Heliops

DELIVERING GLOBAL COVERAGE OF THE HELICOPTER INDUSTRY

2013 I ISSUE 83

HELI EXPO
LAS VEGAS 2013

HELIOPS PHOTO COMPETITION
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Another Good Show

Heli-Expo in Las Vegas was bigger and better than ever. Overall, there was a good 'vibe' at the show and the participants I spoke to were very positive. It broke records at a time when the world's economy is still (and will likely to be for sometime yet), 'shaky'. As HAI points out, 736 exhibitors and 20,393 attendees, it was a 6th year of consecutive growth. There is no doubt Las Vegas was a success and so I hope to see another show there in the not-so-distant future. Heli-Expo 2014 is less than a year away now so start planning your presence in Anaheim!

PRIVATISATION AND CONTRACTING

The British Government recently announced that Bristow Helicopters will replace the UK Military's Search and Rescue helicopters around the United Kingdom. Twenty-two new helicopters (Agusta 189s and Sikorsky S-92s) will replace 40 Sea Kings. Concerns have been raised about the cut in the number of aircraft but the UK Ministry of Defence pointed out, there were only 16 Sea Kings available at any one time due to maintenance and training requirements. The helicopters replacing the venerable Sea Kings are modern and capable. The S-92 has been in service for some time now and any teething issues should be well and truly behind the aircraft now. It is in fact a highly sought after machine by the offshore oil industry since the gear shaft problems experienced by the EC225 in 2012. Eurocopter hopes to have the 225 flying again soon. The Agusta 189, a larger version of the 139 and based on the military 149, was announced at the 2011 Paris Air Show as Agusta's competitor to the EC225 and S92.

Privatising para-military operations can make economic sense purely because the cost of maintaining and operating aircraft within military systems is usually higher than their civilian equivalents. The problem for the military is that tasks such as SAR are good training for their own personnel and provide a respite from military operations. Yet, not having to come up with the upfront purchase money also works for cash-strapped governments. Companies such as Bristow and CHC with their large fleet base and infrastructure like steady contracts such as a Government SAR contract. The pace of flying, in comparison to off-shore support operations, is usually lower and the customer tends to be a little less demanding. The challenge for the companies is ensuring reliability when it is needed.

A variety of civilian companies play a big role in the world's hotspots, including Afghanistan. Primarily providing logistical support, there is a motley collection of helicopters, from Mil-8s, Mi26s, S-61s and even S-92s to Bell 205s. In countries where the enemy owns the roads with Improvised Explosive Devices, helicopters are the vital transport link. The civilian aircraft and crews offload the military so it can focus on fighting the fight. Crews earn good money but flying without a weapon can be a bit nerve-wracking but the role exemplifies the increasing role civilian helicopter operators have in supporting Government operations.

Despite the world's economic woes, the helicopter industry as a whole is continuing to grow. Whether supporting the resources sector, Government requirements or tourism, the industry is dynamic. Yet, it seems there is a real problem encouraging young people to undertake maintenance training. In Australia alone, a report showed employment in the sector increased by 18% in the 5 years to November 2011 and is expected to keep increasing by 18.8% per year to 2016. Yet completions in courses and apprenticeships have been falling by 11% a year. The resource project boom in Australia will only see more pressure on the industry. If these figures are being reflective of the rest of the world, aviation as a whole is

heading for trouble and the helicopter industry even more so (for many, working in harsh conditions is not overly attractive). As the current crop of mechanics and engineers are offered lucrative packages, it is hoped that young people will see fixing aircraft as a choice career and we will see the numbers increase – but the time between entry to training and being productive is long and the situation will worsen before it gets better.

Which leads me back to the question of privatization. A major source of trained mechanics is from the military yet if the tendency to privatise continues, that pool may well dry up as militaries reduce their training throughput. The cost of training new people will fall back on the industry and we will see costs increase. Then will the privatisation/commercialisation still look attractive?

Mark Ogden

EUROCOPTER ECUREUIL FAMILY ARRIVES IN BANGLADESH

Eurocopter has delivered its first civil helicopter into the Bangladeshi civil helicopter market when an EC130 B4 was delivered to R&R Aviation. This is the first of two EC130 B4s that have been acquired by the Bangladeshi helicopter operator; R&R Aviation is the largest private helicopter operator in Bangladesh and will be used primarily for providing emergency medical services (EMS) and humanitarian support.

JAPANESE STC FOR AW139 FIRE ATTACK SYSTEM

Simplex Aerospace has received Japanese STC for its Fire Attack system Model 326GII for the AgustaWestland AW139 helicopter. The first Japanese sale of the Model 326GII system was installed on the Yokahama Fire Department AW139 by Mitsui Bussan, Simplex's long-time representative for AgustaWestland products in Japan. The system has a 480 gallon (1,817 liters) water capacity, is equipped with a foam system and ground handling wheels that facilitate installation in less than 10 minutes.

AW189 HELICOPTER SELECTED FOR UK SEARCH AND RESCUE

AgustaWestland will supply its AW189 Search & Rescue (SAR) helicopter in the provision of SAR services in the UK. Bristow Helicopters Ltd., have been awarded the contract by the UK Department for Transport to provide SAR services to the UK for 10 years, and has selected the AW189 SAR variant as one of the central platforms for its SAR program. In addition to the aircraft, AgustaWestland will provide related training, maintenance and support services. A total of 11 AW189s will be operated by Bristow in the UK, with a phased-in starting period between 2015 and 2017. The program for AgustaWestland is valued at over €275 million ($212 million). The iconic Sea King, which has been operational for over 30 years, is currently providing the bulk of Search and Rescue missions in the UK alongside the AW139 which has undertaken the same role, primarily on Britain's south coast, for the Maritime & Coastguard Agency.

EC145 FOR POLICE SERVICE OF NORTHERN IRELAND

The Police Service of Northern Ireland will add another helicopter to this agency's all-Eurocopter fleet when they receive a second EC145 in the first quarter of 2013. The Police Service of Northern Ireland's current Eurocopter fleet: an owned EC145 and EC135, along with a leased BK117, provides a high annual utilization, logging an average 1,100 flight hours yearly per helicopter. Eurocopter operate more than 350 Eurocopter helicopters in the civil and parapublic service across the United Kingdom.

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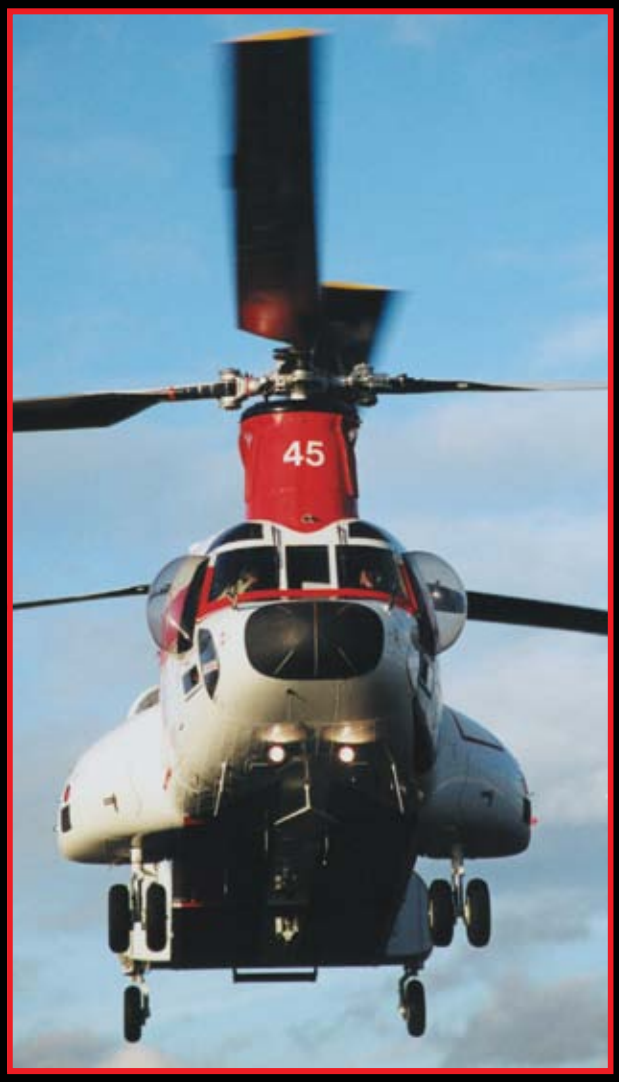
MI-38 WORLD RECORD OFFICIALLY REGISTERED BY FAI

The record set in 2012 by the second prototype of the Mi-38 helicopter has been officially registered by the Fédération Aéronautique Internationale. Test pilots from the Mil Moscow Helicopter Plant set three world records in the FAI category for helicopters weighing 10,000 to 20,000 kg.: flying to an altitude of 8,620 meters (ft.) without a payload, reaching an altitude of 3,000 meters (ft.) in six minutes and an altitude of 6,000 meters in 10 minutes and 52 second.

WALES AIR AMBULANCE COMPLETED THEIR FIRST NIGHT MISSION

The maiden night flight was to attend a 59-year-old man who had suffered a heart attack and followed weeks of extensive night flight training for the pilots and paramedics at the Wales Air Ambulance. The Wales Air Ambulance began night flight trials at the start of 2013 with the aim of providing a 24-hour air ambulance operation, having raised £6 million ($9 million) to upgrade its three EC135 helicopters based in three locations across Wales.

We Fly



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AUSTRALIA TO GROUND R44s WITHOUT FUEL TANK UPGRADE

Robinson R44 helicopters in Australia not fitted with upgraded fuel tanks face being grounded. The Civil Aviation Safety Authority of Australia has issued a direction to all affected R44 helicopter operators regarding the installation of flexible fuel tanks to reduce the risk of post-accident fires. The CASA has made it clear that Australian based R44 helicopter operators following the Robinson maintenance program are required to install the new fuel tanks. The latest actions by CASA follow a preliminary investigation report by the Australian Transport Safety Bureau into a fatal R44 helicopter accident in NSW on 21 March 2013. In a service bulletin issued in September 2012 Robinson set 30 April 2013 as the deadline for the fitting of the flexible fuel tanks.

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HELICOPTER SATELLITE COMMUNICATION SYSTEM FOR JAPAN

Mitsubishi Electric Corporation has delivered the world's first helicopter satellite communication system (HSA40) to Japan's Fire and Disaster Management Agency. The system, installed on a Eurocopter AS365 N3, can transmit high-speed, real-time aerial video of disaster areas even when ground-based networks are interrupted, as well as in situations where line-of-site broadcasts are hampered by mountains or tall buildings. They will be used to gather information on disaster areas to support the rapid deployment of emergency-response services.

TURKMENISTAN AW101 VVIP HELICOPTERS DELIVERED

AgustaWestland have delivered the first of two AW101 VVIP helicopter to Turkmenistan Airlines. AgustaWestland has also provided pilot and maintainer training and an initial spares package under the contract. The aircraft departed the UK fully loaded for the five day ferry flight across Europe to Turkmenistan. The journey included stop-overs in Germany, Ukraine, Russia and Kazakhstan prior to transiting to Ashgabat, the capital of Turkmenistan. After over 30 hours of flight time the aircraft arrived serviceable to the main operational base.

COLUMBUS POLICE HELICOPTERS GROUNDED

Columbus Police Department are now back flying after taking the precaution of grounding their helicopters while they were inspected along with checks on maintenance records. The grounding is a result of gaps found in maintenance reports that came to light when the aviation unit was preparing to sell one of their helicopters, the department have now checked the records of all seven MD500E helicopters in the departments fleet. The unit normally flies about 16 hours per day seven days a week and responds to an average of 7,000 calls each year.

COAST TO COAST HELICOPTERS EXPANDS FLEET

Canadian Coast to Coast Helicopters has taken delivery of two enhanced AS350 B3e's to increase support for the groups utility helicopters operations. Both aircraft will be operated by one of the group's subsidiary operations; Mustang Helicopters. Coast to Coast's fleet is a mix of rotary and fixed wing aircraft that service the Oil and Gas, Forestry, Hydro, Passenger and Freight Transportation, Mining, Emergency Services and Tourism sectors. The new aircraft will boost Mustang Helicopters' fleet to eleven AS350 B2's and three AS350 B3e's adding to 130 aircraft Coast to Coast Helicopters operates.

ASU COMPLETES 100TH BK117 NVG UPGRADE

Aviation Specialties Unlimited has completed their 100th Night Vision cockpit modification on the BK 117 aircraft for Flight for Life Transport System, which is operated by Air Methods. The recent installation was completed at Helicopter Specialties a helicopter completion center in Janesville, Wisconsin.

JAPANESE CERTIFICATION FOR 480B

Following an application submitted in May 2012 Enstrom Helicopter Corp has now received civil type certification from the Japan Civil Aviation Bureau for the Enstrom Model 480B. Enstrom has been successful in Japan over the years, including a recent sale of 30 480B helicopters to the Japanese Ground Self Defense Force for training.

SUMMIT AIR AMBULANCE ANNIVERSARY

Summit Air Ambulance have celebrated its one-year anniversary of their Bozeman Yellowstone International Airport base in Belgrade. Since its first flight in January 2012, the helicopter service has flown over 200 patient missions. Summit utilizes an Agusta 109E Power helicopter for both emergency scene responses and inter-hospital transports and covers South Central Montana, Southwest Montana and Yellowstone National Park.

EUROCOPTER CORPORATE FOUNDATION TAKES FLIGHT

Eurocopter has held the first board meeting of its new Corporate Foundation, an independent, apolitical and non-profit legal entity funded by Eurocopter, Eurocopter Deutschland and Eurocopter Group subsidiaries. The Foundation is dedicated to the following areas of service: emergency humanitarian aid; support for developing countries; assistance for the disadvantaged including the ill, handicapped, and those living in extremely difficult conditions; and youth development through the transfer of aeronautical know-how to underprivileged youth. The foundation's outreach will extend to partnerships with selected non-governmental organizations and associations that have both a national and international scope. Eurocopter Group employees may participate in projects supported by the Foundation either by volunteering their time or offering a financial contribution.

FIRST AS350 B3E IN UK

The first AS350B3e, the newest version of Eurocopter Ecureuil family, in the UK has been delivered to Loxwood Holdings. The company currently operates a MD500E and the AS350B3e is the first Eurocopter product the company has operated.The new aircraft will be used for Surveillance & Security Services, Route Reconnaissance and Airbourne Security Training Services.

FLIGHTSAFETY RELOCATE S-76B TRAINING

FlightSafety International has moved its training for the Sikorsky S-76B helicopter to its Learning Center in Dallas, Texas from their West Palm Beach Learning Center. The Sikorsky S-76B simulator is currently undergoing a complete refurbishment and upgrade at FlightSafety's support facility in Tulsa, Oklahoma and is scheduled to enter service in Dallas during the third quarter of 2013.

R66 TURBINE RECEIVES RUSSIAN CERTIFICATION

The IAC AR, Russia's FAA equivalent, has issued its type certificate for the R66 Turbine. The Russian certification process, which began in November 2010, concluded in March 2013 following the FAA's approval of the ELOS (Equivalent Level of Safety) for the R66 hydraulic control system. The ELOS was significant as it effectively removed an exemption in the R66's original type certificate limiting the certification of the R66 across Europe and some other countries. Certification in Russia is an important milestone for the R66 as Robinson has orders for forty-seven R66 from Russian customers with twenty-two already waiting export, eighteen are currently in production and scheduled for delivery later this year. Seven R66 demonstrators were delivered to Russia prior to certification.

BOND AIR SERVICES SIGNS CONTRACT WITH NORTH WEST AIR AMBULANCE

Bond Air Services, UK, has been awarded a new seven-year contract by North West Air Ambulance. The contract, worth just over £10 million ($15 million), is to provide air ambulance support across five regions in North West England. Under the new contract, Bond will continue to provide a complete helicopter support service out of Blackpool Airport and City Airport Manchester, including aircraft, crew and maintenance support. Bond has operated Helicopter Emergency Medical Services for NWAA since the charity was founded in 1999.

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Courses Offered:
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BELL 429 FOR DELAWARE STATE POLICE

Delaware State Police have ordered two Bell 429 aircraft to join the aviation units three Bell 407s and single Bell 412. The unit has 25 pilots and medics providing 24 hour coverage from two locations, Georgetown and Middletown and each year, the unit averages 2,000 missions, transports approximately 300 trauma patients and flies nearly 1,500 hours.

METRO AVIATION DEBUTS NEW TRAINING CENTER

Metro Aviation has announced the completion of a new training center co-located at the company's main offices in Shreveport, Louisiana. The 12,000 square foot facility is complete with the latest generation learning tools and the company will provide advanced training to its staff of over 700 maintenance technicians and pilots located around the United States.

A109A PASSES 10,000 HOUR MILESTONE

REACH Air Medical Services, headquartered in Santa Rosa, California, A109 has passed the 10,000 flight hour milestone. REACH Air team has been flying the A109 for 25 years and pilots Tim Karwal and Jason Dykstra flew the 10,000 flight hour during a flight training mission. Since 1987 REACH has transported more than 55,000 patients across to Northern California.

AW139 SIMULATOR CERTIFIED TO LEVEL D

The Italian Civil Aviation Authority have certified a CAE 3000 Series AW139 full-flight simulator to Level D. The simulator is located at the Rotorsim training center in Sesto Calende, Italy. Rotorsim is a joint venture owned equally by CAE and AgustaWestland and the simulator is installed in the new simulation building which will include up to nine Full-Flight Simulators and five Flight Training Devices further expanding the Training Academy capabilities.

BALTIMORE PD CONTINUE TO FLY FOUR EC120S

Eighteen months after Mayor of Baltimore approved the purchase of four new EC120B helicopters for the Police Department, her recent proposed budget called for grounding one aircraft as a cost-saving option. But within days, the administration reversed the decision and will now keep all four helicopters flying. In September 2011, Baltimore approved the $9.5 million purchase of the EC120B to replace the original helicopters purchased in 2001.

CORNWALL AIR AMBULANCE TRUST ANNOUNCES NEW HELICOPTER OPERATOR

UK Cornwall Air Ambulance has signed a new helicopter support contract with Medical Aviation Services who were selected ahead of the other two companies shortlisted including the existing operator, Bond Air Services. The service will start operating two MD 902 Explorer in December 2014 and the aircraft will have increased cabin space and the capability to operate after night fall to allow the air ambulance to increase its operating hours. The move to a new operator marks the end of 27 years of the operator relationship between the Cornwall Air Ambulance Trust and Bond Air Services.

SAUDI MEDEVAC TO BE EQUIPPED WITH AW139 HELICOPTERS

AgustaWestland has signed a contract for a fleet of AW139 twin engine helicopters to equip the Saudi Aeromedical Evacuation Department of the Ministry of Defense of the Kingdom of Saudi Arabia. The helicopters will be configured with a dedicated aeromedical interior, with deliveries starting in 2013 and completed in 2014. It is the first order for the AW139 to be placed by the Ministry of Defense of the Kingdom of Saudi Arabia and continues the success of the AW139 in the Kingdom, where it is already operating with other operators.

SAGEM AVIONICS ICDS 8A GLASS COCKPIT FOR THE SKYE SH09

Marenco Swisshelicopter has chosen Sagem ICDS 8A glass cockpit for their SKYe SH09 helicopter. The ICDS 8A incorporates a fully configurable user defined checklist, display of primary flight and navigational information, engine management data and improved fuel management function. This will be the first interface to the Honeywell HTS900-2 1D FADEC engine. The ICDS 8A will read 21 channels of FADEC data, as well as 38 channels of other airframe and engine parameters. Marenco Swisshelicopter has over 45 orders for the newly designed SKYe SH09 with deliveries scheduled between 2015 and 2017.

ERICKSON AIR-CRANE ACQUIRE EVERGREEN HELICOPTERS

Erickson Air-Crane has announced that it is to purchase Evergreen Helicopters, the deal is valued at $250 million and will provide Erickson Air-Crane with an incremental fleet of 64 aircraft, consisting of both helicopters and fixed-wing airplanes. Evergreen Helicopters provides air transport services for cargo and personnel to government and commercial customers and has a presence in North America, the Middle East, Africa and the Asia Pacific.

RUSSIAN HELICOPTERS AND DENEL AVIATION LAUNCH SERVICE CENTER

Russian Helicopters and Denel Aviation of South Africa have opened a maintenance, repair and overhaul (MRO) center in South Africa for Russian-built helicopters. The MRO in Johannesburg will offer maintenance services for civilian helicopters manufactured by Russian Helicopters and are the first service center for Russian helicopters in sub-Saharan Africa and will begin by servicing Mi-8 and Mi-17 models.

AUSTRALIAN HELICOPTERS SELECTED FOR NEW RESCUE CONTRACTS

Australian Helicopters has been selected as the new helicopter provider to support both Central Queensland Helicopter Rescue Service, based in Mackay, and Capricorn Helicopter Rescue Service, based in Rockhampton. Services will transition over in July 2013 from the current operators at both the Mackay and Rockhampton locations which form part of the Queensland Government's Emergency Helicopter Network. The company will operate a Bell 412EP helicopter from each of the bases.

RACQ CQ RESCUE CREW AWARDED NATIONAL EMERGENCY MEDALS

Members of the Australian RACQ CQ Rescue helicopter crew have been awarded National Emergency Medals at a ceremony held at their service's hangar. National Emergency Medals are given to individuals, who respond to nationally significant emergencies within Australia, the medals recognize the efforts of the RACQ CQ Rescue crew during the natural disaster stricken start to 2011. In January 2011 the rescue crews were deployed to Brisbane to assist with flood relief work, then in February 2011 were deployed to Townsville in the wake of extreme tropical Cyclone Yasi.

ALL METALS DELIVERS TO US COAST GUARD

All Metal has delivered a customized maintenance stands designed specifically for the US Coast Guard's MH-65 Fleet following testing at the Coast Guard's Elizabeth City facility. The multi-purpose maintenance stands have been designed for use during both routine maintenance and complete overhauls on the MH-65, and can be used on all models of the Dauphin helicopter.

BOND SIGNS NEW CONTRACT WITH PREMIER OIL

Bond Offshore Helicopters has been awarded a new contract with Premier Oil Plc. to provide crew change flights for the independent exploration and Production Company. Services have already started and the contract will run for three years with options to extend. Premier Oil has equity interests in nine producing fields as well as a number of current and future development projects in the UK North Sea. The new contract will be serviced by a new Sikorsky S-92 aircraft from the Avincis Group, the first of this aircraft type to be operated out of Aberdeen by Bond.

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PHOTO COMPETITION

2012 WINNERS

The 2012/13 HeliOps Photo Contest attracted over 300 entries this year. Choosing not just the winners but even our Honourable Mentions was tough because the standard of photography was superb but in the end we had to choose one over another. There are some very talented photographers within the worldwide helicopter industry and its our pleasure to showcase the Best of the Best here in these pages. So please take a minute to browse through the pages and enjoy some simply amazing images showcasing this wonder industry we are all part of. And don't forget the 2013/14 edition will be announced soon so watch this space.

OVERALL WINNER

PHOTO BY: **RICHARD CHAPUIS**

An Air Glaciers SA315B Lama HB-XVL spraying a winery near Grimisuat in Switzerland.

PHOTO BY: **TONNY OLSEN**

Picture was taken in Uummannaq(BGUQ) at the heliport just before weather turned down on us. Snow showers were hitting bad with severe winds the following hours after landing. Pic was taken with my Nikon D3200 with a 18-200 lens.

WINNER – ACTION

2nd PLACE – ACTION

PHOTO BY: **KARL HUBER**

A Wucher Helicopters AS350 transporting a snowgun near the Mehlsack summit.

3rd PLACE – ACTION

PHOTO BY: **JOHANNES HERRMANN**

Co-operation of ground and air rescue. The ambulance crew handing over a patient to the Crew of 'Christoph 62' from Bautzen at Riesa hospital, Saxony, for an intensive care flight to a specialized hospital. The helicopter is the 1984 BK117B2 D-HDAC (c/n 7005).

WINNER – MECHANICS

PHOTO BY: **DAN SWEET**

A Columbia Helicopters C107 crew chief conducting a pre-flight inspection on the ramp in Afghanistan as a US Army Chinook flies past in the background.

2nd PLACE – MECHANICS

PHOTO BY: **TONY WALKER**

A mechanic debugging blades off an AS 350BA in North West British Columbia.

PHOTO BY: **DANIEL QUEIROZ**

An AS350BA from the Rio de Janeiro Governments VIP fleet gets washed down at the start of the day.

3rd PLACE – MECHANICS

PHOTO BY: **BENEDIKT H SEGURA**

A BH212 at Kangok Fjord, Baffin Island. Picture is taken when on a servicing trip to one of the North Warning System Radar sides in the eastern Arctic. The opportunity came to take the picture when the mechanic working on the side generators had to power down for testing and the side went dark. I used the head light on my helmet and about 20 sec exposure time to capture the picture.

WINNER – ARTISTIC

2nd PLACE – ARTISTIC

3rd PLACE – ARTISTIC

PHOTO BY: **ELVIS NIEVES**

A Sikorsky S76 picking up executives at the end of a long day at the 34th Street Heliport in downtown New York.

OPPOSITE PAGE

PHOTO BY: **WILLIAM LAVERY**

Ground Handling The 300: Photo taken at KBJC during a visit to Colorado Heli-Ops. A Heli-Ops pilot readies his aircraft for a day of flying.

Heliops
DELIVERING GLOBAL COVERAGE OF THE HELICOPTER INDUSTRY

HONOURABLE MENTIONS

PHOTO BY: **MARK ANDREASSEN**

PHOTO BY: **MICHAEL COONEY**

OPPOSITE PAGE

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PHOTO BY: **DEAN WINGARD**

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R66
TURBINE

TOP ON THE WORLD OF THE

A GROUP OF RUSSIAN ADVENTURERS DECIDE TO MAKE AN EPIC TRIP TO THE NORTH POLE IN AN R66 AND CREATE A NUMBER OF FIRSTS. READ ABOUT THEIR AMAZING ADVENTURE THROUGH SOME OF THE WORLDS MOST HOSTILE ENVIRONMENTS.

STORY BY **MICHAEL FARIKH**

I became a pilot at a fairly advanced age and only received my private pilots license in July 2008. Since then I've been flying mostly in my Robinson R44 Raven I. I fell in love with long-duration and endurance flights not only in Russia but around the world. I've repeatedly circled all around Europe, flew across much of the U.S. and even managed to fly in South Africa. Probably for this reason, the famous Russian Arctic and Antarctic explorer Oleg Prodan called me in the middle of March 2013 and invited me to take part in a scientific expedition. It was organized to search for the Russian schooner Svyataya Anna, which disappeared in the Arctic – with captain Georgy Brusilov and part of the crew – about one hundred years ago, in 1914. Historical reports mentioned several different geographic coordinates for the schooner's location at the time that navigator Valerian Albanov left it. It was necessary to put meteorological radio beacons at these points – located approximately 70 nautical miles to the north of Rudolf Island in the Franz Josef Land archipelago – to be able to trace the drift route of the schooner or its wreckage.

Expedition leader Oleg Prodan organized the delivery of Jet A-1 along the route, so only a turbine engine helicopter could be used therefore my piston engine R44 was not suitable for the purpose.

Since 2011 our air club has been operating three R66 helicopters in Russia. As soon as they were brought into the country – long before the type certificate release – the helicopters had been registered as singular aircraft copies. This enabled the owners to make some legal modifications without requesting approval from the manufacturer. At the same time, we've been anxious to test the helicopter at high latitudes where it's not been flown before. The owner of Aviamarket aircraft company agreed to provide an R66 (S/N 0040, Reg. RA-1588G) for participation in the expedition and for testing in the harsh Arctic conditions. The chief pilot of our air club – experienced aviator Dmitry Rakitskiy – was appointed to be the pilot in command. I flew as co-pilot and navigator. Before departure we carefully studied the history of Arctic operations, as none of us had flown to the north of latitude 71 degrees (North Cape, Norway). The history was particularly interesting to me because more than eighty years ago my grandfather, Fabio Farikh – one of the first Soviet polar pilots – often flew along this route.

By the time of our flight from

THE HISTORY WAS PARTICULARLY INTERESTING TO ME BECAUSE MORE THAN EIGHTY YEARS AGO MY GRANDFATHER, FABIO FARIH — ONE OF THE FIRST SOVIET POLAR PILOTS — OFTEN FLEW ALONG THIS ROUTE.


ARCTIC COUNCIL
NORTH POLE
N90°
OTTAWA
4949 KM
COPENHAGEN
3809 KM
HELSINKI
3312 KM
REYKJAVIK
2819 KM
OSLO
3342 KM
MOSCOW
3840 KM
STOCKHOLM
3404 KM
WASHINGTON
5675 KM

Moscow, our helicopter had 571 flight hours clocked. Ours was one of the first R66s in Russia, and by this time we hoped that all the "childhood diseases" of this aircraft had already emerged. Preparing the aircraft for the flight included the installation of supplemental 79-gallon fuel tanks with transfer pump, attaching "bear paws" at the heel of the skis, making air intake blanks for out-of-hangar parking and manufacturing an engine preheater. We took along an extra battery to ensure reliable engine starting in the frost. Dampers for partial coverage of engine oil coolers and main rotor transmission were also manufactured. We felt ready to stay in the air without refueling for more than seven hours. Of course, we took warm clothing, footwear and an emergency kit which would allow us to survive at least three days while waiting for assistance should anything happen. Our friends and relatives could monitor us via SPOT, and I was planning to send text messages with our coordinates from the Iridium satellite phone as we moved north of latitude 80.

Our journey began at our heliport near Moscow on the morning of April 2, 2013. Our takeoff was delayed three hours, though, because of bad weather – the cloud base was no more than 100 feet and the horizontal visibility was about 400-500 meters. By 11:00 am local time the weather improved and we departed, laying in a course for the north. That first day we had to cover about 1,063 nautical miles to the city of Vorkuta, with a stopover for refueling in Syktyvkar. The trip took 9.3 hours of flight time and, because of the late start, we landed in Vorkuta (UUYW) about 10 minutes after dusk.

The next day was a preparation day for the further flight to the north. The expedition leader and correspondents from several TV channels (making films about the expedition) arrived in Vorkuta by train. The time schedule of our trip was determined, based on the fact that in early April a meeting

with Arctic Basin commonwealth representatives had been planned on the Franz Josef Land Archipelago. Two Mi-8 helicopters of the Joint Arctic Squadron of the FSB Russia were provided for possible search and rescue operations. Oleg Prodan negotiated with the command that these helicopters would occasionally take journalists and various expedition supplies to the islands, because our helicopter could fly only with two pilots and our staff on board over such long distances.

I must say that, at first, the Arctic military pilots had a dim view of the possibility of flights in the northern region by our "toy" helicopter and by us, the "inexperienced amateur pilots." They met us in Vorkuta with thinly veiled surprise because we had made a rather long flight in far from ideal weather en route. By the end of the expedition they admitted they had changed their opinion both about the R66's capabilities and about us – civil pilots.

On April 4, our three aircraft took off from Vorkuta and headed northeast to Dikson Island (UODD). Our helicopter was bringing up the rear and landed about 20 minutes later than the swift Mi-8. We tried to keep up catching tailwinds aloft. We even managed to overtake our military colleagues and their powerful twin-engine aircraft a couple of times. After fueling at Dikson we continued on to the north, now over the ocean.

To my surprise, the ocean was not completely covered with thick pack ice; we observed much open water and vast areas with thin drift ice. Landing on the thin ice (in case of engine failure) would be no safer than landing in open water. Running ahead of the story, I will tell you: We cruised over many open water patches up to latitude 83

N, sometimes observing pancake ice, looking like numerous jellyfish from high altitude. The ice to the north is much thicker, but also has numerous fractures that look like black rivers between white shores. Steam is curling above these “rivers” in 25-degree frost, as if warning of the possibility of fast icing. In such circumstances, Dmitry and I had to make a difficult decision several times. What is safer, we wondered, to continue the flight under a cloud base in dangerous proximity to steam, or to climb above the clouds, with the possibility of icing while ascending? Now we can say that all our decisions were correct. In fact, I’m sitting in a cozy office in Moscow writing this story and the helicopter is safe and sound, sitting in a warm hangar. But during those eventful days we were making our very first steps in the Arctic, and we relied on our previous experience and knowledge to give us confidence.

So, after taking off from Dikson we headed north to the Severnaya Zemlya archipelago and Sredniy Ostrov Air Base (UODS). Along the way, however, we made a brief landing on Troynoy Island (meteorological station Izvestiya of CEC - Central Executive Committee) to deliver parcels from the mainland to meteorologists who had been there since winter. No incidents occurred and by the end of the day we had reached Sredniy Island. This was an overnight stop at this frontier post. On the way to Sredniy Island, Dmitry and I for the first time in our lives saw a polar bear on the ice – with two cubs – and we just had to take a few photographs. The Mi-8 expedition members were terribly envious. That day we traveled more than 880 nautical miles during 9.1 hours of flight time.

In the morning after take-off we

charted a course west to the archipelago of Franz Josef Land. On the way, approximately halfway between the two archipelagos, we made a brief landing at the Vise Island meteorological station to again deliver some parcels. We continued our journey and then crossed all of Franz Josef Land from the east to the west. The islands turned out to be surprisingly beautiful.

As a matter of fact, before this flight I had no idea the Arctic was so diverse. I thought I would see an endless white plain, monotonous and without signs of life. I was shocked by what I saw, and every hour of flight revealed fascinating new views to me. We saw huge hummocks of blue and turquoise ice and could hardly imagine the power that could pile ton upon ton of ice onto of each other. It must have been hundreds of tons of ice. We admired the high, steep walls of glaciers that were slipping into the sea from the islands, and we saw icebergs which were formerly part of these glaciers. We photographed a huge laid-back walrus with thick white and yellow fangs. We saw whales too, floating to the surface to take breaths of air. There were seals on the ice and polar bears were waiting for seals next to the ice holes. The walls of the glaciers are so magnificent as they're illuminated by the midnight sun, and the sun itself is dazzling above the horizon, sometimes producing a halo effect or light column. Our planet is beautiful not only in Hawaii or the Grand Canyon, but in the Arctic, which is a pearl in the necklace of Nature.

At the same time, there is a troubling situation – this pearl is heavily spoiled by people. We observed discarded fuel barrels on many islands, abandoned machinery

TO MY SURPRISE, THE OCEAN WAS NOT COMPLETELY COVERED WITH THICK PACK ICE; WE OBSERVED MUCH OPEN WATER AND VAST AREAS WITH THIN DRIFT ICE. LANDING ON THE THIN ICE (IN CASE OF ENGINE FAILURE) WOULD BE NO SAFER THAN LANDING IN OPEN WATER.

and even crashed aircraft. All of this has mostly accumulated in the last hundred years. Just recently, our leaders expressed concern about the problem of Arctic waste debris, but I've only heard about the discussions – and nothing about any specific actions. Sadly, I haven't seen any signs of cleanup of waste, left by the "conquerors" of these places.

By the afternoon we had landed safely at Nagurskoye military airfield on Alexandra Land; here we would perform work on behalf of the expedition. We covered quite a small distance that day, just 470 nautical miles in 4.2 flight hours. We were busy with sorting, organizing and preparing for departure to the location where meteorological radio beacons would be placed. Interestingly, the logic of military decisions sometimes differed from our own ideas. The commander of the Mi-8 squadron informed us that, by command decision, they were not flying the next day, April 6. Since decisions of the military command did not apply to us, I sent a flight plan through to Moscow and the next day Dmitry Rakitskiy and I, Oleg Prodan and operator Anton Zhdanov made a "reconnaissance" flight to the northernmost point of Eurasia – Cape Fligely of Rudolph Island. Close to this cape we would later execute the primary goal of the expedition – to put three radio beacons into drifting ice while in the "crosshairs" of TV cameras. On our way to Rudolph and back we surveyed several more islands. By the way, we confirmed that maps displayed in our Garmin navigation device did not always reflect correct shape and relief. During that day we logged 3.3 hours and flew about 262 nautical miles.

Back at the base in the evening, the military pilots "surprised" us again with the next command decision: They were ordered to stay on the ground for four or five more days until the end of the summit (which had not yet started). We had nothing (officially) to do with the

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military helicopters or the summit so we made our own decision: the next day we would fly out and place the beacons. We felt sorry for the correspondents – they came from Moscow to the edge of the earth especially for the filming. Now, they wouldn't be able to see the event. At first we thought we couldn't help them, as we had been promised by the military to deliver fuel to Rudolph Island. But after rechecking the weight and checking the forecast, we offered to take the lightest of the cameramen onboard under the condition that he shared the footage with the others. Of course, everyone gladly agreed. This cameraman turned out to be Valery Frolov who worked for Russia Today television.

On the morning of April 7, the four of us departed the airfield. Chained to earth by a "command decision," the military pilots watched us leave with some sadness. We had to spend about 6 hours in the air, so the helicopter – equipped with a long-range tank – was taking off sluggishly, despite denser air and a rather strong head wind. We immediately laid our course for the open sea and in about an hour-and-a-half made the first landing on the ice. We carefully put all three radio beacons at different points on the sea ice. Quite suddenly, though, we discovered a pump was failing, the pump that was transferring fuel from the long-range tank to the main one. We had enough fuel, but we could not use it. Considering the problem, Commander Dmitry Rakitskiy decided we should fly to Rudolph Island. A day before we saw an abandoned polar station there. After all, it's much more comfortable to solve a problem on the ground – and close to shelters – than on an ice cake in the Arctic Ocean.

After landing, we calculated that we needed to transfer to the

main tank not less than 60 liters (16 gallons) of Jet A-1 in order to return safely to the airfield. We could find only an empty half-liter plastic bottle of water on board for this purpose. We had do gravity fuel draining through a tank level indicator (clear tubing with an inner diameter of about 5 mm (0.2 inches)). All this was taking place with a temperature of minus 22C and a wind of about 20 meters per second (40 knots) during a snowstorm! Filling the bottle took us one minute. A simple calculation told us we needed at least 120 minutes or 2 hours to complete the task. We called the airfield and reported that everything was in order but we were slightly delayed. Since we were taking turns filling the small bottle, Oleg had time to walk to the ice-bound shelter to do some searching. Smiling, he came back with a much larger 5-liter plastic water bottle! It took 10 minutes to fill this bottle and we used the extra time to take our cold hands out of kerosene-soaked gloves and warm them in our sleeves and next to our chest! Dmitry used the second


РОСАТОМФЛОТ


Date
APR-08-13
Time
11:39:28
3D GPS Location
NRST

10-minute wait to visit the shelter and came back with a piece of fairly thick rubber hose. Now things became more cheerful: We poured about 5 liters of kerosene every two minutes into the main tank! About an hour-and-a-half later, Dmitry and I calculated there was enough fuel to get back to the airfield. At that point we happily started the engine and turned the cabin heater on to full power. That day we logged 5.8 hours and suffered some slightly frostbitten fingers, but we completed the goal of the expedition!

During these days, Dmitry also made some special flights with the scientists from the wildlife sanctuary. They overflew surrounding areas and landed at several observation points of special interest. It was useful that the scientists had many opportunities to see that the R66 is much faster and more comfortable than any snowmobile.

As for the military helicopter pilots, they went on with their preparations in anticipation of the arrival of the VIP guests. The fact was, we couldn't return to Vorkuta without them (we wouldn't be able to refuel our helicopter en route without their help) and the North Pole was some 565 nautical miles to the north. Knowing this, we discussed the matter and we all agreed: We were absolutely determined not to miss our opportunity to reach the Pole. We knew that the temporary Barneo ice airfield had recently been created close to the Pole. Without delay we contacted airfield administration in Moscow and agreed to purchase Jet A-1 for 3,250 euros per barrel and we submitted our flight plan. Now, filled with excitement, we found it hard to sleep. Every pilot, at least once in his life, dreams of landing his aircraft on one of the Earth's poles.

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LOOP.aero Magazine, Jan 2013

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KEY FIGURES:

- Total flight time (including local flights in the Arctic) was 75 hours
- Total distance was 7,170 nautical miles

OBSERVATIONS ABOUT FLYING IN THE ARCTIC:

- It's impossible to fly in the Arctic without real practice of instrument flying.
- Sea ice that is suitable for emergency landings is not always present. There is much thin ice and open water right up to the 83rd parallel. It's absolutely necessary to have life-support equipment on board.
- Very often during favorable clear weather, islands dotting the ocean are covered with fog, which can make landing quite complicated.
- We rarely observed white-out conditions over the ocean – there are almost always contrast details on the ice in the form of cracks, ridges, etc. But in the narrow gaps between the islands where there are no currents or wind, as well as over the land, we had to switch to instrument flying time and again. We used smoke pellets for landing in such conditions. Thrown out of the cockpit, they indicate the strength and direction of the wind and mark the surface with a bright color spot.

A FEW WORDS ABOUT R66 OPERATION IN THE ARCTIC:

- The helicopter performed extremely well, except for the problem with the starter (there were four failures in total).
- During long flights at low temperatures, pilots can experience serious cold in their feet, even if they're wearing special polar boots. It's necessary to redistribute the air flow from the heater and direct some of it down to the feet. In general, the standard heater provides good cabin heating.
- For our flight we took an extra battery to start the engine and a gasoline Primus stove for engine compartment preheating. In fact, we never needed this equipment; the helicopter was easily started from the standard battery, even after a 35-hour open-air parking at temperatures down to -30 degrees Celsius.
- In the Arctic we used shutters to partly cover the engine oil cooler and main rotor transmission oil cooler; these were fabricated by our engineers. Engine oil temperature was consistently maintained in the center of the green range of the scale. Unfortunately, the manufacturer doesn't provide a main rotor transmission oil temperature indicator unit. There is only an overheating warning light. We decided to install a temperature sensor on our helicopter and place the indicator on the instrument panel.
- It's necessary to install a Webasto preheater with warm-air supply system to the engine and main rotor transmission for flights in cold conditions. This heater must be located by the engine compartment firewall, where RHC now installs the air conditioning unit. This heater must have its own small independent battery that can be charged in flight from a standard generator.


R66
TURBINE
RA-1588G

On the morning of April 8, Dmitry, Oleg Prodan and I took off and headed to the north. We had to climb the globe more than 9 degrees – and then come back safely. The weather that day was just what the doctor ordered but the winds were blowing in our face. Considering our experience the day before, we took two new fuel transfer pumps and hoped we wouldn't have any more surprises.

Slowly but steadily, we moved closer to the North Pole, reporting by phone to the flight operations officer every hour and sending text messages with our coordinates to our friends in the air club. Degrees of north latitude on the GPS receiver screen were slowly changing: 81-82-83-84 . . . 88. Curiously, our Garmin unit "went mad" approximately on the number 88: the line pointing to the Pole bent at a right angle and the ten-minute route line started bending in different directions. I switched the GPS receiver to digital coordinate mode and we began to navigate by the numbers. Finally, we reached 89 degrees 59.980 minutes north latitude – we couldn't determine the Pole more precisely. We decided that several dozen feet is quite a small error and we finally touched down on the ice. At this moment I could see we were moving away from the Pole – our ice island was drifting at a speed of about 0.15 knots! Naturally, we planted our air club's flag by the Earth's axis and proudly took pictures with it! We were so happy to call our families and friends! Remarkably, this was the first ever R66 at the Pole. As proud as we were, Dima and I realized the epic journey was only half over – we still had to find our way home. Traveling from Nagurskoye airfield to the Pole had taken us 6.8 hours of flight time due to a strong head wind.

Finally, with our brief celebration over, we decided to take off. Dmitri turned on the ignition, pressed the starter button and... we heard nothing but relay clicks – the starter failed to rotate the turbine. Several attempts changed nothing – we were stuck at the North Pole and

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the engine would not start! With irony, I thought to myself that the helicopter pilots from the Barneo airfield would have to come to our rescue; they were only 25 nautical miles away. But just remember, we traveled all the way to the North Pole from Moscow safely by helicopter – not by train. Ha! But it was embarrassing to imagine the grins and advice from the seasoned icemen: the Arctic is not a place for "a week-end helicopter". After a couple of minutes, Dmitry had an idea. He took the air club's metal flagpole (it was well-worth taking to the Pole) and slightly knocked the starter body with it. He explained the older model starter was designed for a Bell-206 and such failures occurred in the past. Honestly, I don't understand why Rolls Royce doesn't use a new, more compact starter. However, the aviation industry in general prefers familiar, time-tested solutions – even if they are not completely perfect.

Amazingly, after Dmitri's flagpole "persuasion," the starter turned over and the engine roared back to life. We were elated! We took off and landed back at Barneo just twenty minutes later. We had our lunch, refueled the helicopter and then began our trip back. We held a course for Moscow through Nagurskoye. Winds were not difficult and our flight to the airfield took us just 6.1 hours. Our new friends with torches in their hands met us there, even though it was already after midnight local time. The road back home seemed shorter to us, and we were more than lucky with the weather. In total we spent 13.3 hours in the air that day and covered 1,180 nautical miles. More than 15 hours had elapsed from start to finish, and what eventful hours they were! We flew to the North Pole! HO

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HELI-EXPO LAS VEGAS 2013

STORY BY **ALAN NORRIS**
PHOTOS BY **ALAN NORRIS & TERRY MOORE**

For anyone in the helicopter industry the Annual Heli-Expo is the must go to unique event where you get to meet the big and small players in the industry. This year's Helicopter Association International hosted exhibition was held at the Las Vegas convention center and recorded its highest ever number of attendees 20,393. There were 60 helicopters on display and 736 exhibitors at the show all displayed in 1 million square feet (93,000m^2) of exhibition space, making it the world's largest helicopter trade show and exposition.


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Confidence in the helicopter industry has been increasing steadily over the last four years with manufacturers seeing growth in their turnover for the first time since 2008. This growth has been mainly driven by a strong oil and gas market around the world and the expected increase in market sectors such as Asia and Brazil.

Eurocopter confirmed its dominance in the helicopter market by announcing that its revenues were up by 15%, at €6.3 billion ($8.3 billion), with civil business accounting for 54% of actual turnover. Deliveries peaked at 475 and sales totaled 469 helicopters valued at €5.4 billion ($7 billion) with American Eurocopter accounting for over €1.1 billion ($0.9 billion).

Lutz Bertling, the outgoing President and CEO of Eurocopter, said "72% of our revenue was from exports and marked the success of our company's strategy of expanding in to emerging markets". He said that although they delivered fewer helicopters in 2012 the number of heavier and so pricier aircraft increased.

"Ramping up production remains the order of the day and will remain so for some time, and thanks to our order book we expect to see aircraft deliveries increase by 15% in 2013"

Eurocopter orders announced at Heli-Expo were paced by Milestone Aviation Group's booking for 14 EC225s and five EC175s bringing this helicopter leasing company's overall Eurocopter order backlog to a value of nearly €1.3 billion ($1 billion). The EC225s and EC175s for Milestone will be configured for offshore oil and gas platform support and search and rescue.

To launch the US demonstration tour Eurocopter flew in its new seven tonne class EC175 helicopter to Las Vegas, which is a joint program with China's Aeronautics Industries Group Corporation (AVIC)., painted in Bristow Group colors who will be the launch customer for the model, Bristow signed another agreement covering up to 12 more EC175s for support in the offshore energy industry.

Sharing the spotlight on the Eurocopter stand was the newest version of the EC135 model the T3/P3 which is offered with two upgraded engine options, along with increased-length main rotor blades and optimized FADEC software providing significantly improved hot and high performance, increased maximum takeoff weight to 6,579lbs and extended range. A trio of international customers placed launch orders at the show: Air Methods and Norsk Luftambulanse ordering six each for emergency medical services; and Aiut Alpin Dolomites booking one helicopter for its mountain rescue operations.

Sikorsky were celebrating 90 years since Igor Sikorsky formed the original company marking it in a ceremony on their stand and a display of Igor Sikorsky memorabilia

CONFIDENCE IN THE HELICOPTER INDUSTRY HAS BEEN INCREASING STEADILY OVER THE LAST FOUR YEARS WITH MANUFACTURERS SEEING GROWTH IN THEIR TURNOVER FOR THE FIRST TIME SINCE 2008.

including his original helicopter pilot's license.

Sikorsky President Mick Maurer announced the company recorded sales to the value of €1.8 billion ($14 billion) during 2012. The new S-76D production is almost sold out until 2014 and is valued at €538 million ($700 million) this alongside the €1.1 billion ($1.5 billion) backlog for the S-92 Maurer said "we are on the right track and gaining momentum."

The S-92 fleet has now surpassed 500,000 flight hours with more than 90% of all

S-92 hours flown in the offshore configuration, with 54% being flown in the North Sea sector alone. To add to this figure Sikorsky entered into agreements to sell 23 S-92 helicopters and seven S-76D helicopters to Milestone Aviation Group, the agreements also included options on a further 14 S-92 and 10 S-76D helicopters. Sikorsky expects to begin delivering the helicopters in 2013 and continuing through to 2017. "The S-92 and S-76D are both great helicopters and workhorses of the offshore oil and gas industry," said Richard Santulli, Milestone's Chairman. "We believe there will be tremendous demand for these machines from operators all over the world." The Bristow Group echoed this view by entering into an agreement to buy 10 S-76D, with options for another 16, to operate in the offshore oil transport role.

Sikorsky ended the show with more orders for the S-76D including four to China's Ministry


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of Transport's Rescue and Salvage Bureau for search and rescue duties, with an option for another four in 2014. ASESA (Aeroservicios Especializados, S.A. de C.V.), a Mexican helicopter service provider, signed for six S-76Ds to serve the offshore oil industry and Arkansas Children's Hospital signed to purchase two S-76D helicopters for its Angel One intensive care medical transport unit.

AgustaWestland's new CEO, Daniele Romiti confidently dismissed the many problems Finmeccanica are going through at the moment and strongly defended the company's reputation regarding the bribery scandal around the sale of 12 AW101 helicopters to India. Romiti guaranteed full transparency during the investigation and said "We are confident that there has been no wrong doing by AgustaWestland."

The company's finances are in a strong position and has an order backlog valued at €11.6 million ($8.9 million) and posted profits up to September 2012 of €2.9 million ($3.8 million). Romiti said "With the AW189 and AW169 helicopters on schedule to be certified this and next year respectively, AgustaWestland has the most modern range of commercial helicopters of any manufacturer."

Orders for the 8-tonne class AW189 in 2013 and 4-tonne class AW169 currently stand at 70 and

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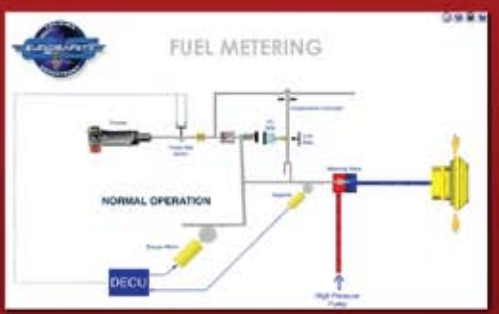

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60 respectively. These two new products along with the AW139 form the AgustaWestland Family of new generation helicopters. The company has also successfully demonstrated to the European Aviation Safety Agency (EASA) a 50-minute loss of oil or "run dry" capability for the AW189 main gearbox. This dry run capability is vital for helicopters operating in harsh environments such as the offshore sector where an immediate landing is not always an option. The AW189 will be the first helicopter to enter service with such a capability.

Highlighting the company's strong and growing industrial presence in the United States, three of the four helicopters on display at Heli-Expo were built in their facility in Philadelphia. Appearing for the first time was the AW119Kx, an evolution of the successful A119Ke, featuring the Garmin G1000HTM Integrated Flight Deck system with an advanced avionic suite comprising a Synthetic Vision System with Highway in the Sky depiction, moving map and a Helicopter Terrain Avoidance Warning System. The aircraft on display was from the launch customer, EMS provider Life Flight Network, who signed for 15 EMS configured aircraft. Marking the entrance of the AW119Kx into the Australasian market Wagners Development Company Pty Ltd signed a contract for a single aircraft to be operated in the VIP role in Towoomba, Queensland.

Also making its debut appearance at Heli-Expo was the GrandNew, this new generation evolution of the AW109 Grand has a new digital glass-cockpit and a composite fuselage. The aircraft on display was the first GrandNew to be delivered


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to a Canadian customer and the first corporate configured to be delivered in North America.

AgustaWestland also displayed two models of their highly successful AW139, one as a National Security helicopter demonstrator aimed at the parapublic agencies tasked with national security and law enforcement missions. The second AW139 was in offshore transportation configuration and is seen as the outright market leader in its weight class for the offshore oil and gas market.

AW139 sales at the exhibition included West African based Caverton Helicopters who signed for three aircraft to compliment the six already serving deep-water oil and gas rigs in West Africa. The Japanese National Police Agency ordered two AW139s to be operated by the Hokkaido and Fukushima police departments. The Bristow Group signed for six AW139 helicopters, and a number of options for additional aircraft, bringing their fleet to a total of 15 AW139s.

John Garrison, Bell Helicopter's president and CEO anticipates continuing growth in their commercial deliveries during the next 12 months. "We expect 2013 to be another big year as we build on the momentum we established in 2012 – which was a record year for both our military and commercial programs." Growth in the future is expected to come from a balanced military and commercial portfolio, with an emphasis on expanding the commercial product line which is currently at 40% of its €3.2 billion ($4.2 billion) 2012 figures, Garrison explained.

Bell delivered 188 civil helicopters during 2012: 106 407GX, 43 429 light twins and 39 Bell 412EPs. Development continues on the fly-by-wire Bell 525 Relentless and the first flight is expected in 2014. "Developments like the 525 Relentless would not be possible without the input of our customers," said Garrison. "As part of our product development strategy that puts customers at the center of everything we do, we have assembled a customer advisory panel that is involved in every step of the design process."

Bell introduced an upgrade to one of the company's most versatile and reliable helicopters the new Bell 412EPI. Fitted with the Bell BasiX Pro fully integrated glass flight deck the new Bell 412EPI also has Pratt &

Whitney PT6T-9 Twin Pac engines fitted increasing shaft horsepower by 15% and the BLR FastFin System to improve hot and high performance by as much as 640kgs (1,410lbs) of payload.

The company also unveiled the new Bell 407GT, the armed version of the Bell 407GX. The commercially qualified Bell 407GT aims to incorporate the performance and reliability of the Bell 407 with the Garmin G1000H flight deck. The 407GT features a flexible and configurable weapons system, including an infrared camera system with laser designation capability and a universal weapons pylon derived from the OH-58D Kiowa Warrior.

Air Medical Group Holdings placed an order for 30 Bell helicopters, 24 Bell 407 and six Bell 206L-4 helicopters, the company is one of the largest independent providers of helicopter emergency medical services worldwide. Deliveries are scheduled to begin in 2013 through to 2018.

Although no longer part of the Bell product range the iconic Bell 47 has had resurgence with Scott's-Bell 47 announcing it will soon start production of a new Bell 47 model, the 47-GT6, powered by the Rolls-Royce RR300 turboshaft engine. The new model will be a new build and is based on the 47G-3B-2A design and will have a maximum load of 750kg (1,650lbs). The 47-GT6 will incorporate composite main blades and a new updated tail drive and modern instrument panel and flight testing is scheduled for 2014, the company signed orders for five of the new model 47-GT6.

Robinson Helicopter CEO Kurt Robinson reported strong turnover in 2012 with a 45% increase in sales to 517 aircraft, the R66 accounted for 191 of theses with the company now producing six R66 and R44s a week, 70% of which are overseas sales. He also said that the company had not seen any impact from the R66 on R44 sales and sees the two as different markets and not competing against each other within the company.

According to Robinson, the FAA has approved the removal of the ELOS (Equivalent Level of Safety) for the R66 hydraulic control system, an exemption in the R66's original type certificate and a major factor stopping EASA from certifying the R66 in Europe. The exemption had been originally granted over a regulation requiring an alternate for the hydraulic control system. This is now seen as no longer required due to the fact that the single valve used in both the R44 and R66 has flown millions of hours without a failure. The company was successfully able to show that the pilot could continue to fly the R66 in the event of a hydraulic failure.

The company is looking at a number of enhancements including installing the Garmin GTN series with touch screen avionics in to all models and expects final approval by 2014. Certification of floats for the R66 has also been carried out in house and FAA approval testing will start soon with the option available by the end of 2013. Robinson Helicopters has also been working with Lycoming and the FAA to approve the use of environmentally better unleaded fuels in their piston engine R22 and R44 models, Kurt Robinson said that work on this is progressing and they expect approval by the middle of 2013.

"Twenty years ago, the MD Explorer introduced the world to the future of rotorcraft design," said Lynn Tilton, CEO of MDHI. "Today, the MD Explorer boasts the most advanced airframe in the light twin category, and many significant advantages exclusive to NOTAR technology."

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Tilton went on to say "I believe this is the year of the NOTAR, the MD902 has finally come in to its own with over 100 aircraft worldwide and the support system has improved massively." Backing this up the company announced the next generation enhancements to the MD Explorer with significant upgrades to the avionics and electrical system, an increased maximum gross weight of 3,070 kg (6,770lbs) along with further developments to increase range and payload.

To achieve the avionics update MDHI has partnered with avionics manufacturer Universal Avionics Systems Corporation to introduce a new single-pilot IFR capable integrated flight deck. Available for all production and retrofit Explorers, the new cockpit will feature a Primary Flight Display, Primary Engine/Rotor data and safety critical annunciators. Night Vision Goggle (NVG)-compatible cockpit displays and controllers are also planned once certification of the basic display system is completed.

In preparation for the up and coming US Army Aerial Scout competition MDHI also announced that it has selected the new Rolls-Royce M250-C47E engine to power its MD540F armed scout helicopter. The MD540F is an upgrade to the popular MD 530F but with bolstered performance to achieve an increase in max gross take-off weight and useful load capability. The aircraft has a 6-bladed, fully articulated rotor blade system with composite blades and a more rugged landing skid built for heavier take-off and landing weights. The Rolls-Royce M250-C47E has a new, dual-channel

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MDHI received orders for MD500E aircraft one from Polk County Sheriff Office and one from Alaskan based Bering Air and will be used in support of the construction of microwave Internet towers in Alaska.

Enstrom Helicopter has selected the Garmin G1000H all-glass, integrated flight deck for its 480B helicopter model. The G1000H integrates all primary flight information, navigation data, communications, terrain awareness, traffic, weather, and engine parameters on two 10.4-inch, high-resolution displays. The company expects certification to be complete by mid-2013 and the installation will then be available as an option when purchasing a new aircraft. Enstrom was acquired in 2012 by Chinese investment company Chongqing Helicopter Company and this year the new Chinese owners placed an order for ten 480Bs with an option for a further 15 helicopters in 2014. The company also announced that they have now completed the type certification of the 480B in Argentina and expect to make the first aircraft delivery by June 2013.

The now annual "Russian Hour" attracted the highest number of attendees for any of t he pre-scheduled presentations during the show. Organized by Russian Helicopters and the Helicopter Industry Association of Russia, the briefing introduced two recently unveiled aircraft from Russian Helicopters, the Mi-171A2 and the Ka-62.

Russian Helicopters Marketing Director, Mikhail Dubrovin said: "Russian Helicopters has an order book for 820 helicopters with a combined value of over €9.2billion ($12 billion) that is more than three times the amount of helicopters we delivered in 2011." He went on to highlight the expanding relationships with international OEMs, including an agreement to develop a 2.5-tonne helicopter jointly with AgustaWestland. The first test flight of this new helicopter took place at the end of last year, he added.

The Mi-171A2 is the latest version of the long established Mi-8 family and is designed to meet the latest flight-safety requirements and have improved maintainability and reduced operational costs, achieved with an increase in payload, extended range to 45nm and extended service life. The new model will be manufactured from composite materials including the main rotor blades fitted to a new main rotor head. The aircraft will have an X-shaped tail rotor design and will be powered by two VK-2500 up-rated turboshaft engines giving it a cruise speed of 150knots. The Mi-171A2 will also introduce a new-generation glass cockpit and engine intake dust filters, designed by Pall Corporation of UK.

The new Mi-8 version development is based on feedback from operators of the type and the extensive operating experience that these helicopters have amassed around the world. The Mi-171A2 will retain the spacious cabin, the largest in its class, with a volume exceeding that of the EC225 and S-92, and will be able to carry either 24 passengers, a four tonne internal load or a five tonne sling load. The type will also introduce an automatic weight measuring system and a CCTV camera for observing the cargo on the external sling. A Mi-171A2 prototype is already flying and certification is planned in the fourth quarter of 2014, with deliveries commencing in 2015.

The Ka-62 is an all-new Kamov design in the 6.5-tone class, targeting the offshore and passenger transport market. Unlike all previous Kamov rotorcraft, it features a conventional single five-blade main rotor and a fan-tail rotor. The new design was selected to provide high speed, low vibration levels and a large useful volume in the fuselage to accommodate 12 passengers in normal configuration, increasing to 15 in a high-density configuration. The Ka-62 will be powered by the Turbomeca Ardiden 3G turboshaft and will meet all the current international standards of safety, the first flight is scheduled for 2013 and certification in 2014. The Ka-62 has attracted interest from potential corporate customers, such as Brazilian company Atlas Táxi Aéreo, who will be the launch customer and have placed an order for seven of the new helicopters.

To emphasize the global success and reliability of the Mi-171A1 Ian Shailon, Maintenance Director from Atlas Taxi Aero of Brazil gave a presentation of their last 12 months of operations using the type for supporting the drilling activities of Petrobras in the Brazilian rain forest deep in the Amazon basin. He described how in very difficult environmental conditions, the Mi-171A demonstrated a 98% availability operating in excess of 1,000 hours. Its monthly utilization reached 120 hours, with the machine hauling over 600 tonnes of cargo, mostly drilling equipment on an external sling between sites. Atlas now expects to be operating an all-Russian fleet of helicopters in support to Brazil's growing oil

exploration industry within the next three years.

According to the Brazilians, the success of the Mi-171A project was possible thanks to three principal factors – the market knowledge and the operational capacity of Atlas, which pushed for the helicopter's type certification in Brazil, combined with the support from Russian Helicopters and its commitment to supporting its South America customer, and the technical resources and services to back the Mi-171A operations, provided by Vertical de Aviacion of Columbia.

The 'Russian Hour' concluded by honoring the president of VIH Helicopters of Canada, Ken Norie, with the Russian Helicopter Association special award for his achievements in establishing and developing Ka-32 operations in the West. His cooperation with Kamov started when he met the Russian company's Designer General Sergey Mikheev at Heli-Expo in 1991 and subsequently was instrumental in achieving Canadian certification of the type. Today the

Ka-32A11BC is certified and operational worldwide in a number of heavy lift roles.

Heli-Expo is not just about the big OEMs Marenco Swisshelicopter Ltd. announced the selection of Heliflite Pty Ltd. to become its SKYe SH09 distributor in Australia and New Zealand, Heliflite has been a leading distributor of helicopters for over thirty six years in the Oceania region. Engine manufacturer Turbomeca (Safran) announced the introduction of a new turboshaft engine to be called the TM800 Arrano, a 1,100shp engine designed to power four-to-

six tonne helicopters and will offer a 10% to 15% lower fuel consumption over comparable engines. The Arrano is named after the word 'eagle' in the Basque language and will power the Eurocopter X4 next generation helicopter. Turbomeca also announced a Support by the Hour contract signed with CHC Helicopters, the contract covers 60 Makila 2 engines powering CHC EC 225 helicopters used for offshore missions, in the Black Sea regions, Nigeria and Australia.

With more than 50,000 engines delivered and 380 million hours flown since its launch in 1963, Pratt & Whitney Canada is celebrating 50 years of PT6. A 130 different aircraft and helicopters have been fitted with variations of this time tested turbine and Pratt & Whitney launched a year

long celebration of the PT6 golden anniversary. The latest PT6C-67E is very different from the original: four times more powerful, 40% better power-to-weight ratio and 20% better fuel consumption, and will carry the legacy on for even more years.

Honeywell published their 15th Turbine Powered Civil Helicopter Purchase Outlook at the show, and forecasts a market for 4,900-5,600 new civil helicopters from 2013 to 2017. The report identifies strong demand over the next three years from all regions of the world, with delivery rates expected to reach 1,000 units per year.

Volga-Dnepr, a Russian heavy lift cargo company, was at the exhibition to meet old and new customers. The company operates the Antonov

124-100 and Ilyushin 76TD-90VD aircraft and has flown helicopters for Sikorsky, AgustaWestland, Eurocopter, Kazan Helicopter and many others across a range of worldwide destinations. Based in Moscow the company also has offices in America and Europe, and recently transported the Eurocopter X3 to America for its demonstration tour.

Phoenix Heliparts based of Mesa, Arizona gave fans of the Magnum P.I. television series an opportunity to see what the company had done with the MD500D acquired from the Honolulu police. The aircraft has been completely refurbished and painted in the original colors of the MD500D that appeared in so many of the episodes from 1980 to 1988. The famous helicopter was on display and visitors had the chance of meeting two of the stars from the series: Larry Manetti, who played Orville "Rick" Wright, and Roger E. Mosley, who had the role of charter helicopter pilot Theodore "T.C." Calvin.

The Chinese State-owned Aviation Industry Corp. of China (Avic) brought its Avicopter rotorcraft unit to Heli-Expo for the first time. Avicopter's product line includes the AC313 a development of the Aérospatiale Super Frelon, AC352 the Chinese variant of the EC175, AC312 resembling a Eurocopter Dauphin and the AC310 similar design to the Schweizer 300.

Erickson Air-Crane President and CEO Udo Rieder signed an agreement to purchase Air Amazonia the aerial services business of Brazilian oil & gas company HRT Partcipacoes em Petroleo, who operate seven Sikorsky S-61s, five Bell 212s and two Eurocopter AS350s. Rieder said that this was excellent opportunity to diversify and grow the company into the medium helicopter market. As part of the agreement Erickson Air-Crane will continue to provide operational services, including both cargo and passenger transport, to HRT in the Amazon under a three-year renewable contract.

Revue Thommen unveiled a new, compact searchlight with optional infrared filtering and laser-designator capability, the HSL-1600. The new

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Portland, Oregon based Simplex announced that it is teaming with Advanced Helicopter + Rescue Techniques (AH+RT), also located in Portland, to provide rotary-wing aerial firefighting and technical rescue training for its customers. AH+RT is known for its helicopter wild land firefighting training, advanced NVG rescue operation training, mountainous flight and rescue, technical rescue and tactical operations training. The company sees training and support services as key to ensuring overall flight safety and mission effectiveness.

Vector Aerospace has announced the opening of a new Vector Aerospace Engine Services-Atlantic PT6A engine MRO facility in Brisbane, Australia and has appointed Paul Bland as regional sales and service manager for New Zealand and the following areas of Australia: Southern Queensland, New South Wales, Victoria, Australian Capital Territory and Tasmania. The new engine facility will allow the Canadian firm to develop in the region by offering operators a number of services. These include field service and engine repairs on the Pratt & Whitney Canada PT6A, JT15D, PW300 and PT6T engine series, as well as complete overhaul and test capability on the PT6A.

Heli-One has extended its support contract with Brazil's Omni Taxi Aereo to provide power-by-the-hour support for Omni's Sikorsky S-61 and S-76 fleet. Omni's fleet, which is used to support Brazil's offshore oil industry, also includes Sikorsky S-92, Eurocopter EC225 and AgustaWestland AW139 helicopters. The new contract also extends Heli-One's support of the Omni fleet to 2018 and is valued at €19 million ($25 million).

With most of the major OEMs reflecting on a good year in 2012 the mood was buoyant at Heli-Expo, although the effects of the US Administration sequestration cutbacks had not yet reach the companies that rely on business from US government departments. But overall the helicopter market has seen a steady increase in business over the last four years and most exhibitors at Heli-Expo felt the worst of the global recession was now behind them. Most of this positive feeling seem to stem from the growing oil and gas industry and developing markets in Asia and Brazil, but as always only time will tell if this growth produce the predicted dividends. Diary dates for Heli-Expo 2014 are February 25-27 in Anaheim, California. HO

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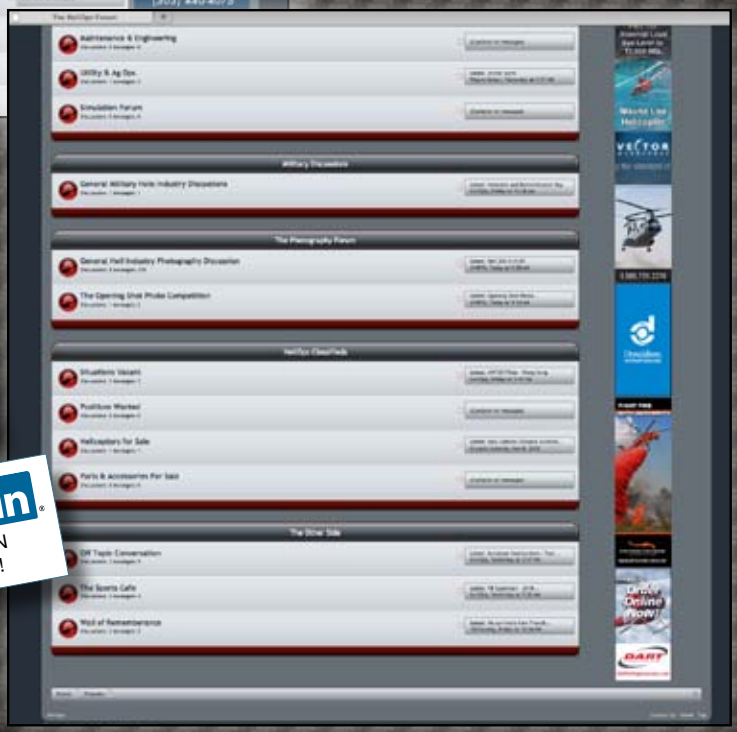

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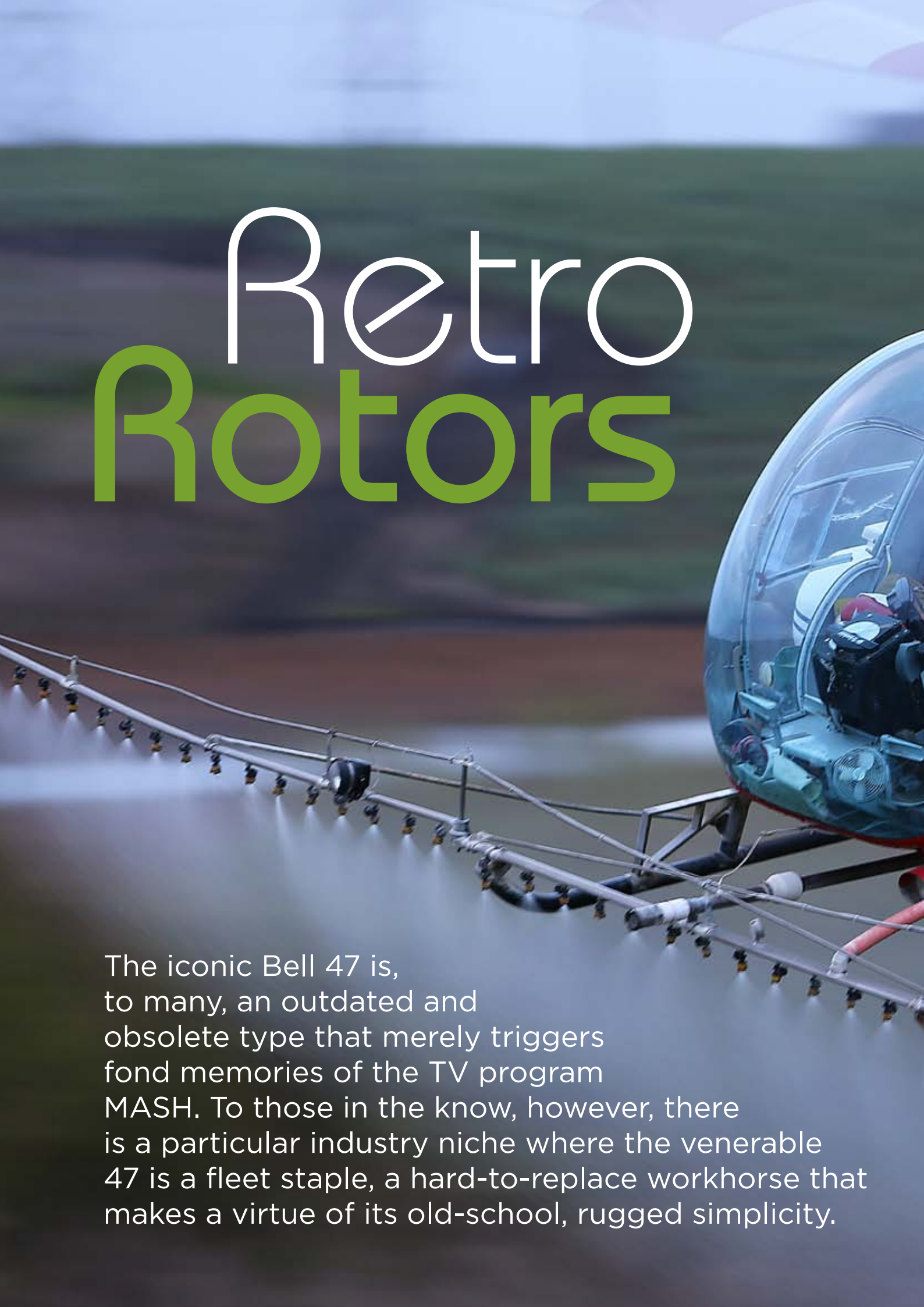

Retro Rotors

The iconic Bell 47 is, to many, an outdated and obsolete type that merely triggers fond memories of the TV program MASH. To those in the know, however, there is a particular industry niche where the venerable 47 is a fleet staple, a hard-to-replace workhorse that makes a virtue of its old-school, rugged simplicity.


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Long-established agricultural operator Gomes Farm Air Service Inc. is based at California's Salinas airport, where second generation principals Frank Gomes and his sister Christine Gomes Belione spoke to HeliOps about the company's long involvement with the Bell (now Scott's) 47. Flying since 1975, Frank's 18,000hrs rotary time has all been accumulated in the Bell 47 series and virtually all within a 30mile radius of the Salinas base. That's after he started out in fixed wing, flying for his father in Ag-wagons and Stearmans. With increasing intensity of agriculture and greater awareness of over-spraying and efficiency, the inability of fixed-wing operations to remain within the limits of the field being sprayed meant that aerial agriculture in the area had become entirely rotary-wing by 1981. Gomes Farm Air went the Bell 47 route although the Hiller and 206 were more popular choices at that time. When asked what he sees as the 47's strengths, Gomes says the type is both very maneuverable and very cost-effective. "I think it's the best helicopter ever built for our type of agriculture," he declared. Its massively long rotor blades give it the widest swathe in the ag-sector, a huge benefit. Additionally, the Gomes Farm Air 47s all have the taller extended skids fitted, allowing safer landings in soft dirt and minimizing the risk of tail-rotor damage. With a 1000lb useful load it can easily carry its 100 gallons of spray, while types like the Bell 206 - vastly more expensive to both buy and operate – carry a mere 20 gallons more at the close-to-sea-level altitudes at which Gomes operates, seldom exceeding 500ft. Along with the incredible visibility offered by the huge plexiglass bubble, the simple, 'old-school' design also has other advantages. As one of the Gomes pilots remarked, "Because the aircraft has a hand-throttle with no governor I like it, in a right hand turn I like to pull a little collective and throttle, use the torque."

A fleet of well set-up trucks compliments the Gomes helicopter fleet, each truck carrying chemicals forward and water at the rear, with the components mixed in a large stainless tank and supplied to the helicopter. Food safety standards dictate that the stainless tanks have to go, though, and Gomes is transitioning to black plastic instead – white apparently supports algae growth. Unusually for the aerial ag-industry, loading is all carried out directly to the front of the

WITH INCREASING INTENSITY OF AGRICULTURE AND GREATER AWARENESS OF OVER-SPRAYING AND EFFICIENCY, THE INABILITY OF FIXED-WING OPERATIONS TO REMAIN WITHIN THE LIMITS OF THE FIELD BEING SPRAYED MEANT THAT AERIAL AGRICULTURE IN THE AREA HAD BECOME ENTIRELY ROTARY-WING BY 1981.

helicopter rather than from the side, with everything designed so the pilot can see what is going on and is blind to nothing that the loader-driver is putting on or in his machine, including fuel. Not surprisingly with Frank's level of experience, he's had a few moments of excitement. He recounted an occasion very soon after the introduction of cell-phones, when he took off with the fuel hose still attached. "I was pre-occupied with the phone-call and had climbed right over the two-inch fuel hose to get into the helicopter. I waved to the loader and took off, ending up upside-down with the hose still attached" he explained. Now, as well as the frontal positioning of the loader, the company uses plastic fuel hose that is designed to break in that event and is fitted with valves to prevent fuel loss. Because the company carries out many small jobs, two trucks service each machine to ensure that the helicopter is never kept waiting. The standard working team, then, is four people; two loaders, a ground foreman and the pilot. To minimize weight the Gomes 47s have the dual controls and extra fuel tank removed, along with a few other minor items and leaving about

UNUSUALLY FOR THE AERIAL AG-INDUSTRY, LOADING IS ALL CARRIED OUT DIRECTLY TO THE FRONT OF THE HELICOPTER RATHER THAN FROM THE SIDE, WITH EVERYTHING DESIGNED SO THE PILOT CAN SEE WHAT IS GOING ON AND IS BLIND TO NOTHING THAT THE LOADER-DRIVER IS PUTTING ON OR IN HIS MACHINE, INCLUDING FUEL.


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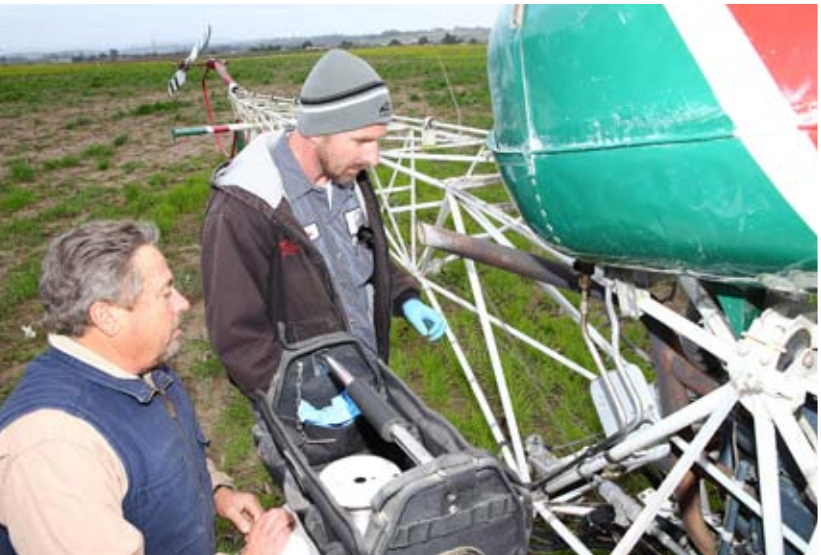

20 gallons – or one hour – fuel on board. This is easily sufficient for their short-range operations as truck-borne fuel is immediately available and the average field size is only 12 1/2 acres.

Frank explained that it is all fresh-market crops in the surrounding area, with around 70 percent of all US fresh market produce coming from the locale for much of the growing season. “Crops like spinach, lettuces, artichokes and strawberries. We used to be bigger in carrots and tomatoes but a lot of that has been moved south down to Mexico.” Work hours start at 3.00am and usually finish by noon. This beats the wind, which is usually rising by noon and making operational flying difficult or impossible by early afternoon, although even after daybreak visibility is often marginal. Obviously, flying in the dark means that this work is not for the faint-hearted. As Frank says, “You just have to know where the wires are and that only comes with experience. You’re not going to send a novice out to fly in the dark, that’s for sure. Mind you, if you’re not flying in the dark you’re flying in the fog. Every pilot around here is an excellent fog pilot because if you don’t fly in the fog you’re not going to get any work done.” And when Frank talks about fog he means a ceiling under 50ft and less than 600ft horizontal visibility. “In June, July or August if you can see the sun for three hours a day, you’re doing well!”

Christine takes responsibility for supplying spares to the operation. “I source parts all over the place. I use online parts locators and we’re always on the lookout for parts because we’re always re-building helicopters. Operators like us will often get their parts by buying out the old inventory from companies

going out of business." These are old machines and a lot of parts for them have been sitting half-forgotten on back-room shelves for years, so sometimes the opportunity arises to buy stock from an operator transitioning from 47s to a new type. "One operator we know of is changing to a new type and is actually stripping down his 47s to sell as parts. He'll recoup a lot more money that way than if he sold them as airworthy machines. You have to be prepared to look all over the world, another operator we know has gone to Greece and Chile to buy parts for his 47 fleet. I sometimes struggle to get parts for our three machines; well he's got twelve! Before Bell sold the 47 to Scott's, blades were $300k and a yoke was $20k. That's because some Textron bean-counter went down and saw they weren't making any money on the 47 parts. so they just raised all the prices. Scotts have brought them down but they're still quite high so of course we'll buy elsewhere if we can get them a lot cheaper." The more robust and durable HAC composite tail-rotor blades Gomes has sourced, for example, are a 4,000hr item and cost $12,000 per set. That compares to the standard Bell blades for the same price but with only a 2,500hr life. Ly-Con Aircraft Engines has been the supplier of engines and engine parts for the 47s but has now ceased that service and Gomes has sufficient parts on hand for maybe six more years. Frank therefore believes that within six or seven years the increasing scarcity of affordable parts for the 47s will necessitate the move to the Soloy turbine conversion or transition to another type – a hugely expensive proposition that may well signify the time to wind up or sell Gomes Farm Air Service Inc.


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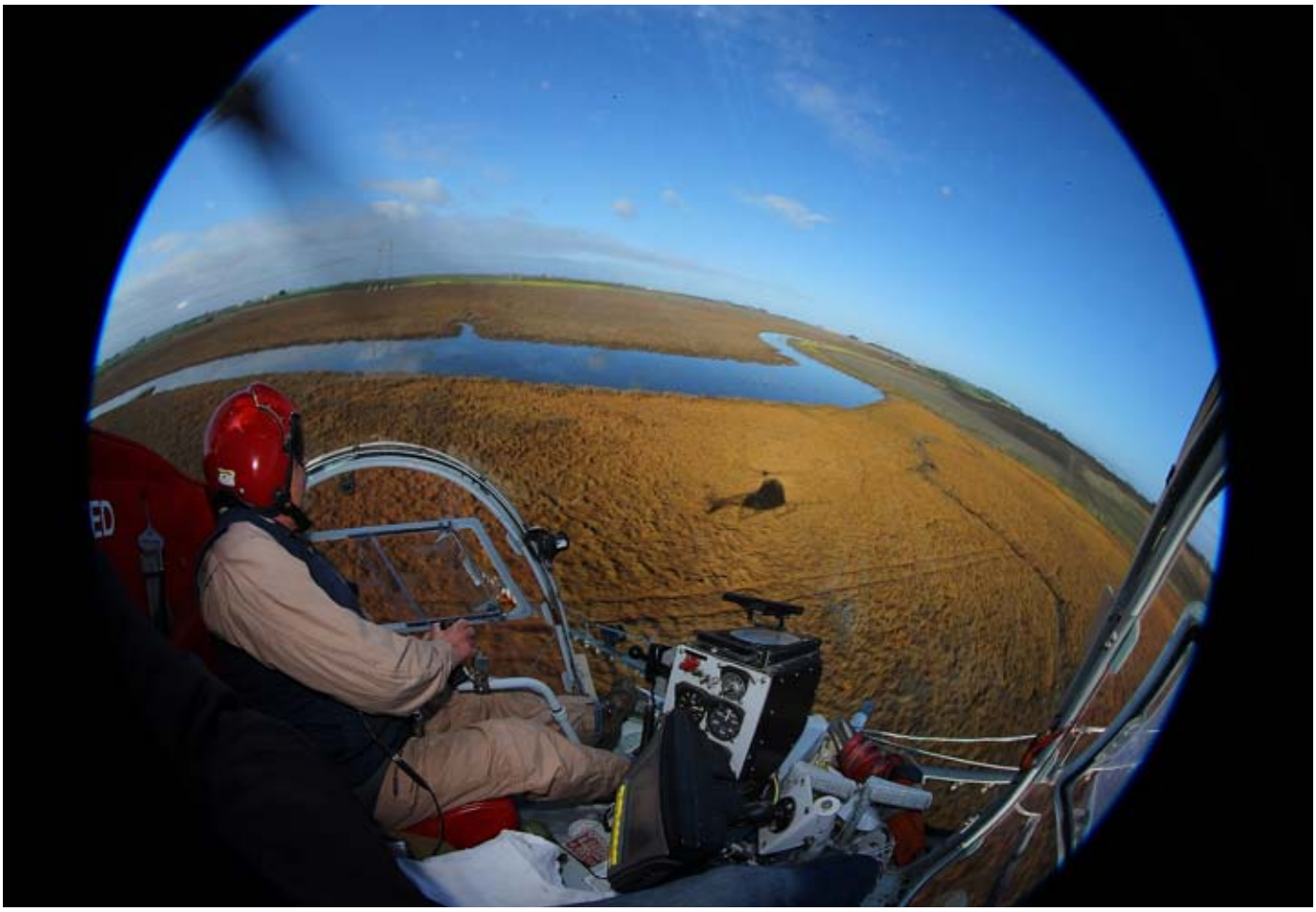
Gomes runs three 47s each day and, as Frank says, “It always takes four machines to have three running. We’re completely self-sufficient here, we do all our own maintenance and re-builds; even do all the work on our own trucks.” When the machine currently under assembly in the company’s workshop is completed in around three months, Gomes Farm Air will have six Bell 47-G5s on hand to keep four serviceable and three flying each workday. Their latest helicopter was purchased from an elderly gentleman in England, after originally getting a lead on it through the Bell 47 association. Christine told us “It had been an ag-helicopter at one time; it’s been over in Africa and some restaurant owned it too, all before the Englishman bought it. He decided to sell it because he’s 80-something now and can’t fly around in it.”

While Gomes sees a good future for the helicopter ag-industry, he sees its greatest problem being the continuing supply of good pilots. He elaborated, “These guys typically come to us with a commercial license but they still have about three years of learning ahead of them to be really competent in this sector. There’s a lot to learn about carrying heavy loads close to the ground, working in bad weather etc. The average value of crop we’re spraying and working over is $6,000 per acre, or $36,000 per tank load, so there’s zero margin for error or else we can cost our customer a huge amount of money.” Bearing in mind his optimistic view of the industry’s future, Frank was asked about competition. “There are competitors but we all seem to get along now. There was a time when we didn’t get along and the competition was fierce, everyone was friendly to your face but absolutely cutthroat

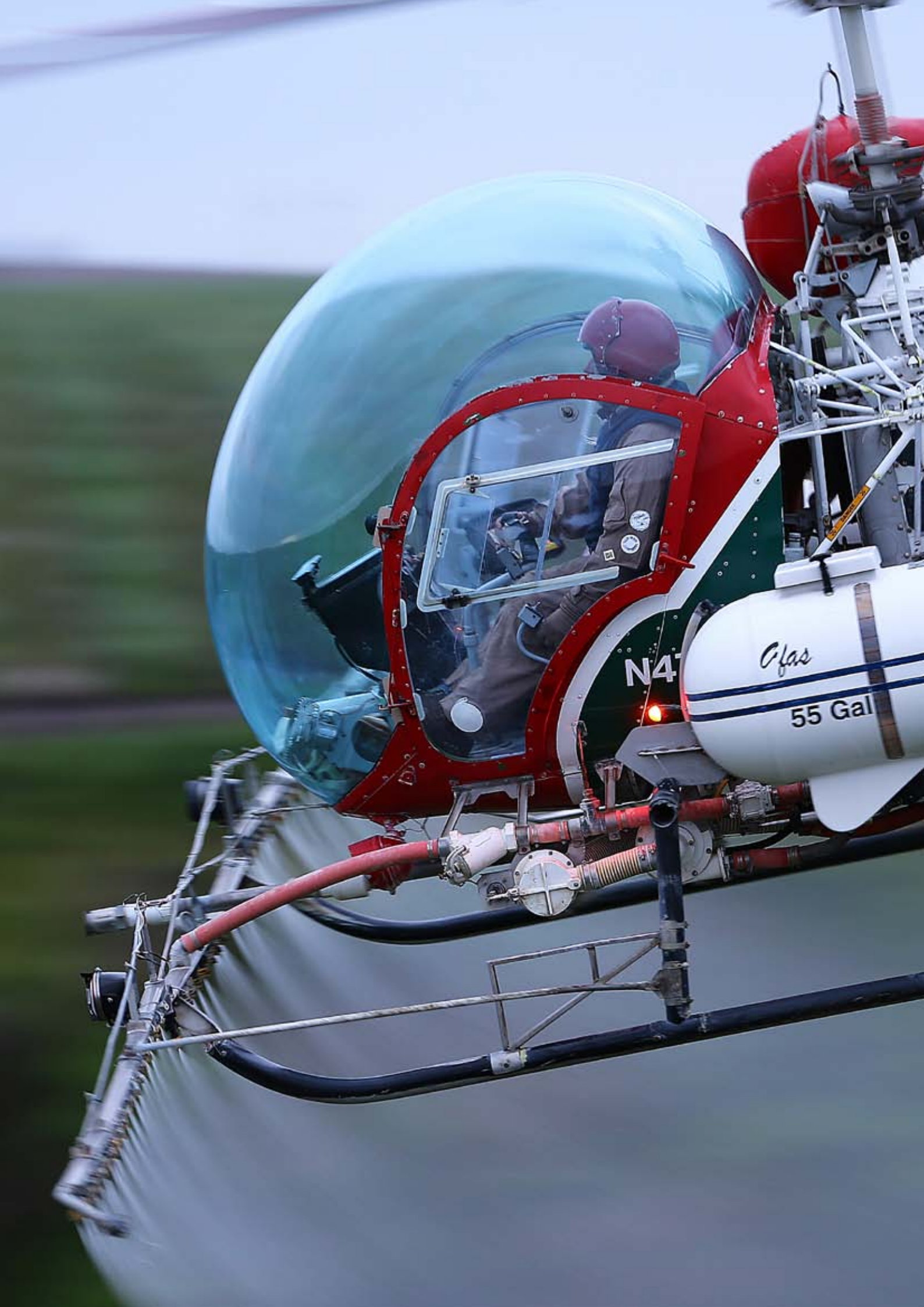
as soon as you turned your back. There are only three companies now and there is such a constant flow of issues facing all of us in the industry that we've been compelled to work together in a lot of ways."

If a pilot joins Gomes with just the basic commercial license they will be employed on salary and start work as a loader, giving them a good perspective and understanding of that side of the operation. Then they'll be put in as the 'bird-dog' – the guy in the pick-up who's ahead of the helicopter, orchestrating the jobs and talking to the people - so within two years they have learned how to load, to mix, all about the chemicals, how to deal with crews, where all the fields are. And what about air-time? "Alongside all that they're flying as well; I give them about ten hours a month," said Gomes, "It's an approved program with my insurance company." As one of Gomes' pilots who joined the company straight out of flight school commented, "It's not the flying that's inherently difficult. It's what else is going on around you, the people, the situational awareness, the crews, adjacent crops, all the stuff like that." In three years with Gomes Farm Air the young pilot had accumulated about 400hrs ag' time. After spending a year as a loader and about a year as bird-dog he had almost completed the professional and structured training program that Gomes has put together. Workload is constantly at an extremely high level when ag' flying so the quality of the training program is of crucial importance. Just as in any field of endeavor, it's the details and the small things that best display an operator's level of professionalism and Gomes is at pains to cover all his bases when training a new pilot. Unfortunately there are still very few



young pilots coming through the ranks, most industry meetings being described only partially tongue-in-cheek as 'a sea of white hair'. It was pointed out that the prospect of getting up to go to work at 2.00 or 3.00am on Saturdays and Sundays was never going to appeal to anyone who didn't have a real passion for the job. It's not just the helicopters that are old school; Frank is a great believer in teaching his pilots to fly as he learned. That means becoming competent at spraying a field free-hand, without use of a lightbar or reference to the GPS. The advantage of this training is that a pilot is not reliant on added technology to complete his mission. If a GPS fails or the lightbar goes out he can still finish the job. It also minimizes the likelihood of a crash caused by a pilot's attention being inside the cockpit on the GPS unit, instead of outside the cockpit, concentrating on flying the aircraft.

Frank Gomes echoed comments from his pilots when asked what he enjoyed about the ag' work. "I like the challenge. It's never boring and you spend a lot of time flying in the dead man's curve. Between the government, the public, the farm owners and the required skills to do the job, it's just a constant challenge though. We pride ourselves on being professional. I matured through the 'cowboy' era in this industry and that has been my greatest challenge, taking this business to the next level. I'm pleased that for a few years now I've been able to say, if you're not professional you won't survive in this business. For example, all the guys on the ground have breathing apparatus as required and while some of our equipment may be old, it's all well looked after, maintained and clean. When people see that it saves a lot of problems. It's no good spending $600k on a nice helicopter and having a truck that's leaning sideways with a tank that's leaking! Another part of the professionalism is precision. We'll often be spraying immediately alongside highways,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while schools, buffer zones, waterways and estuaries surround us and we can't afford to ignore overspray or spray-drift." For that reason Frank and his pilots frequently use smoke generators, a simple modification that oils the machine's exhaust and allows the pilot to monitor current wind and drift conditions. Separation between fields is often only 20 inches so precision is a must, aided by the

47's ability to deliver a spray pattern with minimal vortex disturbance. Frank explained, "That's the beauty of the wide rotor swathe. The key is keeping your boom width to 75 percent of your rotor, then working with your nozzles to retain the larger droplets and ensure almost everything drops straight down." The Gomes 47s are equipped with Isolair tanks, Simplex booms – converted from aluminum to stainless steel – and TeeJet nozzles. The stainless booms have just one disadvantage; they don't break. Frank explained that this is a drawback in flight conditions that make boom impacts reasonably likely, hence another Gomes Farm Air modification, "That's why we have those flimsy-ass conduit pipes there. If we hit something they'll just fold and go back, because the boom's not going to break."

It will be interesting to discover whether the next decade will see Frank Gomes semi-retired as he intends and Gomes Farm Air Inc. either sold or under the direction of another generation. Equally interesting is the question of what helicopter type will replace the aged 47s if parts availability challenges force their retirement. Whichever type that may be, it is hard to imagine it becoming as iconic as the once-ubiquitous little Bell. HO

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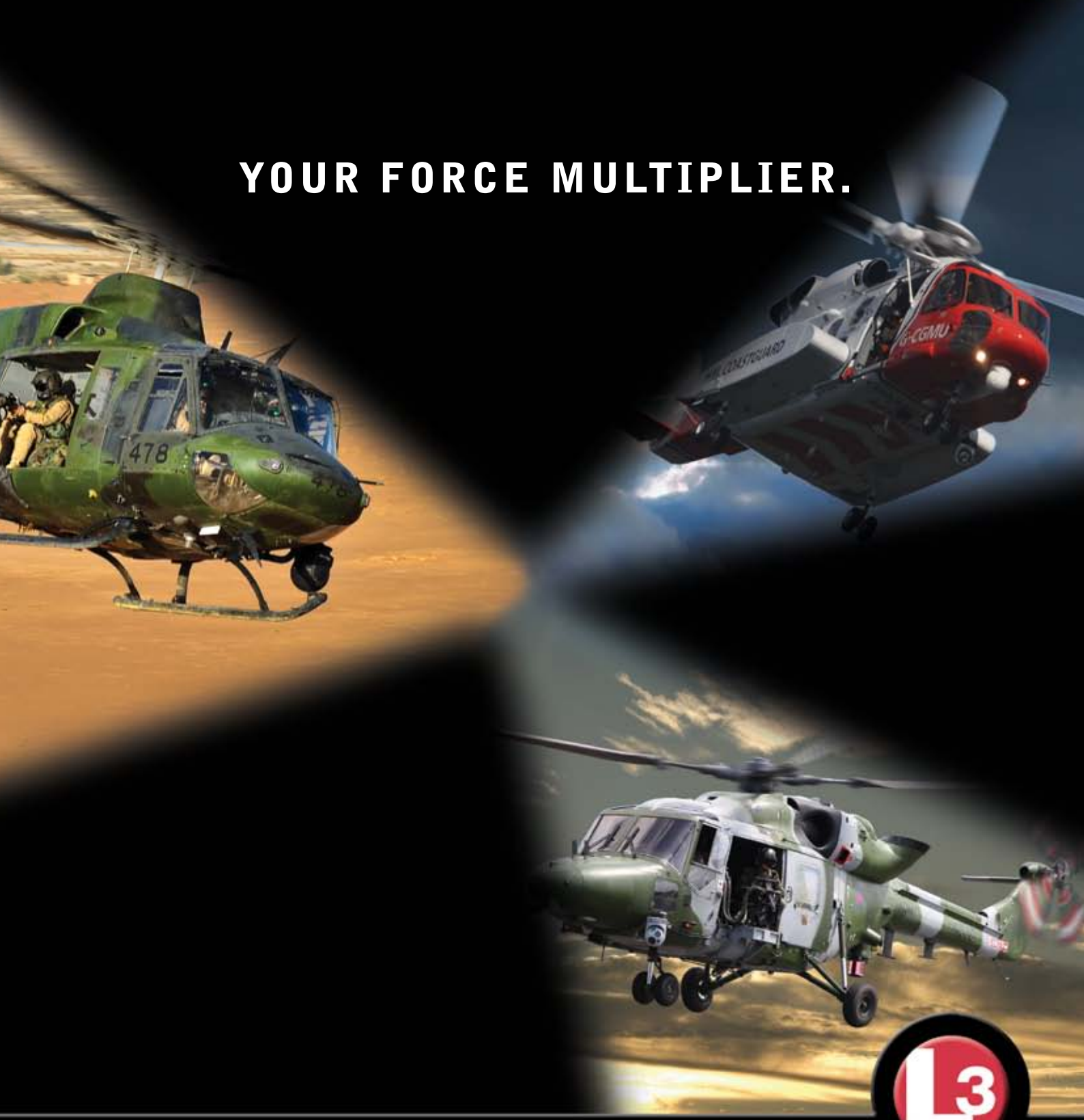

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