for the Air Crane is provided on site in San Diego by Erickson, which flies parts and tools down from its 150,000-square-foot maintenance and warehouse facility 900 miles away in Portland. Overhauls, however, are done at the shop in Portland.

Since brush fires can grow very large and quickly cover a huge area, SDFD's air unit can find itself helping or being helped by other helicopter units in the region, such as those belonging to the City of Los Angeles and the counties of Orange, Los Angeles and San Diego.

Unfortunately, fires don't just occur during the day, when crews can see obstacles surrounding the engulfed area. To make operations safer, SDFD flight crews have night vision goggles (NVGs) available for night missions, especially when a call takes them out into the surrounding desert. When donned, the pilot—and the crew chief—





Photo by Ernie Stephens

San Diego Gas & Electric's red, white and blue S64F Air Crane is primarily used for power grid construction and maintenance, but has a matching, detachable tank that can carry 2,650 gallons of water. It can draw its load from ground tankers, or through one of two snorkels lowered into a water source.

has a better chance of spotting power lines, towers and the mountains that nearly surround San Diego.

When the need comes to take on water for a night drop, SDFD won't draft water from natural locations, to eliminate falling victim to the false altitude cues that operating over water can cause when it's dark. Instead, crews land at a temporary landing zone, where pumpers and water trucks fill the tanks using a hose.

Other equipment used aboard San Diego's Bell 212 and 412EP are the 30-million candlepower Spectrolab Night Sun, to illuminate locations at night; a nose-mounted FLIR 8500 forward-looking infrared system, to detect hot spots during day and night operations; and a digital downlink system that can transmit the FLIR images seen by the flight crew down to ground personnel.

Equipment alone is not enough for safe and effective helicopter firefight-

ing, though. A skilled flight crew is also a necessity. Luckily, talented paramedics and rescue swimmers were already available within the fire department, and captains who wanted to be crew chiefs could be recruited from within. But where would the pilots come from? As it turned out, highly experienced pilots were right under the department's nose.

Prior to the unit's start in 2005, the city leased helicopters, pilots, maintenance services and a fuel truck from a private aviation company that assigned the same pilots to fly for San Diego every fire season.

"When we decided to purchase our own aircraft, we interviewed a number of pilots," recalls Esquer. "When the interviews were over, the SDFD hired the four contract pilots. They know where they're going, they know the mission profile, and they obviously have a lot of time doing this."

Once the crews were trained and

ready to fly, the unit adopted a safety rule that still stands. Put simply, it says, "Three to go, one to say no." So, in essence, before any launch, all three members of the crew must be briefed on the mission, and all three must agree that the mission can be flown. But if one person—regardless of rank or team seniority—feels the assignment is unnecessarily dangerous, the mission cannot be flown.

Communities around the nation have been reporting record heat and drought conditions, making this a busy year for firefighting helicopters. From the Northwest Territory of Canada to Mexico, and from the shores of the Atlantic to the beaches of the Pacific, crews are standing ready to save lives and property from the ravages of fire. The days are long, and the shifts can be busy. But airborne fire attack is an important, necessary service that saves lives and property around the world. 🚁

# All Change for the Better **AT BOEING**

Photo by Andrew Drwiega

Boeing's AH-6i flies overhead in the Arizona desert during the final day of a media tour with the helicopter manufacturer.

**During early June this year, Boeing invited members of the international defense media on a tour of some of its key facilities around the USA. This tour included both of the rotorcraft facilities at Philadelphia and Mesa, Arizona. Rotor & Wing's Military Editor reports.**

*By Andrew Drwiega,  
Military Editor*

**W**ithin Boeing's recently restructured Defense, Space and Security (DS&S) division, rotorcraft are no longer grouped together, although they are all part of Chadwick's military aircraft business. The AH-64 Apache is now within Global Strike alongside the F/A-18 and F-15. The CH-47 Chinook and V-22 Osprey are grouped with C-17s and two tankers in a mobility group. Then there is surveillance and engagement with the AEW&C and P-8A, with the final group comprising missiles and unmanned aerial systems. The other two business groups are Roger Krone's Network and Space Systems (N&SS) and Global Services and Support, under Tony Parasida. The total of all three comprise DS&S.

Chris Raymond, vice president of business development for DS&S, said that over the foreseeable years throughout the aircraft business there would be fewer new program starts in terms of new products, but those that did develop would be very important and would be carefully scrutinized during their lifecycle. He added that Boeing's position was secure through its backlog of orders, many with multiyear funding such as AH-64D Block III, CH-47F Chinook and MV/CV-22 Ospreys.

Dennis Muilenburg, President and CEO of DS&S, recognized that it was currently "a challenging environment" for the defense business as a whole due to the downturn in spending still sweeping through the global economy, more especially among European nations and in the U.S. However, as with most defense OEMs and contractors, opportunity is seen to lie in the growth of Asia-Pacific and Middle East. "Our international revenue was seven percent of business five years ago, to 17 percent last year to what we expect to be 25 percent a couple of years out from here," he said.

But the restructuring of the overall business was as a direct result of the

need to drive efficiency, cost reduction and productivity. Muilenburg believes there is now a good balance between the three DS&S businesses—Boeing Military Aircraft, Network and Space Systems, and Global Network and Support. He believes that the bulk of international growth will be witnessed through the military aircraft and satellite sector platform businesses. To that end, Boeing's rotorcraft business has been shaping to the task.

Leanne Caret, vice president of H-47 programs, provided an overview of the CH-47 business as well as detailing the \$130-million redevelopment that is approaching its final stages of the Chinook and V-22 Osprey production facility at Philadelphia. The 80-year-old ex-Baldwin Locomotive works, an area covering 223,000 square feet, has been transformed into an area that is bright and conforms to Boeing's Lean production flow. Part of the leaning process sees people and components arranged around each aircraft on a priority and point of use basis. This includes the quaintly named Moonshine shops which are, in effect, problem solving task groups. As with all of Boeing's production lines, even the civilian airliners that we saw being assembled over in Seattle, key people and not just mechanics are close at hand should advice be required.

The complete factory reopening, including an extra 30,000 feet of offices, is scheduled for Sept. 21, 2011—marking the 50th anniversary of the Chinook's first flight. Caret said that by using a computer aided lighting system that accounts for the extra ambient light that is now allowed into the facility, there has been an energy savings of around \$200,000 per year. Accordingly, the facility will be the first in Boeing to be LEED (Leadership in Energy and Environmental Design) certified.

Practically, what this really gives Boeing is a much improved production rate. From one production line a year ago there will now be two lines,





Photo by Andrew Drwiega

Side-by-side: AH-6i and AH-64D Apache Block II.

one dedicated to U.S. Army CH-47F production and the second to a mix of international orders and MH-47Gs for the U.S. Special Forces. Where before in 2003, the output had been comparatively miserly 10 aircraft per year, the transformation now means that Boeing has not only the capability to match the Army's requirement of CH-47Fs but also to the surge in international orders by manufacturing around six aircraft per month. U.S. Army alone is looking to field a force of around 464 CH-47Fs with 132 being already delivered.

International orders include 15 CH-47Fs for the Canadian Defence Force, six aircraft for the Royal Netherlands Air Force, 16 for the Italian armed forces (through a coproduction contract which will see AgustaWestland conducting final assembly in Italy) and potentially an additional 14 Mk 6 Chinooks to further grow the UK Royal Air Force fleet of 46 aircraft. However, the Ministry of Defence's budget cutting process has not yet finished and there is still cause for concern about whether this acquisition will survive. This decision actually has a knock-on effect throughout the British military rotorcraft world. The RAF is currently reluctant to go through with the planned hand-over of its AW101 Merlin fleet to the Royal Navy/Commando Helicopter Force until it is sure that the extra Chinooks will be theirs.

Until that happens the CHF will keep flying its aged S-61 Sea Kings—actually now less of a problem since the SAR-H competition ground to a halt earlier this year due to the illicit exchange of confidential information to the winning bid group. However, the government has a stated aim of taking all of the Sea Kings out of service by 2016—so time is tight although Caret confirmed that Boeing would be able to deliver the aircraft to the timeframe the MoD would require.

Campaigns for new international orders include 15 for India (which would represent a new and valuable first foothold in that country), and a scattering throughout the world including six for Turkey through Foreign Military Sales agreements and more for Australia. There is also a potential for up to 16 aircraft in the Middle East.

Over at Boeing's other major rotorcraft works in Mesa, Ariz., the Apache Block III program is of great excitement to all concerned with helicopters, even the older hands. The program "is all about sustainment and modernization," says Mike Burke, Boeing's director of rotorcraft business development.

"It provides high technology at low risk." Low risk is certainly the case as the Apache attack helicopter has been flying missions since the first days of the AH-64A model 28 years ago.

Over three and a half million hours have been flown by Apaches with over

808,000 hours flown during combat operations. Burke adds that deployed U.S. Army units in operational theaters have been flying between six and eight times the standard number of peacetime hours per month while sustaining readiness rates of over 80 percent.

Burke is thankful that the Army has plans for the Apache long into the future. Its expectation is that by the end of 2017 it will have 690 Apache Block III attack helicopters, most of which will have been remanufactured Block I & II aircraft, although there is provision for 56 new build Block IIIs. The Boeing production lines at Mesa will still churn out Block II and Block III aircraft for the next few years until 2013, the date when Block I aircraft will be replaced. Burke believes that the Block III aircraft will be the 'most popular version yet.'

The international market for Block III has already been kicked-off by an order for 30 of the latest Apaches through an FMS sale to Taiwan, this confirmed by Col. Shane Openshaw, the U.S. Army's AH-64 program manager. Production of those aircraft will begin as early as October of this year. There are over 300 Apache Block I and II aircraft currently with international military forces with current operators including the British Army Air Corps, the Netherlands, Egypt, Kuwait, Japan, the United Arab Emirates, Singapore, Greece, Israel and Saudi Arabia.

Although Britain's 66 aircraft are designated WAH-64D Longbows, through an agreement that sees AgustaWestland as the UK's prime contractor, Tommy Filler, deputy of Boeing's attack helicopter programs said that the British MoD was being provided with information about the Block III upgrades and that solutions were being studied regarding how it could maintain the capability of its Longbow fleet alongside that of the Block III version. Earlier this year the UK Apache fleet registered over 100,000 flying hours, a third of which have been flown operationally in Afghanistan.

Low rate initial production (LRIP) for the Block III was confirmed in Sep-

tember 2010 and the first aircraft will be with the Army this October, with Block III remanufacturing and new builds to continue until 2027. The first Block III aircraft will be used for trials and testing, while regular army aviation units will begin to receive their first Block III aircraft in April 2012.

Improvements to the aircraft include better computing power. "There were 13 computers on an A model Apache, there were eight computers on a D model, and we have reduced it to one computer split in half [on either side of the helicopter] so one round can't get them both," said Burke. There is also increased situational awareness through a cognitive decision aiding system which fuses sources of data together and automatically upgrades the mission systems in flight.

Regarding maintenance, there will be significant improvements. "The life of the airframe will be increased to 10,000 hours; the new composite rotor blades and transmission endurance move from 4,500 hours to 10,000 hours. Plus there are sensors around the aircraft that measure heat, temperature and vibration so if you have a gearbox or component going bad it will sense that, inform the pilots and when the Army incorporates the Logistics Information Management System into their ground net, the [onboard] system will be able to 'phone home' and tell the ground crew about the problem without the pilots having to do anything about it. This should drive the drive the operational support costs down by a third."

Alongside the Apache is its "little brother," as Mike Burke likes to call the AH-6i. With its commonality of systems to around 85 percent, and having been positioned as a reconnaissance/attack helicopter by Boeing, Burke is fond of saying that when its systems are started up "it thinks it's an Apache." A lovely sales vision perhaps, but it does possess firepower and capability and it should not be forgotten that any aircraft being used by the U.S. Army's 160th Special Operations Aviation Regiment—and this is an improved ver-



Photo by Andrew Dwiega

S-100 Camcopter and an unmanned version of the AH-6i on the tarmac.

sion of what they are flying—deserves much consideration.

Boeing is also building the A160T Hummingbird in Mesa. Work was transferred over from Phantom Works in California and the current schedule is for the production of one aircraft per month according to Jeff Hunt, production manager for the A160T.

"The challenge has been getting the supply chain established and we are still completing the transition from California to Mesa," he said. Boeing is producing all of the avionics and the rotor blades, but the process of identifying all of the core competencies required is ongoing. Partners on the A160 project include L3, Honeywell and System 3.

"This is an affordability driven project and we have got to get the costs down," stated Hunt. Boeing is building the first 21 aircraft 'on its own dime' but from aircraft No. 41 and beyond additional customer funding will be required.

One of three main objectives of the A160T program is to carry cargo (which it has already demonstrated to the U.S. Marine Corps at the Dugway proving grounds and is set to be further tested when it is sent to Afghanistan to conduct further trials in-theater). USMC currently owns two aircraft.

Another UAS in Boeing's current stable is the S-100 Camcopter. Back in August 2009 Boeing teamed with Schiebel Industries of Austria over marketing and support of Schiebel's S-100 Camcopter compact unmanned aerial system. Boeing's relationship with the U.S. government and other military customers, especially in the field of rotorcraft, was considered a good business case for both parties. The S-100 can fly in adverse weather conditions at a range of up to 200 km and at a height of up to 18,000 feet.

Vic Sweberg, director, unmanned airborne systems, said during a presentation at Mesa that Boeing had been working with U.S. Special Operations Command (SOCOM) on experimental demonstrations.

Across Boeing's rotorcraft portfolio there is a mix of improved older platforms and new UAS aircraft. There was also a hint that the restructuring is also running deep inside the Phantom Works and while new rotorcraft may not be on the design board at the moment, Boeing is investing heavily in the technologies all materials across its defense products that, at the right time and given the right economic conditions, could be applied into the rotorcraft world. ✈

# TRAINING NEWS

Colombia Training Center 40

Invest in IS-BAO? 41

Safety & Training 46

## Sikorsky Improves Colombian Training

Sikorsky Aerospace has broken ground on a helicopter training complex at the Melgar Air Force Base in Colombia. The UH-60 Black Hawk flight training center, scheduled for completion later this year, will feature a full-motion, high-fidelity simulator to provide training for the Colombian Armed Services and other Latin American Sikorsky operators. Two pilots will act as operators when the center opens later this year. The complete UH-60 cockpit replica is rated to FAA Level D. The Melgar simulator comes on the heels of Sikorsky's strengthening of its service offerings in Colombia to add a maintenance support team. David Adler, president of Sikorsky Aerospace Services, stated that plans to expand depot capabilities for crash and battle-damaged helicopters are also underway.

According to Sikorsky, Colombia operates the world's fourth largest Black Hawk fleet, which recently surpassed 300,000 total flight hours. ✈

## Heliwest Wraps Up NVG Training

Australia-based Heliwest has concluded its first night vision goggle (NVG) training course at its Jandakot headquarters. A modified Bell 206 LongRanger acted as the classroom for the three inaugural students—two EMS pilots and one ATP-licensed civilian helicopter pilot. During the course, the students received five hours of flight training and a 1.5-hour flight test. The course used NL-94-au night vision goggles and exposed to the students to brightly lit urban areas, as well as low-light rural locations. ✈

## Finnish NH90s Practice Troop Movements



More than 150 soldiers were airlifted 190 miles in five hours using NH90 tactical transport helicopters (TTHs) during a recent Finnish Defense Forces training exercise. Eight aircraft from the Finnish NH90 Utti Jaeger Regiment's Helicopter Battalion, plus a reserve, flew two rotations from Helsinki to Kauhava with 157 troops from the Guard Jaeger Regiment. The units also performed two hot refueling exercises. Operation Pyorremyrsky—Finnish for “whirlwind”—featured a total of 40 flight hours. The battalion currently has a fleet of 10 NH90s. ✈



Lance Cpl. Ryan Carpenter

A Sikorsky CH-46E Sea Knight preps for a night training operation with the U.S. Marine Corps 11th Marine Expeditionary Unit's maritime raid force.



# SHOULD THE ROTARY WORLD INVEST IN IS-BAO?



*By Rick Christoffersen*

Looking at the latest brochure for IS-BAO, you'll see only one photograph of a helicopter amongst dozens of private jets. Even the IS-BAO logo is an image of a fixed-wing aircraft. Rick Christoffersen, an IS-BAO auditor and director of safety at The Squadron, says that despite this strong leaning to our fixed-wing brothers, the rotary world should also seriously consider using the IS-BAO model as a proven safety and operating tool.

If you've visited the HAI or IHST websites lately you simply cannot miss the safety mantra of "Reduce the helicopter mishap rate 80 percent by 2016." When I first heard this brave statement, I recall thinking, "Wow, pretty

lofty goal." Then I took the time to reflect on why these groups are aiming so high, and I couldn't help but admire the tenacity of the effort—talk about a "go bold or go home" posture. But let's face it, bold is exactly what the helicopter community needs if

we are to make a substantial impact toward reducing the mishap rate. So I asked myself, "Can such an audacious goal really be met?" Well, actually yes, it's been done in the recent past by the airline industry, and so surely the helicopter segment can do this too.

The principle behind the airline sector's success was shifting the organizational safety culture from a reactive posture to a proactive posture. I've been involved in aviation safety for the last 20 years of my career, and in my opinion IS-BAO is the most effective model to start this transitional process, and to continue developing an effective operation into the future. Like many others, I initially felt that IS-BAO was heavily fixed-wing biased, but as I started to work more with these principles, the more I found that they could be successfully applied to the rotorcraft world with impressive results.

I wanted some other opinions as to why IS-BAO should be considered attractive to aviation companies and large government agencies. So I asked Stan Rose, HAI's director of safety and vice chair of the Helicopter/IS-BAO team, and Jim Morrison, a U.S. Forest Service air safety investigator and member of the USDA/USFS Safety System Enterprise Team. Their answers were nearly identical, and echoed the same sentiments:

- "Regulations set the minimum standards,"
- "IS-BAO goes beyond the minimums, it raises the bar,"
- "IS-BAO is proven, it works," and
- "Why create a new standard of excellence when one already exists?"

Jim further indicated from the implementation aspect that, "IS-BAO is a great checklist and standard to clean up and formalize things you're already doing. It even helps identify risks you haven't considered. What's not to like about that?"

A consistent theme prevailed that IS-BAO is an ideal compilation of best practices, with proven methods

# Customize Your Reprints!



REPRINTS  
EPRINTS  
PLAQUES  
POSTERS

**Create** a powerful statement for your product, service or company through professionally designed marketing materials utilizing editorial content from *Rotor & Wing*.

**Contact Wright's Media** to discuss how we can customize these materials to enhance your current marketing campaign.

**U.S.** copyright laws protect against unauthorized use of published content.

**Reprints can be used as:**

- Trade Show Handouts
- Media Kits
- Point-of-Purchase Displays
- Direct Mail Campaigns

**Call today  
877- 652-5295  
and allow our reprint  
coordinator to assist  
you with some proven  
marketing ideas.**

to improve flight safety, manage risk, reduce the potential for mishaps, and improve organizational efficiency and effectiveness. IS-BAO standards are performance-based and process-led, allowing IS-BAO to be scalable to an operator's needs.

That's worth repeating—IS-BAO is scalable to the operator's needs. Ultimately, this means that with some careful thought, and the desire to make it a success, IS-BAO can help produce the same results for a helicopter firefighting contractor as for the corporate air wing of a Fortune 500 company.

## Core of IS-BAO

Ray Rohr summarizes IS-BAO best by saying it “is a code of practice that reflects what a well-managed flight department could do. It has an operator's SMS as its cornerstone and contains standards, recommended practices and guidance material that operators can use to enhance safety, security, efficiency and effectiveness of their operations.”

IS-BAO standards, guidance and SMS principles are proven best practices that go right to the core of identifying and mitigating “latent system errors” within your business processes. Those who have attended human factors (HF) training have almost certainly been introduced to Reason's Model that reflects “latent system errors,” those insidious holes or breakdowns in business processes that provide opportunity for error to be introduced and perpetuate into an incident or accident.

Accident investigators refer to these as “contributing factors.” SMS was developed to help operators identify these holes and get out ahead of them, to proactively identify safety threats and implement appropriate “preemptive” risk management strategies to prevent loss of human and material resources, i.e., proactive/predictive safety. We're not talking just about

major bent metal events here, SMS also targets those lesser events that gouge the bottom line—simple human error events that generate incidental aircraft damage, create unscheduled maintenance, lead to injury, lost work days, lost resource hours, and ultimately lost

revenue. And it all too often links right back to business processes. SMS helps “right the boat,” but the bailing process can seem painfully slow. IS-BAO is like a gas-powered dewatering pump for your SMS—it gets you high and dry quicker.

# R44 HELICOPTERS DO MORE WITH LESS OVERHEAD



R44 Raven I - Cattle Mustering; Bushy Park Station, Australia; Photo: Jean Marc LaRoque, Courtesy Nev Power

**Lowest acquisition cost**

**Lowest operating cost**

**World's top-selling helicopter**

**ROBINSON HELICOPTER COMPANY**

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



## Danger Lurks as SMS Programs Mature

Your company is sold on SMS and formulates a team to lead the implementation and put all the right safety processes in place. You continue to operate, record safety data and take action to mitigate the hazards. You begin to find and plug holes in your business processes—fatigued crews making simple mistakes, too much “word of mouth” procedures driving the train, well-intentioned crews exceeding their expertise or authority.

### IS-BAO Development in Brief

There is a clear lineage between the Commercial Aviation Safety Team (CAST), the International Business Aviation Council (IBAC), the sponsors of IS-BAO, and IHST. Essentially, IS-BAO represents a move from the old-fashioned reactive safety implementation to preventive and predictive safety management systems (SMS).

**1998:** Airline industry stands up CAST to reduce the fatal mishap rate by 80 percent within 10 years. By 2007, CAST had achieved a remarkable 83 percent reduction.

**2000–2002:** IBAC brings SMEs together to compile best practices to address their mishap rate, creating IS-BAO. Today 1,500-plus flight departments are holders of IS-BAO and 500-plus have demonstrated conformity and received Certificate of Registration.

**2006:** Benchmarking CAST successes, the IHST is chartered with the same goal for the rotary wing community.

**2009:** IS-BAO is recognized as an alternate solution to demonstrating that an operator meets the SMS requirements of ICAO Annex 6.

**2010:** HAI, BHA and EHA team up with IBAC to integrate helicopter operations into IS-BAO, due to release a new publication in January 2012.

**Present:** Several U.S. government flight departments, including FAA, NASA, FBI and DOI, are moving at accelerated pace to integrate IS-BAO.

SMS is working, but it is taking time and money to continue to support it to the elusive point that it is mature enough to see real gains. You understand that SMS is a process and not just an “off-the-shelf” product, but at the same time, you still feel exposed to the dangers lurking that have not yet been addressed. Surely with the wealth of knowledge and experience that is out there already, operators can fast track this process.

This is the beauty of IS-BAO—it is a consolidated package of proven processes that go right to the core of addressing latent system failures, those common contributors to mishaps. Implementing IS-BAO steers deliberate integration of safety “best practices” and ultimately expedites the process of identifying and closing systemic problems. IS-BAO helps operators avoid pitfalls during the early adoption stages of SMS and helps formulate a long-term, proactive safety strategy. The result is the desired end state of preventive and predictive management of risks. Just like a great football coach dials in the game plan and pulls the best from the team, IS-BAO coaches your SMS, and in fact your whole business, to achieve successful results.

### IS-BAO Implementation

IBAC recognizes that a fully developed SMS requires time to reach peak performance. And since SMS is a cornerstone of IS-BAO, the program has adopted a phased approach to enable recognition for three stages of maturity.

Certification is supported by regular audits to demonstrate how an organization is developing. During the first stage, the chief concern is that the IS-BAO elements are in place, resourced, functioning and sound. Essentially, validating that the right foundations have been put into place to support the organizational structure, flight operations, maintenance control and

SMS. To reach stage two, the auditor will need to see a functioning SMS appropriate to the organization, with a dynamic element of safety assurance in place. This adolescent stage is a challenge for all involved, but with commitment, especially from management, the organization will evolve into stage three, characterized by a healthy preventive and predictive safety culture. From this point forward, the IS-BAO auditor is interested in the effectiveness of the programs and processes, looking to see the organization continuously improving over time.

### Safety Culture

I'd like to reinforce why IS-BAO hits the mark. Experience has taught me that the key component to a healthy organization is getting the “culture” right, as culture drives people much more successfully than rules ever will. You cannot demand a culture to be a certain way, regulate culture or even buy a culture, but you can create an environment where a healthy culture is encouraged to develop. IS-BAO provides some very helpful tools to create this positive environment, although it should be remembered that it is only one ingredient that is needed, along with a healthy dose of commitment.

IS-BAO has gained wide acceptance and use in the business aviation community—a community that shares more in common with helicopter operators than might be expected, governed primarily by Part 91 and the vast majority operating five or less aircraft. Business jet operators have embraced IS-BAO because it is a proven method to tighten business processes, and because it helps them move judiciously toward that desired end state of proactive, preventive, predictive safety. Looking forward to the integration of helicopter operations in the 2012 version of IS-BAO, it is well worth investigating now to learn if IS-BAO is right for your company. ✈



# AW139

## TRAINING FOR EFFECTIVE OPERATIONS

AgustaWestland delivers highly quality end-to-end training solutions, designed to maximise operational performance, safety and effectiveness

Crew benefit from tailor-made courses incorporating modern training helicopters complemented by advanced multimedia technologies

Courses are available for aircrew in a wide range of realistic operational environments, including SAR, Winch Operations and Night Vision Goggle flying

# Safety & Training

By Keith Cianfrani

## Risk Management



In my last column, I wrote about the safety enthusiasm in a “Just Culture” that permeated throughout the HAI Convention back in March. This culture is a partnership with management and all employees. A safety culture is ultimately a leadership responsibility and needs management commitment. Let’s look and see what a “Just Culture” is all about.

I’ve attended many great safety presentations on this issue but one of these presentations by Bristow Helicopters proved to be very useful. This presentation was a combination of valuable information gathered from the IHST program and from Bristow’s Training and Safety Academy. The academy was well represented, with 10 safety professionals in attendance including the director. I was particularly impressed as to how these organizations work so well together. The presentations began by explaining what organizations are involved with this safety initiative and what they are currently doing.

The International Helicopter Safety Team (IHST) was created in 2006 and established a goal to reduce worldwide helicopter accident rates by 80 percent within 10 years. We all recognize the helicopter mission profile is inherently more dangerous than other areas of aviation. These areas include offshore operations, firefighting, EMS, long line, external cargo and SAR. IHST represents the leading worldwide safety initiative program.

Key initiatives to achieve this goal include: safety management systems; ADM; CFIT awareness; risk, automation and task management; helicopter flight data monitoring (HFDM); situational awareness; CRM; and training.

And let’s not forget human factors.

Do most of us really know what is involved with a successful SMS program? SMS is the formal, top-down business approach to managing safety risk, which includes a systemic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures. SMS programs for product/service providers (certificate holders) and regulators will integrate modern safety risk management and safety assurance concepts into repeatable, proactive systems. SMS evolved from other industries including ISO 9000 quality management systems. SMS doctrine can be adopted for all. In the military, we call it safety management through risk management using the Five Step program. Examples of SMS topics include: safety and quality policies (both personal and corporate); organizational structure and responsibilities; development of procedures and controls; safety culture; open reporting; risk management decision making; and safety management, assurance and promotion.

Do we need a “Just Culture” with flight training? Personal/private and training categories accounted for 40 percent of rotorcraft accidents in the U.S. during 2006 and over a three-year period those sectors were 75 percent higher than the next category, aerial application. Thirty-seven percent of accidents resulted from autorotations. The single highest category of autorotation accidents was attributed to instruction/training. How do we raise the level of awareness on the inherent risks of autorotation training?

There is always much discussion on how can we prepare CFIs to mitigate

these risks? Are CFIs teaching the correct decision-making techniques? We must look at mitigating risks when training by looking at areas such as environmental conditions throughout the day (which effects aircraft performance), the planned sequence of how the training is conducted, how the student has performed in the past with certain tasks, and how to address the student’s weak areas.

With all the safety tools available in the aviation industry, it’s important to ask, “Why do we continue to make the same mistakes?” Causal factors for accidents and incidents have varied little despite improvements in the design, reliability and technology for environmental management systems. Familiarity and prolonged exposure without mishap can lead to a loss of appreciation of risk. We simply fail to follow the established practices—an issue complicated by a constant turnover of personnel. This is why training is so critical. We must have a plan to manage risk.

SMS is a decision-makers program. It must be incorporated in to all areas of operations—even small operators who work on a very little profit margin. It is a good return on your investment.

The opposite of managing a safety program could be loss of life, reputation and aircraft. A job done right will ensure safety is the first priority. I urge leaders, pilots and safety managers to take a close look at the SMS process and incorporate a “Just Culture” into everyday activities. We must bring the safety effort into a normal management framework. Don’t be afraid to speak out when you observe something that is unsafe. Train to be safe. The reward will be well worth the effort! 🇺🇸



Why pay \$20K+ for a new set, when we can overhaul your existing ones for \$3,200?



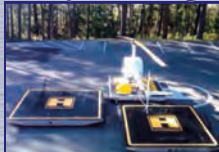
Helicopter Accessory Repairs is the world leader in mechanical and hydraulic ground handling wheel overhauls, restoring them back to factory-new condition.

[www.HelicopterAccessoryRepairs.com](http://www.HelicopterAccessoryRepairs.com)  
or call us at 208-899-6010.

**Wireless Remote Control**



**Helicopter Landing Dolly**



- Reduced Hanger Rash
- Reduced Injury
- All Weather Dolly
- Saves Time
- 360 Degree Visibility
- Call For Special Pricing

"60 Seconds On Our Website Will Change The Way You Move Your Helicopter!"

[WWW.HELIIWAGON.COM](http://WWW.HELIIWAGON.COM) 1-800-HELIIWGN (435-4946)

# Got Gas?

Presenting  
the 2-Bottle  
Tilt 'N Tow.

Built like a brick,  
one-person operation,  
low profile, fits through  
doorways, small hangar  
footprint, yet it's tug towable!

AERO has 2, 3 and 4 bottle carts in stock!



**AERO  
SPECIALTIES**  
GROUND SUPPORT EQUIPMENT



+1 208-378-9888 | [www.aerospecialties.com](http://www.aerospecialties.com)

**Ground Handling**

Simply a better idea

## Chopper Spotter

Helicopter Ground Handling



Direct from the  
manufacturer:

J.B. Knowles, Inc.  
Blue River, WI 53518

Ph: +1 608 537-2049  
Fax: +1 608 537-2043

[info@chopperspotter.com](mailto:info@chopperspotter.com)  
[www.chopperspotter.com](http://www.chopperspotter.com)

# #1 for Dauphin Parts



We own and stock the largest independently held Dauphin helicopter parts inventory available on the market today. Rotables, avionics & instruments ready to ship worldwide. Parts for exchange and outright sales.

**alpine**  
air support

US-Phone : +1 207-513-1921  
Phone : +41 52 345 3605  
Fax : +41 52 345 3606  
E-Mail : [mail@alpine.aero](mailto:mail@alpine.aero)  
Web : [www.alpine.aero](http://www.alpine.aero)



## Take control of your business with Quantum Control

MRO & Logistics Software Solutions

Integrated with **StockMarket.AERO**

[componentcontrol.com](http://componentcontrol.com) · 619-696-5400

# Leading Edge

By Frank Lombardi



## Matched to the Mission?

**P**erformance, stability and control. These are the main ingredients in the recipe for the most suitable aircraft for your mission (cost notwithstanding). Blending the proper amounts of each gets your mission accomplished safely, efficiently, reliably and happily. Messing up that recipe leaves you as frustrated as a chef with a deflated soufflé.

The military usually has the luxury to design an aircraft specifically to meet their mission goals. In the civilian world, this is not so. Aircraft are certified to meet the FAA's required level of safety, not mission requirements. Of course manufacturers do their best to design aircraft that will appeal to a broad customer base, while perhaps highlighting a particular niche. In doing so, they design in various amounts of the above ingredients with purpose. It is beneficial for you, the buyer, to understand what each ingredient brings to the design, so you can best choose what fits your needs.

An aircraft's performance characteristics are the result of pairing a powerplant to an airframe. The airframe's size, shape and weight will dictate the power required to propel the aircraft through the air and the engine will dictate the power available to do so. Parameters such as range, endurance, speed and hover capability are dependent upon this combination. An aircraft's degree of stability and controllability will dictate its flying qualities—how well it handles while performing a task. Some mistakenly believe that if an aircraft is very stable, then it is very controllable. While quite related, the opposite is actually true. A stable aircraft is essentially one that resists being disturbed from the condition it is

trimmed at. Obviously this is beneficial in many cases, but it can be problematic in others, if it is the pilot who is disturbing it with a desired command. An aircraft that resists its pilot's commands is not a very controllable one.

Deciding exactly what elements of performance, stability and control you are going to require begins with deciding exactly what your mission is. If forethought and discipline are not used here, the lack of it will most certainly show up in various forms such as large maintenance bills, perplexed owners and most often, cursing pilots. An aircraft that is a "jack of all trades" is well, you know.

Next comes a deeper understanding of your mission's "task elements," or what is intricately required to accomplish each aspect of your flying. Do you perform electronic newsgathering (ENG)? Then plan on doing lots of OGE hovering for extended periods of time. Do you provide corporate transport? You'll probably need a fast, smooth ride, good range and IFR capability. Do you perform scene medevac? Then you'll want exceptional vertical lift and something that can be handled easily in confined spaces.

If you're getting the idea by now, good. But don't stop there, as this is too general. Get more specific and dissect what's involved. Don't worry, no test pilot schooling required. Let's revisit the task elements of the OGE hover in the ENG role, for example. Just ask a few ENG pilots to describe a helicopter that hovers "nicely" and you'll hear such technical answers as, "One where I'm not churning butter while doing the pedal dance as I pray I don't over-torque it." What they are describing are elements of performance, stability and

control as they relate to pilot workload, or, how much attention they have to put towards holding a "nice" hover. So scrutinizing one important task element of ENG operations results in realizing that not just a helicopter with power to hover OGE, but low workload in that hover is certainly a requirement. This approach can be taken with all the aforementioned examples, breaking down each mission into its most rudimentary elements.

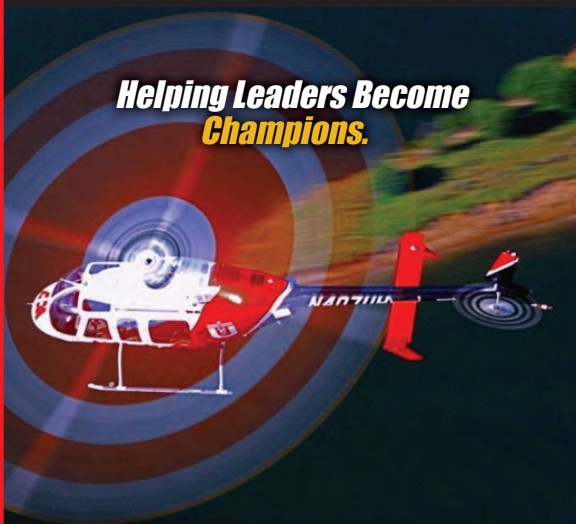
Now here's a bit of a rub. It's usually basic performance that drives aircraft sales. Most shortcomings in an aircraft's handling qualities end up compensated for by pilot skill, and sometimes we even like the ego boost! We often pride ourselves on being able to master a machine that's been called "a handful," or we make fun of stability augmentation systems (SAS) saying, "real pilots don't need SAS." Point being is it's easy to overlook the importance of low pilot workload when making choices in favor of an aircraft that boasts excellent performance—one with seemingly endless power or massive useful load. But shouldn't low workload always be our goal?

Helicopter expos showcase rows of beautiful helicopters along with large picture cards that display their pertinent performance parameters on the back. All those specifications may have purpose, but rarely can you make any decisions by doing a side-by-side comparison of those cards alone? In upcoming articles, we will continue to broaden our understanding of the aspects of the performance listed on those cards, as well as examine flying qualities more thoroughly, and see how designers strive to bring us pleasurable machines to fly. 🚁



# FLIGHT DATA MONITORING

## Lightweight & Affordable

*Helping Leaders Become Champions.*



**817.561.9500**  
Visit our website at:  
[www.northfds.com](http://www.northfds.com)

# COMPOSITE REPAIR SOLUTIONS

**HEATCON®** AS9100 / ISO 9001:2008 Certified  
**COMPOSITE SYSTEMS**  
COMPOSITE REPAIR SOLUTIONS



HCS3100 Series  
Portable Autoclaves

## COST EFFECTIVE SOLUTIONS FOR ALL YOUR COMPOSITE BLADE REPAIRS!

**COME VISIT Us!**  
MRO EUROPE  
BOOTH #941  
MADRID, SPAIN  
SEPTEMBER 27-29, 2011

- Portable Autoclaves
- Blade Clamps & Tools
- Custom Heat Blankets

Follow us on    

600 Andover Park East, Seattle, WA 98188  
Phone: 206-575-1333 • Fax: 206-575-0856  
Email: [info@heatcon.com](mailto:info@heatcon.com)

**WWW.HEATCON.COM**  
United States • United Kingdom • Asia

# No Limits. No Boundaries. No Excuses.

Whatever You Need. Wherever You Are. Whatever It Takes.



- Avionics
- Sheet Metal
- In-House Engineering
- Interiors
- Custom Completions
- Aircraft Painting
- 24/7 Field and Tech Support
- Composites
- Engine Management
- Parts Sales
- STC/PMA Program
- MD 500 & UH-1 specialists.

**Phoenix HELIPARTS**

[www.PhoenixHeliParts.com](http://www.PhoenixHeliParts.com) • +1 480-985-7994

# Reach the Best clients.

advertise your product or service in the *Rotor & Wing Aircraft Marketplace.*

Contact: Gary Brennan  
Phone: 607-547-2591  
email: [garyb@curpiercompany.com](mailto:garyb@curpiercompany.com)



# Offshore Notebook

By Pat Gray

## Inside FlightSafety Lafayette



In February 2009, FlightSafety International made a move to the offshore helicopter training market in a big way. This is the opening date for the company's 78,000-square-foot training center in Lafayette, La. Up and running are two Level D full flight motion simulators, both for Sikorsky helicopters—the S-92 and the S-76C+, convertible to the C++. Also installed and running are two Bell Helicopter Level 7 flight training devices (FTDs), one for the Bell 206 B3/L3 and one for the Bell 407. More on these later. The building is designed to accommodate eight full motion simulators and three FTDs for future expansion.

The center manager, Amparo Calatayud, and the director of training, Dave Welch, hosted me on a recent tour through the facility. Trying to explain the highly technical and sophisticated equipment and their training methods to an old "has been" like me had to be a major chore! There are 25 staffers, 10 of whom are flight instructors and 10 who are maintenance technicians. The instructors work on a non-standard schedule and are available to accommodate the operators, regardless of clock time. The maintenance techs work a three-shift schedule so there is always someone there to keep the training devices and systems running.

While near the simulator bay, I thought I was in a Star Wars movie. These machines are huge and watching them articulate through use of electric motion and control loading systems gives one an eerie feeling of being in a science fiction scenario.

Ampy and Dave got right down to the business of training, giving expla-

nations of the equipment and the training methodology that FlightSafety uses. Emphasis is placed on integrated training using a system developed by FlightSafety known as Matrix. A simplified picture of the Matrix system consists of four main components—full flight simulators, graphical flight deck simulators, desk top trainers used in the classrooms, and the SimVu debriefing system—an amazing innovation for the training environment. Developed by FlightSafety, SimVu consists of a two-station (pilot and co-pilot) arrangement where information is presented using a series of flat panel touchscreens. A computer-generated reproduction of the simulator flight the two students completed is brought up on the multi-screened display. The instructor uses the system to review the simulator session and to reinforce training lessons with the student's active participation.

The classrooms are state-of-the-art, and every student has a touch screen in front of him or her. The instructor can manipulate all the screens from one station, and the students have a limited amount of freedom to input scenarios that will be placed on the huge master screen facing the classroom. You've never seen a blackboard like this. There is color and movement. Name any aircraft system, such as hydraulics or electrical, and it will pop up in just about any detail you want. This is real-time systems training. You see what happens in the cockpit and with the aid of a split screen, you instantly observe what is happening to the systems within the aircraft.

So, the lessons learned in the FFS, the graphical flight deck sim, desk top trainer and SimVu all reinforce each

other. It's such a complete training system that it can be likened to a new language immersion program. They don't teach the test, they teach you how to function as a complete CRM team, fully qualified in the aircraft and full of confidence in yourself and the aircraft.

The two Bell FTDs are the latest in technology and are the only Level 7 trainers that FAA has certified. They are not motion equipped but do have vibration and of course, audio. When sitting in the cockpit, a 220-degree concave screen surrounds the user. The graphics that are displayed are computer generated but are very close to real-world views. There is a wide variety of scenery that can be generated, everything from airports, helidecks, and medevac accident scenes. Most scenes can be tailored to the customers flight operations. The visual system uses three hard drives, each with multiple terabyte capability to make the projections. Something this big and sophisticated needs a lot of power.

Centered in the heart of the offshore helicopter world, FlightSafety has become an integral part of flying safety, not only to the Gulf Coast operators but to a number of other aviation segments as well. The training can be customized to meet the specific needs of government and military agencies, as well as business and commercial helicopter operators, including EMS, law enforcement, SAR, airborne surveillance, security and firefighting.

As a final note, FlightSafety's Lafayette operation is not confined to North American helicopter companies. They have students from Malaysia, Brazil, West Africa and Japan who use the facility on a regular basis. ✈

# MD 500 Total Support



**37 Years Backing the MD 500 Product Line**

Authorized Service Center.

Parts. Components. Accessories.

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



1-714-755-2999 • 1-800-826-6899 • Fax 1-714-755-2995

24/7 AOG service • MD • Bell • Eurocopter • Schweizer • Rolls-Royce • Red Box Ground Power

## Instruction/Training

Build valuable Bell 206 Flight Time for \$155/hr. Join us here in sunny southern California to fly the "Traffic Watch". You log PIC time and get acquainted with the Jet Ranger. Call Corbin at (714) 318-6244 or cstree76@gmail.com

## Heliport Lighting

HELIPORT LIGHTING FAA-approved equipment. MANAIRCO, INC. (419) 524 - 2121, [www.manairco.com](http://www.manairco.com)



**U-ZIP-IT™**  
Anti-Exposure  
Breathable  
Dry Suit



Protecting Aviators Since 1920  
**Switlik Parachute Co., Inc.**  
Trenton, NJ USA  
609-587-3300    [WWW.SWITLIK.COM](http://WWW.SWITLIK.COM)

# advertiser index

Page# .....	Advertiser.....	Website	Page# .....	Advertiser.....	Website
17	Aero Dynamix .....	<a href="http://www.aerodynamix.com">www.aerodynamix.com</a>	5	FlightSafety.....	<a href="http://www.flightsafety.com">www.flightsafety.com</a>
47	Aero Specialties.....	<a href="http://www.aerospecialties.com">www.aerospecialties.com</a>	15	Garmin International.....	<a href="http://www.garmin.com">www.garmin.com</a>
23	Aerometals.....	<a href="http://www.aerometals.aero">www.aerometals.aero</a>	49	Heatcon Composite Systems.....	<a href="http://www.heatcon.com">www.heatcon.com</a>
45	Agusta Westland/Italy.....	<a href="http://www.agustawestland.com">www.agustawestland.com</a>	47	Helicopter Accessory Repairs.....	<a href="http://www.helicopteraccessoryrepairs.com">www.helicopteraccessoryrepairs.com</a>
47	Alpine Air Support.....	<a href="http://www.alpine.aero">www.alpine.aero</a>	49	Heli-mart .....	<a href="http://www.helimart.com">www.helimart.com</a>
56	American Eurocopter.....	<a href="http://www.eurocopterusa.com">www.eurocopterusa.com</a>	47	Heli Wagon.....	<a href="http://www.heliwagon.com">www.heliwagon.com</a>
9	Aspen Avionics.....	<a href="http://www.aspenavionics.com">www.aspenavionics.com</a>	29	IMP Aerospace Group.....	<a href="http://www.seekingsymposium2011.com">www.seekingsymposium2011.com</a>
19	Becker Avionics.....	<a href="http://www.beckerusa.com">www.beckerusa.com</a>	49	North Flight Data .....	<a href="http://www.northfids.com">www.northfids.com</a>
2	Bell Helicopter.....	<a href="http://www.bellhelicopter.com">www.bellhelicopter.com</a>	51	Phoenix Heliparts .....	<a href="http://www.phoenixheliparts.com">www.phoenixheliparts.com</a>
30	Bower Helicopter.....	<a href="http://www.bowerhelicopter.com">www.bowerhelicopter.com</a>	11	PRESAGIS .....	<a href="http://www.presagis.com">www.presagis.com</a>
47	Chopper Spotter.....	<a href="http://www.chopperspotter.com">www.chopperspotter.com</a>	21	Reed Exhibitions/HeliTech.....	<a href="http://www.reedexpo.com">www.reedexpo.com</a>
3	Cobham Radios.....	<a href="http://www.cobham.com/avionics">www.cobham.com/avionics</a>	43	Robinson Helicopter .....	<a href="http://www.robinsonheli.com">www.robinsonheli.com</a>
47	Component Control.....	<a href="http://www.componentcontrol.com">www.componentcontrol.com</a>	51	Switlik .....	<a href="http://www.switlik.com">www.switlik.com</a>

# Around the World

By Emma Kelly

## Australia Preps for Fire Season



With the fire season at its peak in parts of Europe and North America, state and fire authorities around Australia are making plans for the 2011/12 bushfire season which will kick off in parts of the country as early as late August. With the exception of Western Australia (WA), which had one of the most devastating bushfire seasons on record, Australia had a relatively quiet fire season in 2010/11. Large areas of Queensland, New South Wales, Victoria and northern WA experienced more problems in early 2011 from floods than fires, with some of the fleet of helicopters contracted by the National Aerial Firefighting Centre (NAFC) deployed to rescue people from floods, according to NAFC general manager Richard Alder.

The number of helicopters and aircraft deployed to fight bushfires in Australia has risen rapidly over the past few decades, with just a handful deployed in the 1970s to a 52-strong fleet of aircraft and helicopters contracted for the 2010/2011 season, which started in September in Queensland and ended in April in WA. In addition, individual states and territories deploy their own fleets. According to Alder, the NAFC fleet in 2010/11 was the largest ever contracted by the organization, which was set up by the federal, state and territory governments in 2003. A similar fleet is likely for the coming fire season, with contract negotiations ongoing in mid-July.

Considerable research has been done by Australia to determine the best mix of aerial firefighting resources. For example, the Bushfire Cooperative Research Centre (CRC)'s groundbreaking 2007 study on "The Effectiveness

and Efficiency of Aerial Firefighting in Australia," has helped fire agencies identify the most effective combination of suppression resources. A subsequent study on the cost-effectiveness of aerial firefighting found that the use of ground resources with initial aerial support is the most economically efficient approach to fire suppression. It determined helicopters are the most economically efficient approach for remote fires, they perform better than large air tankers in Australian conditions, and high volume helicopters and fixed-wing aircraft are more economically efficient.

Over the years, Australia has found that a mix of type one helicopters (with a capacity of up to 2,650 liters), type two medium helicopters (1,135 to 2,649 liters), type three light helicopters (380 to 1,134 liters), and single-engine fixed-wing fire bombers work best.

The 2010/11 NAFC fleet included Bell 205s, 206s, 212s and 214s; Erickson S64s; Eurocopter AS350s and AS355s; Kawasaki BK117B2s; and Sikorsky S-61s. In addition, individual states deployed their own assets. WA, for example, spent nearly A\$9 million on its 2010/11 aerial fleet. WA's aerial fleet, which included two Sikorsky S61Ns, was activated 348 times, flew more than 530 hours, made more than 2,800 drops and saved approximately 300 properties, the government says. South Australia had a 14-strong aerial fleet, which included an Erickson S64 Aircrane, Bell 205s and Eurocopter AS355s. Three Aircranes, AS350s, and Bell 205/206/212/412s are featured in Victoria's 17-strong helicopter fleet for firebombing, fire detection and mapping, aerial reconnaissance and command, and back burning. In remote areas, Victoria also uses its Bell heli-

copters for rappelling and hover exit of specialist firefighters.

Erickson Aircranes are a familiar sight in Australia in the fire season—having operated in Australia for 13 years. When the likes of "Elvis" and "Elsie" arrive, the Australian public knows that summer is about to begin. Elvis, in particular, gained notoriety in the Black Christmas fires of 2001, when it helped to save hundreds of homes around Sydney. Six of the type operated in the country in the latest fire season, with the helicopters typically on contract for 12 weeks. The S64's maneuverability, precision-drop capability and fast turnaround make it a highly effective firefighting tool, Australia has found. Aerial firefighting was one of the many areas investigated by a Royal Commission following the devastating Black Saturday bushfires in Victoria in February 2009 in which more than 170 people died. The Commission found that aerial resources played an important role.

While the helicopter fleet is unlikely to change a great deal this year, fire authorities are constantly looking at the potential for new technology to aid in fighting bushfires. For example, NAFC's ongoing study recently included a trial of a Sikorsky S-76 equipped with high-definition electro-optical sensors and mapping and communications packages. In addition, NAFC predicts that Australia will be operating unmanned aerial systems, particularly in obtaining intelligence, in five to 10 years. Despite the new technology, helicopters are set to save homes and lives throughout the Australian summer for many years to come. And with this writer experiencing a bushfire less than a kilometer from her house during the last fire season, I'm very thankful for that. 🇦🇺



# Coming Up

in rotor & wing



## September 2011:

**Meeting the Rotorcraft Needs of the Chinese Market**—We all know the growth projections of the Chinese market related to almost any consumer good, and the Chinese need for helicopter services is no different. A recent *Frost & Sullivan* study conservatively pegged the increase in demand for commercial rotorcraft at 10 percent over the next decade. But how will this huge market ultimately structure itself? Will there be a thriving commercial rotorcraft market or will the government take on that role via the military? Will there be opportunities for Western aircraft manufacturers and Western operators? We try to begin answering these questions and many more in this detailed look at the emerging market for new rotorcraft in China and throughout Asia.

**This Month's R&W Operator Profile: Hong Kong Government Flying Service**—Chris Baur travels to Hong Kong, China to interview the current management behind this high-profile government Police, SAR, Air Ambulance and Fire-

fighting operator. Founded in 1993 under British rule, HKGFS was handed over to the Chinese government in 1997 along with everything else and has since become an all-Eurocopter fleet as far as rotorcraft operations go. How have things changed in the past few years, and what might the future hold? We ask the questions and give you the update.

**New Helicopter STCs from Nose to Tail**—Every day, operators find new ways to use the unique capabilities of helicopters. And many of these new uses require very specialized components and systems. From new avionics, to cabin safety features, to advanced composite rotor blades, aftermarket system and component suppliers are continually creating and certifying new parts that make today's helicopters safer, more capable, and reliable. From the cockpit to the tail rotor, we'll take a look at 10 recently STC'd systems that bring new capabilities, safety and maintainability to the helicopters you're operating today.

**Bonus Distribution:** Helitech Duxford 2011, Sept. 27–29 in Duxford, UK.

## October 2011:

**Impact of 2012 U.S. Defense Budget on Helicopter Programs**—With the continued need for wartime lift, funding for existing military and paramilitary rotorcraft programs is better off than other Department of Defense programs. But what about funding for future programs? DoD has yet to formulate a cohesive strategy for developing and funding next-generation equipment. Robert Moorman explores.

**Military Insider**—A special supplement to the October issue will examine two very similar helicopter upgrade programs from two different continents. Andrew Drwiega looks at a European-based initiative to upgrade the substantial worldwide fleet of the venerable Eurocopter Gazelle, and Douglas Nelms provides an in-depth look at the Bell OH-58 "A2D" conversion program for the U.S. Army. New glass, powerplants, transmissions and blades—not to mention the implementation of all the latest sensor technology—are stretching the service lives of these mature airframes far beyond what anyone imagined even just a few years ago.

**Bonus Distribution:** AUSA Annual Meeting, Oct. 10–12 in Washington, DC. NBAA Annual Meeting & Convention, Oct. 10–12 in Las Vegas, Nev. Air Medical Transport Conference (AMTC), Oct. 17–19 in St. Louis, Mo.

**We Fly the Bell 407GX**—Bell Helicopter recently invited *Rotor & Wing* to evaluate the Garmin G1000H flight deck as part of its new 407GX, which was unveiled earlier this year in March during Heli-Expo. Editor-at-Large Ernie Stephens supplies this exclusive *Rotor & Wing* pilot's perspective.

**HEMS Regulations for Public Use Operators**—Law enforcement, firefighting and other public-use operators are wondering how the ongoing evolution of FAA's regulations for helicopter emergency medical services (HEMS) will impact them, and whether any changes will encompass the police/fire entities that conduct HEMS work. Frank Lombardi addresses some of the well-meant, yet controversial ideas from law enforcement agencies that are hoping they will not have to comply with tighter regulations on HEMS operations. ✈

# Military Insider

By Andrew Drwiega



## More Helos the Answer in Libya?

Following the French government's premature announcement in late May that its Gazelle and Tiger helicopters, together with British Apaches, would begin operations against Col. Gaddafi's military regime in Libya in support of Operation Unified Protector, the British government had no recourse but to confirm the fact soon after. The Apaches' first mission occurred on June 5/6, with the UK's MoD announcing the following day that, "the Apaches were tasked with precision strikes against a regime radar installation and a military checkpoint... Hellfire missiles and 30mm cannon were used to destroy the targets; the helicopters then returned safely to HMS Ocean."

At a recent Air Power conference in London, the UK's Secretary of State for Defence, Dr. Liam Fox, stated that the Apaches were providing "tactical flexibility to NATO commanders." While fast air has dominated news coverage (as usual), with the MoD almost beside itself trying to emphasize what a wonderful aircraft the Typhoon is (all potential customers please take note), the Apache keeps up the kinetic attack at a tactical level. And in the type of fighting that is going on, scarcely organized militia on one side verses more regular organized forces, then attack helos must be a large part of the answer to the needs of the militia. Time and again since the invasion of Iraq, when there are 'troops in contact' it is rotary wing that delivers 30mm fire, unguided and guided rockets into an enemy that is dangerously close.

Tactical fast air has an important role to play in attacking command and communication points, and the larger targets, but we have learned the value of lower, slow-flying helicopters when

it comes to forcing back an enemy, position by position. If Apaches and French helicopters are making a difference on a daily basis, then why not increase the number of NATO attack helicopters in this role.

But does NATO have any to deploy? The Netherlands has Apaches but the force is being reconstituted after its longstanding commitment in Afghanistan. Italy too has its Mangusta A129s with Afghanistan experience, but can they be operated 'over the beach' The European Tiger still fights without a guided rocket using only unguided rockets and its gun. If the U.S. Marine Corps was at hand with its littoral capability there is more than a suspicion that a more persistent, consistent and tactical effect would be being brought to bear against Libyan regular forces on a daily basis. Meanwhile the focus in Europe remains transfixed on the perceived utopia that fast jets can deliver.

### Pilots Cleared of Negligence

On July 13, the UK's Secretary of State for Defence, Liam Fox, issued an official apology to the families of two Chinook pilots, Flight Lts. Jonathan Tapper and Richard Cook, for having been found negligent of a Chinook crash in 1994.

The story goes back to June 2, 1994, when a Royal Air Force (RAF) Chinook Mk 2 (ZD576) crashed into a hillside on the Mull of Kintyre in Scotland, killing 25 passengers and four crew. While the loss of life was staggering enough, it was soon revealed that the majority of those on board were the cream of the United Kingdom's senior intelligence personnel in Northern Ireland.

In 1995, the official RAF board of inquiry, chaired by two Air Marshals, ruled that both of the Chinook's pilots were guilty of gross negligence in caus-

ing the crash by flying too fast and too low in foggy weather. However, following a new independent review by Lord Alexander Philip, a former Scottish judge, that original charge of negligence has officially been overturned.

Fox, in addressing the UK's Parliament, stated: "The official conclusion that the accident was caused by the negligence ... had been criticized almost since the day it was reached. Doubt had been cast on the findings in different ways by the fatal accident review held in 1995, by the Defence Committee and the Public Accounts Committee of the House in 1998 and 2000, and by the Select Committee appointed in another place in 2002." The recommendations coming out of the latest review conclude that the gross negligence charge should be 'set aside' and that the MoD should consider an apology to the pilot's families.

So where did the fault lie? Fox stated: "The report does not purport to tell us exactly why Chinook ZD576 crashed, he wrote, "but those who allege that there has been a long-running conspiracy to cover up technical shortcomings in the aircraft will find no support here. The Chinook has had an excellent safety record since the disaster on the Mull. However, the report reveals that on this occasion the pilot expressed concerns that he felt unprepared to fly the aircraft."

Since this incident, one improvement has been the establishment of the Military Aviation Authority that regulates, audits and assures all aspects of military aviation. While the full explanation behind the crash of Chinook ZD576 is unlikely ever to be known, perhaps there are systems in place now to stop such a mistake in official judgment happening again. 🚁



# AVIONICS<sup>®</sup>

FOR

# NEXTGEN

*The Technologies Driving the Future of Aviation*

SEPTEMBER 13, 2011 • CAESARS • ATLANTIC CITY, NJ

## What is Avionics for NextGen?

**AVIONICS FOR NEXTGEN** is the only event where you'll delve into the technical aspects of the six component programs of the NextGen Implementation Plan. Don't miss this once a year opportunity to join experts from all facets of the aviation community who will answer your tough questions on NextGen technologies - Where are we in the implementation process? How will current processes be enhanced and improved? What challenges must we overcome with each technology?

### Conference sessions include:

- ▶ Enabling Collaborative ATM Technologies (CATM-T)
- ▶ Analog to Digital: Implementing Data Communications
- ▶ FAA's "Cloud": System Wide Information Management (SWIM)
- ▶ Networking Voices: NAS Voice Switch
- ▶ Weather in the Cockpit: NextGen Network Enabled Weather (NNEW)
- ▶ Equipping for Automatic Dependent Surveillance-Broadcast (ADS-B)

**Register today with VIP Code: R&W2011 to qualify for discounts on the Conference!**



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





AS350  
EC135  
EC145  
UH-72A

# EXPERIENCE THE EMERGENCY

## BEFORE IT HAPPENS



**T**raining in a helicopter is good. But certified training in the American Eurocopter AS350 full motion simulator is better. Experiencing emergencies in your actual mission environment greatly enhances decision-making when it counts. Our comprehensive curriculum and realistic airborne law enforcement mission scenarios will increase the ability of pilot and crew to react quickly and correctly in any situation.

Are you ready to fly with new levels of safety and effectiveness? Register now for the best training from the best source. American Eurocopter. Experience Through Training.

**American Eurocopter Training Experience**  
(972) 641-3646 | [training@eurocopterusa.com](mailto:training@eurocopterusa.com)

