November 2011 Serving the Worldwide Helicopter Industry rotorandwing.com

rotor&wing

Bell's Laser Focus
Wind Energy Revolution
3D Audio in the Cockpit?

BOEING CHINOOK

50 YEARS & COUNTING

Access Intelligence

We bring the hangar to you.

ALL HELICOPTER SUPPORT IS NOT CREATED EQUAL.

AAR Aircraft Services-Melbourne is staffed by military and commercial rotorcraft experts with complete capabilities for every support challenge. Whatever you need. Wherever you need it. We work when — and where — you do.

Visit our website for details: ***aarcorp.com/asm***

Or speak to a support specialist: 321-837-2700

AVIONICS/INSTRUMENTATION
ENGINEERING
EXPEDITIONARY SUPPORT
LOGISTICS
MAINTENANCE
MODS/COMPLETIONS
TRAINING

AAR®
Aircraft Services – Melbourne

rotor&wing

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
Joe West United Kingdom Correspondent
Contributing Writers: Chris Baur; Lee Benson; Shannon Bower; Igor Bozinovski; Tony Capozzi; Keith Cianfrani; Steve Colby; Frank Colucci; Dan Deutermann; 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 +34 952 118 018, jmcauley@accessintel.com

DESIGN/PRODUCTION

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

AUDIENCE DEVELOPMENT

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

LIST SALES

Statlistics
Jen Felling ,1-203-778-8700, j.felling@statlistics.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

Access Intelligence

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

BPA WORLDWIDE
AMERICAN BUSINESS PRESS ABP

Editor's Notebook

Face to Face: No Replacement

aparker@accessintel.com

By Andrew Parker

Yes it's been said before, but meeting people one-on-one, in person, is becoming a lost art. Many of us know a few people that we've worked with for months—or even years—that we've never actually met, or even seen. One of my colleagues always jokes that a phone call equates to around something like 100 e-mails, and an in-person meeting is worth at least 200 phone conversations. Those figures are exaggerated, of course, but the point is there's so much that can be gained from face-to-face contact.

With all the various topics and daily developments in the helicopter industry, sometimes drilling down to a particular subject for a monthly column can be challenging. For this November print cycle, it's been easy, after traveling to Duxford for Helitech 2011 in late September (see photos on page 16-17) and going to AUSA in October (see *Rotorcraft Report* starting on page 12).

In a refreshing departure from communicating mostly via e-mail and phone, I had the chance to meet some new faces and re-connect with old friends during the trip to Helitech. In producing the *Helitech Show Day* [**accessintelligence.imirus.com/Mpowered/book/vheli11/i1/p1**] from the show floor, it reminded me of my newspaper days, with the feel of an onsite, intra-day news desk. The biggest difference was sound of helicopters approaching the airfield, and running outside soon after hearing the rotors get louder to snap a picture of the birds coming in.

The static display at Helitech was impressive, with more than 40 helicopters including—to name a few—the AgustaWestland AW189 mock-up, Apple Intl's Bell JetRanger, Cotsworld Guimbal Cabri G2, Enstrom 480B, Eurocopter EC135, Heli Air Design HAD-1 prototype, MD Helicopters MD902, PremiAir Sikorsky S-76, PZL W-3 Sokol and Sloane Helicopters Robinson R66.

After heading back to the states and regrouping from the trip, it was time for AUSA, which is a little closer to our home base—although with D.C. traffic, it didn't always feel that way. The agenda was packed with briefings from Lockheed Martin, ITT, Clearfix Aerospace/3M, Honeywell, EADS North America, Northrop Grumman and others, followed by the unique opportunity to sit down with Bell Helicopter President & CEO John Garrison.

As expected when talking to the head of any large company, Garrison spoke very highly of the manufacturer's efforts in working to diversify its commercial, military and aftermarket offerings while experiencing an overall flat or downward turn in the marketplace. He launched right into a discussion about the V-22 and the benefits to the military (see story on page 26).

But it wasn't Garrison's glowing perspective of Bell facing challenges in a down economy that made me sit up and take notice. It was the way he spoke, his body language, confidence and—you could almost feel it—faith that the company will continue to grow and prosper despite the realities of the current economic situation, with some sectors getting hit harder than others.

Garrison's term, "laser focused" is a good way to describe the pairing down of the company's stable of helicopter models. But there's something I picked up only by being in the same room with him. Not only is the company focused on those types going forward, but Garrison himself is laser-focused and determined on making sure that happens—something that I could have never inferred over the phone.

Sure, Garrison came firing out of the gate with clichés and heard-before statements promoting the present and future of Bell's product lines, but his personal conviction adds a lot to the equation. All talk aside, his drive is clearly affecting the senior management of the company in a positive way, and there are some market indicators to back up what he's saying, as evidenced by Bell's continual high placement in industry customer support surveys.

This brings me back to my point. A funny thing happened while at AUSA—the "Blackberry outage" of 2011. Not being able to get e-mails and stay in touch with the rest of the world during the tradeshow got me to thinking about the importance of face-to-face contact, and for companies to continue sending their employees to industry events.

You'll never be able to fully pick up somebody's "vibe" from e-mails or phone calls. Videoconference or Skype, maybe a little—but there's something about being in the same room that has no comparison.

Maybe turning off the cell phone or mobile device once in a while is a good thing.

WHEN LAW ENFORCERS DEPEND ON IT, WE'RE RIGHT ALONGSIDE.

Good news for all law enforcement operators. Whatever platforms you use for your search and rescue, Goodrich has a hoist that's ready and available.

Whether you operate AS350s, EC145s or A109s, there's a Goodrich hoist you can rely on to provide the perfect solution.

Goodrich is unique in providing the translating drum technology, which has the highest reliability in the industry and no fleet angle restrictions. And Goodrich has the lowest life cycle costs.

So whichever platforms fly your missions, depend on Goodrich to be right there with you.

For more information about Goodrich rescue hoists, email sis@goodrich.com

www.goodrich.com

right attitude/right approach/right alongside

GOODRICH

THIS MONTH FROM rotor&wing

Personal|Corporate | Commercial | Military | Pub

(Above) Afghan Police practicing with its Russian Helicopters Mi-17. (Bottom) FLIR mounted on an AgustaWestland AW189 mock-up with Robinson R66 mast in reflection. (Right) Technician conducts a maintenance demo on an EC135 during Helitech 2011.

FEATURES

26 Bell 'Laser-Focused' on Future
Rotor & Wing sat down with Bell Helicopter CEO John Garrison during AUSA for a discussion on the big picture for both the military and commercial markets. *By Andrew Parker, Senior Editor*

COVER STORY
30 Chinook Upgrades Take Hold
Boeing's H-47 Chinook recently turned 50 and the company opened its hangar doors for a tour of facilities in Ridley Park and Millville. *By Andrew Drwiega, Military Editor*

34 3D Audio in the Cockpit?
With the advancement of 3D Audio technology in the cockpit, helicopter communication is taking an exciting step forward into the future. *By Mark Robins*

40 Offshore Wind Farms: Energy Revolution
The second half of an in-depth look at the emerging European offshore wind farm industry. *By Andrew Drwiega, Military Editor*

On the Cover: A U.S. Army Boeing CH-47F Chinook runs through its paces during a mid-October flight near Philadelphia. *Boeing photo by Fred Trolio.*

DEPARTMENTS

12 Rotorcraft Report
22 People
22 Coming Events
24 Hot Products
47 Classified Ads
53 Ad Index

COLUMNS

4 Editor's Notebook
8 Feedback
10 Meet the Contributors
44 Public Service
46 Danger Zone
48 Offshore Notebook
50 Law Enforcement
52 Around the World
54 Military Insider

Vol. 45 | No. 11
November 2011

16 ONLINE

www.rotorandwing.com

SIGN UP FOR THE *ROTOR & WING* COLLECTIVE

- Subscribe today for our latest 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**

VIDEO: WINDOW RESTORATION SYSTEM

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

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**. 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

NOVEMBER 1

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

WEEK OF NOVEMBER 14

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

WEEK OF NOVEMBER 28

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

TO SUBSCRIBE TO ANY OF OUR EXCLUSIVE EMAIL PRODUCTS, GO TO: 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. *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. Canada Post 40612608. Return Undeliverable Canadian Addresses to: PitneyBowes, P.O. BOX 25542, LONDON ON N6C 6B2

Publication Mail Sales Agreement No. 40558009

Feedback

LOFT and CRM

In response to "*The Importance of Training*" (August 2011, page 4), I'd like to add that the essential ingredient in today's training is line orientated flight training (LOFT) and CRM. This is especially true in the offshore helicopter world. Particularly in the Gulf of Mexico where there has been a quantum leap in technology to the glass cockpit and the need for "automation integration". From "round gauges" to glass in a few short years ... couple that with the frequency of IFR operations. Bear in mind that all fixed-wing flights land out of an instrument approach ... therefore the process is incidental and the pilots can concentrate on the unusual. In the Gulf of Mexico helicopter world IFR was a twice-a-year event (spring and fall changes requiring IFR), therefore creating stress points and potential automation integration errors. Today's training needs a paradigm shift, away from the FAA dogmatic adherence of "check the boxes" to more LOFT and CRM-based scenarios that captures today's technology and incorporates it from day one. The aircraft are here, the simulators are capable, the operators are ready and the scenarios are written. Some have already started!

Richard Landrum
airWing Aviation Consultants
Kingwood, Texas

Operational Lessons Learned or Not Learned?

The loss of the SEAL team and Chinook crew is tragic (see "*CH-47 Crash Kills 38 in Afghanistan*", September 2011, page 12), but not unprecedented in this war. My hope is that the Army Chinook community is taking a hard look at the flight profile and tactics used by the flight crew in delivering the team of special operators to their target. There is a documented history of helicopters—the Chinook in particular—getting hit while flying in the "Zap Zone," the flight profile most likely to attract enemy fire.

Lt.C Rhys Hunt
Ocala, Fla.

R&W's Question of the Month

Based on performance, handling or just plain looks, what is your favorite helicopter type and why?

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

From Facebook

The following comments appeared on *Rotor & Wing*'s Facebook page: **www.facebook.com/rotorandwing**

(Responding to: "What is your favorite helicopter type and why?")

The Bell 206B Jet Ranger/TH-67. I'm a mechanic on the TH-67. Easy aircraft to maintain! The downside is engine power during the summer time. I think Bell and Rolls-Royce should beef it up a little bit. Other than that, it's a great aircraft!

Kenneth-Brandy Johnson

Sikorsky S-61 (HH-3E). It performed the job of combat rescue when there were no others doing it. This type saved many downed airmen in Vietnam, and many civilians.

Bob Pederson

I have always been infatuated with the MD500/530 series of helicopters. They are sexy, fast, agile and I can't wait to get a type rating on one. If only I had the money, I'd have one of my very own.

Mike Twardy

Robinson's R44 Raven [has] autotorque, an easy start [and requires] less fuel. It is a very nice flyer with the speed of Cessna and lands anywhere, with minimum pilot workload. It's very fun to fly, [and I] don't feel like working. Pure joy.

Bakhit Kourman

My number one favorite rotorcraft is the AgustaWestland AW139 for business and offshore purposes. Number two is the Sikorsky Black Hawk, of course. Sikorsky should provide S-70 Black Hawks for non-military [use]. If Sikorsky provided S-70s for executive and offshore, customers will prefer this helicopter, and it would be my number one.

M.Kursat Sahsivar

Correction

The Boeing Chinook CH-47 mentioned in *"Chinook Crash Kills 38 in Afghanistan,"* September 2011, page 12, was misidentified. According to the National Guard, the helicopter belonged to the U.S. Army's 10th Combat Aviation Brigade out of Fort Drum, N.Y. *We regret the error.*

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. 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.

EFD500H MFD EFD1000H Pro PFD

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

Meet the Contributors

CLAUDIO AGOSTINI, aerospace and defense consultant, has been engaged with helicopter market competitive intelligence for more than 20 years. He has been writing for *Rotor & Wing* about helicopters in Latin America since 1999. He has also been engaged with local helicopter events and seminars since 2002, and regularly provides support in some areas to the Brazilian Association of Helicopter Pilots (ABRAPHE) in São Paulo, where he is based. Although not a licensed pilot, he's had the opportunity to fly in a wide range of helicopters, from the Robinson R22 up to the Mil Mi-26, in many parts of the world.

LEE BENSON is the retired senior pilot for the Los Angeles County Fire Department. Before he was named senior pilot, Lee ran the aviation section's safety and training programs, including organizing the section's yearly safety meeting with other public agencies and the press.

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. He has reported on rotary forces across the world, and in doing so has flown in a wide variety of rotorcraft on training missions, exercises and operations, including the Osprey, Apache, Rooivalk and many others. He has an extensive military library of around 400 books.

PAT GRAY is our "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.

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.

MARK ROBINS is an experienced and accomplished editor who has bylined more than 50 full-length feature articles in his career, most dealing with technical and manufacturing developments. He has written for such technical trade magazines as *Quality* and *Electronic Packaging and Production*. He has also worked full-time for the editorial departments of the American Society of Civil Engineers and Society of Manufacturing Engineers.

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 has covered a wide range of topics, both online and in print since 2002. 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.

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.

TERRY TERRELL gained his early aviation experience as a U.S. Navy fixed-wing instructor and U.S. Coast Guard aircraft commander, where his service included SAR in Sikorsky S-61s. Terry served as a cross-qualified captain and safety special projects officer with Houston's Transco Energy, and later with Atlanta's Kennestone AVSTAT Helicopter Ambulance Program and Georgia Baptist LifeFlight.

DRS
DEFENSE SOLUTIONS

Ready to Fly!

Introducing the flight-tested
GS205 Targeting System
- the smallest, lightest weight, fully environmentally qualified stabilized targeting system on the market.

Bring off-the-shelf targeting capability to small airborne and ground platforms, today!

- Providing high quality, long range imagery in a seven-pound, 5.5-inch-diameter package.
- Featuring DRS' 640x480 Micro-Integrated Detector Cooler Assembly
- Coupled with a dual-color, eye-safe laser rangefinder/laser designator and high resolution color TV imager
- Offering day/night reconnaissance, surveillance and target acquisition capabilities
- Also available with a 17-micron, 640x480, uncooled long wave thermal imager for situations complicated by battlefield obscurants

Designed and manufactured by DRS Sensors & Targeting Systems in Cypress, Calif., the flight-proven GS205 offers targeting capability for all laser-guided weapons.

A DRS Defense Solutions product.

To learn more about the GS205, visit us online at www.drs-ds.com or contact marketing@drs-ds.com.

Your Mission... *Our Commitment*

Rotorcraft Report

MILITARY | ATTACK

EADS Adds Mission Equipment to Lakotas


Photo by Andrew Parker

EADS North America's Armed Aerial Scout 72X on display at AUSA in Washington, D.C.

EADS North America has started handing over UH-72A Lakota LUHs outfitted with security and support (S&S) battalion mission equipment packages (MEPs) to the U.S. Army National Guard. EADS will integrate MEPs on 52 new Lakotas, while 16 in-service UH-72As will receive upgrades at American Eurocopter's facility in Columbus, Mo. The S&S mission equipment package features a center-line electro-optical infrared (EO/IR) sensor, searchlight, analog/digital video downlink, rear observer console with 15-inch display, enhanced tactical communications suite, onboard digital video recorder, and a video management system. EADS also announced that Rockwell Collins has joined its Armed Aerial Scout 72X (AAS-72X) team. Rockwell Collins will oversee design, engineering and production for simulators and training devices being developed for the U.S. Army. The AAS-72X is the Lakota's armed spinoff.

TRAINING | ENGINES

Turbomeca, Bristow Academy Partner on Engine Maintenance Training

Safran Group division Turbomeca has inked a long-term agreement with Bristow Academy to supply engine maintenance training. Under the partnership, Bristow Academy will have the ability to train pilots and mechanics as part of the Turbomeca training network. The engine maker is also expanding its reach in the UK, with contracts in place to support the Ministry of Defence and a number of civil EMS and police operators. The UK fleet of Turbomeca engines stands at around 750 in service on around 600 helicopters.


Turbomeca

Left to right at Helitech 2011 in Duxford are Bruno Even, Turbomeca vice president of operations; Christian Hamel, former Turbomeca UK CEO; Samantha Willenbacher, director of Bristow Academy, Wendell Dunaway, Turbomeca USA training manager; and Frederic Fourciangue, who took over as CEO of Turbomeca UK in October.

MILITARY | UNMANNED

Kiowas Complete MUSIC Testing

Bell Helicopter tested its OH-58 Kiowa Warrior at the U.S. Army's Dugway Proving Ground in Utah during a Manned Unmanned System Integration Capability (MUSIC) demonstration in September. As part of the MUSIC testing, exercises included receiving UAS sensor payload video and telemetry; re-transmitting the video and telemetry to a UAS ground control station; and live weapons firing at a target. The helicopters received sensor videos from systems, such as Shadow, Hunter, Gray Eagle and the legacy models Raven and Puma. The exercise marked the first time both manned and unmanned aircraft systems operated under a single commander, according to Mike Miller, director of Army business development for Bell. "We expect the Kiowa Warrior will be fielding Level II manned/unmanned capability in 2011," he noted.

PRODUCTS | MILITARY

Lockheed Martin Wins Apache Contract

The U.S. Army has inked a $19-million follow-on production contract with Lockheed Martin for VNsight sensors for use with four Boeing AH-64D Apache battalions. The visible/near infrared sensor allows pilots to acquire targets in low-light-level conditions. VNSight's system is merged with the modernized target acquisition designation sight/pilot night vision sensor system (M-TADS/PNVS) also known as Arrowhead, currently installed on the Apaches. VNsight will produce 112 sensors and spares under the contract.

Staff Sgt. Zachary Wolf

A Sikorsky HH-60G Pave Hawk comes in for a landing during U.S. Air Force joint training with 212th Rescue Squadron pararescuemen and airmen from Baker Company, 3rd Platoon, 509th Infantry Regiment (Airborne). For this exercise, held at Joint Base Elmendorf-Richardson in Alaska, the helicopter carried 212th to members of Baker Company, who were injured by an improvised explosive device (IED) and receiving heavy enemy fire.

COMMERCIAL | AIRFRAMES

Eurocopter Stays Strong on New Markets

Government orders for helicopters in the homeland security, parapublic and emergency medical services (EMS) sectors are offsetting the downturn in corporate business orders, Olivier Michalon, vice president of customers for Europe and Central Asia, told *Rotor & Wing* during Helitech 2011 in late September. He is responsible for country markets that stretch from western Ireland to the Pacific. Eurocopter has five subsidiaries within that region: UK, Spain, Romania, Russia and Kazakhstan.

"The further east you go, the more those countries are looking to replicate the west in terms of modern, government service and parapublic helicopters," he said.

The countries around the Caspian Sea have newfound wealth from oil, gas and other minerals, and have ambition to modernize. Countries such as Kazakhstan—five times the size of France with a population of only 15 million—require a modern helicopter EMS operation. And although the country is close to Russia, it is also at the international crossroads between east and west and wants to increase its stature. Kazakhstan signed an agreement with Eurocopter in October 2010 to establish a joint venture that will assemble EC145s in the country, including the long-term purchase of up to 45 helicopters over a six-year period.

Discussions with Russian authorities on all levels are also progressing, although large-scale opportunities have yet to materialize due to the value placed on Russia's internal rotorcraft industry, which has recently been reorganized under the Russian Helicopter Federation. Eurocopter's footprint in the UK is enlarging and the company feels well positioned, due to its penetration of the UK police helicopter sector, to become involved in the new search and rescue (SAR) competition, which Michalon views as one of the major projects in the coming years. *—By Andrew Drwiega, Military Editor*

COMMERCIAL | PRODUCTS

United Technologies Acquires Goodrich

Sikorsky parent company, United Technologies Corp. (UTC) has acquired Goodrich in a deal worth $18.4 billion. Charlotte, N.C.-based Goodrich produces "complementary product lines," such as actuation systems, wheels and brakes, engine components, landing gear, engine controls, electrical power and ISR systems, sensors and nacelles for the six major helicopter manufacturers, including Sikorsky.

"The combination will significantly increase our system's offerings to airframers," explained UTC chairman, Louis Chenevert. CFO Greg Hayes added that UTC doesn't currently "have landing gear and brakes" in its catalog of product offerings. According to Hayes, Goodrich's acquisition now makes United Technologies a $66 billion company.

Current Goodrich chairman and CEO, Marshall Larsen, is slated to become CEO of a forthcoming combined UTC Aerospace division, which will be based out of Charlotte. Larsen stated that Goodrich's portfolio was "very strong," with 30 percent of sales coming from the defense and aerospace sectors, which encompasses the production of OEM and aftermarket helicopter parts. "We have a core business in priority areas ... that are least likely to be impacted even in the face of tighter defense budgets," said Larsen.

Goodrich provides almost all the sensors and integrated systems for the Black Hawk, as well as several main components for the CH/MH-53D/E Sea Stallion, CH-53K Super Stallion, H/S-92, MH-60 Seahawk, PZL Swidnik SW-4 and the S-76C+/D. Until the acquisition closes in 2012, it's "business as usual" for Goodrich, a company spokesperson noted.

Following UTC's acquisition, Goodrich made an acquisition of its own, purchasing Winslow Marine Products Corp. Lake Suzy, Fla.-based Winslow produces life rafts for the helicopter, commercial aviation and marine markets. *—By Chris Sheppard, Associate Editor*

COMMERCIAL | AIRFRAMES

Eurocopter Tests Hybrid Helicopter

Eurocopter's hybrid is a version of the AS350 with a supplemental electrical system.

Eurocopter has conducted airborne testing of a hybrid helicopter that uses a turboshaft internal combustion engine with an electric motor and lithium ion polymer battery. The hybrid is a production version of the AS350 with a supplemental electric system. According to Eurocopter, the electrical systems and motor increase the pilot's maneuverability during descent and autorotation by delivering power from the motor.

PUBLIC SERVICE | GOVERNMENT AGENCIES

FAA Establishes Helicopter-Specific RNAV Routes for DC, New York

FAA has published the first helicopter area navigation routes (RNAV) for public use in aeronautical charts. RNAVs, also known as TK routes, were previously available for fixed-wing aircraft only. The new satellite-based routes are from Washington, D.C., to New York City. The FAA Performance Based Navigation (PBN) Integration Group worked to establish the RNAV routes on the U.S. IFR low-altitude en route charts.

According to FAA RNAV project leader Mike Hilbert, operators fly around 10 helicopter flights per month between Washington and New York, but that number will increase "once the public becomes more aware of the availability of the routes." Hilbert also expects an upturn in traffic after the South Capitol Street heliport in Washington becomes available for commercial use. FAA is working to assign new RNAV routes for helicopters.

A recent MITRE CAASD study indicated that the agency should consider a route connecting New York City to Boston. "Designing the next routes should go a lot quicker—best case could be under a year from initial planning," Hilbert noted. Safety benefits from the new routes include that helicopters will now share the same airspace as fixed-wing aircraft, and can now fly at lower altitudes to avoid icing conditions during the winter.

SERVICES | WAAS

Hickok WAAS LPVs Win FAA Approval

FAA has given the green light to 32 helicopter wide area augmentation system (WAAS) lateral precision with vertical guidance (LPV) instrument flight procedures from Orange Beach, Ala.-based Hickok & Associates. The new flight procedures provide descent altitudes between 250 and 300 feet, instead of the current lateral navigation (LNAV) minimum descent altitudes (MDA) of 460 to 500 feet.

Hickok is currently developing 33 additional LNAV procedures. The company is also maintaining 28 flight procedures previously held by FAA. The WAAS LPV program holds supplemental type certificates (STCs) for the AgustaWestland AW109, Bell 429, Eurocopter EC135 and EC145, and Sikorsky S-76.

PRODUCTS | SENSORS

Sky Helicopters Chooses MX-10

L-3 Wescam has picked up a new operator of its MX-10 multi-sensor, multi-spectral imaging system. Sky Helicopters of Spain will use the MX-10—which features a 37-lb. turret and a vibration isolation and stabilization package—on its fleet of Eurocopter AS350s.

PRODUCTS | AVIONICS

Gama Distributes Cobham HeliSAS

Gama Engineering has secured an agreement to distribute Cobham's HeliSAS autopilot and stability augmentation system. The company has also teamed with Garmin to offer the G500H electronic flight instrument system (EFIS) to operators in Europe.

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[1] 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[2]. No wonder more pilots look to Garmin technology for cues that translate to confidence.

Follow the leader.

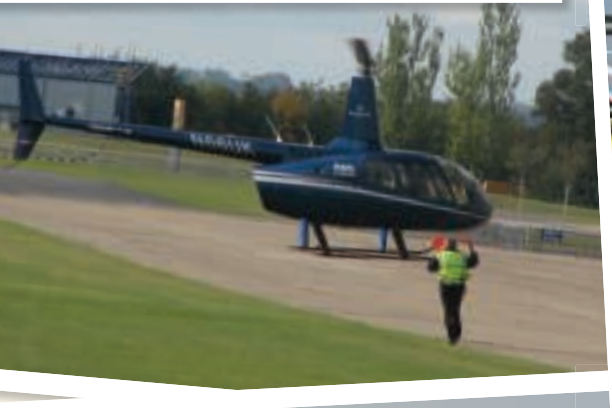
NASDAQ **GRMN**

[1]NOTE: Optional HTAWS functionality for GNS sold separately.
[2]Compared to standard Garmin TAWS database for fixed-wing aircraft.

www.garmin.com

GARMIN®

Photos by Andrew Parker



■ COMMERCIAL | EVE

Helitech

This year's Helite
more than 5,000
ters and a confe
police aviation ar
world. Here's a sa
and photos on t
www.helitechev

ENT COVERAGE

n Turns 25 at Duxford

ch, held September 27–29 in Duxford, featured visitors, 200 exhibitors, a static display with around 40 helicop- rence program featuring discussions on offshore wind farms, nd a number of other topics related to Europe and the rest of the mpling of the various helicopters on display. For more coverage he web, visit **www.aviationtoday.com/rw/helitech2011** and **vents.com**

■ SERVICES | MAINTENANCE

Boeing, AAR Service RNLAF

The Royal Netherlands Air Force (RNLAF) has inked a deal with Boeing and Wood Dale, Ill.-based AAR Corp. for maintenance, repair and overhaul (MRO) on its fleet of CH-47 Chinooks and AH-64D Apaches. The helicopters will be part of Boeing's Logistic Center Woensdrecht (LCW) partnership with the Dutch government. The new agreement with AAR and Boeing is the first collaboration under the LCW.

■ MILITARY | COMPONENTS

Army Adds FLIR to Black Hawks

The U.S. Army has contracted FLIR Systems to supply Safire II stabilized multi-sensor systems for medevac-equipped Sikorsky UH-60 Black Hawks serving in Afghanistan and Iraq. Under the $20.9-million order, work will take place at FLIR's facility in Wilsonville, Ore. First deliveries are slated for 2012.

■ COMMERCIAL | AIRFRAMES

AgustaWestland Establishes Chinese JVs

AgustaWestland

Guangxi Police will use its new AW139 for law enforcement and disaster relief.

Chongqing Helicopter Investment Corp. has announced plans to partner with AgustaWestland to "examine future collaboration opportunities" in the expanding helicopter market in China. The companies are creating a joint venture in the Liangjiang New Area of Chongqing, with the first test-flight of the JV-produced aircraft slated for late 2012. AgustaWestland has established another joint venture, Change Agusta Helicopter (CAH), with AviChina's Jiangxi Changhe Aviation Industries Company. AgustaWestland has also handed over an AW139 to the Police of the Province in Guangxi, China for law enforcement and disaster relief missions. The province capital's Nanning Public Security Bureau also received an AW109 Power in recent weeks. The helicopters are part of a fleet-wide upgrade and expansion program in Guangxi.

■ MILITARY | MAINTENANCE

MD Helicopters Wins U.S. Army Contract

The U.S. Army has issued a $14-million fixed-firm training and support contract with MD Helicopters involving the Afghan Air Force. The contact is part of the Rotary Wing Primary Training Aircraft-Afghanistan program, which features MD530Fs. The manufacturer has delivered three MD530Fs to the Army as part of the initial training program order of six helicopters. According to MD, the four-year contract could involve as many as 54 helicopters.

■ PRODUCTS | ENGINES

AKV Arriel 1 Gets Turbomeca OK

Turbomeca, in partnership with AKV Inc., has designated the AKV Arriel 1 engine cycle counter for use in Arriel 1B, 1D, 1D1 engines on Eurocopter AS350s, with the 1E1/-2 approved on the BK117C1 and EC145. The system is available for operators looking to upgrade. AKV engine counters have already received FAA, Transport Canada, EASA and Brazilian approvals on the helicopter models.

■ COMMERCIAL | AIRFRAMES

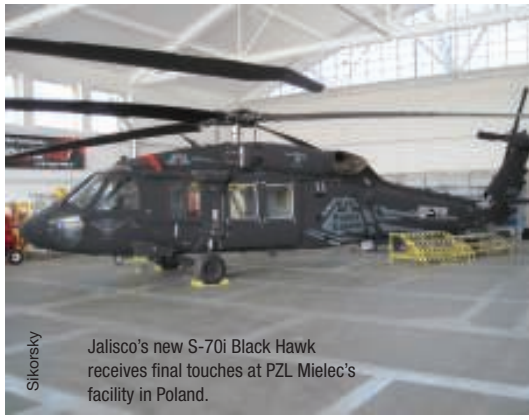
FAA Certifies Bell 407GX

Bell Helicopter has received FAA certification for the 407GX, which features the Garmin G1000H flight deck. The approval follows Transport Canada's certification of the 407GX earlier this year. Bell has sold more than 60 of the type following its debut at Heli-Expo in March 2011. For more see "*Flying the Bell 407GX*," *Rotor & Wing* October 2011, page 38.

■ PUBLIC SERVICE | LAW ENFORCEMENT

Jalisco Welcomes First S-70i Black Hawk

Sikorsky has dispatched an S-70i Black Hawk to the Mexican state of Jalisco. The state becomes the first in the country with the international variant of the Black Hawk. The Ministry of Public Security will use the helicopter for law enforcement, including during the XVI Pan American Games in Guadalajara. Sikorsky's PZL Mielec facility in Poland is currently training the flight crew. The S-70i becomes the 20th Black Hawk in Mexico—the Mexican Air Force, Navy and Federal Police operate 19 UH-60L and UH-60Ms.



Sikorsky

Jalisco's new S-70i Black Hawk receives final touches at PZL Mielec's facility in Poland.

■ COMMERCIAL | EMS

Metro Completes First EC155B1 for Michigan, Delivers EC135 to Korea

Shreveport, La.-based Metro Aviation has modified the first of three Eurocopter EC155B1s for the University of Michigan Survival Flight program. The helicopter is the first EC155B1 to receive EMS modifications in the U.S. Metro constructed a scale model cabin before starting work on the actual helicopter. The EC155B1 will also share the same UM paint scheme as the program's Bell 430.

Metro Aviation has also delivered a third Eurocopter EC135 to the Republic of South Korea for Korean Air Lines (KAL). The manufacturer delivered two EC135s to KAL in early September. All three helicopters are outfitted for EMS and mark the first civilian EMS aircraft in the country.

■ **COMMERCIAL** | AIRFRAMES

GrandNew Flies Over France, UAE

Societe FCL's GrandNew will operate between Paris and the French Riviera.

AgustaWestland

Haughey Air's AW139 will serve as a corporate/VIP transport.

AgustaWestland has delivered a GrandNew to Societe FCL of France for private and charter services in Paris and the French Riviera. The manufacturer signed a separate GrandNew contract with Falcon Aviation Services (FAS), based out of Abu Dhabi in the United Arab Emirates. The purchase of the VIP transport helicopter expands Falcon's current fleet, which already includes two GrandNew variants. FAS also ordered two AW169s in addition to the GrandNew, becoming the first to introduce the model to UAE skies. AW also inked contracts with Haughey Air Limited of Northern Ireland and Blueway AS of Norway for AW139s. Blueway is adding a fifth AW139 to a framework agreement from early 2011. The contract also contains an option to purchase four more AW139s. Haughey Air's AW139 will be used for corporate and VIP transport and is slated for delivery in 2012.

■ **COMMERCIAL** | TRANSPORT

Discovery Air Forms Inuit JV

Auyuittuq Aviation is a new joint venture involving Discovery Air subsidiaries Air Tindi and Great Slave Helicopters (GSH) with Inuit shareholders that is based in Nunavut, Canada. Auyuittuq Aviation will provide helicopter support for the mining industry on Baffin Island. Plans call for GSH and Air Tindi to direct flight operations, with Inuit owners overseeing the charter services. GSH operates one of the largest helicopter fleets in Canada, with more than 60 aircraft including MD500s, Bell 205/206s, 212s and Eurocopter AS350s and EC135s. In addition to worker and freight transport, Auyuittuq will also offer charter services and wildlife surveys for the government.

MILITARY | COMPLETIONS

Bell Dispatches Last Kiowa SEP

The U.S. Army Armed Scout Helicopter program has received its final safety enhancement program (SEP) from Bell for the OH-58D Kiowa Warrior. The program upgrades the helicopters by adding engines with digital electronic controls, as well as improving crashworthy seats, airbags and avionics. Over the program's 13-year span, Bell delivered more than 290 helicopters to the Army.

SERVICES | MAINTENANCE

Summit Aviation Debuts Expansion

Middletown, Del.-based Summit Aviation has opened its 78,000-square-foot expansion. The revamped facility now includes a 37,400-square-foot hangar, a paint facility, two cold storage units and office space. The expansion will also create more than 100 jobs at Summit over the course of three years, according to the company.

TRAINING | SPECIALTY

Bristow Teams for HUET Training

Leesburg, Fla.-based Rotorworld Institute has established a joint venture with Bristow Academy to provide courses in helicopter underwater egress training (HUET). The first course took place in October and combined two classroom hours with six hours of hands-on instruction. This HUET class is aimed at offshore transport pilots, crew and passengers. Topics include a basic overview of underwater escape from both rotor and fixed-wing aircraft. Initial training is held in Florida, but the class and training units are mobile, allowing on-site training for operators.

PEOPLE

Bell Helicopter has hired **Michael Andersen** as vice president and program director of the Bell-Boeing V-22 program. Andersen will lead Bell's involvement for all Bell-Boeing Program Office (BBPO) decisions and initiatives, reporting to executive vice president of Bell Helicopter military programs, **Mitch Snyder** and to the Bell-Boeing V-22 program's executive director, **John Rader**.

The Society of Experimental Test Pilots (SETP) has awarded the Iven C. Kincheloe Award to Sikorsky Aircraft chief test pilot and director of flight operations, **Kevin Bredenbeck**. Bredenbeck was honored for his work with the manufacturer's X2 Technology demonstrator and for flying the X2 prototype to an unofficial top helicopter speed record of more than 250 knots in September 2010.

Adam Fett has joined Precision Aviation Group's subsidiary Precision Heliparts as a Eurocopter specialist. Fett was previously with L-3 Avionics as a Level III customer support administrator, where he worked with AgustaWestland, Bell and Eurocopter.

Kelowna, Canada-based SkyTrac Systems has promoted **Steve Fuhr** to president and CEO. Fuhr came on board with SkyTrac in 2009 as vice president and director of business development. Former CEO **Kathleen Wallace** will remain with the company as chairman of the board. SkyTrac has also hired **Mark Phillips** as CFO. Phillips spent 25 years with Northern Airborne Technologies, working to help the company expand from a start-up to a subsidiary of Cobham. Phillips will oversee all of SkyTrac's business and financial activities.

Aero Dynamix has added former test pilot **Dwayne Williams** to its staff. A former U.S. Army helicopter pilot, Williams spent 28 years at Bell Helicopter as an experimental test pilot, working his way up to director of flight operations and chief pilot. Prior to joining Aero Dynamix, Williams served as the chief pilot for Heritage Aviation in Grand Prairie, Texas, as well as MD Helicopters in Mesa, Ariz.

San Diego, Calif.-based Jet Source has added **George Puthoff** and **Glenn Gray** to its parts department. The pair will oversee maintaining, stocking, and issuing parts for the company. Puthoff has been in the industry for more than 38 years, including time spent with Corporate Airmotive FBO, Air Resorts and Crownair. Gray is a returning Jet Source employee and will be assisting Puthoff.

coming events

2011:

Nov. 28–29: Airborne Early Warning & Control, Kuala Lumpur, Malaysia. Contact Tangent Link, phone +44 (0) 1628 660400 or visit http://www.tangentlink.com/events/

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.iitsec.org

Nov. 30: Police Aviation Asia, Kuala Lumpur, Malaysia. Contact Tangent Link, phone +44 (0) 1628 660400 or visit http://www.tangentlink.com/events/

Nov. 30–Dec. 1: Public Aircraft Oversight Forum: Ensuring Safety for Critical Missions, Washington, D.C. Contact National Transportation Safety Board, phone 1-202-314-6100 or visit www.ntsb.gov

Dec. 6–7: SAR Asia 2011, Singapore. Contact AHS Intl., phone 1-703-684-6777 or visit 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

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

Feb. 11–14: HAI Heli-Expo 2012, Dallas, Texas. Contact HAI, 1-703-683-4646 or visit 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

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

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

April 22–27: Medical Transport Leadership Institute, Wheeling, W.V. AAMS, 1-703-836-8732 or visit 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

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

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

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

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

PRESAGIS

HOT PRODUCTS

for Helicopter Operators

PORTAPAD Brings the Landing Site to You

A helicopter has to have a landing site. There are many alternatives, however it is not always possible to secure the most beneficial to a specific tactical or logistical situation. The concept of the PORTAPAD is that it has the versatility to go into an area at a predetermined cost and for a planned timeframe. When the mission is completed, you have the ability to exit that area with the equipment and the initial investment intact and ready to be deployed again and again. Installation of the PORTAPAD is quick with little or no site preparation required after which the PORTAPAD provides a strong, safe, reusable helicopter landing platform. In addition the aluminum deck has an integrated non-slip surface to provide consistency in all weather conditions. When ground facilities are uncertain the PORTAPAD can be transported to the heart of a crisis area, assembled within two hours and provide a dedicated helicopter landing pad from which to base evacuation relief services. Contact FEC Heliports, +44 (0) 1494 775226 or learn more at **www.heliportsequipment.com**

3M, Clearfix Aerospace Launch Aircraft Window Restoration System

Clearfix Aerospace and industry partner 3M have unveiled a new aviation window restoration system that aims to lower costs of fixing helicopter windows by up to 80 percent. According to NAVAIR estimates, the 3M aviation window restoration system, developed by Clearfix, could also reduce downtime by upwards of 85 percent. The U.S. Army is looking to use the Clearfix system on its Sikorsky H-60 fleet. During AUSA, the window restoration system garnered preliminary interest from various operators and OEMs, including AgustaWestland, Bell and EADS North America. Applications are not limited to military helicopters, as the system could be employed on commercial helicopters and fixed-wing aircraft, as well as ground-based vehicles or as a coating for night vision goggles. To view *Rotor & Wing's* coverage of the 3M Clearfix demo, visit **www.aviationtoday.com/rw/military/attack/74618.html**. For more information click on the "3M Aviation Window Restoration System" tab at **solutions.3m.com/wps/portal/3M/en_US/Aerospace/Aircraft**

ITT Adds Advanced Laser to CIRCM

White Plains, N.Y.-based ITT Corp. and Daylight Defense have announced a fully integrated quantum cascade laser-based system as part of its common infrared countermeasures (CIRCM) system. The CIRCM will provide military helicopters with protection from heat-seeking missiles. ITT has already integrated earlier versions of Daylight's fiber-coupled QCL-based JammIR laser system with its infrared countermeasures (IRCM) system for testing with U.S. military-operated Sikorsky UH-60 Black Hawks. The CIRCM system is part of ITT's proposed response to the U.S. Army for a quantum cascade laser. For more information, contact ITT at 1-914-304-1700 or visit **www.itt.com** and **www.daylightsolutions.com**

Innovation. Reliability. Performance.

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

www.aero-access.com | sales@aero-access.com | 1-800-251-7094

AERONAUTICAL ACCESSORIES

GARRISON:

Bell Photos

Head of the Fort Worth, Texas-based helicopter manufacturer sat down with *Rotor & Wing* during the AUSA Meeting & Exposition in October to discuss the current state of Bell's military, commercial and aftermarket support offerings.

By Andrew Parker, Senior Editor

'LASER FOCUS' ON V-22, FIVE COMMERCIAL VARIANTS

Bell has turned its tiltrotor attention to the V-22, as the manufacturer is in the final stages of selling its interest in the BA609 joint venture to AgustaWestland.

Bell Helicopter CEO John Garrison knew exactly what he wanted to talk about when sitting down for an Oct. 11 interview at AUSA—the V-22 Osprey and the big picture at the company, which has taken a "laser focused" approach to its inventory of helicopter models. "We're really trying to execute on our balanced business strategy of our military business, our commercial business and our aftermarket services and support business," he explained. "It's important to highlight the success that Bell-Boeing, NAVAIR and the USAF is having with the V-22 program."

Noting the V-22's record in combat as the "safest aircraft in the Marines inventory for the past 10 years," Garrison pointed out that Bell-Boeing recently submitted its Multiyear II proposal to the government. "We're right in the middle of Multiyear I—which goes through the 2015 timeframe—so despite the budgetary environment we find ourselves in, we're under a multi-year contract."

Bell-Boeing is working on the "next generation tiltrotor" for the military's

Joint Multi-Role (JMR) program, which is targeting development by 2030.

"If you look at the requirements that we're talking about for the joint multi-role—speed, range—we're already there," Garrison said. "We've got those. We already nailed it today [with] the capabilities of the V-22." Bell-Boeing will be working on "a system tailored for that joint multi-role, specifically the Army medium, and continuing to use all the things we've learned on the V-22 and the BA609 going forward, to drive cost-effectiveness."

The Marines have completed several studies that show the V-22 is a cost-effective platform, and that bodes well for the JMR submission, Garrison continued. "You're going to need a very cost-effective solution. If you're going to replace a $25-million Black Hawk, you can't do it with a $75-million aircraft."

Garrison has a good reason to focus on the V-22, as Bell is in the final stages of selling the interests to another other cooperative tiltrotor design, this one with AgustaWestland—the BA609, now known as the AW609.

"It's very important, first of all—we're not selling the technology, we're selling the programs," Garrison said. "We're not selling tiltrotor technology, or any V-22 technology. Basically we're selling our equity interest in the joint venture program. We've been joint venture partners now for many years."

That teamwork will continue in the form of an engineering and services contract, and the manufacturing of some 609 components, according to Garrison.

"The transaction hasn't closed yet. We're still finalizing approvals. We expect it to close here, probably fourth quarter," he said. "But we're continuing the development effort with AgustaWestland as our partners, they're just taking over the whole equity interest in the program."

Why did Bell decide to divest itself from the BA609? Garrison pointed to a "significant investment" of time and money required to get the tiltrotor through the certification process.

Bell's AH-1Z recently deployed with the 1st Marine Expeditionary Unit (MEU).

"The 609 is a great aircraft, but we're not quite sure how big the market niche is for it over time, and we thought that our resources could be better utilized really doing two things," he explained. "Number one, continuing to invest in the JMR technology, in the future tiltrotor, and to invest in our conventional product line, to ensure that it is still world-class and leading. So it's really an allocation decision that we made, and a strategic decision given the market size for the 609."

Garrison was quick to stress that Bell is cheering for the continued advancement of the variant. "We'll be thrilled when the AW609 is a wildly successful program," he said. "We want it to be successful. Because anything that helps the tiltrotor market is a good thing for us on the tiltrotor side."

Commercial Focus

Similar to the way the company is turning its attention to the V-22 while pulling back from the AW609 in the military market, in the commercial sector Bell has applied its resources to four commercial models—the 429, 407, 412 and 206L4—plus a yet-unannounced fifth variant known as the "Magellan" program. Over the past few years, the company has phased out production of the 206B3, 427, 430 and 210.

"Our strategy is we believe that if we're laser-focused on four, plus one new potential platform—five platforms, we can cover 80-plus percent of the commercial market," Garrison said. "When you have 13 products to support, it gets to be a challenge on the support side. … So we're not going to try to compete across 13 sectors. But we think we can be very aggressive in those sectors that cover a broad swath of the marketplace."

Acknowledging that the commercial helicopter market in general is "still a little soft," Garrison noted that Bell has "basically been about flat for the last year, as we've said. But we're seeing growth."

Two upgrades to the 407 unveiled in March 2011—the GX, which features the Garmin G1000H cockpit, and the AH, which is an armed variant intended for parapublic operators—are paying early dividends.

"The 407GX has really helped stimulate the market. We're actually in a backlog situation now" with orders for around 60 helicopters, Garrison noted, adding that the 407AH has received

interest around the world from parapublic, airborne law enforcement, drug interdiction and other public service operators. "It's very cost-effective for what it provides foreign nations for an air assault capability."

Despite challenging conditions in the commercial sector, the 429 is allowing Bell to reach markets "that we haven't been able to break into," he noted. "We're starting to have a little bit of success in Europe, we've had some success in the Far East, and down in South America, which has traditionally been a strong point for us."

Bell is aiming to uncover more details about Magellan at Heli-Expo 2012 in February. "We're working very closely with customers on the development of the next platform," Garrison noted. "What we're trying to do is diversify our portfolio between military—we know that defense budgets are going down, so we're investing in our commercial business, to ensure that the commercial business can provide the lift as we go forward."

Garrison agrees that the government's approach to funding military rotorcraft research and development (R&D) has changed, with OEMs having to foot the bill to advance new ideas in the military helicopter world.

Whether it's commercial, military or in the aftermarket support segment of the business, he said, a balanced approach is needed "for a significant product to be successful in a technology innovation-driven industry, so we have to make investments in our engineering side."

Because Bell "has the ability to invest in our commercial segment as well as the military segment," Garrison continued, "we're ensuring that our engineering and innovation organization is always on the cutting edge. We're investing on the research side, but also on the development side and that's the challenge—the more you develop, the better you get at it." A company that fails to fund R&D will end up with performance, schedule and cost issues, he noted. "We're investing significantly [in R&D], a 50 percent increase over time, and that's to be competitive in a global marketplace—both for the commercial and military, and on the customer service and support side—from an engineering and innovation standpoint."

Garrison also spoke about a number of other military and commercial programs, as well as expanding into new global markets and product support, during the interview at AUSA. Read the full story starting Tuesday, November 1 at **www.rotorandwing.com**

Photos by Andrew Drwiega

BOEING CELE
CHINOOK 50TH A

During Boeing's 50th anniversary celebrations to mark the first flight of the H-47 Chinook, the manufacturer invited *Rotor & Wing* was invited to the occasion at Ridley Park, and to its new production facility in Millville near Philadelphia.

By Andrew Drwiega, Military Editor

The Chinook H-47 is 50 years old—a veritable Douglas DC-3 Dakota of the rotary wing world (which was actually rivaled by Boeing's 247 in its early years). On September 21 at Ridley Park, near Philadelphia, the great and the good from the Chinook's present and past gathered at a ceremony in the newly refurbished factory to mark the occasion.

On hand was U.S. Army Aviation Program Executive Officer (PEO) William (Bill) Crosby, himself an ex-Cargo Program Manager (PM), the current Cargo PM Col. Robert Marion, Maj. Gen. Anthony Crutchfield, commanding general at the U.S. Army Aviation Center of Excellence (USAACE).

Seniors from Boeing included Jean Chamberlin, vice president and general manager of Boeing Mobility, and Leanne Caret, vice president, H-47 Program, Mobility.

The CH-47 Chinook's first flight occurred on September 21, 1961, with the first helicopter delivered to the U.S. Army just short of a year later in August 1962. The Chinook first flew in combat in 1965 with the 1st Cavalry Division in Vietnam. Forty-six years and several modifications later, the current version, the CH-47F, is the mainstay of the

Pre-flight hangar at Boeing's new production facility in Millville.

EBRATES
AT RIDLEY PARK

heavy lift requirement in Afghanistan.

Boeing is waiting for budget approval on the U.S. Army's Multi-Year II acquisition of a further 155 CH-47Fs. A draft RFP (request for proposal) surfaced in June with a final version in August. Boeing is expected to respond by November. The Multi-Year II would begin in January 2013.

Jean Chamberlin explained that the recent $130-million upgrade to the Ridley Park facility would allow increased production, and together with the multi-year contract, would result in savings of around $400 million for U.S. taxpayers: "Multi-year contracts enable double-digit percentage savings for the taxpayer, and allow industry to make long-term investments in people, facilities and technology," he said.

Boeing recently confirmed a long-expected order from the UK Ministry of Defence for 14 Chinooks (12 new additional aircraft and two replacements).

"We are currently delivering four aircraft per month," said Leanne Caret. "Next year we go to five aircraft per month through international sales and then on to six. But we still need contracts in place before we move to six—so we are looking at the 2013 timeframe."

Boeing engineers conducting modification work on a new U.S. Army CH-47F at Millville.

In terms of the ongoing development of the CH-47, questions have arisen about the possibility of a CH-47H in the future. This, of course, is a next step question linked to the Department of Defense directive to seek Joint Multi Role (JMR) helicopters across all services for 2030+.

The JMR vision breaks down into the four categories: light, medium, heavy and ultra heavy. However, Boeing believes that the CH-47F now has the capability to get the U.S. Army through to this timeframe, adding modifications that are developed along the way.

Two potential modifications to the CH-47F Boeing is currently exploring involve a new rotor blade that could provide up to 2,000 lbs extra lift in hot and high conditions, as well as a cargo onload/offload system (COOLS) that would (if accepted) enter into the CH-47Fs modifications sometime during 2013.

However, any CH-47H included in the JMR offering would need work to begin relatively quickly. One important consideration in this respect is the stated requirement for a new heavy lift aircraft from the European Defence Agency (both France and Germany have identified a need). However, the thrashing of European defense budgets seems that government investment in such a project is highly unlikely in the short term.

Although Boeing and Eurocopter have been in discussions on this very subject for at least a year, and on how they might work together on such a project, they are highly unlikely to progress much further on such a large undertaking their own dime without any significant government commitment.

Chamberlin said that Boeing "was prioritizing its investments going forward and looking at specific technologies" that could make a difference to existing programs. She added that she was not at liberty to discuss precisely where and how much Boeing was spending on rotorcraft science and technology (S&T) going forward.

Millville Mod Shop

The Millville facility, an old P-47 Thunderbolt airbase that can track its history back to 1941 during World War II, is around an hour's drive from Ridley Park but only a few minutes flying time. It offers around 80,000 square feet of space including offices, storage and aircraft parking and it is where modifications are currently made to each new aircraft once it has left the production line and before it is delivered to the Army's aviation units.

As each new aircraft is finished it is flown to Millville for an additional 14 modifications: "This is a pretty high volume for a mod center," said Sebastion Arrigo, Millville site manager of this part of Boeing's Global Services & Support business.

The operation works out of two hangars, one where the modifications are installed on the new aircraft, and a second for pre-flight checks and any further post-modification work that may need to be done.

"We have around 50 people here and another 50 come and go—some of whom are U.S. Army," noted Arrigo. Each hangar can accommodate maintenance on four Chinooks at one time, with an additional 13 tie-out points outside the buildings.

Millville was established as a modification center in April 2010 and is a temporary facility. Presuming the U.S. Army's CH-47F Multi-Year II procurement is approved, all modifications will be taken back to Ridley Park and integrated into the production line at the start of its cycle in January 2013. Only Chinook F models going to the units are modified in this way, with the CH-47G modifications done by the Special Forces customer.

The ongoing lease for the facility runs out in 2014 but it is renewed on an annual basis with the Delaware River and Bay Authority.

Modifications to the CH-47Fs include new crew seats, AN/ARC231 communications system, common missile warning system and a gun mount, among others.

The team at Millville works to a master schedule over 20 days, said Arrigo, with the full modification including flight testing taking around one month. Around one aircraft has been received per week although, in line with the perceived ramp up in production at Ridley Park, this is set to increase to five per month. While technically the CH-47Fs become

Honor Guard of Chinook Veterans at the Ridley Park ceremony.

Army property as soon as they fly from Ridley Park, the aircraft are released back to Boeing for modifications, although Army personnel are also at Millville including members of the new equipment training (NET) teams that accompany the aircraft when they are finally delivered to their new home units.

A Sting in the Tail

Unfortunately, the Chinook 50th anniversary celebrations were overshadowed soon after when police, working with the full cooperation of Boeing management, raided the Ridley Park plant and arrested 37 people in connection with selling illegal drugs, 23 of whom were later charged. The plant employs a workforce of around 5,400. Boeing's communications spokesman Damien Mills stated that the company had worked closely with the authorities. The investigation lasted four years and looked at sellers and buyers.

Cutting the ribbon on the newly refurbished factory while honoring the 50th anniversary of the first flight of the Chinook are (left to right): Maj. Gen. Anthony Crutchfield, Leanne Caret, Col. Bob Marion, Maj. Gen. William "Tim" Crosby and Jean Chamberlin.

3D Audio technology can take advantage of a pilot's natural ability to distinguish directional sound and improve situational awareness via channel separation and directional information.

Terma

Communication is one of the most important elements of helicopter flight ensuring navigation, traffic flow and safety. Technology is making it easier to connect with advancements such as 3D Audio on deck.

By Mark Robins

Effective communication is one of the most essential components of safe helicopter flight. Vital information is being transmitted in a helicopter cockpit, and it must be accurately understood and complied with.

Radio communication involves a very large group of sensors within the cockpit. There are tactical radios, radios to talk to air traffic control (ATC) and radios that help navigate the aircraft, GPS, VHF nav, distance measuring equipment (DME), automatic direction finder (ADF), Satcom telephones, radar altimeters and transponders, and weather radars or weather-receiving devices. All these systems must be coordinated and correctly work together in conjunction with the helicopter's mission.

Scott Hovelsrud, product line director of radio at Cobham Aerospace Communications, explains that the key systems that "keep aircraft from running into each other" are the GPS receiver, transponder and any traffic collision avoidance system (TCAS) equipment, along with electronic flight instrument system (EFIS) displays. The transponder/TCAS systems alert the air traffic control and the pilots of impending issues. The power output of the transponder and the quality of the antenna installation is critical, he adds. GPS quality is critical in that new FAA procedures such as LPV approaches require higher levels of GPS units that meet TSO 145c WAAS Beta III qualifications.

Communication equipment helps pilots with weather issues. Weather

Channel Separation
Directional Information

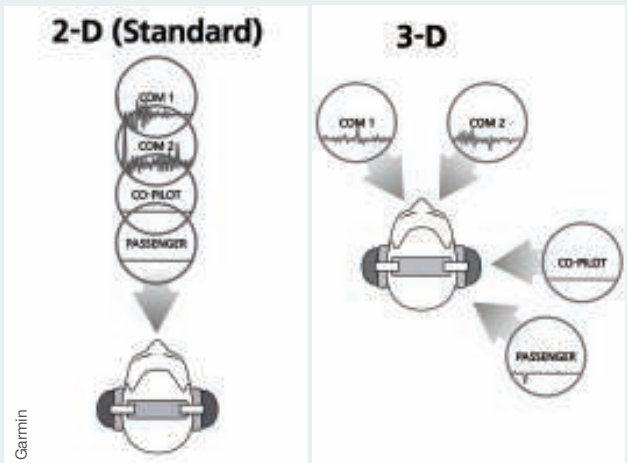
COORDINATING ROTORCRAFT COMMUNICATION

advisories from ATC assist in avoiding convective weather and icing levels when operating IFR. Radio communications with company operations can provide specific, local weather advisories at a remote base such as a hospital helipad.

"While navigating around complex weather systems during critical missions, weather avoidance sans a controller's vector guidance is often the only method a low-level rotorcraft pilot has to maintain safe clearance from weather," says Hovelsrud.

3D Audio Technology Will Soon Be Heard

3D Audio technology is coming and will provide significant improvements for rotorcraft audio systems. Most airborne audio and intercom systems still utilize the same 2D mono headsets and low bandwidth audio signals used four decades ago. "2D audio is what you hear today," explains Jim Alpiser, director of aviation aftermarket sales for Garmin, Olathe, Kan.



Traditional mono incoming audio sources are played over a single channel, so all the audio sources quickly become indistinguishable when played simultaneously. 3D Audio can separate various audio sources.

"All mono incoming audio sources are played over a single channel, so all the audio sources quickly become indistinguishable when played simultaneously. 3D Audio can separate various audio sources. For example, Com 1 will seem like its coming from the left side of the pilot's stereo headset. Com 2 will seem like its coming from the right side of the pilot's stereo headset. This avoids missing an important call from a controller."

Continued on page 39

"When single-pilot operations dictate the normal cockpit crew compliment, the pilot is the navigator, communicator, pilot-in-command and crew mission specialist all in one.

With WSI or ADS-B weather products, the pilot can use this as a tool to avoid costly mission cancellations or delays while enhancing overall safety."

The audio panel is the terminal point of activity, localizing all controls and amplifiers within the aircraft. It is "the nerve center of the total communication package," says Mark Scheuer, founder and CEO of PS Engineering in Lenoir City, Tenn. "Every time the pilot and crew speak, transmit and navigate, they are using the audio panel system. The audio panel touches the radio transceivers, navigation systems, audio alert systems and even entertainment systems when installed in business helicopters," he adds.

"That's why the operation of the audio panel must not only be simple, but it should be easily scanned. With so many things interfaced to the audio panel, it is vital that the pilot can take a quick read of the panel to know what he is hearing, where he is transmitting, and the state of the intercom system."

Jerry McCawley, pilot and flight safety engineer at Lockheed Martin, notes that the audio panel "allows a pilot to communicate on the desired radio and is very important in aircraft with multiple radios. They must be simple to operate and intuitive to use."


Eurocopter Group

Vital information is being transmitted in a helicopter cockpit, and it must be accurately understood and complied with.

Communication Breakdown

In spite of its importance, sometimes helicopter cockpit communication can be hindered and even silenced altogether. "The low altitudes that helicopters typically operate [in] tend to limit line-of-sight radio communications," says McCawley. "Satellite communication and data link flight following help solve the problem to a degree. There also are some cell phone apps that can help in-flight following since the phone is continuously broadcasting its location."

The main problems, as PS Engineering sees it from the design and manufacturing standpoint, "are the noisy environment, and the demands for more and more capability and flexibility required in an already busy mission situation," says Scheuer. "To solve the noise problem, we find a number of very good noise-canceling headsets for the listening end. On the speaking end, (there is) excellent microphone filtering and our IntelliVOX intercom handles loud cockpits easily for seamless crew conversations."

One of the sources of helicopter communication breakdown is interference created by other onboard radios. "Due to the small helicopter dimensions the distance between the antennas is quite small," says Jean-Michel Billig, executive vice president of engineering at Eurocopter Group. "Sometimes switchable attenuators for receiving radios are used during transmission of another radio. ESD [electro-static discharge] is another source of interference. Proper electrical bonding of all metallic helicopter parts and anti-static painting of the complete helicopter skin can minimize it." A third problem for radio communication, he continues, "is the helicopter shape and the electromagnetic barriers created by the main gear box and the engine. The impact of the helicopter generating a 'shadow' cannot be minimized."

Sometimes breakdowns are a result of pilot error. According to Greg Schmidt, business development manager at Cobham Commercial Systems, these can include:

- Communicating on the incorrect frequency.
- Switching frequencies without remembering the last frequency, in case the new one was incorrect or nobody is there. Using a second transceiver or standby frequency position as a matter of good airmanship can serve as a combative measure to prevent this problem.
- Turning the volume down to listen to something else and failing to return the volume to normal levels later.
- Communicating with upper antenna radios when lower antenna radios will work better in close quarters.
- Managing multi-comm frequencies back and forth with ATC frequencies. When the TFO is available an extra person monitoring the situational awareness is important to avoid such conflicts and situations.

In the event of a total radio failure, most helicopters have a second radio. "In case of a double radio failure the pilot can squawk code 7600: lost communication," Billig says. "Only a complete loss of communication and navigation systems is considered catastrophic."

Anytime. Anywhere.
Information You Can Count On

We're There!

Rotor & Wing is the most respected and most widely-read magazine in the market, and has been for well over 40 years and counting. Whatever you fly, wherever you go, you can count on *Rotor & Wing*.

To subscribe or renew your subscription go to **www.omeda.com/rw**

rotor&wing

www.aviationtoday.com/rw

17796

Man/Radio Multi-Tasking

Flying a helicopter requires 100 percent of the pilot's attention. Therefore, any radio communication can be a distraction, but communication is vital to mission success. Therefore, the man/radio interface human factors must be given particular attention. "The radios must be easy to set up and require minimal pilot interaction in flight," says Scheuer, adding that features like PS Engineering's Swap makes it possible to "change transceivers at the touch of a button on the cyclic, which allows more attention to flying and talking, and less on radio fiddling."

Just how difficult is it for helicopter pilots to balance aviating and communicating simultaneously? The answer to this question partly depends on the mission being flown and the flight conditions.

"During the enroute phase of a normal passenger flight it is surely not so difficult to communicate, because there are not many things to do," says Billing. "But on a rescue mission with difficult conditions, the pilot has to not only communicate with the air traffic controller, but also with different crew members, other aircraft or boats. In stress situations it can be very demanding and difficult to distinguish the different communication participants."

FLYIT Simulators

During training sessions in flight simulators, pilots should be required to respond to communications just as they would in an actual flight.

George Ferito, director of rotorcraft business development at FlightSafety International, says that in terms of flying and communicating, "a VFR flight conducting long line work can be even more challenging than an IFR mission in the busy Northeast corridor. Taking advantage of equipment such as quality headsets and hands-free microphones is mandatory for today's helicopter pilot."

McCawley agrees that certain flying situations produce more challenging communication. "Busy airspace, landing an EMS helicopter at a crash site, and other situations like that are very high workload time when both the flying and communication requirements can be at their highest. It's very important to follow the adage of aviate, navigate, communicate—in that order."

Autopilots assist pilots and flying a helicopter without one can be extremely demanding. "Minimization of pilot task and workload complexity is of paramount importance during high-latitude operations with an autopilot and exponentially more so when hand flying near

Continued from page 35

With traditional mono audio, no more than two or three simultaneous cues, messages and tones can be perceived. With 3D Audio, the listener can interpret up to five sources. "Not in the sense that one can perceive everything from each of the five sources, but pilots can now pick which one or two (or maybe three) sources to listen to, and suppress the others," says Torben Jørgensen, senior systems engineer, Airborne Systems for Terma in Lystrup, Denmark.

"This is not an option with a mono system. In mono, the listener perceives each and every audio source as being played right in the center of the pilot's head. Multiple simultaneous sources are hard to separate.

With 3D Audio, each audio source is perceived as coming from a distinct direction—as in 'real life'—and it's easier to separate them, choose which one to listen to/focus on, and simultaneously the direction could be used to indicate other properties of the audio." Full 360-degree 3D Audio cannot be achieved without "head tracking" (normally used in military applications) due to an effect called front back confusion. "The effect results from the situation that the brain cannot distinguish between front and back without moving the head or seeing the source of audio (mouth movements)," says Markus Schmitz, president and general manager for Becker Avionics of Miramar, Fla.

"In the cockpit environment almost everybody is wearing a headset, which keeps the audio source fixed in relation to the head/ear position. Therefore it is only possible to effectively achieve a 180-degree 3D Audio environment without head tracking."

3D Audio improves flight safety due to increased intelligibility and faster perception of information. It "reduces the high visual workloads experienced by aircrew and provides them with more time to respond to threats or warnings, giving them an operational advantage and a safety edge," Schmitz says.

The technology may increase comfort and reduce crew fatigue as well. "In situations where audio communications on several frequencies are highly used, less mental effort is required to understand what a specific speaker says in case of simultaneous messages," says Jean-Michel Billig, executive vice-president engineering at Eurocopter. "There will be little to learn, it is about using everyday life natural abilities. However, to increase accuracy of 3D Audio, it may be required to adapt the way the sound is modified by the system to the characteristics of the pilot," he continues. The pilot "may then have to identify himself or select a specific user profile before take-off. Taking full advantage of the 3D Audio technology requires integrating it in cockpits as a complement to visual information. Knowing what the helicopter pilots need and do, on top of the technology characteristics, is key to successfully implement 3D Audio," Billig adds.

the ground in high-stress situations," says Schmidt. "The pilot must multi-task while keeping the aircraft under control 100 percent of the time. This takes professional planning and 'being one-with-the-aircraft' at all times."

Until they learn how to do that, rookie helicopter pilots may have difficulty juggling this important and demanding communication tasking. "The first time a new pilot is handed the helicopter controls and the radios at the same time, in what is frequently a very unfamiliar environment, is great material for blooper reels," says Samuel Evans, research associate at Penn State University's Aerospace Engineering department and retired U.S. Army colonel and aviator. "It becomes a combination of a pig looking at a wrist watch and a toastmaster trying to play auctioneer. It definitely takes some training, but eventually becomes second nature."

Above all else, the helicopter pilot must remember that the primary objective is to fly the aircraft. Despite its importance, radio communication is a secondary function.

THE NEXT OFFS
ENERGY REVOLUTION

Operators Uni-Fly from Denmark and Bond Aviation Services have both selected the EC135 for wind farm support operations.

Eurocopter

Part two of *Rotor & Wing's* focus on the European offshore wind farm industry and its growing helicopter support opportunities.

By Andrew Drwiega, Military Editor

If money talks, then lots of money generated in an economic downturn shouts from the rooftops or, more appropriately, turbine tops. In this austere time the offshore wind farm market represents almost a rare windfall opportunity to create wealth, jobs and generate money—if those closely linked to its expansion are to be believed. None come more credible than the UK's Crown Estate (CE). In March 2011, the CE announced a net profit of £230.9 million ($364.9 million), representing an increase of nearly 10 percent on the previous year. The marine sector alone saw a 32 percent increase in revenue, largely due to the leases given to offshore wind farm developers (and to a lesser extent tidal and tidal array). The CE is supporting developers in the wind/tide sector, not just because overall growth in the sector is good for the economy, but also "[to help] provide valuable jobs to local communities" and to support the UK's "commitment to renewable energy and a reduction in CO2 levels, as well as an increase in energy security." The CE's business strategy was ratified in January 2011 and sets the UK Government's course in this sector for the next decade. Over £100 million ($158 million) has already been committed to offshore wind projects and four offshore wind test sites were awarded in the summer of 2010 to test and demonstrate improved and new technologies. *Ernst & Young* has found that "from an investor perspective, the UK is the most attractive country in the world for offshore wind development."

The CE has invested in a three-phase program of offshore wind farm development in the territorial

SHORE

waters around the UK. All the Round 1 (2010/11) projects are virtually complete and half the projects in Round 2 are also either under way or partially operational. According to the CE, Round 3 represents the true change of pace in that its developments (focused on nine separate zones) could result in a quarter of the UK's total electricity needs being met by 2030. Inevitably plans are now being formulated for Round 4 to begin in 2016/2017.

While the current operational offshore wind farms are British-owned Thanet, producing 300 megawatts (MW) and Danish Horns Rev II and Rodsand II (209 MW and 207 MW, respectively) both owned by Denmark, there is more—much more to come. The two biggest under construction are both British; the London Array (Phase 1) and the Greater Gabbard (630 MW and 530 MW, respectively). Germany follows with the next two, both with a generating potential of around 400 MW each. These are all looking at completion dates of 2012, but London Array will be home to 175 turbine blades rather than the current 100 at Thanet and 90 or so at the Danish wind farms.

But the greatest leaps forward are still in the proposal stages, and the UK is leading the field here. The Dogger Bank offshore wind farm would have a capacity of 9,000 MW—30 times that of the current Thanet field. The next four as similarly impressive: Norfolk Bank (7,200 MW), Irish Sea (4,200 MW), Hornsea (4,000 MW) and Firth of Forth (3,500 MW).

RenewableUK is the leading renewable energy trade association in the UK, and has a focus on the land and maritime wind farm sector. Not surprising considering that wind energy is widely thought to be the world's fastest growing renewable energy source, a trend that is expected to continue particularly following the nuclear tragedy in Japan—a factor that changed Germany's focus away from nuclear energy and onto renewables for its future energy. Anne-Bénédicte Genachte, Regulatory Affairs Advisor for Offshore, with the European Wind Energy Association, stated at the recent Helitech conference held at Duxford in September that technically there could be enough potential wind energy generated—25,000 TWh (terawatt hours) by 2020 and 30,000 by 2030—to power Europe seven times over (putting Europe's energy needs at 3,537 TWh and 4,279 TWh, respectively). Development will not happen at that pace, of course.

At the end of 2010, the UK had 45 percent of installed capacity in Europe for the production of wind power energy, Denmark had 29 percent and no other country registered over the 8 percent of the Netherlands. Peter Lloyd, Head of EHS Strategy with Siemens in Denmark, concurs that the offshore wind farm sector is only just beginning to see growth. His wealth of experience in helicopter operations (an ex-Chief of Staff within the Royal Air Force's Search & Rescue Force) leads him to advocate a balance between maritime and aerial support for offshore wind farms. "There has to be a cost-benefit analysis scoping all operational scenarios." Movements will depend on several factors: weather and sea state, urgency or

requirement, cost of relatively speedy airborne delivery matched against cost of downtime while waiting for slower maritime delivery.

Helicopters can fly in windy weather and Danish helicopter service operator Uni-Fly claims deliveries of personnel to turbine platforms in wind gusting up to 60 knots—weather that would create waves that would negate any transfers by boat. Uni-Fly is the only civil Danish helicopter operator that uses Eurocopter EC135s to provide an aerial service to the Horns Rev I and Horns Rev II offshore wind platforms, located around seven miles off the Danish coastline. Uni-Fly states that it is the only such helicopter operator to do hoist operations—around 50,000 to date and counting —and has been providing this service to power company Vattenfall (then Elsam) for nearly a decade. Uni-Fly signed an agreement in late 2002 to support the wind farm fields from a base at Esbjerg Airport.

The majority of missions are to transport technicians offshore to work on the turbines. The company supports the operating principle that it can continue providing a transportation service to the platforms when wave levels are prohibitively high for ships to perform the task. The helicopters will also transport cargo when required to do so, again usually if it is too rough for sea transportation, as well as operations to support vessels. One of the more unusual tasks is ice reconnaissance. Uni-Fly recently became an industry member of the Danish Wind Industry Association. Stating Uni-Fly's belief in the future of the wind farm business, company manager Bjarne Peterson said, "We believe that the positive development in offshore will continue and then we might as well make sure that we are where it happens," referring to the DWIA membership.

The German energy wind farm owner EON is planning that most of their personnel transfers will be undertaken by helicopter, but with boat back-up. Bond Air Services purchased an EC135 in late 2008 to support operations into the Greater Gabbard wind farm in the North Sea, but to date reports indicate that this service is still to begin. Some of the large wind farms are also going to have to be designed with helicopters in mind. This is not only to ensure safe and easy access to the maintenance platforms on top of each turbine, but also to allow helicopter ingress into the farm in cases of emergency [potentially people in the water due to some kind of incident]. Lloyd has studied the cost vs. benefit equation regarding access to turbines against weather conditions usually experienced in the North Sea. Typically a smaller crew transfer vessel (CVT) will have access around 53 percent of the time and a downtime of 47 percent. A bigger service operation vessel (SOV) fares a lot better with around 83 percent access and only 17 percent when it cannot operate. He summarized helicopter access by looking at two limiting factors: with a wind limit of 18 meters (59 feet) per second, access is around 92 percent of the time, although with a higher limit of 25m/s (82f/s) accessibility rises to around 94 percent.

Lloyd also produced figures estimating the cost of downtime of a wind turbine (perhaps through the need of a part) against the cost of paying for a helicopter mission to resolve the problem:

Turbine	1 day lost revenue could be
3.6 MW	3.9 flying hours
6.0 MW	6.5 flying hours

Helicopters, especially light ones such as the EC145 operated by both Danish operator Uni-Fly and British company Bond Aviation Services, offer a number of attractive features. They can carry up to seven passengers and hoist up to four while carrying tools or smaller spare parts. While being able to deploy medically qualified people and rescue teams they are not a substitute for fully equipped and crewed specialist medevac helicopters such as those provided by the Royal Air Force Search & Rescue force. They are quick, flexible and can hover and conduct hoist operations in close proximity to the turbine blades. However they have relatively smaller cabins, do have limited weather operations and are a day-only service.

A medium helicopter such as the EC225, already strongly linked with offshore oil and gas operations, offers much more. More people, around 19, internal cargo space and external cargo lifting (up to around 2,000 kg, or 4,000 lbs., depending on the aircraft and distance). They also have greater comfort when fitted for a specialist role, longer range and endurance and better overall operational capability with day/night/IMC/VMC. However, the drawback is that they would be unsuitable for operations over hoist platforms, suggesting that they would be more appropriate

Uni-Fly

While smaller helicopters are the best choice for turbine hoist operations, larger helicopters may come into the scenario to support operational/accommodation platforms for the larger, more distant wind farms when they are developed.

when the offshore wind farms are coordinated from a central platform in permanent residence within the field.

Lloyd says that specialist helicopters such as those from the SAR Force will still be required for urgent medical rescue where continuing treatment and monitoring of a patient is required and for the usual search and rescue emergency tasks within offshore wind farm fields. Although operating largely heavier aircraft, such as the existing Sikorsky S-61 Sea King, the SAR Force is already working on ways that it can extract injured people by hoist from turbine platforms and to perform other operations within them. Those crews will come with their specialist knowledge of not only the medevac roles they will be asked to perform, but an understanding of the operational area and the weather conditions that prevail at any time of the year. Again the rescue helicopter would be capable of day/night/IMC/VMC operations.

Photo by Andrew Parker

Anne-Bénédicte Genachte, with the European Wind Energy Association, speaks at Helitech 2011.

His conclusions are that helicopters and supply vessels are complimentary to one another and that helicopters will become more important as offshore distances increase.

Finally, it would be a mistake to forget onshore wind farms in terms of the relevance of helicopter support, especially during the build phase. Aircraft such as the Erickson Air Crane could well have a use when it comes to installing turbines in geographically challenging locations, such as on mountainsides and ridgelines.

Ground transport could be used to position the structures and the machinery to the nearest road-side location, but a heavy lift helicopter could be employed in the final stages of transporting the turbine up a mountainside to its final location. This could also be a green-friendly option if the ground needed to be physically protected.

Public Service

By Lee Benson

Night Vision and Safety

Usually I try to come up with a central theme for my column, so that I sound somewhat coherent. An overriding thought has eluded me this month, so look out for the flying fragments. In the past few weeks I have spoken to several friends that are involved with maintaining existing night vision imaging systems (NVIS) or providing modifications to aircraft to allow flight with night vision goggles (NVGs). These conversations have raised my awareness that the FAA has started a program of enhanced attention aimed at operators with NVIS-equipped aircraft. The areas of attention include the operators continued airworthiness programs, their adherence to the applicable STCs—requiring each operator to have the appropriate drawings to cover the NVIS system as installed—and testing for light leakage in the systems.

Most of my exercise over the last several years has been jumping to conclusions about the dark side of the FAA. That said, after a good 20-minute aerobic workout I realized that this might be more than the FAA being the FAA. Many of my peers and I that traveled the NVG road with the FAA in the late 90s have a substantial prejudice about how the agency handled the whole issue of NVG from the get go. But that is really a subject better discussed in the HAI bar in the wee hours. That old prejudice could cause programs with NVGs in use today from seeing the correctness of the FAA's interest in this area. When first considered, these issues seemed to be so much esoteric legalese, another way of saying bovine output.

This time, though the FAA has a very important point, the normal flow of component overhaul, replacement of items in your cockpit and normal wear and tear on filters can degrade the efficiency of your NVIS system. Furthermore neither your eyes nor your goggles will tell you if you have a problem. Proper testing requires specific meters to be employed. Hoffman Instruments makes such a meter and the parties I spoke with are impressed with its capability. The short answer to this is that if you do have light leaks, your goggles will automatically dim to compensate and your system's efficiency in very low light situations will be degraded—exactly when you need them to be at their best. If you operate public aircraft only and haven't been contacted about this issue, I'd suggest you look into it.

The NTSB is planning to hold a meeting to address public aircraft safety on November 30 and December 1 in Washington, D.C. This is an issue that I've written about before. I will remind you that at present all accidents—whether they occur in a government owned and operated aircraft or an aircraft that is owned operated and maintained by a private entity and then leased to a governmental agency—are recorded as public aircraft accidents. I continue to believe that these accidents should be separated and tracked independently. If, as the International Helicopter Safety Team (IHST) has suggested, operational safety culture is the true underlying causal factor of accidents, then trying to associate these two very diverse groups is a disservice to both. I hope to attend this meeting and suggest that this anomaly be corrected. I would hope that others would see this as an appropriate action from the NTSB.

On September 30, HAI President Matt Zuccaro wrote an editorial on the HAI website suggesting that the helicopter industry is not well served by the reality that most primary flight instructor pilots have very little real-world experience. Zuccaro is certainly not denigrating the effort or integrity of these individuals. These instructors are pursuing the path that is open to them to advance their career as helicopter pilots. Zuccaro asked for suggestions on how this reality might be modified, I have the following suggestion. HAI could start a program of interested flight schools and operators that require co-pilots. The flight schools would nominate currently employed CFIs with 500 hours of helicopter time to HAI. The nomination would then be forwarded by the HAI to the cooperating operators. The operators based on their need for co-pilots would offer a limited time position to an applicant pilot.

Once the pilot has flown the predetermined number of hours or months for the operator as a co-pilot he would return to his original flight school. Yes, lots of tweaking to this idea would be needed to ensure a workable system for all involved.

Aviation Today

Your First Destination For Global Industry Intelligence

Aviation Today is your Internet-hub for market intelligence and business resources. Our editorial staff makes your job easier by providing expert analysis of the issues which affect your business every day, including:

➤ Aircraft valuation ➤ Airports/ground services ➤ Avionics ➤ Cargo/freight forwarding ➤ Finance ➤ International coverage of major, regional, and start-up airlines ➤ Navigation ➤ Rotorcraft ➤ Safety

***Aviation Today* Publications Include:**

- ➤ *Air Safety Week*
- ➤ *Aircraft Value News*
- ➤ *Avionics* magazine
- ➤ *Rotor & Wing* magazine

Plus, with Aviation Today, you'll receive these great resources right at your fingertips:

- ➤ Aviation Today's E-letter
- ➤ Calendar of Industry Events
- ➤ Industry Links
- ➤ Job Board
- ➤ Podcasts
- ➤ Social Networking
- ➤ Videos
- ➤ Webinars
- ➤ White Papers

Visit www.aviationtoday.com today!

For more information call +1 (888) 707-5812 or email clientservices@accessintel.com.

17781

Danger Zone

By Terry Terrell

Lucky Drop

During the most intense of the Vietnam War years I had a strong sense that I was the luckiest young sailor in the Navy, as an Air Rescue Swimmer and H-34 Crew Chief stationed in Hawaii, operating Sikorsky S-58s out of Pearl Harbor and NAS Barbers Point across a variety of mission profiles supporting CINCPAC's Fleet Composite Squadron One. Each Tuesday we were treated to the additional privilege of a 100-mile trip to Kauai, to work with the Barking Sands Pacific Navy Missile Test Range. On one of those mornings I had no idea that I was about to learn a critically valuable aviation lesson.

In those days the Pacific Missile Test Range stayed busy conducting analysis of surface to surface weapons systems, and command activities included test firing missiles and analyzing their performance using physically jettisoned "capsule" flight data recorder packages, which were parachuted to the water just before the conclusion of each given shot. Our job was to spot these floating capsules, marked by self-contained smoke flares, and recover them. We had worked out a system of approaching the smoke signature during a final descending upwind pattern leg, and then having the swimmer deploy by stepping out of the cargo door as the aircraft established a hover over the capsule.

On this morning, we arrived at Barking Sands exactly on time with a comfortable fuel load remaining, so we reported on station and began to loiter, awaiting the first shot. When radio traffic indicated that the shot conclusion had been confirmed, we proceeded toward the target datum. I hadn't been in the water yet that day, and was anxious to get wet as we overflew the capsule smoke flare on the initial upwind reconnaissance overflight leg. As the pilots turned downwind, I moved into the cargo doorway, noticing that the water was so calm and clear that I could see many feet into its blue depths. The hoist operator, maintaining ICS communication with the aircraft commander up in the cockpit, was at my shoulder, ready to give a tap signal to jump, and I moved my hand to the gunner's belt release, watching our progress upwind. I could tell we were slowing through translational lift, getting very close to the now irresistibly inviting clear blue surface, nearing the capsule smoke flare, and I was sure the hoist operator was about to tap my arm, so I stepped out.

My next impression was that I needed to stabilize body position, so I extended my arms and glanced up at the helicopter, expecting to feel a splash. I could see the hoist operator, now framed in the cargo door, looking down at me, and I waited one more moment to hit the water. When I didn't feel impact, I looked down, completely confident that the welcoming embrace of the warm water was only an instant away. When it wasn't, I looked back up at the helicopter again, keeping attitude orientation by making tight circles with outstretched arms, and took an oddly curious moment to note that I'd never seen an H-34 getting smaller like that. My now very rapid scan returned to the blue vista below, and I realized that I couldn't really tell how far away it was. I don't remember seeing the flare smoke any more, and I glanced back upward once again, this time noting that the big Sikorsky was now very small indeed. About that time I hit the water.

I recall the swim back to the surface for a breath of air taking a little longer than usual, but not frighteningly so. After regaining respiratory function I took a quick physical inventory, while watching the H-34 climb away in the distance. When the rumbling Sikorsky finally began to hover overhead, I could see veins in the pilot's neck, straining under his helmet. The hoist operator was still at his station in the door, so I signaled for a pick up, capsule and all.

When back aboard I found pilots and crew in full chaos mode. After lots of confused exclamatory ICS chatter—most of it berating me with great energy—the aircraft commander struggled through something like a cross between a lecture and an apology for having taken so long making his second approach. He said that he had been taking some time to begin composing a letter to Admiral McCain explaining why Swimmer Terrell had been lost at sea. He also mentioned that when the hoist operator had declared "Swimmer Away", cockpit radar altimeters had been reporting something in conspicuous excess of 200 feet. To this day I have no idea how such a drop was possible without injuries. Many bridge suicides are accomplished from lesser heights. I must have pulled my arms into a tuck at the last possible instant before impact as a subconscious action of some kind. I will be forever thankful that on this first drop of the day I had not yet bothered to strap on my flippers. Inadvertently I had learned a lesson that would serve me well on countless occasions over later years, as I digested for the first time the invaluable wisdom of adhering to procedures and always trusting your instruments over your gut.

This is an abridged version of a column that was originally published in Flying Magazine *in 2010.*

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 cstreet76@gmail.com

Heliport Lighting

HELIPORT LIGHTING FAA-approved equipment. MANAIRCO, INC. (419) 524 - 2121, www.manairco.com

Offshore Notebook

By Pat Gray

Single-Engine Ops Thrive

Upon completing my last assessment, I'm still comfortable in declaring that the Gulf of Mexico coastline has a larger concentration of helicopters than any comparable piece of real estate, at least in the U.S.

That said, I will turn my attention to a profile of at least one operator who somewhat defies the standard image of the large multi-engine operators who seemingly dominate aerial transportation for the offshore energy industry.

Tucked away in an old sugar cane field in Broussard, La. resides Rotorcraft Leasing Company (RLC). They have a very nice spread of administrative buildings, maintenance hangars and training facilities. Two maintenance-oriented individuals, Cyril Guidry and Loyd Marks, came together about 1984 and thought it would be a good business idea if they bought some older helicopters to refurbish, upgrade and then dry lease the aircraft to various operators. The business met with success. As time went on the partnership split and Roger Bagwell joined Marks and they decided they could get a piece of the commercial flying market and so the company applied for and received a part 135 operating certificate.

Fast-forward to today's offshore market. RLC now owns and operates 80 helicopters, of which 75 are single engine and five are light to medium twins. These helicopters are scattered along the Gulf Coast at 10 different operating bases from Mobile, Ala. to Rockport, Texas. Each of the nine bases is owned or leased by RLC and is an approved heliport location that is used to embark and debark passengers who work on offshore oil/gas rigs. The bases are staffed with pilots and maintenance personnel who do all inspections and light maintenance, with heavy maintenance done at the Broussard facility.

It's important to note the type of helicopters RLC operates—single-engine. For a number of years now, all of the major oil producers, for example Exxon-Mobil, BP, Chevron and Shell, have mandated the use of twin-engine helicopters for overwater operations, both in the U.S. and overseas. This is a safety statement and it would be hard to argue that point. So, if RLC is in the same market, how do they compete and still make money with single-engine helicopters?

Let's start with price. Obviously, a single is cheaper to operate than a twin, so they can bid lower for contracts. Next, the knowledge of which and how many different companies are drilling for a product and how many companies are in the production business—two separate operations. The actual owners of the wells almost always contract with a specialty company (usually called a production company) to get the product, oil or gas, from the well to a pipeline. There are a number of production companies and entities in the Gulf that use single-engine helicopters, such as the federal government through the Mineral Management Service and the U.S. Coast Guard.

Dru Milke has been appointed CEO of the newly energized company and he brings a wealth of experience to the table. He spent more than 20 years with Offshore Logistics, holding just about every management job in that company, including president of the Air Logistics arm.

In an interview with Milke, I asked if he thought RLC was in a niche market and the answer was no, saying that there are quite a few other single-engine operators in the Gulf, but that the company was the largest privately owned company with a 21-year track record of superior service and customer satisfaction. He went on to say that RLC mirrors much of the business model he used at Offshore Logistics, one of the most successful companies in the Gulf.

"RLC has just secured a strategic investment from Sankaty Advisors, a private manager of fixed income and credit instruments. With this funding, the company will have the financial stability to continue providing the service our customers have come to rely on," Milke said.

In talking with Larry Adams, the company's COO, he presented a few operating statistics, noting that the company has 100 pilots who have an average of 6,000 flight hours each. The pilots and mechanics work a one day on, one day off schedule.

The company is proud of its 2010 safety record, with Adams pointing out two recent awards that showcase that record: the HAI Operator Safety award, given for 72,000 accident-free hours, and the California PXP Offshore Safety award, given for no lost time accidents or incidents. It seems like those single-engine overwater operations can be done safely with the right management approach.

Law Enforcement Notebook

By Ernie Stephens

Umanned vs. Manned

A few days ago, I was talking to some college aviation students of mine, when the subject of aircraft development came up. Since many of them are active-duty or contract personnel who work at the nearby naval air station, they're pretty knowledgeable when it comes to some of the Navy's newest flying machines.

"I think everything will be unmanned within the next three decades, said a retired master chief-turned civilian avionics contractor. "With the technology that's out there now, the human pilot is becoming obsolete."

We agreed that remotely piloted vehicles (RPVs) have come a long way in the past few decades, and have "earned their wings," so to speak, in various theaters of war. But then the conversation turned to civilian applications, which immediately begged the question: "Could RPVs make manned police helicopters obsolete?"

Various companies are now trying to peddle RPVs to law enforcement agencies, saying the initial acquisition and operating costs make them an excellent choice for police work. I've seen some really simple ones that weren't much more than a $500 hobbyist's radio-controlled helicopter with a $300 still camera mounted on it, as well as some higher-end kinds that stickered out at $500,000 for a rotorcraft platform with digital downlink video. All of the vendors say their products can serve as alternatives—if not outright replacements—for million-dollar manned helicopters, plus they don't need huge hangars and 5,000-gallon fuel trucks. But even the military, which has had tons of success with its RPVs in the war theater, haven't begun pushing all aircrews out of the cockpit, yet.

Personally, I don't think an RPV can replace a live police helicopter crew in all circumstances. There's a lot to be said for the versatility and efficiency of the human eye, especially when it isn't always exactly clear what you're looking for. You have at least two sets of eyes scanning in 3-D, and, from what I've seen of civilian-quality RPVs, people can move their heads faster and more precisely than a remotely controlled camera. And let's not forget that a civilian-quality RPV (emphasis on "civilian-quality") can't transport personnel to a remote location, haul people aboard during a search and rescue mission, or drop vital supplies during a disaster.

On the other hand, I saw a demonstration of an RPV where it went aloft over a mock civil disturbance. Having flown a couple of those myself, as many of you have, I know that orbiting the same piece of real estate for over an hour gets really old, really fast (provided you stay awake the whole time). Posting an RPV above an area where there is or may possibly be a disturbance seemed to work pretty well. And the longer it can remain on station, the more value and economy it offers. It worked well for grid searches, too.

Other than the lower cost, the big sales push I heard was that the RPV can be kept in a trailer—or even the back of an SUV, in the case of smaller units—and brought out as needed. The one I saw—when disassembled—could fit in the trunk of a car, and boasted a 15-minute prep time between arrival and launch, which in some cases will actually be longer than it takes to get a manned helicopter on station.

And speaking or arriving on the scene, the multimillion-dollar systems the military uses can fly hundreds of miles from where the operator is located, thanks to sophisticated communication links.

But the range of an RPV that's affordable to the average police department won't be able to go farther than a couple of miles from the base. So, that pretty much rules out running back-to-back calls over a wide area the way a helicopter can.

For now, I like the idea of both. Of course, very few jurisdictions have the kind of money to fly helicopters and operate an RPV, but I'll bet that would be a nice combination. Are detectives trying to monitor a suspicious salvage lot? Park an RPV overhead to see over the fence. Got some protestors getting a little rowdy? Have the RPV send some real-time video.

Do you know what I'd like to see, though? I'd like to see a fly-off between an RPV and a manned helicopter! Have an officer hide deep in the woods, or maybe prowl a neighborhood in a panel truck. Then launch an RPV and a helicopter—one at a time, of course—to see who finds him in the shortest time. The loser buys the pizza!

Statement of Ownership, Management, and Circulation (Requester Publications Only)
1. Publication Title: Rotor&Wing 2. Publication Number: 1066-8098 3. Filing Date: 9/29/11 4. Issue Frequency: Monthly 5. Number of Issues Published Annually: 12 6. Annual Subscription Price $99. Complete Mailing Address of Known Office of Publication: Access Intelligence, 4 Choke Cherry Road, 2nd Floor, Rockville, MD 20850-4024 Contact: George Severine Telephone: 301-354-1706 8. Complete Mailing Address of Headquarters or General Business Office Publisher: Access Intelligence, LLC, 4 Choke Cherry Road, 2nd Floor, Rockville, MD 20850-4024 9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Maging Editor: Publisher: Randy Jones, 4 Choke Cherry Road, 2nd Floor, Rockville, MD 20850-4024 Editor: Andrew Parker, 4 Choke Cherry Road, 2nd Floor, Rockville, MD 20850-4024 Managing Editor: Chris Sheppard, 4 Choke Cherry Road, 2nd Floor, Rockville, MD 20850-4024 10. Owner if the publication is owned by a corporation, give the name and address of the corporation immediately followed by the names and addresses of all stockholders owning or holding 1 percent or more of the total amount of stock: Veronis Suhler Stevenson, 55 East 52nd Street, 33rd Floor, New York, NY 10055 11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or other Securities: None 12. Non-profit organization: not applicable. 13. Publication: Rotor&Wing 14. Issue Date for Circulation Data: September 2011.

15. Extent and Nature of Circulation:	Average No. of Copies Each Issue During Preceding 12 Months	No. Copies of Single issue Nearest to Filing Date
a. Total Number of Copies (Net press run)	21,567	22,435
b. Legitimate Paid and/or Requested Distribution		
(1) Outside County Paid/Requested Mail Subscriptions	19,795	19,650
(2) Inside County Paid/Requested Mail Subscriptions	0	0
(3) Sales Through Dealers and Carriers, Street Vendors	0	0
(4) Requested Copies Distributed by Other Mail Classes	37	28
c. Total Paid and/or Requested Circulation	19,832	19,678
d. Nonrequested Distribution (By Mail and Outside the Mail)		
(1) Outside County Nonrequested Copies	562	483
(2) Inside-County Nonrequested Copies	0	0
(3) Nonrequested Copies Distributed Through the USPS by Other Classes of Mail	0	0
(4) Nonrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showrooms, and Other Sources)	678	1775
e. Total Norequested Distribution	1,240	2,258
f. Total Distribution (Sum of 15c and 15e)	21,072	21,936
g. Copies not Distributed (Office, Returns, Spoilage, Unused)	495	499
h. Total (Sum of 15f and g)	21,567	22,435
i. Percent Paid and/or Requested Circulation	94.12%	89.71%

16. Publication of Statement of Ownership for a Requester Publication is required and will be printed in the November 2011 issue of this publication
17. Signature of Owner: Don Pazour Date: 9/29/11

PS Form 3526-R, September 2007

Around the World

By Claudio Agostini

Eurocopter's Definitive Landing in Brazil

Through its Brazilian affiliate Helibras, Eurocopter has become the only helicopter manufacturer in the world that is implementing comprehensive industrial and technological activities in Brazil, placing the country as its fourth industrial base, behind France, Germany and Spain. Helibras was established in 1978 at São José dos Campos city (Embraer's birthplace) at São Paulo State. The company moved in 1980 to Itajubá City located in the southern state of Minas Gerais.

Today, Minas Gerais has country's third largest state GDP/economy following São Paulo and Rio de Janeiro, where, not by coincidence, the three major helicopter fleets are concentrated. This Southeast tri-state region also has an aerospace and defense cluster with almost 90 percent of those industries in Brazil.

At the current Helibras plant, the yearly production capacity for Squirrel (Esquilo AS350) is 36 units plus finish and customization of other models locally sold. But in 2010 due to the market expansion, the company produced 42 units plus F&C services. The numbers for 2011 will remain as high. For next year this area will keep maintenance services/MRO only and the external areas as painting cabins, specific repairs, etc. are being improved, as part of their strategy to increase the earnings with services. Two recent services contracts signed with the Brazilian Army, one for a major upgrade of 34 AS365K Panther transport helicopters and another the modernization of 36 AS350 Ecureuils (Esquilo) will also take place in this area at a rate of four aircraft per year. From current total of 247 military (Army, Air Force and Navy) helicopters, 67 percent (148) are from Helibras/Eurocopter (Esquilo, Fennec, Panther and Cougar).

Just next to the current plant, the new 11,000-square-meter facility is set for opening by December 2012, accommodating areas for the EC725 assembly line, manufacturing, administrative offices, along with a design office for customization, production support and program management. The integration between engineers and technicians from Eurocopter and Helibras engaged with the local project is on its way, including long-term training of Brazilian engineers and technicians at Eurocopter plants. Currently 14 local companies have already signed supply contracts with Helibras.

The contract for 50 EC725s—18 units for the Air Force, (two for presidential use), 16 for the Army and 16 for the Navy, each group with some specific required equipment—is already effective with three initial fully French-made units already delivered, one for each armed force. The full maintenance for all EC725 Makila 2A1 engines will take place at Turbomeca do Brasil in Rio de Janeiro, where the aircraft's flight simulator will also be installed. An expected business sequence for Helibras is the sale/production of the civil EC225 version for Petrobras (the fifth largest oil and gas producer) offshore operators, due to the expansion of this type of helicopters required to operate on the pre-salt in the next 10 years. The EC225 offshore production/sale could be supported by some government commercial concessions for a locally manufactured product. Today, Brazil's oil and gas helicopter fleet is about 110 units, most of them operating for Petrobras, with the EC225 about 30 percent of these units. Sales to other Latin American countries are also foreseen.

Following a visit from Eurocopter's CEO, Louis Gallois at Helibras to verify 'in loco" the project development, the UNIFEI (Federal University of Itajubá), Helibras, ABDI (Brazilian Agency for Industrial Development), and the MDIC (Ministry for Development, Industry and External Trade) organized in Itajubá at the UNIFEI premises. The three-day event, the Development of the Rotary Wing Aeronautical Sector in Brazil, focused on aeronautical development in Minas Gerais, the CTH (Helicopter Technological Center) and the Heli-Cluster projects.

The CTH UNIFEI project is part of a recent governmental program, Bigger Brazil, aimed to expand new technological competencies and business opportunities where the aeronautical and defense areas, including the helicopter industry, are priorities and capable to improve the industrial structure. The EC725 contract catalyzed this project.

At the end of the event, Helibras' CEO, Eduardo Ferreira confirmed to *Rotor & Wing* Eurocopter's plans to build expertise and extend Helibras capabilities through cooperation and offset programs in order for the company develop and launch its own local helicopter by 2020.

With such a strong actions and positive scenario ahead, the hilly, green and hidden city of Itajubá seems poised to become the first helicopter cluster in Latin America.

Coming Up in rotor & wing

December 2011:

Military Insider—A special supplement to the December 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.

Focus on Clearfix—3M and Clearfix Aerospace introduced a new aviation window restoration system at October's AUSA 2011 Meeting and Exposition in Washington, D.C. Clearfix gave *Rotor & Wing* a demo of this window repair system, which the company says will streamline helicopter window repairs and save the military millions through lower repair costs and reduced down time.

Columns—Leading Edge, Frank Lombardi; Safety Watch, Terry Terrell; Military Insider, Andrew Drwiega; Public Service; and Around the World.

Bonus Distribution: Interservice /Industry Training, Simulation and Education Conference (I/ITSEC), Nov. 28–Dec. 1, Orlando, Fla.

advertiser index

Page#	Advertiser	Website
2	AAR	www.aarcorp.com/asm
18	Aero Dynamix	www.aerodynamix.com
39	Aerometals	www.aerometals.aero
25	Aeronautical Accessories	www.aero-access.com
20	Aerospace Optics Inc.	www.vivisun.com
49	Alpine Air Support	www.alpine.aero
56	American Eurocopter	www.eurocopterusa.com
9	Aspen Avionics	www.aspenavionics.com
47	Becker Avionics	www.beckerusa.com
43	Bower Helicopter	www.bowerhelicopter.com
49	Chopper Spotter	www.chopperspotter.com
3	Cobham Radios	www.cobham.com/avionics
49	Component Control	www.componentcontrol.com
47	Consolidated Aircraft Supply	www.consolac.com
11	DRS Defense Solutions	www.drs-ds.com
21	Esterline/CMC Electronics	www.cmcelectronics.ca
15	Garmin International	www.garmin.com
5	Goodrich Corp. Sensor	www.sensors.goodrich.com
51	Helicopter Accessory Repairs	www.helicopteraccessoryrepairs.com
51	Heli-mart	www.helimart.com
51	Heli Wagon	www.heliwagon.com
49	HR Smith	www.hr-smith.com
49	North Flight Data	www.northfds.com
19	Phoenix Heliparts	www.phoenixheliparts.com
23	PRESAGIS	www.presagis.com
47	Switlik	www.switlik.com
47	Tanis Aircraft	www.tanispreheat.com
33	Transaero	www.transaeroinc.com

Military Insider

By Andrew Drwiega

'Getting out of Dodge' Isn't Easy

The withdrawal of American, British and other ISAF personnel from Afghanistan is not going to be restricted by whether or not the Afghan security forces can duplicate the currently of proficiency that they bring; that would be virtually impossible given the ticking timetable counting down toward 2015.

However, there is a large-scale effort driven by Lt. Gen. William Caldwell, Commander of the NATO Training Mission–Afghanistan, to push through the training process as many Afghan nationals as possible who will come through with an internationally accepted minimal level of ability. In terms of the Afghan National Police (ANP), he said that German police, Canadian 'Mounties' and English 'Bobbies' were all present within the country and reflected the international standard of policing that was being taught. Important additions to basic training had been made, such as increasing human rights training from 14 to 32 hours (perhaps more a taste rather than developing a culture, but better than nothing.) During his recent visit to brief senior commanders at NATO's headquarters in Europe, he reeled off figures of 305,600 security forces having been already trained with a further 50,000 to be added within the next 12 months.

It is of course the practical pay-off that will determine how successful all the training has been. In terms of aviation, two recent training exercises demonstrate at least the intent to carry forward skills that will be fundamental to the stabilization of the country by maintaining security around the Provinces. For the first time members of the 2nd Afghan National Civil Order Police trained with Afghan Air Force's Kandahar Air Wing in mid-September, conducting an 'air assault' style of operation. Inter departmental cooperation will be crucial if Afghanistan's security forces are to continue to pressure the Taliban and ensure that the public face of central government is maintained in the Provinces. Both units were receiving training from personnel in the 159th Combat Aviation Brigade (Task Force Thunder).

Another vital mission, that of aerial casualty evacuation, was also carried out for the first time last month. ANA's Air Force undertook its first "unassisted" helicopter-borne medical evacuation, flying a stabilized patient from Camp Shorabak in Helmand province to Kandahar Airfield. This has been a job provided by the resident ISAF air group in Helmand—at the time the USMC 2nd Marine Aircraft Wing (Forward), in partnership with other NATO coalition forces such as the British Immediate Response Team. This is again a matter of teamwork, not just within the aircrew but at both ends of the mission. Nevertheless, those in the middle doing the transporting need to be fully confident in their ability—both in organizing the flight and in mid-flight patient care. The job doesn't begin and end with trained crew and medical staff either. Without good mechanics and ground staff, the aircraft isn't going anywhere.

So the start is a good thing—but it is just a start. The majority of the background support still comes from ISAF personnel. According to UK RAF Squadron Leader Nicola Dyson, who serves in medical operations at Camp Bastion with Regional Command (RC) Southwest, the responsibility for preparing and checking the patients and during their flights has been with NATO mentors. On the positive side, USAF Technical Sgt. Steven Guillen, a flight medical advisor with the 441st Air Expeditionary Advisory Squadron based at Kandahar, noted that, "They're able to do everything from mission planning to launching missions."

There are now Afghan pilot instructors who have gone through the "train the trainer" process and are beginning to pass their knowledge and expertise on to junior aircrew in training. ISAF figures show that the Afghan Air Force, created in 2008, now has more than 4,000 personnel and nearly 60 aircraft, with the principle utility/support helicopter being the Mi-17. By 2016 the goal is to build a force double today's strength and with 140 aircraft. Returning to the previous point, without mechanics, an infrastructure and an MRO capability, the front-end will quickly grind to a halt without the experienced support that ISAF brings.

"Aircraft is kind of one of the limiting factors—aircraft availability and aircraft maintenance... They don't yet have a whole lot of aircraft and not a whole lot of maintainers," Guillen said.

While units such the 441st Air Expeditionary Advisory Squadron are inevitably doing the best job they can to enable the Afghan's to train for their role and gradually increase their capability, the question remains whether there is enough time to allow this to happen. While the political goal for withdrawal may be 2015, practically those propping up the infrastructure are likely to be around for a good while longer.

Dallas Daily

February 11-14, 2012 — **Exhibits open February 12-14**

Plan to attend!

– The Boss

Watch for more information at www.rotor.com/heliexpo

HELI-EXPO 2012

February 11-14, 2012

The Helicopter World Heads to the Big D!

In February 2012, more than **18,000 helicopter industry professionals** from more than **100 countries** will come together at the **Dallas Convention Center** in Dallas, Texas. They will explore a comprehensive exhibit hall within the convention center's **one million square feet** of exhibit and meeting space, with more than **65 helicopters** displayed, and more than **600 exhibitors** with **everything anyone in the industry would need for success.** These industry professionals will meet to learn about the **latest regulations** that will affect their business. They will hear about HAI's involvement within the industry through more than 20 committee meetings. And these helicopter industry professionals will receive the most current education through **HAI's extensive professional development courses.** HELI-EXPO®, the largest trade show dedicated to the international helicopter community, will converge in **Dallas, Texas, February 11-14, 2012.**

HELI-EXPO 2012
February 11-14 • Dallas, Texas
Exhibits open February 12-14

PRODUCED BY Helicopter Association International

www.rotor.com/heliexpo

IIMC RECOVERY

IT'S NO ACCIDENT

Flight conditions can turn deadly in the blink of an eye, putting even experienced, instrument-rated pilots at risk. American Eurocopter wants to prepare all helicopter pilots — no matter what they fly — for inadvertent flight into Instrument Meteorological Conditions. The company's exclusive "IIMC Emergency Procedures 101" combines ground school with the world's most advanced single-engine helicopter simulator to uniquely replicate the intensity of a real world IIMC encounter.

You can recover from IIMC, if you are prepared. Contact an American Eurocopter training expert for course schedule and availability.

American Eurocopter Training Experience
(972) 641-3646 | training@eurocopterusa.com

AMERICAN EUROCOPTER
AN EADS NORTH AMERICA COMPANY