

February 2012

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Pilot Report: **SIKORSKY S-92**

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Editor's Notebook



Own Worst Enemy

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By Andrew Parker

As we head into Heli-Expo, it's important to again bring up the subjects of training and safety. Learning lessons from the mistakes of others is one of the most basic ways of improving.

The U.S. National Transportation Safety Board issued similar rulings on January 19 involving two helicopter EMS crashes where pilots flew into storms at night. The first crash, which occurred Sept. 25, 2009 near Georgetown, S.C., involved a Carolina Life Care Eurocopter AS350B2 operated by Omniflight Helicopters. Three people died in the crash, the pilot, a flight nurse and a flight paramedic.

According to the report, the pilot decided "to continue the VFR flight into an area of IMC, which resulted in the pilot's spatial disorientation and a loss of control of the helicopter."

NTSB noted "inadequate oversight of the flight by Omniflight's Operational Control Center" as a contributing factor to the accident, which happened at around 11:30 p.m. as the crew was headed back from dropping off a patient.

The second accident took place on March 25, 2011 near Brownsville, Tenn. The Hospital Wing Eurocopter AS350B3, registered to Memphis Medical Air Center, went down after heading straight into a quick-developing weather cell, resulting in the deaths of the pilot and two flight nurses. The safety board ruled that attempting to fly into "adverse weather, resulting in an encounter with a thunderstorm with localized IMC, heavy rain and severe turbulence," is the probable cause of the crash.

What's disturbing is the part of the report's narrative that describes the pilot's apparent state of mind before the crash. In a conversation with an

oncoming shift pilot, the pilot allegedly said he "wanted to get the helicopter out" after sitting on the helipad at Jackson-Madison County General Hospital and waiting for the flight nurses. The shift pilot suggested parking the helicopter, but the active duty pilot insisted there was enough time to make it, believing "he had about 18 minutes to beat the storm and return to home base" while leaving the nurses behind. The shift pilot later spoke with one of the flight nurses, who in fact made it on board and said they were about 30 seconds from arrival, when the helicopter went down.

Witnesses reported lighting, thunder and "heavy rain bands" in the area at the time of the accident.

NTSB faults the decision-making process of the pilot, saying that he "could have chosen to stay at the hospital helipad. The pilot, however, decided to enter the area of weather, despite the availability of a safer option. Based on the pilot's statement to the oncoming pilot about the need to 'beat the storm' and his intention to... bring the helicopter back, he was aware of the storm and chose to fly into it."

The report continues by stating the pilot "made a risky decision to attempt to outrun a storm in night conditions, which would enable him to return the helicopter to its home base and end his shift there, rather than choosing a safer alternative of parking the helicopter in a secure area and exploring alternate transportation arrangements or waiting for the storm to pass and returning to base after sunrise when conditions improved."

NTSB also noted that the pilot "was nearing the end of his 12-hour shift, during which he had flown previous missions and may have had limited opportunities to rest. He had been

on duty overnight, and the accident occurred at an early hour that can be associated with degraded alertness."

Sometimes, we are our own worst enemy. Human error, whether it's caused by fatigue, the desire to finish a shift, or any of a large number of other casual factors, is a part of aviation operations. The stakes for aircraft operators are high, we all know that, but it's important to keep this in mind as an example of where the decision to push forward into the gray area can have dire consequences. When dealing with Mother Nature, know your limits. The line may be closer than you think, and at times we can all be one bad decision away from disaster.

The New Face of Rotorandwing.com

If you haven't had the opportunity already, take a moment to go to www.rotorandwing.com and look at the new design and features of our website. In addition to the home page, there are individual landing pages for different sectors of the helicopter market—Commercial, Military, Public Service, Personal/Corporate, Training, Products and Services.

On each of these landing pages, we aggregate our own news and editorial coverage, photos and videos with press releases from industry vendors and links to important stories we've run across from other sources on the web—all targeted to the unique interests of operators in each sector. Each landing page also serves as a central point for users to drill down into more specific coverage. Check it out and let us know what you think. 🚁

Look for reports from the Heli-Expo show floor at www.aviationtoday.com/rw/heliexpo2012 

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(Above) AgustaWestland's AW189 lifts off for its first flight. (Bottom) An inside look at the cockpit of the Sikorsky S-92. Photo by Ernie Stephens. (Right) Air-to-air view showing a German Army Aviation Sikorsky CH-53G over Spain.

FEATURES

COVER STORY

32 ■ **Pilot Report: Sikorsky S-92**

Rotor & Wing takes to the skies in Sikorsky's S-92 and gets behind the controls of the S-76D. *By Ernie Stephens, Editor-at-Large*

38 ■ **Heli-Expo 2012 Preview**

An inside look at some of the highlights and what to expect during this year's Heli-Expo in Dallas. *By Dale Smith*

44 ■ **Night Vision Renaissance**

Providers of NVG cockpit modifications thrive despite the global economic situation and a new set of FAA regulations governing this niche market. *By Andrew Parker, Editor-in-Chief*

48 ■ **Prepping for the Ditch**

EASA workshop focuses on how to increase the survival rate in helicopter ditching incidents. *By Thierry Dubois*

56 ■ **Recovery Training in Spain**

Spanish Air Force hosts EAG's Combined Joint Personnel Recovery Standardization course. *By Andrew Drwiega, Military Editor*

On the Cover: Sikorsky S-92 with the Legacy of Heroes paint scheme. *Sikorsky Photo by Stuart Walls.*

DEPARTMENTS

12 **Rotorcraft Report**

20 People

20 Coming Events

30 Hot Products

62 Training News

65 Classified Ads

67 Ad Index

COLUMNS

4 Editor's Notebook

8 Feedback

10 Meet the Contributors

64 Leading Edge

66 Law Enforcement Notebook

68 Safety & Training

70 Military Insider



56

ONLINE



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CHECK OUT OUR NEW LOOK ON THE WEB

- If you haven't had the opportunity already, take a moment to go to www.rotorandwing.com and look at the new design of the *Rotor & Wing* website. Whether it's just looking for the most important headlines or performing due-diligence research for an important contract or purchase decision, all the information you need is right at your fingertips and easy to sort, archive, forward, print, comment, Tweet or like! Take a look and let us know what you think.

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WHAT DO THE EXPERTS THINK?

- Ask questions to three experts on the topics of helicopter aerodynamics, AS9100 quality management systems audits and night vision goggle (NVG) certification at rotorandwing.com. 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 FEBRUARY 1

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

WEEK OF FEBRUARY 27

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

WEEK OF FEBRUARY 27

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

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Feedback

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From Facebook

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

Accident Reduction

The following responses are to the question, "What more needs to be done to reduce helicopter accidents?"

More IFR training and IFR flights. In the helicopter world, IFR flights are a rare occurrence for most operators. Most guys don't realize how easy it is and how much safer it is to file, get a clearance, and "punch in" versus scud running. I understand some operators aren't equipped, but for those who are....

Brad Weeks

Dual-pilot requirement for EMS missions. Certainly for those during IFR and IMC.

Jim Hickman

"The majority of accidents come from human error."

Install a 44-oz. drink holder because with it between my legs it interferes with my cyclic. Also a CD player would be great because ATC gives me a headache so I take off my headset and all I hear is "whupwhupwhup" ... and some Manilow would be welcome.

Peter McNees

The majority of accidents come from human error. That being the case, you can train and train and train all you want, but in the end we are only human and will make mistakes whether we are 25 or 65 years old, have 1,000 hours or 25,000. We will never fix human error. Just like friendly fire; It will always happen.

Marc Raglin

R&W's Question of the Month

What do you think of the new look of the redesigned www.rotorandwing.com?

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

Fly helicopters unmanned.

Ron Hall

Definitely more practice with 0/0 instrument takeoffs. Could have saved a bunch of guys when they browned out. More simulation time, too. The virtual red screen is a lot more forgiving than a real world one.

Charles Lamb

We are in the process of replacing our Garmin (Apollo) 480s with Garmin 430s. I wish we could ditch the 430s and separate transponders, and just go with a Garmin 530s. Or, the ultimate would be all glass.

Wylie Mathis

Upgrading the BFT so it would not burn out the VHF-AM radio.

Christopher Newlon

New avionics for sure; synthetic vision (moving map), more accurate navigation and improved IMC capability.

Bulent Aydin

Night vision enhancements. Clarity and range.

Charlie Meadors

A more comfortable seat.

Mike Cumbie

Equipment Upgrades

Response to the question, "What's on your mind regarding the helicopter industry? What has struck a chord with you lately, or been on your mind regarding a recent issue, broad or specific?"

What actions must a pilot take if he gets into some serious downdrafts? In this case, the helicopter is a Eurocopter Ecureuil AS350 BA.

Sobit Gauchan

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.

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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.



FRANK LOMBARDI, an ATP with both fixed-wing and rotary-wing ratings, began his flying career in 1991 after graduating with a bachelor's of science in aerospace engineering, working on various airplane and helicopter programs as a flight test engineer for Grumman Aerospace Corp. Frank became a police officer for a major East Coast police department in 1995, and has been flying helicopters in the department's aviation section since 2000. He remains active in test and evaluation, and holds a master's degree in aviation systems-flight testing from the University of Tennessee Space Institute.



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

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.



ANDREW DRWIEGA, Military Editor, is a senior defense journalist with a particular focus on international military rotorcraft. He 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 exercises. He has flown in a wide variety of rotorcraft including the MV-22B Osprey, AH-64D Apache, Rooivalk and many others.



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. Chris is currently pursuing her master's degree in Journalism at Georgetown University in Washington, D.C. She can be reached at csheppard@accessintel.com.



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

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



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

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■ SERVICES | FLIGHT TESTING

AW189 Takes Maiden Flight

AgustaWestland's AW189 prototype has taken to the skies for the first time. Chief test pilot Giuseppe Lo Coco was at the controls for the AW189, which he said "performed as expected" following the flight. The initial prototype will be used mainly for avionics testing and offshore certification. A second prototype will conduct load survey testing during 2012. AgustaWestland expects civil certification of the helicopter in 2013, with deliveries to begin in 2014. The AW189 made its public debut at the 2011 Paris Air Show. ✈



AgustaWestland

With onlookers witnessing the landmark event, AgustaWestland's newest variant—the AW189—went airborne for the first time Dec. 21 at its plant in Cascina Costa, Italy.

■ COMMERCIAL | AIRFRAMES

Range Extension: Transport Canada Approves Bell 429 Performance Boost

Transport Canada has granted approval for a 500-lb. increase to the weight of the Bell 429. The move increases the maximum gross weight of the helicopter to 7,500 lbs., which gives operators additional range "to take better advantage of the helicopter's IFR/WAAS capabilities," according to Larry Roberts, senior vice president of Bell Helicopter's Commercial business unit. The approval follows months of testing and evaluation. Transport Canada concluded that the 429 "would suffer no technical constraints by increasing the gross weight." Bell plans to petition FAA and EASA for a Part 27 exemption from the max gross weight of 7,000 lbs. ✈

■ MILITARY | PROCUREMENT

Army Orders 39 Lakotas from EADS

EADS North America has received a U.S. Army contract for 39 UH-72A Lakota light utility helicopters (LUHs). The \$212-million contract will involve 32 Lakotas outfitted with a mission equipment package (MEP) being delivered to the Army's security and support (S&S) battalion. Those 32 helicopters will enter service with the U.S. Army National Guard. EADS North America has handed over a total of 198 UH-72A Lakotas to the Army through early January 2012, with a total of 345 helicopters expected for delivery by 2015. ✈

■ MILITARY | AIRFRAMES

Boeing Wins Chinook Contract

The U.S. Army has contracted Boeing to supply 14 CH-47F Chinooks as part of the government's foreign military sales (FMS) program. The contract, valued at \$370 million, will involve seven helicopters for the Australian Defence Force and six for the United Arab Emirates (UAE). The other CH-47F will be dispatched to the U.S. Army. According to H-47 program vice president Leanne Caret, the contract raises Boeing's Chinook backlog above 200 aircraft. Boeing is also awaiting the Army's decision on a second five-year, firm fixed-price proposal for additional Chinooks. ✈



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■ **COMMERCIAL | OFFSHORE**

Multitrole EC225s Support Heli-Union, COHC

Eurocopter has delivered two EC225s to French air transport operator, Heli-Union. The new helicopters will be used for offshore oil and gas transport missions. Heli-Union has also purchased four EC175s, with a projected delivery date of 2013.

The manufacturer has also received an order for seven EC225LP Super Pumas from CITIC Offshore Helicopter Co. (COHC) in China for oil and gas transport missions. In addition to the purchase, the two companies are developing a joint venture that will focus on cooperative training and launch a Chinese maintenance facility. Deliveries of the EC225s are set to start in December 2012 and run until 2015.

In addition, Eurocopter has agreed to supply a second EC225 to the Tokyo Fire Department's Tachikawa Air Squadron. The helicopter will be equipped with a belly-mounted water tank and EMS interior, and is expected to service Tokyo city, western mountainous areas and Hachijo-jima Island. The EC225 will join Tachikawa's existing fleet, which consists of seven Eurocopter types—four Dauphin N3s, two Super Puma L1s and one EC225. ✈



From left to right: CNN CEO Patrick Molis, Eurocopter CEO Lutz Bertling and Heli-Union CEO Jean-Christophe Schmitt.

■ **PUBLIC SERVICE | COMPLETIONS**

SAR-Configured S-92 Joins Irish Coast Guard Fleet

Sikorsky has finished production on an S-92 for CHC Helicopter. CHC will operate the search and rescue (SAR) dedicated helicopter for the Irish Coast Guard.

The S-92 will replace the Coast Guard's S-61, which has been in service

for around 20 years. The S-92 will be stationed in Shannon, Ireland. CHC supplies a fleet of six S-61s on behalf of the Irish Coast Guard. The S-92 will serve offshore islands and provide SAR coverage from Cork to Galway. ✈



This Sikorsky S-92 replaces an S-61.

■ **SERVICES | ENGINES**

M International Acquires Keystone Engine Services

McLean, Va.-based M International has purchased the Keystone Engine Services division of Sikorsky Global Helicopters. M International has formed a new company, Keystone Turbine Services, that will operate from a 30,000-square-foot facility in Coatesville, Pa. The acquisition expands M's turboprop and turboshaft engine maintenance, repair and overhaul (MRO) services, notes CEO Richard McConn. Keystone Turbine is a Rolls-Royce and Honeywell-approved MRO facility. ✈

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MILITARY | COMPLETIONS

Italian Armed Forces Receive NH90s



The first NH90 NATO Frigate Helicopters from AgustaWestland's Venice Tessera assembly line have been delivered to the Italian Army and Navy. The Italian Armed Forces have ordered 60 helicopters in total.

AgustaWestland has completed deliveries of two NH90 NATO Frigate Helicopters (NFHs) to the Italian Army and Navy. The helicopters were the first from AgustaWestland's NH90 final assembly line in Venice Tessera, Italy. The Italian Army's delivery was the first of a 60-helicopter order as part of a fleet replacement, with the Italian Navy ordering 46 NFHs and 10 tactical transport helicopter (TTH) NH90 variants.

SERVICES | EMS

Reach Launches New Texas Base

Santa Rosa, Calif.-based Reach Air Medical has teamed with Methodist Healthcare of Houston to establish a second HEMS base. Methodist AirCare 2, located in Pearsall, Texas, will operate a Bell 407, equipped with night vision goggles (NVGs). Reach Air Medical has also added three new hospitals to its service region in southwest Texas.

MILITARY | AVIONICS

Sagem Services Strix Systems

SIMMAD has contracted Safran Group subsidiary, Sagem, to provide life-cycle support for Strix sighting systems on the French Army's fleet of Eurocopter Tigers. The five-year agreement with the Army's air division (ALAT) covers 50 Strix turret-mounted systems for maintenance and service. Sagem will also establish an ALAT hotline in France and in overseas locations where the Tigers are in service.

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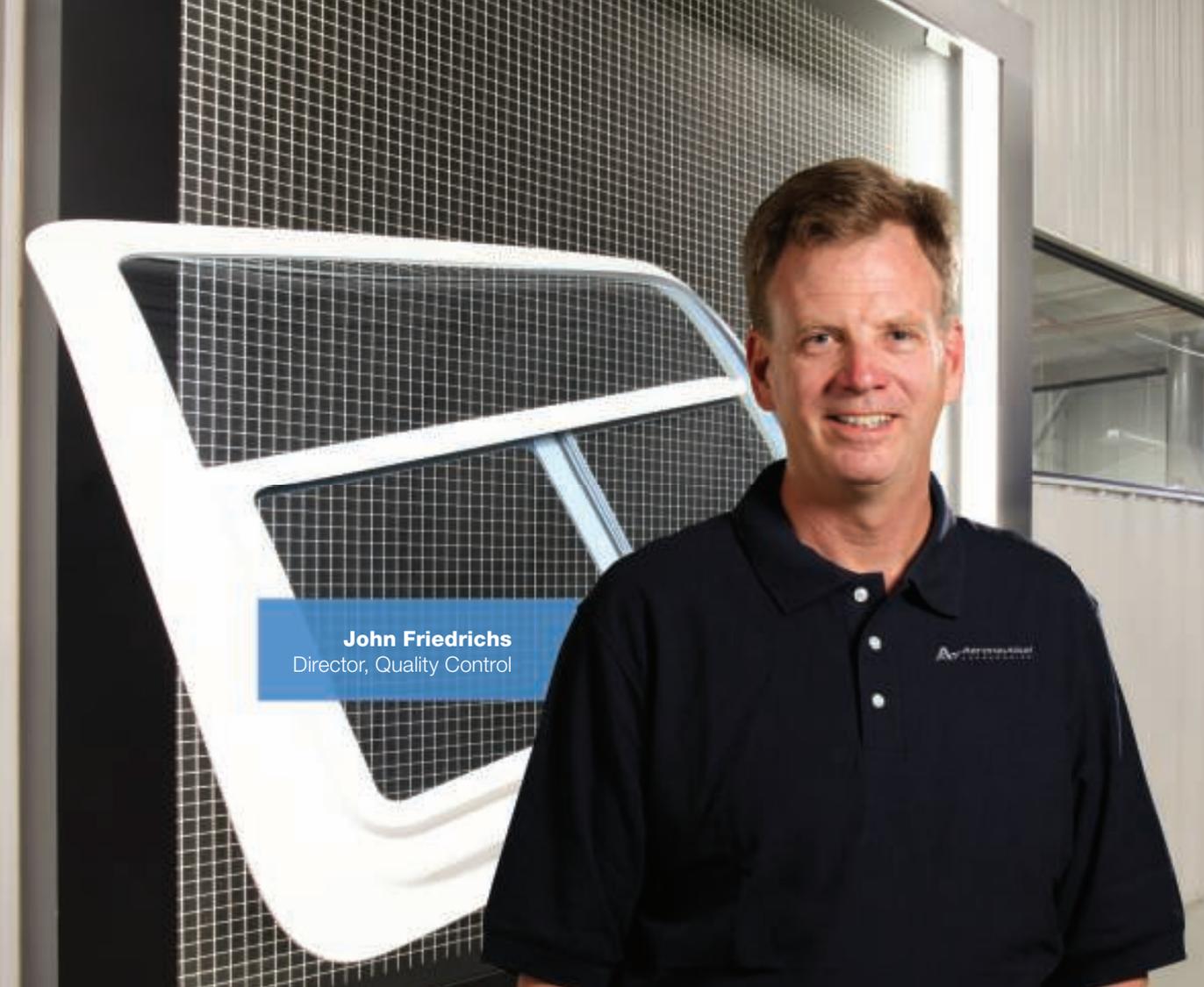
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A man with short brown hair, wearing a dark blue polo shirt with a small logo on the left chest, stands in front of a large white aircraft window frame. The background is a dark grid pattern.

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■ SERVICES | MAINTENANCE

Helibras to Maintain Brazilian EC725s



The Brazilian Armed Forces has a total of 47 more Eurocopter EC725s on order.

Eurocopter subsidiary, Helibras, has reached an agreement to provide parts, service, inspections, overhaul and repairs for the Brazilian Armed Forces' fleet of 50 Eurocopter EC725s on order. The five-year contract covers all three branches of Brazil's military. Helibras will also dispatch teams to provide on-site service at EC725 bases. Three EC725s have entered service with the Brazilian Air Force, Army and Navy, with production on the remaining 47 helicopters scheduled to start in 2012.

■ COMMERCIAL | OFFSHORE

Russia Certifies, UTair and Kenya Receive AS350s

The Interstate Aviation Committee has approved the Eurocopter AS350B3e in Russia. This certification allows Ecureuil operation in Russia and the Commonwealth of Independent States. Following the certification, UTair Aviation took delivery of three of the type. UTair placed an order in 2010 for 20 helicopters from Eurocopter, comprising 13 AS350B3es, six AS355NPs and one AS350B3. The helicopters will be used for cargo airlift, oil and gas pipeline patrols, surveillance and executive transport missions throughout Russia and Siberia.

Eurocopter has also handed over an AS350B3e to the Kenya Police Air-Wing, making it the first African operator of the variant. The aircraft fly anti-poaching, counterterrorism and other law enforcement duties.

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PEOPLE



The EADS board of directors has elected **Sean O'Keefe** as chairman of the board. The EADS North America CEO will replace the retiring **Ralph Crosby**. O'Keefe served as vice president of the technology infrastructure sector of General Electric before being appointed CEO of EADS in 2009.

Fargo, N.D.-based Spectrum Aeromed has hired **Michael Gallagher** as vice president and project manager. He will oversee design, product development, sales and system analysis of air medical equipment. Gallagher comes to Spectrum from Curtis Construction Company, where he was the owner.

Phil Sprio has been named president and CEO of Man Lift Manufacturing in Cudahy, Wis. Spiro replaces **Jeff Bailey**, who founded the company in 2000 and will remain as a director.

The Civil Aviation Authority of New Zealand has appointed **Graeme Harris** chief executive and director. Harris will succeed **Steve Douglas** following his resignation, which will take effect in April. Harris has worked with the CAA in a variety of roles since 2004.

Dr. **Nidal Sammur** has been promoted to director of engineering for FlightSafety International's simula-



tion facility in Broken Arrow, Okla. Sammur was most recently staff scientist for the company before being promoted to replace the retiring **Ron Jantzen**. Nidal has worked with Flight-Safety since 1992.

Greg Setter has joined Mesa, Ariz.-based BDN Aerospace Marketing as account director. Setter, who has more than 25 years of aviation experience, will oversee strategic planning and account services for BDN. Setter was previously with Honeywell Aerospace as its marketing communications strategy manager for commercial aviation, and held similar roles at GE Aviation and Rockwell Collins. ✈



2012:

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

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

Feb. 15–17: Helicopter Maintenance Management Seminar (HMMS), Irving, Texas. Contact Conklin & de Decker, phone 1-817-277-6403 or visit www.conklindd.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, Ottawa, 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 3–6: 55th Annual AEA International Convention & Trade Show, Washington, D.C. Contact AEA, phone 1-816-347-8400 or visit www.aea.net/convention

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 helirusia.ru/en

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

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

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

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

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

2013:

May 21–23: AHS Intl. 69th Annual Forum and Technology Display, Phoenix, Ariz. Contact AHS Intl, phone 1-703-684-6777 or visit www.vtol.org ✈

■ MILITARY | COMPLETIONS

British Army Receives Final Lynx



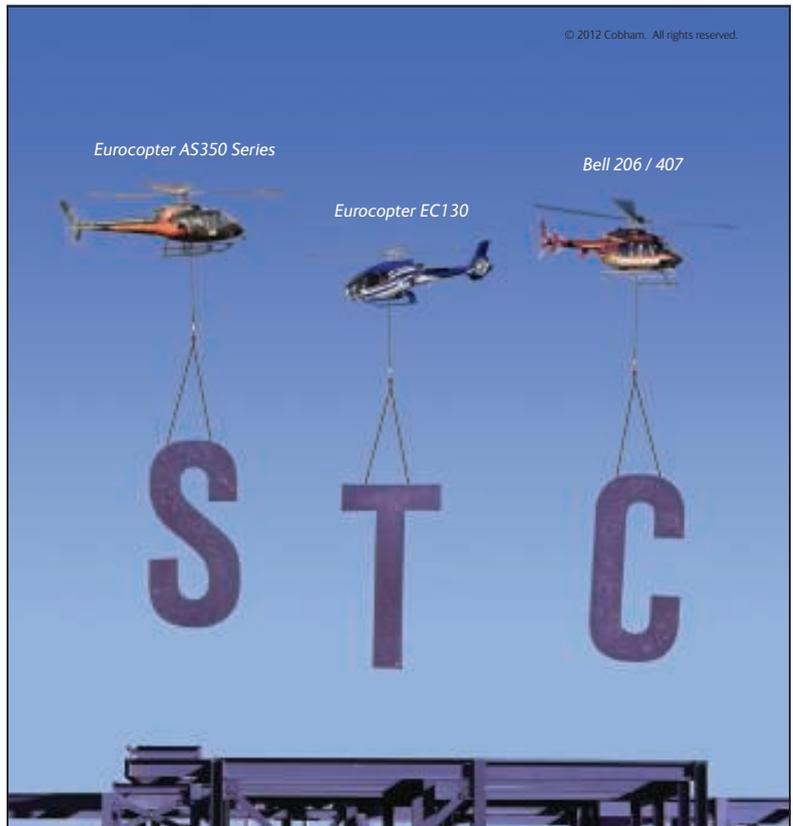
AgustaWestland has delivered the final British Army Lynx AH Mk9A.

AgustaWestland has handed over the last Lynx AH Mk9A to the British Army Air Corps. The Lynx Mk9A is a fleet-wide upgrade of the Lynx Mk9, outfitted with new engines and modifications to the gearbox, fuselage and interior displays. AgustaWestland's Yeovil facility produced 22 of the upgraded helicopters under the Urgent Operational Requirement contracts from the Ministry of Defence. ✈

■ SERVICES | CERTIFICATION

FAA Approves Metro EC155 EMS Kit

Shreveport, La.-based Metro Aviation has received a supplemental type certificate (STC) for its emergency medical system kit for the Eurocopter EC155B1. The certification marks the first time an EC155B1 with an EMS package has received approval in the U.S., according to Metro. The STC covers a variety of EMS interior options including secondary patient restraint, seating and a cabin overhead module with four audio and control touch panels. ✈



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MILITARY | UAV

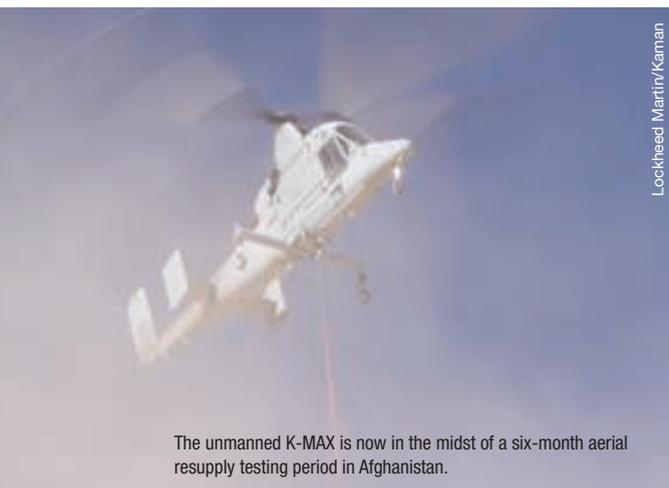
Unmanned K-MAX Operational in Afghanistan

Lockheed Martin and Kaman Aerospace's unmanned K-MAX has entered combat service with the U.S. Marine Corps in Afghanistan. USMC's Unmanned Aerial Vehicle Squadron 1 received the first K-MAX unmanned aerial system in early December, with the initial cargo re-supply mission taking place on Dec. 17. The unmanned helicopter transported more than 3,000 lbs. of food and supplies from Camp Dwyer to troops at Combat Outpost Payne in the Helmand Province—all in less than two hours.

"We delivered cargo today that was supposed to be delivered by convoy, now that convoy has three pallets that it does not have to carry," noted Maj. Kyle O'Connor, the officer-in-charge of Squadron 1's cargo resupply detachment. The delivery signifies the first step in a six-



The K-MAX unmanned aerial helicopter during its first cargo delivery for the U.S. Marine Corps in Afghanistan.



Lockheed Martin/Kaman

The unmanned K-MAX is now in the midst of a six-month aerial resupply testing period in Afghanistan.

month testing period in Afghanistan, after which the Marine Corps may opt to use the K-MAX as part of its aerial resupply capabilities. The demonstration phase will "test the true capabilities of this aircraft and how well it can perform its job in a combat environment," O'Connor continued.

While the unmanned K-MAX will lessen the threat of personnel loss during deliveries, the Navy doesn't plan to take unnecessary risks with the K-MAX, stating that a majority of the re-supply operations "will be conducted at night and at higher altitudes ... to keep out of small arms range."

The UAV completed a five-day quick reaction assessment (QRA) for the U.S. Navy in mid-2011. The QRA was part of a \$45.8-million contract awarded in December 2010 to test the UAV in a cargo resupply role for the Marine Corps. 🚁

SERVICES | MAINTENANCE

American Eurocopter Becomes EC135, EC145 MRO Hub

Eurocopter has designated its U.S. subsidiary as a maintenance, repair and overhaul (MRO) center for EC135s and EC145s in North and Latin America. With this designation, American Eurocopter is now able to perform Level D MRO actions on EC135/145 airframes, blades and dynamic components. The manufacturer expects turnaround times on repairs to decrease for operators through the designation. American Eurocopter, the largest of the parent company's various geographical subsidiaries, already supports the AS350, AS365, EC120/130, and EC155. 🚁

MILITARY | AVIONICS

DRS Upgrades Pave Hawks

Dayton, Ohio-based DRS Defense Solutions' intelligence, communications and avionics solutions (ICAS) division has won a \$12-million U.S. Air Force contract to upgrade Sikorsky HH-60G Pave Hawks. DRS will replace first-generation altitude hold and hover stabilization systems (AHHS) with fifth-generation improved altitude hold and hover stabilization systems (IAHHS). The contract also covers platform integration, the development of a technical data package, production kits, spares and support. According to Logan Thiran, president of DRS ICAS, the avionics system will help pilots navigate through brownout conditions in Afghanistan and Iraq. 🚁

MILITARY | COMPLETIONS

Polish Air Force Upgrades Fleet

AgustaWestland subsidiary PZL-Swidnik has inked an agreement with the Polish Ministry of National Defence to provide five W-3WA Sokols and upgrade 14 more. The Polish Air Force will use the W-3WAs for government and military transport. Plans call for PZL-Swidnik to overhaul eight Russian Mi-2s, convert four W-3 Sokols to the W-3PL Gluszc armed configuration and upgrade two W-3s with a FADEC system. The converted W-3PLs are scheduled for delivery in 2014. ✈

TRAINING | SIMULATORS

CAE Wins Military, Civil Contracts

Canada-based CAE has received a number of recent military and civil contracts totaling more than C\$100 million (\$99 million). The Department of National Defence in Canada has tasked CAE with upgrading its Bell CH-146 Griffon and Lockheed CC-130H simulators. The Griffon simulator will feature an updated computer system and instructor operator station.

Professional Way in Malaysia has signed with CAE for maintenance and support on the 3000 Series AgustaWestland AW139 full-flight simulator that CAE is developing. The company is also providing a 3000 Series FFS and training services for two undisclosed customers. ✈

COMMERCIAL | AIRFRAMES

Robinson Doubles 2010 Production

Torrance, Calif.-based Robinson Helicopter Company is reporting an upswing in production for 2011, comprising 56 R22s, 88 R66s and 212 R44s. The total number of 356 is a sharp increase over 2010, when Robinson assembled 162 helicopters. ✈



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■ PUBLIC SERVICE | LAW ENFORCEMENT

Fairfax Bell 429 Includes Becker Audio

Bell has handed over the first of two 429s to the Fairfax County Police Department in Northern Virginia. The helicopters come equipped with Becker Avionics' DVCS6100 digital audio system. Paradigm Aerospace Corporation/PAC International customized the helicopter for both law enforcement and EMS missions at its facility in Mount Pleasant, Pa. Bell Helicopter plans to deliver the second Fairfax 429 later this year. Fairfax County has two additional Bell 407s in its Helicopter Division fleet. The new Bell 429 is also the first of the type to feature the new multi-mission configuration for airborne law enforcement, EMS and search and rescue (SAR). 𠄎

See page 38 for a photo of the Fairfax County Bell 429. Look for the full story from Editor-at-Large Ernie Stephens in *Rotor & Wing's Show Day* publication at Heli-Expo, and visit our web page: www.aviationtoday.com/rw/heliexpo2012



■ SERVICES | MAINTENANCE

Canadian Forces Signs with Bell

Bell Helicopter has won a 10-year, C\$640 million (\$630.9 million) contract for support and service for the Canadian Forces' fleet of CH146 Griffons. The CH146 optimized weapon system support (OWSS) contract will cover maintenance and management services, spare parts and engineering and technical publications. OWSS also has four one-year options available after the initial 10-year contract expires and will combine three existing contracts for engineering, overhaul, repairs and supplies. According to Bell, the Mirabel plant and Calgary supply center will provide the materials needed to fulfill the agreement. 𠄎

■ MILITARY | AIRFRAMES

Russian Air Force Expands Fleet

Russian Helicopters has reached an agreement to provide the Russian Air Force with up to 30 Kamov Ka-226s by 2020, according to Defense Ministry spokesman Vladimir Drik. The Air Force's training center in Torzhok already took delivery of 17 helicopters in December 2011, including Mi-8MTVs, Mi-28Ns, Mi-35s and Ka-52s. Four Ka-226s were projected for delivery to the training center by the end of January. 𠄎

■ PRODUCTS | REPLACEMENT PARTS

V-22 Awards Parts Contract

The Bell-Boeing Joint Project Office has obtained a \$7.2-million modification involving a fixed-price-incentive-fee contract. The adjustment involves production line preparation of spare parts for the V-22 program. Bell-Boeing expects to complete the parts by October 2014. 𠄎

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■ COMMERCIAL | AVIONICS

S-92 Receives STC for Blue Sky

Blue Sky Network has earned a supplemental type certificate (STC) for its communication and tracking systems on the Sikorsky S-92. La Jolla, Calif.-based Blue Sky's D1000A uses built-in GPS position reporting with satellite transceivers and telemetry data to provide near real-time tracking. The ACH1000 allows voice and two-way communication between pilots and ground crews. The helicopter can also be securely tracked with Blue Sky's online portal SkyRouter. 

■ SERVICES | MILITARY

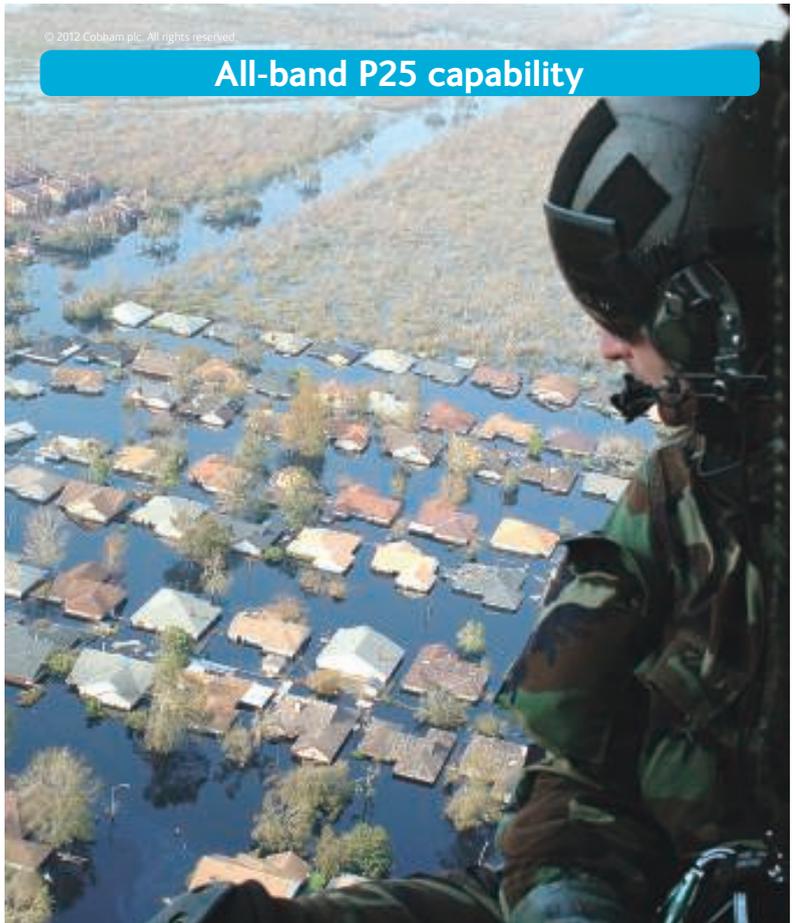
AECOM Supports USAF Helicopters

Los Angeles, Calif.-based AECOM Technology Corporation has received a \$16.5-million task order contract by the U.S. Air Force for Contract Field Teams (CFT). The three-year order covers field and limited sustainment maintenance for the USAF's Boeing AH-64 Apaches, CH-47 Chinooks, Sikorsky UH-60 Black Hawks and HH-60 Pave Hawks. Ground support equipment is also included with the contract. 

■ COMMERCIAL | EMS

Metro Completes Sanford EC145

Metro Aviation of Shreveport, La. has handed over the first of three Eurocopter EC145s for Sanford Health's facility in Sioux Falls, S.D. The helicopter is expected to enter service in January. Scheduled for delivery later this year, the remaining helicopters will be based out of Fargo, N.D. 



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AgustaWestland

Doctor Heli files the first EMS-equipped AgustaWestland GrandNew in Japan.

■ PUBLIC SERVICE | EMS

Doctor Heli Adds GrandNew to Fleet

AgustaWestland has completed delivery of a GrandNew to Kagoshima International Aviation of Japan for the Doctor Heli EMS system. The helicopter is the first EMS-configured GrandNew operating in the country. Doctor Heli's latest helicopter has entered service the Kagoshima Prefecture in southern Japan. 🚁

■ SERVICES | NIGHT VISION

Aero Dynamix Upgrades Toll Bell 412s

Eules, Texas-based Aero Dynamix has incorporated night vision goggle (NVG) cockpit upgrades into two Bell 412s in service with Toll Remote Logistics. Toll contracted Spokane, Wash.-based Eagle Helicopters for the modifications, who in turn, subcontracted Aero Dynamix. The newly outfitted Bell 412s will be used for multi-mission operations. 🚁

■ PUBLIC SERVICE | MISSION EQUIPMENT

Helijet and Max-Viz Outfit Canadian Sikorsky S-76s with EVS

Portland, Ore.-based Max-Viz has teamed with Helijet of Vancouver, Canada to equip three Sikorsky S-76s with the Max-Viz EVS1500 system. The helicopters will perform EMS missions for the British Columbia government under a contract with Helijet. Pilots flying the S-76s with the enhanced vision system have already reported back that they are able to see "fog and cloud formations and concentrations of precipitation during the day enabling them to pick safer routes ahead," according to Max-Viz. 🚁

■ MILITARY | ATTACK

Longbow Snares Apache Contract

Lockheed Martin and Northrop Grumman's joint venture, Longbow LLC, has won an U.S. Army contract worth \$181 million for Boeing AH-64D Apache Block III Longbow systems. The contract also covers Taiwan's purchase of 15 Block III Longbow fire control radar (FCR) systems. The agreement marks the first international sales of the FCR.

Longbow will also provide 14 unmanned aerial system tactical common data link assembly (UTA) systems and 18 Radar Electronic Units (REU), plus spares, for the Army's new fleet of Block III Apaches.

Lockheed Martin's facilities in Ocala and Orlando, Fla. and Northrop Grumman's plant in Baltimore, Md. will perform the work under the new contract. 🚁

■ TRAINING | CERTIFICATION

CASA Grants 147 to Australian Aero

Australian Aerospace has received Part 147 certificate approval from the Civil Aviation Safety Authority (CASA). Australian Aerospace becomes the first civil helicopter maintenance training operator in the Asia-Pacific region to receive such approval under a new series of maintenance safety regulations in Australia.

"The new regulations, which came into force in June this year, will enhance safety because they introduce requirements for safety management systems and human factors training into the maintenance sector for the first time," according to John McCormick, director of aviation safety for CASA.

McCormick also added that while operators had up to two years to transition to the new safety regulations, Australian Aerospace completed it in less than six months. 🚁

■ CORPORATE | VIP

Capital Air Flies EC135 Hermes

Eurocopter has delivered an EC135 "l'Helicoptere par Hermes" to London, England-based Capital Air Services. The House of Hermes-detailed helicopter features more than 150 design changes to both the interior and exterior. The EC135 is the fifth for Capital Air Services and will be used for corporate charter flights. Capital Air's fleet also includes EC155 B1s, and AS355s. ✈



Eurocopter

Capital Air's fleet now boasts a House of Hermes-outfitted Eurocopter EC135 for executive transport in the UK.

■ SERVICES | MILITARY

Sikorsky Wins UAE Conversion Contract

The U.S. Army has awarded Sikorsky Aircraft Corp. an \$81.2-million firm-fixed-price contract to convert UH-60M Black Hawks for the United Arab Emirates (UAE) Armed Forces. Sikorsky's facility in Stratford, Conn. will handle the conversions, which are expected for completion by December 2012. The U.S. Army Contracting Command, based out of Redstone Arsenal, Ala. is tasked with the contracting activity. ✈



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CWO2 Michael Morris

Sgt. Joshua Stevens, a parachute rigger, prepares to hook up a sling load to a Russian Mi-8 at Forward Operating Base Salerno in Afghanistan in early January. Task Force Spartan recently took over areas of responsibility in Paktya and Khowst provinces.

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SERVICES | MAINTENANCE

Marine Discovers Maintenance Issue

U.S. Marine Corps Sgt. Christopher Lemke has received the Navy and Marine Corps Achievement Medal in Afghanistan thanks to his discovery of previously unknown maintenance issue on a Bell UH-1Y Huey.

Lemke, a mechanic with Marine Light Attack Helicopter Squadron 369, was performing a routine phase inspection of the helicopter's transmission compartment when he discovered that the transmission pylon beam and the main beam joint, which attaches the transmission to the Huey airframe, were decomposing.

"When two metals rub together, it creates this black liquid, and that's what I found," Lemke said. "No one else had ever found such an issue, but when we looked at another aircraft we had in phase, it had the same problem."

The area Lemke was inspecting is known as the "hell hole" as it is difficult to reach and was not required that day as there was no known issue with that portion of the helicopter.

Following Lemke's find, there was a fleet-wide inspection and an engineering advisory report.

"Our job isn't just replacing things. If we don't do it right, that's someone's life," Lemke said. 🇺🇸



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AT THE CONTROLS:

Sikorsky recently invited *Rotor & Wing* to fly the S-92 over rural Virginia and the S-76D (shown here) from its West Palm Beach facility in Florida.

By Ernie Stephens, Editor-at-Large

Rotor & Wing Editor-at-Large Ernie Stephens at the controls of the Sikorsky S-76D as part of a Dec. 8 demo flight. The S-76D shares the same sleek, elegant lines as earlier variants, but comes equipped with a state-of-the-art Thales cockpit, composite rotor blades, and a set of Pratt & Whitney Canada 210S engines. See story on page 33.

Since 2009, the economy has ravaged many sectors of rotorcraft industry. Corporations have cut back on flying, and some public service operations have shuttered their hangars altogether. But the good news is that the offshore industry, with its gas and oil exploration endeavors, managed to dodge the bullet. That was good news for the folks at Stratford, Conn.-based Sikorsky Aircraft, because only a few years before, it had introduced the S-92, a hefty-size helicopter that was exactly what the offshore industry needed.

Many oil and gas companies drilling in the Gulf of Mexico have pushed farther away from the shore, so they need a helicopter with good reach, high seating capacities, and the muscle to tote lots of people and equipment. The S-92 surfaced as the rotorcraft of choice for several operations around the world, including Cougar Helicopters of St. John's, Newfoundland; PHI in Lafayette, La.; and Brunei Shell Petroleum based in Seria, Brunei Darussalam.

However, the S-92 is not a one-

trick pony. It is a medium, twin-engine helicopter with a stand-up cabin that can be completed for a variety of missions, including executive transport, cargo hauling, military applications, and air ambulance service. In the back is a huge, cabin-width door that opens into a cargo ramp, or, in the VIP role, accesses a cavernous baggage compartment apart from the passenger area. At the forward end is a state-of-the-art flight deck that will do everything for the pilot, but order lunch.

While a Sikorsky crew was passing through the Washington, D.C., area showing off a brand new S-92 in a special Legacy of Heroes commemorative livery—a paint scheme depicting soldiers, firefighters and police officers in silhouette—I was invited to take it for a spin. Stafford Regional (RMN) is a sleepy little airport in rural Virginia about 34 nautical miles southwest of the District of Columbia. That made

the 60-foot long, 15-foot tall S-92 look supremely out of place amidst the Cessna 172s parked nearby.

Inside the FBO, I met Les Gerrard, the senior applications engineer on the S-92 program; Stacy Sheard, a program test pilot, and Joel Vigue, another of the test pilots. They briefed me on the lineage of the program, the general capabilities of the aircraft, the avionics, and the local weather conditions—all of which were impressive. It was now time to go flying!

The gunmetal grey aircraft, s/n 920146, was the 146th ship of its kind to roll off the assembly floor at the Coatesville, Pa. plant, and was showing



S-92 & S-76D

just about 50 hours on the Hobbs meter. Others in the fleet have been in service around the world in offshore drilling support, SAR operations and VIP service since its FAA certification back in 2004. The model was also the first aircraft to be certified under the newer, more rigorous safety standards adopted by the European Aviation Safety Agency/Joint Aviation Authorities.

When it comes to size, the S-92 is no Chinook, but it certainly is large. When I stepped inside, I found seating for about 15 passengers—22 is the maximum—in webbed, fold-down crew seating affixed with their backs to the wall. And because it was built as a SAR demonstrator as well, there were three fold-up patient litters along the starboard wall, leaving the rest of the cabin with the utilitarian look one would expect in a SAR configuration.

Up front in the cockpit, pilot Joel Vigue was already strapped into the left seat, leaving me the other side to occupy. So, I stepped through the cockpit door, and belted myself in.

The flight deck is about the size of the front office in a UH-60 Black Hawk, and was equipped with four color, multi-function displays (MFDs), with a blank center position for a fifth one. The massive center console and overhead panel were loaded with all of the usual radios, switches and knobs, which Vigue was already configuring for our flight. Between the pedals that could be moved closer and farther away, and the nicely cushioned seat that could be adjusted in four directions; this 250-lb. writer had no problem finding a comfortable position for piloting.

The field of view from the cockpit of the S-92 is excellent. The center windshield post and windshield wipers, which park vertically, weren't bothersome, and the wide windshields and side windows offered a good look at everything throughout a better-

S-76D: The S-92's New Stablemate

In 1979, Sikorsky sold the first models of the Sikorsky S-76 intermediate, twin-turbine helicopter. Billed as the first true executive transport helicopter, it could also be found flying in a wide variety of roles where a spacious cabin was a must. There was even a military version, but it found limited popularity.

In a high-density seating configuration, the S-76 can carry 13 passengers, plus two pilots. For EMS missions, it can easily transport two patients in a fully equipped medical cabin.

Powerplant options were added in the ensuing years, giving customers a choice between the original Pratt & Whitney Canada PT6Bs, the Turbomeca Arriel 1S, the Arriel 1S1 and the P&WC PT6B-36A. The last model of the S-76 to be certified, the C++, receives power from a pair of 922-shp Arriel 2S2 engines, and became

exceptionally popular in the executive transport arena. Eric Welch, who operates a C++ in the northeast corridor of the U.S., equipped his company aircraft for executive transport. "We have the latest in state-of-the-art equipment in the back," said Welch. "We have flat-screen digital TV, XM stereo and worldwide communications. We are very happy with it."

Sikorsky, however, has not stopped improving on the S-76. On Dec. 8, 2011, the company gave Rotor & Wing a look at the new S-76D. The D model has all-composite rotor blades that are spun by a pair of 1,050-shp P&WC 210S engines with FADEC, a quiet tail rotor and a Thales cockpit. Engineers say the aircraft has increased range, and an even quieter cabin. In addition, many of the D's features will be backward-compatible to older S-76s.

Certification of the S-76D is expected in 2012, and will be assembled in Coatesville, Pa. alongside the S-92.

than-180-degree sweep. Two small windows overhead were nice, but the chin windows weren't good for much more than checking the polish on my boots. (They just don't show enough out the front of the aircraft.) The instrument panel was just right: not too high, not too low, not too deep, and not too shallow. And the engineers were kind enough to keep the height of the panel lower on the ends than in the middle, making it easy to see over while on approach.

Vigue already had the two General Electric CT7-8A engines—rated at 2,520 shp each—online with the S-92's four-bladed, fully articulated main rotor, and canted four-bladed tailrotor system. All that was left to do was to take a quick look at the numbers being displayed on the Rockwell Collins Pro Line IV instrument suite, which we both did. With everything well in the green, I was awarded the controls.

Picking up the S-92 was uneventful. The ship, which was approximately

18,000 lbs. as loaded (about 8,500 lbs. less than its max gross takeoff weight), got light on its gear, and came up nose first, as is common with wheeled helicopters. It granted me a nice, stabilized hover about 15 feet off the ground before I pulled it into a normal takeoff.

The S-92, like most rotorcraft its size, has a couple of trim triggers on the collective and cyclic which, when squeezed, allow the flight controls to move with the ease of a much smaller helicopter. Let them go, and the controls immediately adopt that position, allowing the pilot to relax a bit. They aren't locked there, mind you. They're just trimmed to that position. However, I wanted to get to know this aircraft, so I kept the triggers in through climb out, crosswind, and a bit of the downwind. I've flown a lot of helicopters for *Rotor & Wing*, but this was one of the quickest to get comfortable with. Because after just a few minutes on the controls, it was clear to see that the S-92 wanted to

"talk" to its pilot. Feedback through the cyclic was just enough to let me know that I had her full cooperation, but light enough to feel like I was in something several thousand pounds lighter. Even the information on the Rockwell Collins MFDs were easy to interpret; not that there was much to stare at. The ship was holding airspeed, heading and altitude without a fuss, and the gages showed that the engines were barely breaking a sweat, let alone being overworked.

Under most conditions, my first approach in an aircraft under evaluation would be a normal one to the numbers. But I actually felt so comfortable with N146UK, I asked Vigue to advise local traffic that we would be extending our downwind, in anticipation of a run-on landing.

At a little less than a mile off the approach end of the runway, I brought the aircraft through a base leg, and turned final. The ride down was a non-event. The infamous "clothes line" we were all taught to slide down felt like

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it was actually running through the centerline of the aircraft as we coasted down. Tweaking the descent and hauling it back to the recommended run-on landing speed of 50 KIAS was more a matter of thinking about it than commanding it.

For grins, I decided to do it at 46 KIAS, and had no trouble holding exactly that all the way to the touchdown zone. A bit of aerodynamic braking just after touchdown, and toe brakes at 34 KIAS, brought the aircraft to a smooth stop without so much as a shutter.

Next on the menu was a maximum performance takeoff, which I spoke to Vigue about first, since he was the one the company signed the aircraft out to. I think he was waiting for me to ask, so he could make the recommendation that he loves making during all S-92 demonstrations.

"Try it with your feet off the pedals," he said.

I replied: "Excuse me?" After all, snatching-in a boatload of power is as much an exercise in pedal work as it is in collective control, right?

Well, to ease pilot workload, Sikorsky equipped the S-92 with an anti-torque hold system that takes over as soon as the pilot removes his or her feet from the pedals. But barely touch a pedal, and the system's micro-switch will know, and instantaneously understand that you're back in command. (At least that's how Vigue said it worked.)

From a hover, I pulled the collective smartly, with my size 11 boots flat on the floor, and one eye on the compass. Up we went. The magnetic compass might as well have been glued in its housing, because it didn't rotate by so much as a degree, not even after I reached 50 feet and was pushed the nose over to dial up some airspeed. (I believe I heard the aircraft laugh just a bit.)

After a couple more takeoffs and landings, Vigue suggested we depart the pattern, so I could check out a few of the other features of the S-92.

Coupling up the four-axis autopilot to put us on a departure course gave me time to take a better look at the other fea-

tures. Just about everything you'd expect to find on the flight deck of a business jet was here, plus some. The engineers packed this aircraft with a 500-parameter health and usage management system (HUMS), traffic collision avoidance system (TCAS), enhanced ground proximity warning system (EGPWS), navigation management system, weath-

er radar, optional rotor anti-ice system and a host of other tools.

Of special interest was an in-flight diagnostic system. If you suspect that one of the four main rotor blades—or one of the four tail rotor blades, for that matter—isn't playing well with the others, it's no problem. The ship can perform a track and balance examination of

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Performance		
Maximum Gross Weight	26,500 lbs	12,020 kg
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HIGE Ceiling	9,000 ft	2,743 m
HOGC Ceiling	6,500 ft	1,981 m
OEI Service Ceiling	5,000 ft	1,524 m
AEO Service Ceiling	15,000 ft	4,572 m

Powerplant and fuel system		
Number of Engines	2	
Engine Type	GE CT7-8A	
Take-off Shaft horsepower (5 min)	2,520 shp	1,897 kw
OEI Shaft horsepower (30 sec)	2,740 shp	2,043 kw

Accommodations		
Cabin Length	20 ft	6.1 m
Cabin Width	6.6 ft	2.0 m
Cabin Height	6.0 ft	1.8 m

all eight blades, and make the appropriate adjustments to permanently correct the problem while cruising at altitude; a nice feature, since 70 percent of all S-92s delivered are used in offshore support missions.

But that's not all. If a VIP or litter patient is getting too rough of a ride, that same set of force generators can be commanded to smooth out the ride in that passenger's particular zone. Sikorsky built this aircraft with SAR

in mind, so it comes equipped with an autopilot that will fly a hands-off, crew-defined search pattern over water. It has a hard time holding grid and spiral searches over the kind of terrain found in central Virginia, so it had a tough time when I tried it. But having flown the same system over Long Island Sound, I can testify that it works well in the environment for which it was intended: water.

After a nice airborne visit with the S-92, we steered back to Stafford Regional for a break. Once back, I followed

Chad Phillips, a mechanic with Sikorsky's final production team, as he performed a quick post-flight check of the aircraft.

As Phillips conducted his visual inspection of the titanium main rotor blades, he explained that there were currently about 340,000 hours of flight time on the entire fleet of S-92s produced to date, which was 147 aircraft as of October 2011. The line was sold out through the rest of the year.

"This is the easiest aircraft to maintain," said Phillips, who was specially selected to travel with N146UK. Most hose fittings, inspection ports and linkages can be seen without mirrors, or having to assume contortionist's positions. "Every-

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Photo by Ernie Stephens

N146UK, designated Sikorsky's Legacy of Heroes S-92 aircraft, was specially painted to salute the contributions of U.S. military, fire, rescue, and police personnel, whose silhouettes appear on each side. In October 2011, it began a six-month world tour that included scheduled stops throughout the Americas, Asia and India.

thing is really easy to get to," he said. After our break, I went up with Stacy Sheard, a former Army Black Hawk pilot. Don't tell Sikorsky, but this was more of a fun flight, since I had concluded the evaluation portion with Vigue. I just wanted a couple more turns around the airport to enjoy the feel of hand-flying the S-92, and practicing with the systems.

"How much is an S-92?" you ask? With all the variations of equipment and contract deals available, Sikorsky was—as would most helicopter manufacturers—reluctant to discuss sticker prices. But my educated guess puts the Legacy ship that I flew in the neighborhood of \$20 million. At the end of the day, the Sikorsky S-92 gave a great

showing. Interior-space versatility, cockpit design, avionics, and ease of maintenance puts it high on my list of impressive helicopters. I guess the best way to describe it is to say that it flies along with you, as if it's an extension of your own body and thoughts. And what better compliment can a pilot give an aircraft? 🚁

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HELI-EXPO PREVIEW

THE BIGGEST 'LITTLE HELICOPTER SHOW' IN TEXAS

Major league baseball has the World Series. The NFL has the Super Bowl. NASCAR has the Daytona 500. When it comes to the biggest event in helicopters, of course it's Heli-Expo.

By Dale Smith

In case you haven't attended in the past few years (and why not?), Heli-Expo has grown to be the world's largest helicopter event. According to Helicopter Association International, this year's iteration will be one of the biggest ever, taking up more than 1 million square feet of the Dallas Convention Center. The 2012 edition will feature 600-plus exhibitors with more than 60 helicopters on display. That's on top of hundreds of hours of meetings, technical briefings, educational courses and the ever-popular Job Fair.

With all that floor space and all those exhibitors to cover—not to mention navigating through an expected attendance of above 18,000 people—trying to take it all in three days can be just a bit overwhelming.

In an effort to help save time and energy before hitting the convention floor, we've collected a handful of the announcements that helicopter suppli-



Photo by Ernie Stephens, Editor-at-Large

Virginia's Fairfax County Police Department is displaying its new Bell 429 at Heli-Expo in Dallas. For the full story and coverage from the event, visit www.aviationtoday.com/rw/heliexpo2012 and look for *Rotor & Wing's* Show Day publication on the convention center floor.

ers uncovered leading up to the show. Take a minute to check out a few of these not-to-be-missed exhibitors.

For more highlights, news and coverage from the show, look for *Rotor & Wing's* Show Day publication at Heli-Expo, and visit our dedicated webpage: www.aviationtoday.com/rw/heliexpo2012



Appareo Systems (Booth 7834)

Appareo Systems, which is best known for its ALERTS (Aircraft Logging and Event Recording for Training and Safety) system, plans to introduce electronic flight bag (EFB) software that is being developed for CHC Helicopter.

According to John Pederson, manager, marketing communications for Appareo Systems, the new CHC EFB will run on the Apple iPad. The software will help CHC flight crews

increase efficiency by providing a tool for routing, fuel planning and weight and balance calculations.

The CHC project "taps into our considerable software development expertise, leveraging our experience in mobile development and cloud computing," notes Barry Batcheller, president and CEO of Appareo. "We're honored to be partners with CHC," he adds.

While Appareo will only have a prototype of the EFB at Heli-Expo, the company will have its full array of ALERTS systems on hand, including its latest unit, ALERTS Vision 1000. Jointly developed by Appareo and Eurocopter, Vision 1000 captures inertial and positioning data, as well as cockpit imagery and audio.

Cobham (Booth 3122)

Cobham and Carson Helicopters recently announced a program to retrofit Sikorsky S-61, S-76 and UH-60

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

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Sikorsky S-61 panel from Carson Helicopters and Cobham.

helicopters with Carson's performance modifications and Cobham's suite of integrated avionics. The new deck will include Cobham's large-format EFIS displays with 3D synthetic vision/highway-in-the-sky (HITS), integrated flight hazard alerting (terrain, traffic and weather), VHF com/nav, audio/radio management and more.

According to Frank Carson, owner of Carson Helicopters, adding Cobham's avionics "dramatically reduces pilot workload, increases safety and provides for future growth."

Cobham also comes to Heli-Expo 2012 with some additional supplemental type certificate (STC) approvals for its HeliSAS autopilot and stability augmentation system, including for the Bell 206/407 and the Eurocopter AS350 and EC130. The company has also received Brazilian validation for aftermarket installation of its 3D synthetic vision system aboard the Eurocopter AS350/355 series.

Columbia Helicopters (Booth 7334)

Columbia Helicopters is looking toward Heli-Expo to kick-off a big 2012. "Our pursuit of commercial and military helicopter maintenance and operational contracts in new areas has resulted in our ability to hire more people," reports Michael Fahey, president of the Aurora, Ore.-based company. "At the same time, we are continually developing

new contracts with our global petroleum and logging customers."

The company is certainly enjoying growth across the board. According to its year-end release, hiring is up 12 percent over 2010, with nearly 200 jobs added since late 2009. That brings its global workforce to nearly 700 with over 200 more employed by international subsidiaries or affiliate support organizations.

Columbia's aircraft fleet is pretty healthy, too. It currently operates seven Model 234 Chinooks and 14 Model 107-IIs. According to Fahey, much of the recent growth has been fueled by the company's entry into the military operation market. Columbia deployed five heavy-lift helicopters and support personnel to Afghanistan on Dec. 1, 2011 as part of a multi-million dollar contract to supply non-tactical support for the U.S. Transportation Command.

"The Afghanistan mission is a perfect fit for the skill levels and expertise we have built over our 55-year history and our understanding that we are making a difference," Fahey says. "The military has repeatedly expressed great appreciation of our operational tempo, high level of availability and the flexibility of our crews to perform our missions in a timely, and very professional manner."

In addition to the growth in its military sector, Columbia continues its support work for its global commercial

operators. To keep up with demand the company has recently invested in upgrading maintenance capabilities for both groups, as well as other operators who use helicopters similar to those in the Columbia fleet.

"While we have grown conservatively," Fahey says, "we do not expect our business model to change."

Era Training Center (Booth 4023)

To help meet the rapidly growing demand for the AgustaWestland AW139, Era Training Center in Lake Charles, La. has received FAA certification for its Level 6, full-motion flight simulation training device (FSTD).

According to Marc Schechter, general manager, the simulator is the second in North America to receive FAA certification. "With the resounding popularity of this type of aircraft, the demand for AW139 training has been surging."

The FSTD includes the latest flight software for the AW139's FMS and replicates the aircraft in every detail. It features a high-fidelity simulation of the helicopter's flight characteristics and, with the aid of a high-performance electric control loading system, delivers a "realistic" flying experience. The FSTD features a high-resolution visual imagery system presented on a spherical screen using TruVision Global database, which includes over 10,000 runways, coastlines and other geographic features.

Along with the AW139 program, Era Training Center has two other FAA-approved Level 6 FSTDs—one Eurocopter EC135P2+ and one AS350B2. Both simulators are designed by Frasca International to provide training for both single- and dual-pilot IFR configurations. The company also offers a variety of training programs for helicopter pilots and crewmembers, including in the corporate, oil and gas, EMS, ENG, law enforcement, government and military sectors.

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PRESAGIS

Garmin (Booths 31 and 9432)

For many Heli-Expo attendees, their first stop this year will be the Garmin booth for the opportunity to reach out and touch the new GTN 650 and GTN 750 series avionics—successors to Garmin's GNS 430/530 GPS/nav/com. The highlight of the GTN design is a large touchscreen for data entry and radio tuning. The units recently received EASA validation.

The GTN series has received a good market response, "with thousands of units already installed," says Carl Wolf, Garmin's vice president of aviation sales and marketing. He adds that because of the EASA validation, European operators can now employ "the latest technology, simplified interface and enhanced safety features" of the GTN series. Garmin also recently announced that its new GMA 35 remote mount audio processor has the ability to interface with the GTN 750. This optional installation configuration will enable the GTN 750 to act as a touchscreen control head for the aircraft's audio and intercom functions. A Garmin spokesperson said that the company is currently working on a blanket STC from the FAA and EASA covering helicopter installations for the GTN series.

L-3 Communications (Booth 8056)

L-3 Communications recently donated a set of night vision goggles (NVGs) to Embry-Riddle Aeronautical University's Prescott, Ariz. campus. The NVGs will be used in the university's bachelor of aeronautical science, helicopter specialty degree program.

The NVG system will train students in a variety of environmental conditions. The ground instruction on NVG operations course will be administered in accordance with the requirements outlined in FAR Part 61.31(k). As part of the program, students will also get to the tour L-3 Warrior Systems' Electron Tube

Operations facility to see how the NVGs are made.

"NVGs are playing an ever-increasing role in night helicopter operations," says Bryan Cox, assistant professor, ERAU. "It provides not only hands-on training, the field trip to L-3 also gives students an appreciation for emerging technology that will undoubtedly be useful in the helicopter industry."

Rockwell Collins (Booth 6119) and Vector Aerospace Helicopter Services (Booth 7139)

For a company that's not normally viewed a leader in commercial helicopter avionics systems, Rockwell Collins is headed to Heli-Expo aiming to further position itself in the rotorcraft market. The avionics maker's booth will feature a mock-up of the Sikorsky S-61 Pro Line 21 avionics upgrade program that Vector Aerospace announced at last year's event. John Peterson, director of avionics and flight controls marketing for Rockwell Collins, notes that Vector Aerospace received an STC in June 2011 for the Pro Line 21 installation, adding that Vector has "already delivered two aircraft into service."

Rockwell Collins is "bringing next-gen capabilities to legacy aircraft," with the Pro Line 21, Peterson says, adding that it "provides a host of features that you typically see on the latest OEM aircraft like graphical weather, charts, runway charts, maps, video inputs, solid state MEMS, ADS-B Out as well as solid-state AHARS." From an avionics perspective, he continues, "we've moved that aircraft well into the future with respect to operations, efficiency and reliability. All of this is certified for Part 29 IMC operations. Rockwell Collins is seeing an increase in demand for the upgrade with S-61 operators around the world. Peterson said the company is also in the process of certifying Pro Line 21's synthetic vision suite, which will be



Photo by Ernie Stephens

View of the show floor at Heli-Expo 2011.

available on the Vector S-61 upgrades. In addition to the S-61 panel and its new ADS-B Out transponder, Rockwell Collins is also displaying its Venue cabin management system for executive and VIP helicopters.

Marengo Swisshelicopter (Booth 4417)

Marengo Swisshelicopter is planning to bring a full-size pre-prototype carbon-fiber mock-up of the SKYe SH09 light helicopter to Heli-Expo. Unveiled during last year's convention, the SKYe SH09 is a light, single-engine turbine designed to provide multiple missions in adverse weather environments.

The SKYe SH09 is being developed specifically to meet the needs of operators who require hot and high altitude performance, greater payload capacity, an augmented sling load capability and faster cruise speed, according to the company. Preliminary specifications indicate a cruise speed of 145 knots (270 km/h), making it one of the fastest single-engine light helicopters in the category. Marengo Swisshelicopter says that the first flying prototype is in the assembly stage and the program is on track to begin deliveries in 2015.

The SKYe SH09 will have a maximum takeoff weight of 6,170 lbs. (2,800 kg) and feature a new modular cabin design with a large flat floor and a "unique high ceiling" concept, offering multiple seating configurations for up to seven passengers. ✈

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NIGHT

Despite the challenges of the global marketplace, cutbacks by public-use helicopter operators and new guidance in the form of FAA Order N8900.152 that took effect in April 2011, companies that provide night vision goggle (NVG) cockpit modifications are doing well, posting higher year-end returns and expanding at a time when many businesses are pulling back on the reins.

Rotor & Wing spoke with three of the major commercial NVG cockpit modifiers—Aero Dynamix Inc. (ADI), Aviation Specialties Unlimited (ASU) and REBTECH—to gauge the state of the specialized market and find out the impacts of N8900.152, Special Emphasis Inspection of Night Vision Imaging System Lighting Installations, on both operators and modifiers.

“Across the board, NVG demand lately is high,” says Dennis Trout, general manager of Euless, Texas-based Aero Dynamix. “Back in the old days, and I’m just throwing figures out there, probably 10 percent of rotary wing aircraft required NVGs. Now, even though the market for aircraft is down overall, roughly 30 percent of new aircraft require NVG. All market sectors are up—EMS, police, law enforce-

ment, offshore, military—it’s across the board, they’re all turning to NVG.”

The percentage of NVG users “has continued to grow, even in the economic situation that we have,” he adds. “Once the economy returns in earnest, we expect to see the demand for NVG to go even higher than it is today.”

The worldwide economy “has had only a slight impact on REBTECH over the past few years,” notes Richard Borkowski, president of the Bedford, Texas-based company. “The market is pretty strong right now. We do foresee that it’s probably already hitting its peak—maybe. Our sales have continued to rise at a pretty healthy rate over the past four and a half years.”

While the numbers are steadily going up overall, Borkowski observes that some taxpayer-funded operations are “being forced to go with the lowest modification bid over a source which is sometimes preferred by the pilots and maintenance personnel. Many in the law enforcement field have seen their operational budgets cut drastically to the point of not being able to acquire NVG equipment at the moment, or in piece parts over a period of time.”

But in the next few years, he sees “more and more air applications needing and benefiting from the use of

NVGs,” including those units who had previously held back because of budget concerns.

Shawn Woodworth, director of maintenance for ASU out of Boise, Idaho, says his colleagues have been expecting this business to start dropping off soon. “But for the past three years, every year we’ve been [modifying] more and more aircraft—2011 was a booming year for us despite all the challenges we’ve had, and 2012 is starting out to be a boom year too.”

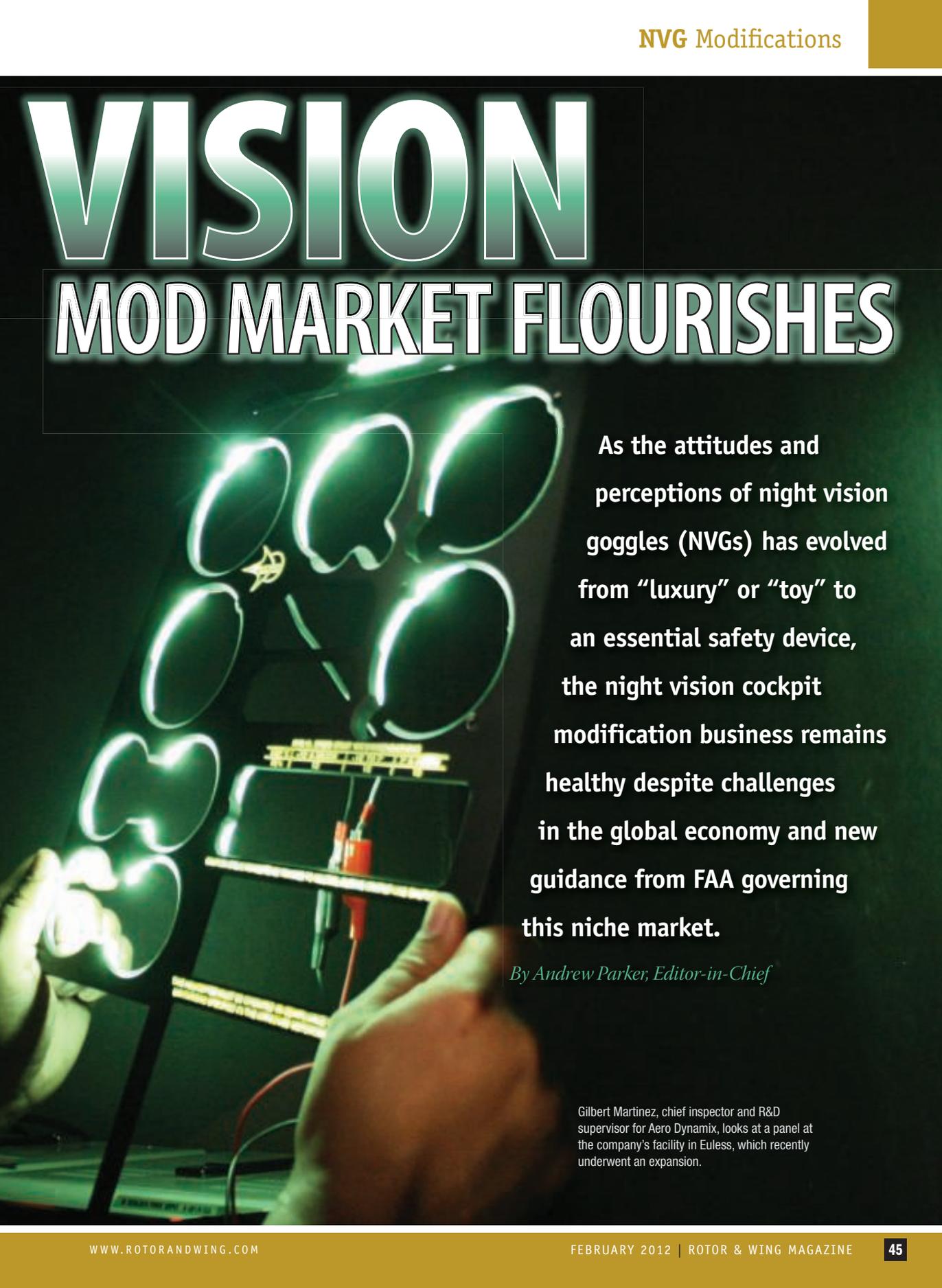
Hannah Gordon, director of sales and marketing for ASU, explains that EMS is the company’s biggest sector. “It used to be police, but under the ‘new economy,’ public uses have taken the biggest hit on extra spending.” She adds that ASU sees the global marketplace as a major growth area—although that brings its own challenges, due to U.S. government export regulations and varying rules among different countries.

The increased awareness of the importance of NVGs as a safety tool has helped isolate some of the losses experienced in the public use arena.

“NVG is an operational requirement in many cases these days. Before it was a luxury, but today a lot of operators won’t do without it,” Trout observes.

VISION

MOD MARKET FLOURISHES



As the attitudes and perceptions of night vision goggles (NVGs) has evolved from “luxury” or “toy” to an essential safety device, the night vision cockpit modification business remains healthy despite challenges in the global economy and new guidance from FAA governing this niche market.

By Andrew Parker, Editor-in-Chief

Gilbert Martinez, chief inspector and R&D supervisor for Aero Dynamix, looks at a panel at the company's facility in Eules, which recently underwent an expansion.

"We've seen a trend to go toward NVG," says Borkowski, "whether you're a law enforcement, EMS, offshore operator, etc. We do a lot with operators like the Ontario Ministry of Natural Resources, for example—those that fly power lines at night, those that check on control towers or cell phone towers. They are flying all the time and they're realizing that they're a lot safer if they are trained properly, have an STC-approved cockpit, and using a good quality set of goggles. They're seeing that there's not as many nighttime crashes" for operators with NVGs.

Unfortunately, says Jeff Stubbs, senior vice president of operations and systems technology for REBTECH, public service aircraft units, with a few exceptions, have historically "been treated as an unwanted evil, and NVGs as toys. Once we can convince a decision maker that this could save lives and avert a possible 'incident,' then we can move forward."

"There are obviously times when we know that an operator's going to get a couple of aircraft completed and due to their budget situation, will drop NVG—but it's a pretty rare occasion comparative to what it was four or five years ago," notes Tonka Hufford, operations manager for Aero Dynamix. "Back then NVGs might be the first thing off the list, today it's one of the biggest things that people fight to keep on the list."

One of the recent issues impacting operators in the NVG modification industry is FAA's N8900.152, which took effect in April 2011.

Stubbs says that the biggest challenge for NVG operators and modifiers in dealing with the FAA "is that unlike any other STC, civil NVG approval can be subjective."

Regardless of experience, education or training, he continues, "ultimately an individual is making a decision that is based on perception or opinion."

Kim Harris, director of operations for ASU, agrees. Much of the NVG program within the FAA is kind of a round peg in a square hole, he says.

Both Woodworth and Harris elaborate that NVG evaluations can be very

subjective—while one inspector might decide that daylight readability in a particular aircraft is adequate, another might have a different opinion.

Describing it as an ongoing "learning experience for both the industry and the FAA," the process of developing and enforcing the regulations has created additional time and costs for NVG modifiers, according to Harris. The company worked with FAA in 2007/2008 in a process that involved "paperwork cleanup and a lot of special emphasis inspections," Gordon explains.

The initial aircraft reviews were "a huge expense for us, but a definite learning experience for everyone—us, the FAA and the operators," Harris says, adding that when the special emphasis inspection guidelines came out in 2011, "the lessons learned from our experience helped the entire industry."

According to Stubbs, "when we were first made aware of N8900.152 a couple months before it came out, I was probably the 'chicken little' of REBTECH, running around concerned about what was going to come out of it."

But in reality, he continues, "out of our 300 aircraft, we really did have less than three percent of our fleet affected by 152, and that three percent was solely operators who had modifications a few years ago and they lost documentation. It really did not impact us much at all. For other companies, it nearly ruined them."

For operators, "one of the biggest challenges is the budget," Trout says of N8900.152. "These new demands have a big impact on their budget—some instruments either have to be updated, or the user wants to make changes to improve safety or effectiveness. From our side, the regulations have given the operators and maintenance providers more awareness of what the FAA guidelines have evolved to."

That increased awareness, Hufford explains, "has driven the operators to realize that, while they may have added a couple small units over the years and thought everything was just fine, often times the maintenance providers may

have overlooked the impact the change may have had on the NVG certification."

Aero Dynamix has experienced "a huge increase in demand [to answer] questions. That's driven a very large, new requirement for STC updates and re-certifications. That is, aircraft that were field approved before 2003/2004, or even as far back as the late 90s, that are now coming back and requiring a full FAA STC," Hufford continues.

The increased demand has been a factor in helping drive a recent expansion of the Aero Dynamix headquarters in Eules to 23,000 square feet, with a workforce now approaching 100 people.

Stubbs says that the FAA Special Emphasis Inspection "was not only needed but long overdue. N8900.152 has provided the FSDOs with initial NVG training and a regulatory format in which to insure the NVG STC is maintained and documentation is current. Many of our operators have taken N8900.152 and are implementing it into their quality system as well."

From an operator's perspective, "it's an entire shift in how they perceive modifying their aircraft," says Gordon. "So in that regard, there's a lot of discrepancies a lot of modifiers are dealing with. A good 30-40 percent of those problems have to do with an operator upgrading their GPS but not realizing that they have to get an ECO [engineering change order] to do that. They can't do it with a [Form] 337 anymore."

Economics is based on filling a demand, and the demand for NVG modifications remains high and it should continue to be a productive segment for many years to come. While the sector involves a very complicated product—with issues like daylight readability still a case-by-case challenge—it clearly isn't on the decline.

"Filtering infrared light today is not the hardest part of modifying equipment, it's the balance and the daylight readability," Trout explains.

"It's easy to make a cockpit NVIS compatible, but can you read it during the day? That really is the challenge," adds Woodworth. ㊦

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PREPPING FOR THE DITCH

Helicopter Industry Struggles to Improve Ditching Survivability

By *Thierry Dubois*

Most ditching events and water impacts would be survived if on the ground. Civil aviation authorities, helicopter makers and equipment manufacturers are struggling to improve the survivability of these accidents, as the number of fatalities due to drowning of conscious occupants is still unacceptable. Improving floatability is a major focus. Just as important, avoiding helicopter capsizing would save many lives.

Emergency breathers can help, but can be challenging to use. Underwater evacuation training helps, too, but only happens once every four years. At December's European Aviation Safety Agency (EASA) helicopter ditching workshop in Cologne, Germany, about 65 attendees—a lot of them representing North Sea oil-and-gas offshore operators—heard how difficult it will be to

make this safety picture somewhat rosier.

Let's first define what they are dealing with. A ditching event is an emergency landing on water. It is performed so that it enables a "safe and orderly egress" of the occupants. A water impact is uncontrolled or partially controlled. An example is a Sikorsky S-76C+ accident in 2005 near Tallin, Estonia. All 14 passengers and crewmembers drowned (they inhaled water), although there was enough survivable volume after the impact. Statistics show that what is probably the most strictly run helicopter activity, offshore transportation, lags behind in terms of safety. Commercial airlines have 0.9 fatal accidents per million flight hours. Offshore helicopter transportation has 5.7 (2010 numbers).

Why focus on ditching and water impacts? According to a review of world civil water impacts, 98 survivable water

impacts happened between 1971 and 1992. They caused 338 fatalities, including 192 caused by drowning. An underwater escape (from a flooded helicopter cabin) too often mismatches breath-hold time.

Shell Aircraft senior aviation advisor Alan Ward insisted his company has "a strong belief in using more modern aircraft." Oil companies wanting to buy safer aircraft is one more incentive for the manufacturers to carry on with their efforts in this direction. First, they may want to have manufacturers better understand ditching dynamics. Russia-based Kazan Helicopter is thus endeavoring to properly model these forces. "This will help determine proper piloting," said Dmitry Nedelko, chief of Kazan's calculation bureau.

Operators may want to have their helicopters floating longer. As John

Franklin, an EASA safety analysis coordinator, noted, in 26 of 184 accidents (since 1970) that involved ditches, the helicopter sank much too early. This was immediately or during the evacuation.

Sometimes floats did not inflate. Sometimes they inflated, then deflated. So what about emergency floatation system (EFS) crashworthiness? "Statistics indicate improving floatation is the most important factor for better survivability," noted Dave Howson, UK civil aviation authority (CAA) flight operations research manager. Indeed, the major drowning cause is the inability to escape an inverted helicopter.

Surprisingly, computation has shown that a 100-percent increase of EFS design strength translates into a modest crashworthiness improvement. A designer should think of a greater number of floats rather than stronger floats. In simulations, the helicopter stayed afloat in all impacts, providing it had two high-mounted floats—in addition to the usual four floats at the bottom of the airframe. The two upper floats bring redundancy and a side-floatation capability.

Other ways to save lives by improving floatation include, for example, automatic activation. This can be done with immersion switches. However, to automatically activate the EFS, it has to be armed at all times.

This has a cost. "You either have to demonstrate inadvertent deployment does not jeopardize the flight or certify a system, using speed or altitude switches for example, to prevent such inadvertent deployment," Howson explained. As a result, the estimated cost per life saved would be about \$380,000. This is considered highly cost effective. "Oil & Gas UK uses a figure around \$7 million per life saved," Howson reminded.

All of the North Sea helicopters already have automatic floats. They proved their value in a Super Puma (G-REDU) accident there in February 2009. "Most of us believe that the helicopter would have capsized and drowned at least some of the occupants

if it hadn't been for the automatic activation system," Howson told *Rotor & Wing*.

AgustaWestland claims to have demonstrated its AW139 medium twin is seaworthy up to sea state 6 (very rough sea). Initially, it was just complying with the regulation—sea state 4 (moderate).

The flight manual now refers to sea state 6.

The Anglo-Italian manufacturer recalculated float and structural loads. It then performed tests in a water tank on a 1/12th model, said Daniele Robustelli, marine and general airframe systems

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This model shows an example of the "side floating" concept.

specialist. On a video, the AW139 model appears not to capsize, despite the simulated waves and wind.

Robustelli was challenged, though. The audience expressed surprise at seeing smooth water surface on the video. It turned out that the rules that govern such demonstrations are quite relaxed. "I agree irregular waves may be a more severe environment, which we have not tested," Robustelli added.

A Eurocopter representative pointed out that irregular wave testing would

require a huge water tank. This would be to accommodate the drift caused by the simulated wind over the irregular wave scheme period. EASA rotorcraft certification manager Massimo Mazzoletti wondered, "should we mandate sea state 6?"

As for post-ditch stability, adding float scoops would be a significant improvement. The EFS would then just cost 10 percent more or so. A float scoop is a small, flexible bucket, attached to the exterior of the float. It naturally fills up

with water when the float immerses. The added weight of the water acts to increase the aircraft's righting moment when above the water. The drag of the pocket also dampens rolling when below the surface. As a result, the helicopter can withstand one more sea state—sea state 5 instead of sea state 4, for example.

It remains that capsizing is a non-linear process. "Therefore, it is difficult to relate it to measurable helicopter parameters such as dimensions," Howson noted. Fundamentally, the reason why helicopters roll over is that a lot of weight is located on the top—engines and main rotor. "Don't stay in the aircraft if it seems to keep upright, as it may capsize," warned UK CAAs Tony Eagles, a former Royal Navy pilot.

Other ideas have been pitched to avoid capsizing and sinking. Mazzoletti pleaded for the "jettison fuel" item to be removed from the ditching checklist. "It

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does not improve floatability and makes the cg higher," he said.

Separately, the suggestion to let some water in (the "wet floor" concept) to stabilize the aircraft has been ruled out. It brings a risk of capsizing when the water rolls—this is called the "free

surface effect." The side-floating concept brought a lot of attention and debate. Howson supports it. Human subject trials showed it is much easier to escape from a helicopter that is floating on its side, rather than inverted. An asymmetric configuration, with only one upper

float, is preferred, he said. It provides a single rather than two-side floating position. This avoids the helicopter switching from one position to the other. Moreover, it is cheaper, lighter and generates less aerodynamic drag (even when stored, emergency floats make the helicopter's exterior less smooth).

Eurocopter had quite a different view. Louis Delorme, in charge of EFS design, does not quite like seeing a float near the main rotor, in case of inadvertent deployment. Moreover, the proximity of gas exhaust requires new fabrics or thermal protection. Then, the weight of the extra floats can be close to 200 lbs.

On the asymmetric configuration, Delorme said it does not provide as much air volume in the cabin as a symmetrical one. "Today, we are not sure of the risk-benefit ratio of side floating," he summarized. Eurocopter is therefore focusing on upright stability.

What about a sea anchor? Howson said it is good because it helps keep the helicopter facing waves—hence much more stability. Therefore, the helicopter has a better chance to avoid rolling over. "But the time it takes to deploy a sea anchor is an issue," he added. It doesn't work until the connecting line is tight and the helicopter could capsize before that is achieved.

François Hochart, an investigator at the French BEA (the equivalent of the NTSB), noted additional equipment to prevent helicopter capsizing appears to be difficult to design. "Were other ways investigated in terms of design or training to improve safety?" he asked. He suggested to find other locations for emergency exits and to enhance passenger training.

As things stand, if the efforts to keep some exits "dry" fail and the helicopter actually inverts, occupant disorientation is immediate. According to Paul Sparkes, a UK CAA flight operations inspector, the occupants' allies will be training, equipment "and a lot of good luck." Seats should be aligned with windows. "Otherwise, once inverted, you'll never find your way," Sparkes stressed. Not all mod-



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HAL Dhruv – Bengaluru
Sikorsky S-61 – Stavanger
Sikorsky S-76B, S76C+ – New York
Sikorsky S-76C++ – São Paulo (2012), Vancouver, Zhuhai (2012)

ern helicopters used today in offshore operations have such alignment.

Once the occupant has pushed the window out, he or she often needs something to hang on the fuselage to help egress. But recent aircraft have smooth, aerodynamic surfaces. This does not make egress easier, several speakers noted. The Sikorsky S-61 Sea King had a lifeline rope. It even had a hull properly designed for landing on water, like the Sud Aviation SA321 Super Frelon.

Although the fuselage offers little to hang on, it happens that it damages liferafts. “We have to de-lethalize the fuselage,” Sparkes said. Also, as Paul Hannant, a UK Aircraft Accident Investigation Branch (AAIB) senior inspector emphasized, survival equipment should not be mounted on a door that can be jettisoned.

Then, an occupant has to wear a well-sized immersion suit. “They are sometimes chosen too large for comfort reasons,” Michael Cunningham, investigator in charge of the 2009 Cougar flight 91 (a Sikorsky S-92) crash, said. There is also a risk of snagging. Involved can be emergency breathers or, for the military, survival equipment (such as a dinghy) attached to the back of the pilot.

Water temperature can add one challenge. To keep dexterity, occupants are encouraged to put gloves on only after egress. But, in one instance, a survivor got his fingers so cold that he could not



AgustaWestland AW139 flying over water. Photo courtesy AgustaWestland.

don his goggles. This affected his vision.

Typical escape time is 45 to 60 seconds in a real accident. Meanwhile, breath-hold time can be as short as 20 seconds in cold water.

To help solve the mismatch between underwater escape and breath-hold time, three types of emergency breathing systems (EBS) are available. The first one uses a small bottle of compressed air. The second one is a rebreather. The third type is a hybrid of the first two.

The idea is to have at least one minute of breathing time. “It helps overcome panic and disorientation,” Howson added. Training is needed, though. In addition to the snagging hazard, the added buoyancy can impede egress from an inverted aircraft. Research is going on

to ensure there is a net safety benefit in using EBS. Howson hopes the EASA will adopt the resulting specification. It could then issue it as a European Technical Standard Order (ETSO).

Consultant Sue Coleshaw is developing a technical standard for EBS. She pointed out that using an EBS should be easy. For example, the mouthpiece should not be hidden in the folds of the stored air pocket. Also, the emergency breather should not prevent harness release. Designing an EBS with a deployment time clearly below breath-hold time is still a challenge.

Underwater escape training is obviously very useful but it must be properly done. Regulations only call for one such training session every four years. In a presentation by Michael Taber, director of research and development with Survival Systems Training, it appeared this brings somewhat contradictory requirements. The simulated cabin has to be as realistic as possible with accurate window and handle locations etc. However, as training sessions do not occur often, the simulator also should be representative for several types. One passenger may be carried in several different helicopters over the four-year interval.

Taber also insisted the stress level in underwater escape training should be high enough for knowledge and skills to be retained. 🇺🇸

The North Sea is a Hostile Environment—But What About Other Places?

As one attendee, representing an operator flying off West African coasts, told *Rotor & Wing*, rulemakers should not forget about those environments that are less hostile than the North Sea. For example, should helicopter occupants off Nigeria wear immersion suits? Yes, if one thinks helicopter search-and-rescue services there are virtually non-existent—rescue will come by boat. But, if they wear an immersion suit during a flight in Africa’s hot environment, they will dehydrate, the attendee pointed out.

In addition, do all occupants there have the necessary culture to take benefit from safety training? “The cooks we fly to oil platforms may find it challenging to use European-designed, complex safety devices,” he said.

About aircraft ditching certification, some participants suggested sea state 4 is perfectly acceptable for environments like the Mediterranean and the Gulf of Mexico.

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MEDIA



SPANISH SCENARIOS TEST PERSONNEL RECOVERY TECHNIQUES

In October the Spanish Air Force hosted the European Air Group's 5th Annual Personnel Recovery Training Meet, CJPRSC.

By Andrew Drwiega, Military Editor



Spanish Air Force AS332B behind one of the international extraction forces.

The fifth gathering of European international military aircrews that were seeking to improve their knowledge and skills in personnel recovery techniques met at the Albacete airbase in Spain from October 14-26, 2011 under the auspices of the European Air Group.

This was the annual Combined Joint Personnel Recovery Standardization course (CJPRSC), formally known as the Combined Joint Combat Search and Rescue course (CJCSAR), organized under the direction of the EAG's Lt. Col. Uwe Schleimer (JPR-1), based at RAF High Wycombe in the UK. This was Schleimer's fourth course in as many years, although he was deputy commander the first time around. The basis for the course actually goes back to 2002-2006 with the VOLCANEX/CSAR exercises.

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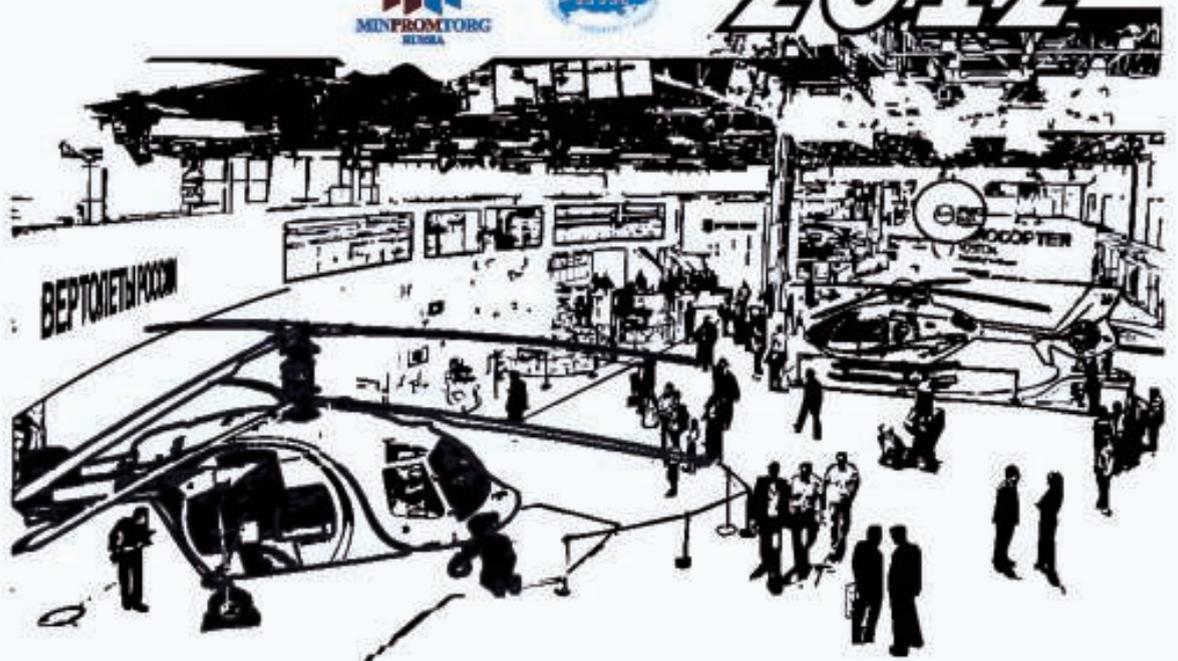
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A pair of Spanish Air Force Super Pumas acting as recovery vehicles.

The concept behind the annual CJPRSC is to provide individual training for those with responsibility for personnel recovery tasks.

It trains and tests their knowledge and proficiency in planning and executing PR missions “in a non permissive, multinational environment embedded in a COMAO [Composite Air Operation], using operational documents.”

The structure of the CJPRSC “is virtually unchanged since last year,” said Schleimer, adding that, “the only real difference was that the course was more operator-oriented and a little more away from the theoretical.” Most of the participants are new to the course although a good number of the instructors and directors return to assist with instruction.

The course has matured over the years and although some of the participants are knowledgeable in its requirements, most have no experience. Which is a good balance, explained Schleimer.

Those on the course get to know tactics, techniques and procedures (TTPs) and identify common operating principals instead of using their own standard operating procedures (SOPs) and standing SPINS (Special Instructions).

EAG held the initial planning meeting at its RAF High Wycombe headquarters in January 2011, followed by a further planning meeting at the airbase in Spain during June. The Program of Instruction (PoI) is based around four days of theoretical instruction and seven days of fly-

ing sorties. During the flying phase, Schleimer revealed that 90 percent of the scheduled sorties took place. Once again however, as in recent years, no night flying exercises were possible due to limited residual conditions and the two night missions became day missions instead.

The program calls for the aircraft present to be divided into two PR Task Force groups, with each group receiving their own separate task. Forward Air Refuelling Points (FARPS) were once again used although the Spanish conditions led to some unscheduled ‘brownout’ training.

Once again the course attracted a good international attendance with 13 nations sending a total of 319 personnel and 17 helicopters and fixed-wing aircraft. The main nations con-



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(Above) Italian Navy EH101 on the ground prior to takeoff with an extraction force. (Bottom) The CJPRSC 2011 group photo at the Tactical Leadership Program (TLP) facilities at Albacete Air Base, Spain.

tributing forces and benefiting from the CJPRSC training were Spain, France, Germany, Italy, Poland, Sweden and the United States.

Personnel from six other nations contributed to support and observer roles.

“The Spanish forces should be recognized for the great effort that they put into making this CJPRSC one of the best with 10 fixed-wing sorties per day. There was also the chance to use fast jet pilots as on scene commanders—something that rarely happens in exercise but can happen operationally,” explained Lt. Col. Schleimer.

Although a fixed-wing NATO E-3A Sentry airborne early warning (AEW) aircraft wasn't available, the role was performed by an EH 101 C2 from the Italian Navy.

Enemy ground forces were provided by the Spanish Military Police with the Swedish, Polish, French and Italian militaries provided the extraction forces.

“Today we are not looking at high-intensity warfare or home country defense,” said Schleimer.

“Now what is more usual is expeditionary warfare. We have a moral obligation to try and get our people back.”

The amount of financial investment that countries make in training and qualifying their flying personnel makes them expensive assets. In the current difficult financial climate, cuts to training will mean that individuals will be harder and costlier to replace in the future, Schleimer stated.

Overall the course achieved its training objectives, despite the lack of night flying. As Schleimer outlined in his debriefing document, “The shift in focus away from pure CSAR missions towards the wider scope of Personnel Recovery operations continues to prove beneficial to tailor the course objectives towards real time requirements.”

The ultimate lessons learned by the teams that participate in the CJPRSC will hopefully be taken away and used when they are called upon to plan and execute real PR missions in a non-permissive multinational scenario operating within a Combined Air Operation (COMAO).

The next European Air Group CJPRSC training course will be held later this year. It is scheduled to run from October 8 through Oct. 26, 2012 in the Schönewalde/Holzsdorf region in Germany.

Participating Aircraft: CJPRSC Exercise

- 1 x MC-130, USAF
- 1 x EH-101 C2, Italian Navy
- 2 x F1M, Spanish Air Force
- 2 x F-18M, Spanish Air Force
- 2 x AS555, French Air Force
- 2 x AB212, Italian Air Force
- 1 x EH101, Italian Navy
- 1 x CH-53G, German Army
- 1 x SA330, French Air Force
- 2 x AS332B, Italian Air Force
- 2 x HH3F, Italian Air Force

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TRAINING NEWS

EASA Prepares for 'the Ditch' 48

Apache Block III Enters Service 62

Enhancing Safety & Professionalism 68



Lt. Col. Edward Vedder using an AH-64D Apache Block III simulator at Boeing's facility in Mesa, Ariz.

Army Unit First to Train on Upgraded Block III Apaches

The U.S. Army's 1st Infantry Division, part of the 1st Attack Reconnaissance Battalion, 1st Aviation Regiment, Combat Aviation Brigade, has become the first unit to fly the Boeing Apache Block III. Pilots flying the Block III, which features 26 new technological upgrades, will receive three weeks of training on the revamped helicopters at Boeing's facility in Mesa, Ariz.

Lt. Col. Edward Vedder, commander of the 1-1 ARB, explains that there are new components to the helicopter. "There is new head tracker, a new helmet and new flight pages. It doesn't take additional skills to fly it, but the aircraft is significantly different."

Vedder is one of the first 10 Apache pilots to undergo Block III training in Arizona. He also has the distinction

of having flown all three incarnations of the Apache—the AH-64A Block I and AH-64D Longbow Block II, in addition to the current iteration.

"At Block II, it has a certain level of power when you pick it up. This is totally different," notes Vedder. "When you pick this aircraft up you are going to immediately feel the power difference." The Block III variant also comes with the ability to communicate with unmanned aerial vehicles (UAV) and its controllers, as well as watching the UAV video feed and taking control of the UAV, should the situation warrant it.

The unit currently has 85 Apache pilots that will require training on the Block III. The first 75 will train in Mesa, with the remainder handled via mobile training at Fort Riley, Kan. All pilots will be trained on the Block III prior to their next deployment. —*Information from Sgt. Jeff Troth contributed to this report.*

Navy Employs Sikorsky Virtual Environment Trainer

The U.S. Navy has begun using its first virtual reality training device, a Sikorsky MH-60S aircrew virtual environmental trainer (AVET). MH-60S and HH-60H crew members will practice aerial gunnery, cargo replenishment, confined area landings and search and rescue (SAR) with the new full-motion simulator. Capt. John Feeney, Naval Aviation Training Systems Program Office (PMA-205) program manager, says that future plans call for the Navy to "network this trainer with the tactical operational flight trainers for multi-crew mission rehearsal training." The simulator is based at Naval Air Station North Island in San Diego, Calif.

Bell Sim Opens at CAE Mexico

CAE has launched a new training center in Mexico for Bell helicopter and business jet pilot training. The facility features a Bell 412 Level D-equivalent full-flight simulator (FFS) as well as various fixed-wing simulators, all qualified by Mexico's Directorate General of Civil Aviation (DGAC). The Toluca, Mexico location is CAE's ninth for civil helicopter training.



Bell 412 FFS in Toluca.

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Leading Edge

By Frank Lombardi



Quiet Please

The beginning of a new year seems like an appropriate time to look at what lies ahead with evolving helicopter systems and technologies. One area that always welcomes improvement is that of helicopter noise and vibration. A quieter, smoother helicopter makes those who fly in them smile bigger, and those who are on the ground complain less; a win-win for all. There are many oscillating forces and moments at work creating sources of noise and vibration in flight. One of the most well known sources is due to blade-vortex interaction (BVI), otherwise known as “blade slap.”

Just like an airplane wing, higher-pressure air will spill out from under a rotor blade at the tip, get sucked toward its upper surface, and create a strong corkscrewing swirl of air, or tip vortex. Under normal conditions in level flight, these vortices tend to sink and lose energy as they get blown below the rotor. In autorotation, they pass above the helicopter as the aircraft descends quickly. However, in a partial-power descent, or when the helicopter is rolled into a turn, an approaching blade will often come into the vicinity of a tip vortex left by a preceding blade. When the high-energy swirling air strikes the rotor blade, it causes a sudden change in angle of attack and an associated change in pressure on the surface of the blade. This is what creates the loud impulsive noise that can be annoying to those on the ground. There can be increased vibrations in the cockpit due to BVI, especially as the aircraft is

slowed on approach. As you begin to “ride the burble,” the tip vortices impart high vibratory loads on the blades that pass down the rotor shaft, into the fuselage, and into the seat of your pants until the helicopter slows to a hover and the vortices are once again blown down beneath the rotor.

There is more than one way to lessen BVI. In recent months, Eurocopter has publicized its latest efforts to make friendlier-sounding, smoother-riding helicopters, developing both passive and active systems to combat blade-vortex interaction. The manufacturer’s passive system, which is called Blue Edge, involves redesigning the conventional straight rotor blade from the root outward, to include forward sweep, aft sweep, and anhedral (droop) at the tip. The intensity of the BVI is governed by the distance between the vortex center and the plane of the blade, the strength of the vortex at the time it meets the blade, and how parallel the vortex is to the blade edge when they meet. Blue Edge combats all three of these. The forward and aft sweep of the blade sit at an oblique angle to the vortex during contact, while the anhedral, or drooped tip weakens and deposits the vortex lower, giving the approaching blade more clearance over the top. This has produced a reduction of noise levels by 3-4 decibels, according to the company. Blue Edge has been said to increase hover performance as well, since reducing the strength of tip vortices will increase rotor efficiency.

Eurocopter’s Blue Pulse technology is an active noise/vibration canceling system that uses piezoelectric actua-

tors to control trailing edge flaps on each rotor blade. Piezoelectric actuators can change their shape when an electrical voltage is applied, and actuate those flaps at 15-40 times per second, effectively flying it up and over or down and under the approaching vortex with every revolution, greatly reducing transmitted noise and vibration. Eurocopter has reported a 5-decibel decrease with the system.

These methods of BVI reduction have been around for a while, but only now are they coming into their own. The constant development of materials technology is what has allowed this to be so. The unconventional shape of the Blue Edge rotor would plague engineers with difficult bending and twisting loads that try to distort the shape of the blade in flight, were it not for the advent of composite materials that can resist such aeroelastic effects. With Blue Pulse, piezoelectric actuators made largely of ceramic light-weight materials and virtually no mechanical parts have proven to be very robust while living in the high-g, oscillatory environment of the spinning rotor; something that has long-troubled earlier projects exploring active-blade control.

Until these newer systems are fully integrated into the helicopter production line, it falls upon us to keep the negative public perception of our flying to a minimum. Knowing what causes BVI and the regimes of flight it is commonly encountered in allows us to do our best to avoid it, and we should continue to be good neighbors and use “fly friendly” techniques until technology gives us a quiet helping hand. 🛩



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Law Enforcement Notebook

By Ernie Stephens



A Paid Advertisement?! On a Police Helicopter?!

A good friend of mine sent me a news clipping the other day. Basically, the sheriff of a fair-size department is having such a tough time financing his air unit, he has decided to solicit sponsors to help cover the costs of the operation.

Now, if the image of a decal-laden NASCAR vehicle comes to mind, you're headed in the right direction. Just change the car to a helicopter, and the laundry detergent logo on the hood to, oh, maybe a local grocery store chain, and you'll be dead on. Because just like Tony Stewart's #14 Chevy with "Home Depot" emblazoned across the hood, that agency's helicopter will be a flying billboard for whichever companies take the sheriff up on his offer.

The only reason this news didn't shock me was because it was not the first time I had heard of such an idea. San Diego Fire Department (SDFD) did the same thing several years ago when they invited area companies and organizations to place logos on the department's Bell 212, in exchange for a donation toward the then-one ship operation. It worked well, too. They had logos from a medical center, a Native American resort, and a couple of other outfits; not to mention a happy little bundle of cash.

Deputy Chief Brian Fennessey, a lieutenant at the time I met him in 2007, said the sponsorship method was the only option the SDFD had to get their unit up and running—a unit that battles brush fires nearly all year. The deal made some in the SDFD nervous. After all, if the choice has to be made between which fire to work now and which one

to work later—and a sponsor's interest is one of the properties in harm's way—how will it play out? Will the involved sponsor expect—or subtly demand—priority consideration, and withdraw its support if it doesn't get it? And if the sponsor legitimately deserves priority, will the "regular citizen" assume money drove that decision?

For the record, I know Fennessey. I'm sure he would never let sponsorship interfere with how the SDFD prioritized its missions. But for every honorable public servant like him, there are plenty who are less honorable, and might very well allow contribution-dollars to cloud their better judgment. (Refer to the politics section of your local newspaper to learn more about money can corrupt decision-making.) The meat and potatoes of this whole method for finding revenue is just another piece of the economic-meltdown pie, especially since things got really ugly back in 2008. The woes of the housing market clobbered the tax base that public services need to operate. Unlike private businesses, which can divest, merge, and do a bunch of other things, government agencies are pretty much limited to cutting costs, raising taxes and selling bonds to make-up for the shortfall.

So, here we have a sheriff, who is wedged between a financial rock and an operational hard place with his helicopter unit. I'm betting he has already reduced staffing to the bare bone, virtually cut out all overtime, and must hold his fleet of patrol cars together with bailing wire. And now, his helicopter operation—which not only patrols, but

is needed for search and rescue services in remote areas—could go the way of other units that have had to sell their ships due to lack of funding.

Once all of the discussions, gnashing of teeth, and moaning passes, here is where I land: Trading ad space on a police helicopter for operating cash would be so far down on my list of unit-saving options, you'd skin your knees trying to get low enough to read it. It isn't that I would feel obligated to give preferential treatment to a sponsor, because I wouldn't. And if I were an elected unit head, as this sheriff is, I wouldn't be too worried about outside influence trying to make me do otherwise. I would, however, be concerned if I were an appointed official, who might have to deal with a boss or political figure that might lean on me to play favorites based upon who send in the largest check.

That said, if I were stuck in the unenviable position of having to rely on sponsors to operate my unit, I'd do my best to limit it to those who probably wouldn't need my services, such as the non-resident providers of my unit's radio gear, jet fuel, or mission equipment. It would keep my unit from having to face accusations that I gave better police service to a sponsor than to a non-contributor.

So, while I salute that sheriff's efforts to keep his deputies flying, and don't blame him for looking for outside sponsors if that's his last resort, I sure hope it works for him. Air assets are extremely important. Hopefully, he can discontinue the whole sponsorship deal once things get better, as the SDFD was able to do. 🍷

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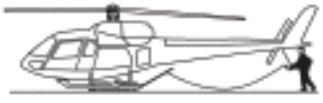
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Safety & Training

By Keith Cianfrani

Enhancing Safety and Professionalism



I had the pleasure of attending the Eastern Region Helicopter Council (ERHC) seminar in September last year in Mahwah, N.J. and enjoyed spending time with the council's President, Jeff Smith, and HAI's Safety Director Stan Rose. The first several sessions were focused around employment in the rotary wing industry. Attending were young pilots looking to get that "perfect" flying job and a few more experienced pilots trying to back into the cockpit.

Smith spoke on the state of the industry and explained what the ERHC is and what they do. He explained that local helicopter pilots who were interested in the availability of IFR flight for rotorcraft started the organization in 1977. Their ad hoc meetings in New York City, using the initial name of Northeast Helicopter Operator Council (NEHOC), were the initial step in forming the eastern seaboard's first locally organized aviation group to represent helicopters. After the charter member pilots realized their success in joining together with respect to the IFR issue, they incorporated in 1979, renaming the non-profit organization Eastern Region Helicopter Council, Inc. to represent their interests in aviation.

ERHC has always had an active community outreach program to address the concerns of residents, relating to helicopter and heliport issues. In 1982, the ERHC was awarded the first-ever Fly Neighborly Award from HAI, and is featured as an example in the Fly Neighborly Guide. ERHC is an affiliate member of HAI and NBAA. Since 2007, the group has strengthened its bonds with other local aviation groups, such as the Mid-Atlantic Pilots Association

(MAPA), Mid-Atlantic Aviation Coalition (MAAC), Long Island Business Aviation Association (LIBAA), and New Jersey Aviation Association (NJAA). The council meets five times yearly. Its first priority always has been, and remains—safety. Since 1977, ERHC has promoted communication among local-elected officials, FAA, the public and the region's helicopter operators to enhance safety, professionalism, efficiency and community compatibility. Following Smith's presentation, the chief pilot of Liberty Helicopters, Paul Tramontana, gave an update regarding sightseeing along the Hudson River and how they've adjusted to the new airspace limitations in the New York area. Liberty Helicopters is one of the major tour operators and hires low-time pilots to fly the river for several years before they are upgraded to other types of flying. Other companies flying in the area are Manhattan Helicopters, Zip Aviation and Helicopter Flight Services. The air tours operate under CFR 49, Part 136. There are three heliports in use, West 30th Street, East 34th Street Heliport, and the Downtown Heliport.

Rose presented several sessions on the "State of the Industry" and safety awareness. He spoke on the reasons why we crash aircraft and that these mishaps are all preventable. Shortly after his session, I had the opportunity to speak with Stan and we talked about many areas of safety in our industry. He went on to say that HAI is a lobbyist organization promoting safety and helicopter aviation worldwide while representing interests of owners, most of which have less than five aircraft. We discussed how HAI is working with ERHC to reduce accidents in the community by promoting

aeronautical decision-making assessments, obtaining legal weather briefings, and reviewing safety "hot spots." We discussed how pilots need to plan for all flight conditions on the ground prior to each flight. He believes every solution begins with each and every pilot.

Of course, we then talked about new CFIs and how many of them do not have the ideal cognitive skills and aeronautical experience, a topic I have written about several times. Rose went on to say how pilots are task overloaded and how risk management is not performed on all occasions, as there are limitations to see and avoid and how it is the responsibility of the PIC to manage the workload.

Rose finished our interview with mentioning what pilots need to know about the industry. He stated that 30 percent of the Vietnam Era pilots (many of which are approximately 65 years old) would retire, but because of the poor performance of their 401K plans, still need to work. Pilots must know their competition. With many of these pilots retiring in the next five years, there may be opportunities for employment.

Finally, the FAA Safety Team conducted a seminar concerning areas of interest such as the ongoing work of IHST and how with PRIA a pilots training history will be tracked. In other words, if you fail a check ride, it stays on your record permanently. They also discussed that there is no evidence that twin-engine helicopters are safer than single-engine models and the need for LARS. Overall, it was a great event, featuring very professional presenters and an opportunity for operators and pilots to network. I was very glad the focus was on safety and risk management. Good job guys. ✈



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Military Insider

By Andrew Drwiega

The Challenge to be Good Enough



With Afghanistan already in the drawdown stages in the minds of politicians, the challenge ahead for U.S. Army Aviation commanders will be to maintain the quality, capability, volume and performance of the force it has built up since the windfall in spending following the cancellation of the Comanche program. As its commander Maj. Gen. Anthony Crutchfield stated during his opening address at the recent AUSA Institute of Land Warfare (ILW) aviation conference, “the last 10 years of war are not the blueprint for the next war.”

But Army Aviation is starting this new phase in U.S. global defense strategy from a position of strength. It is well on the way to modernizing its entire fleet—with the exception of the Kiowa Warrior and the oldest fleet in the books, the variety of training aircraft at Fort Rucker, Ala. It is also well into the process of constituting its 13th Combat Aviation Brigade (CAB)—getting it through the budgetary door before it slams shut. Six CABs are currently committed globally: four in Afghanistan, one in Kuwait (still supporting the Iraq forces in spite of the heavy PR campaign emphasizing departure of all troops from that country) and one in South Korea. But the “elephant in the room” is the government’s declared commitment to cutting \$487 billion from defense spending in the next decade.

Speaking in January 2012, Secretary of Defense Leon Panetta said, “...with the end of U.S. military commitments in Iraq and the drawdown that is already under way in Afghanistan, the Army

and Marines will no longer need to be sized to support the kind of large-scale, long-term stability operations that have dominated military priorities and force generation over the past decade.” So if there is a reduction in ground force numbers, it is likely that Army Aviation will be reduced accordingly. Panetta added to his remarks saying the “U.S. joint force will be smaller, and it will be leaner.”

So joint is also in; remember, this is why the Joint Multi-Role (JMR) aircraft is—this time—unlikely to go away. Joint equipment programs are going to increasingly appeal to DoD financiers because a shared platform across different forces equates to reductions in not only procurement but also through-life ownership costs. So better for the Army, the Marines, the Air Force and the Navy to have their share of JMR aircraft rather than lose out by not participating—then have no option further down the road.

The first players in this development will have an opportunity to shape the design for the future—those coming to the table reluctantly at a later stage may be limited in their ability to influence such a program.

Panetta also stated the requirement to the future force being able to regenerate and mobilize quickly, and that it was a priority to maintain a strong National Guard. The challenge will be to ensure that the Guard is equipped, trained and paid in line with the level of commitment expected of it in the future. If, as has already been stated, it will continue to take its share of front line duties, carrying out the same tasks and missions as

its regular colleagues, then the build up in its force structure and ability to integrate with regular formations must continue. Many have stated in recent times that it’s still not at a level that will be required, particularly in terms of pre-deployment training with regular units, unmanned aerial systems (UAS) and Special Forces. On-the-job training, while possible at times in Afghanistan, may not be possible next time around. In the case of the Guard, it will be very tempting for financiers to contemplate slipping back into the mindset that placed the Guard at a lower level of requirement to the regulars—but this must not happen if they are to be relied upon to be interchangeable operationally with the regular force.

Crutchfield’s will lay down his line on the general way ahead for Army Aviation in April at Quad-A in Nashville, Tenn. He will release his Vision 2030 paper and campaign plan for the future, but gave a brief insight as to its contents during AUSA. “We need to sustain the active reserve when the Army is not at war. We need to know what our advisories can exploit in our current equipment. And we have to rethink the current way of doing business in our acquisition process.” Finally, he said, everyone in aviation needs to take an “appetite suppressant” for the journey ahead. “We need to be happy with what is good enough.” By this he didn’t mean cutting capability, but having what was required to get the job done in a balanced way, measured against the overall capability of the force available. In short, there won’t be any more Comanches. ■

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