



HELI

EXPO
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2017

Police Aviation News

The organisers Helicopter Association International [HAI] based in Alexandria, Virginia claimed that the HAI HELI-EXPO 2017 was to be the largest ever produced.

It is the people and the parts that matter to industry insiders but normally there are plenty of other attendees that mainly salivate over there being some 60 helicopters across the show floor of the massive Kay Bailey Hutchison Convention Center on the edge of Downtown in Dallas.

Potentially important was that one of the exhibits was a Boeing CH-47D Chinook, one of the largest helicopters commercially available in North America [but of course nothing like the real biggie the Mil Mi-26]. Also vying for general interest were a former Russian Mil-24 Hind helicopter, several commercialised Sikorsky Blackhawk helicopters, and a variety of models from Airbus, Bell, Leonardo, MD, Robinson, Sikorsky, and other aircraft manufacturers.

In the event it appears that all those attractive airframes did not ultimately bring in the number expected. At 17000, footfall was down quite dramatically on expectations [though perhaps not to the level of Louisville last year] and HAI may have to rethink the new situation somewhat. Again there were lots of spare Tote bags and programme guides going begging but again not in the numbers experienced last year.

In the event the fall in footfall does not appear to have lessened the good business experienced by most of the vendors who mostly paid quite dramatic amounts of money for their booths, the missing people appear to have been the enthusiasts, the family groups, the strollers. Not perhaps too much of a loss to what is primarily a business forum.

In the end it is the bottom line on the financial ledgers that matters and it may be many months before the number crunchers can put a value on the business versus the cost.

Every vendor was their product noticed but from my point of view it was more about the potential headlines. The really new, the ongoing research and, if possible, the unusual. The headlines were MD for the sort of new, developments in searchlights and a little bit about gas bottles in air ambulances that is really a parochial story about folks in England.

HEADLINE NEWS

Thommen, a Swiss company that was once a major player in the aircraft instrument market has been weak for some time. Taking on Russian investment has not resolved its weaknesses and in recent weeks it has endured its 'Icarus' moment, flown and got burned. The slightly damaged remnants were exhibiting in Dallas.

Not so long ago Thommen was a thriving supplier of what we would now call traditional analogue aircraft instruments. Through a lack of investment in the new technology they fell behind the market as glass cockpits began to dominate; surviving on the provision of standby analogue instruments as glass cockpits were initially looked upon with a degree of suspicion. Even as the world air fleet grows exponentially the product Thommen provides is a good one but now mainly serves a niche market slot.

A few years ago Thommen sought to resolve its looming problems by taking on Russian investment from Transas and set about the development of a promising Russian searchlight in 2012. The searchlight needed Westernizing and certification, it seemed an easy option. The base Russian light was acceptable in Russia but was not sophisticated enough for the wider market and was faced with needing a Western country base to ease its way into those markets.

In the event certification was not so easy as it looked and coin-



The Thommen 1600 is already in service. This example was on a Korean Coast Guard Sikorsky S-92. ©PAR

FRONT COVER: With Colombia Helicopters celebrating its 60th Anniversary this year it is only fair to include this magnificent stock shot from the company of one of their Chinook helicopters dropping a deluge. Unlike last year in Kentucky, Dallas was warm and not too wet! Plenty of Tote Bags and programmes left over though so expect them to be hard to find next year in Las Vegas.

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cided with the rise of the also certified Trakka searchlight. The publicity surrounding the development and marketing difficulties only served to highlight its Russian origins.

To cut a very long story short the ‘Thommen’ searchlight did not make headway against either the traditional legacy Spectrolab products or the up-and-coming Trakka and the Russians have moved on and sold the searchlight to a US company. Thommen has downsized to fit better with its onward development.

The latest on the searchlight that is in service with a number of operators including the Swedish Police is that the Thommen developed HSL1600 searchlight product was sold to Luminator Company, Pleno Texas. The research and development team were dispersed long ago.

Luminator is a long standing US company that produces SX-16 sized searchlights, smaller landing light sized searchlights, a range of illuminated signs and prototypes for aviation and other transport needs. Luminator has a 1600W Searchlight that looks like the SX-16 but did not offer add-ons like infra-red. The original light won a US Army tender for the UH-72A / EC145 LUH in 2010 and that is a long term commitment for the company. Having the former Thommen 1600 in its product line-up greatly enhances the capabilities of the company.

The company is honouring support of the Thommen searchlights although there are probably as yet unspoken limits to their largesse. They have a stock of around 40 units to sell before they need to ramp up new production. Production aside they have already put in place several improvements to the product and will continue to tweak it.

It will not be ‘win-win’ for the Texas based company as some of component parts are uniquely sourced in other countries – the casing is from the UK – but the searchlight looks to be in good hands.



The Luminator searchlight is simpler and in a long-term service agreement with the US military. ©Luminator



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MDHI

As mentioned in the March edition of PAN MDHI were celebrating Huntington Beach Police Department's Air Support with a special commendation for its outstanding record of over 70,000 accident free flight hours and its current all-NOTAR fleet of three MD 520N helicopters. The back-up for this bit of all our yesterday's news was that the police in Hungary had bought into the former German police MD902 fleet. Alarm bells are rightly ringing when a manufacturer lauds the resale of ten-year old airframes.

Much was expected of this year's HAI diatribe by the CEO Lynn Tilton and as usual it turned into something interesting and the dangers of it being a damp squib quickly receded and all was lapped up by the usual significant crowd of fans and detractors. The rhetoric was softer than in the past as she spoke of a 'comeback story' and bringing a bit of beauty back to the industry but true to type there was a real nasty sting in the tail.

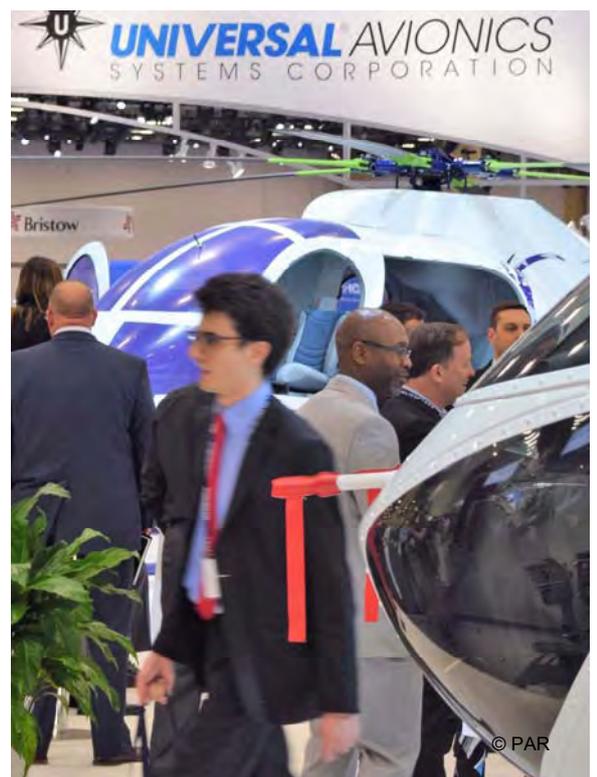
Expected were new items on the developed MD600 as the MD6XX and the developed MD900, the 969. The former was expected to be simply a 600 with a tail rotor and so it proved. Thanks to Internet leaks of photos in late February and even the MD Twitter account by the time of the show unveil on March 7 it was simply old news so there was no unveil as such. The MD600N has a new tail that deletes the NOTAR and replaces it with a four-blade tail rotor.

There were questions to ask though, it was noticed early on that the tail boom seemed thicker than it needed to be so was there a strake that conferred a BLR like Coanda effect on the as yet unphotographed left side? Alas no, a major disappointment. For a company so linked to using the tailboom to assist in taking the load from the control there was an expectation of a sculpted boom and maybe even the strake creating some Coanda effect. Of this there was none and the admittedly pretty standard tailboom profile was exactly that. The reasoning given was that they hoped to produce an airframe with the handling characteristics of the ancient MD500 series.

Despite this apparently retro thinking MD are projecting the 6XX as a thoroughly modern airframe with a great future in support of most airborne emergency services. It is fairly roomy compared with the 500 but it is of course the same narrow cabin with the same intrusive gearbox bulge in the rear cabin roof. We can perhaps forgive her the 'artists licence' of regularly referring to her aircraft having a '4-Axis' autopilot in a world where scientifically there are only 3-Axis possible. In truth all the manufacturers pull that one out of the sales speak bag.

If there were any need for production of the MD900 series airframes one might assume it would be in the USA but there are still enough Turkish produced 900 shells lying around the factory for planned production. A question that was hovering was how does Ms Tilton square production of MD500 airframes in Mexico with her 'built in America' strapline. She covered that bit of awkwardness by declaring that the shells of the MD500 are now being built in Mesa with only a few parts now being created in the Mexican car factory she owns.' That should keep Donald Trump happy.

The 900/902/969 question remains in the background – another year has passed with the same non-message ringing in our ears



and it looks like another will pass before any change will come to the fore – if then. This years ‘promise’ is ‘...third quarter....’ 2017.

The bombshell message announced by Tilton was on her strategy on glass cockpits. Although there had been a rumour and some of the pre-event media knew that something was afoot, it appears that the people most affected – the sales team from the Universal Avionics booth right next door - had not been officially told.

MDHI announced the selection Genesys Aerosystems’ new-generation Integrated Display Units (IDUs) as standard aboard its MD 902 Explorer. The Genesys system features an FAA-certified open architecture and will be available Q3 2017.

“We are thrilled to partner with Genesys Aerosystems on our twin-engine glass cockpit initiative,” said Lynn Tilton, Chief Executive Officer for MD Helicopters. “I have worked with my MD team for years, dedicated to deliver a highly capable and customizable next generation glass cockpit solution for our MD 902 operators. This goal has finally been met. The open-architecture solution developed by Genesys Aerosystems offers innovative, leap-ahead capabilities that will provide enhanced accessibility to critical data for our operators, and a tremendous leap forward in technology for us.”

In addition to its standard installation on the MD 902, MD Helicopters will certify the Genesys Aerosystems IDU-680 System as the primary integrated cockpit solution for the MD 6XX Concept aircraft, the MD 530G light scout attack helicopter, and on the MD 530F to support both commercial and military configurations.

In recent years Universal Avionics have been at pains to have their booth right next to MD. I predict that will not be happening again any time soon.

For many years now we have heard Ms Tilton complain bitterly about how MD and herself have been treated so badly by the aerospace industry. And yet here we had an instance where she treated Universal Avionics, a company that on the face of it was a loyal prime contractor, every bit as badly as she was supposed to have been treated. She no longer has grounds for complaint.

As for Genesys, the winners in all this, the staff were also somewhat bemused by it all. The team from Universal may we have been kept in the dark on developments but so were the Heli-Expo team from Genesys who will be expected to provide the complete package to Ms Tilton in less than 6 months. I hope it all goes well.

The press text on the MD6XX was every bit of the over egging of the product that we might expect [all manufacturers being guilty of that one]. Words like “an all-new, high-performance single-engine helicopter” do not really fit a Vietnam era pod with an unimproved conventional tail boom and rotor. That said there may be innovation to be added. Plans for self-opening main door – a gimmick traded in from her automobile business - seem pretty futuristic if the FAA will accept it and the customers pay for it. It seems odd to have innovation in doors and yet ignore the apparent benefits of a tail boom with some type of Coanda effect.

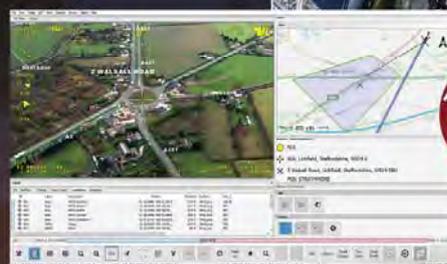
MD will be marketing the new airframe to air ambulance and law enforcement, meanwhile the spectre of the Airbus Helicopters H125 hangs over those aspirations.

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LEONARDO

It was a fairly muted Leonardo. Appearing more or less as themselves for the first time. This has been the longest industry name change ever, and I am really still unsure whether AgustaWestland as a brand marque exists or not!

The headline story is perhaps the continued absence of the AW169 air ambulance from the skies of the UK but it was not really a US issue so not to the fore in peoples thoughts and comment in Dallas. There was acknowledgement of the undercarriage problem but little more. The localised problem in the UK is a mixture of the undercarriage retraction issues, the unique medical fit and gas bottles and until all of them are resolved the type will simply not fly operationally. It is not grounded as such, more not yet 'fit for purpose.'

There was not a great deal on the booth and virtually nothing on the AW609 TiltRotor project, another item with one of the longest gestations in recent years, it is expected to start icing trials soon following recent ground and flight testing activities. The first flight of the 609 was March 2003, fourteen years ago. These advances have been made in support of FAA certification, which remains on track for 2018.

The third prototype, based at Leonardo's facility in Philadelphia, performed several weeks of unrestrained ground testing and, more recently, flight trials that allowed avionics and all systems to be fully tested. During initial flights, the aircraft performed basic hovering and manoeuvring and patterns around the airport, concluding with hover landing. Additional flights up to altitudes of 4,000 feet with short take-off and landing (STOL) are planned shortly.

The aircraft will undergo icing trials in Marquette, Michigan, through the winter. The tests will ensure the AW609 can fly in known icing conditions and reach operational standards not currently available in any other commercial aircraft.

On the booth were a handful of airframes, but there were others in the hall on the spaces of others. A Koala, A109, AW139, AW169 and an AW189 pretty much covered the civil range on offer and most of the other activity was announcements on sales, deliveries and updates on customers.



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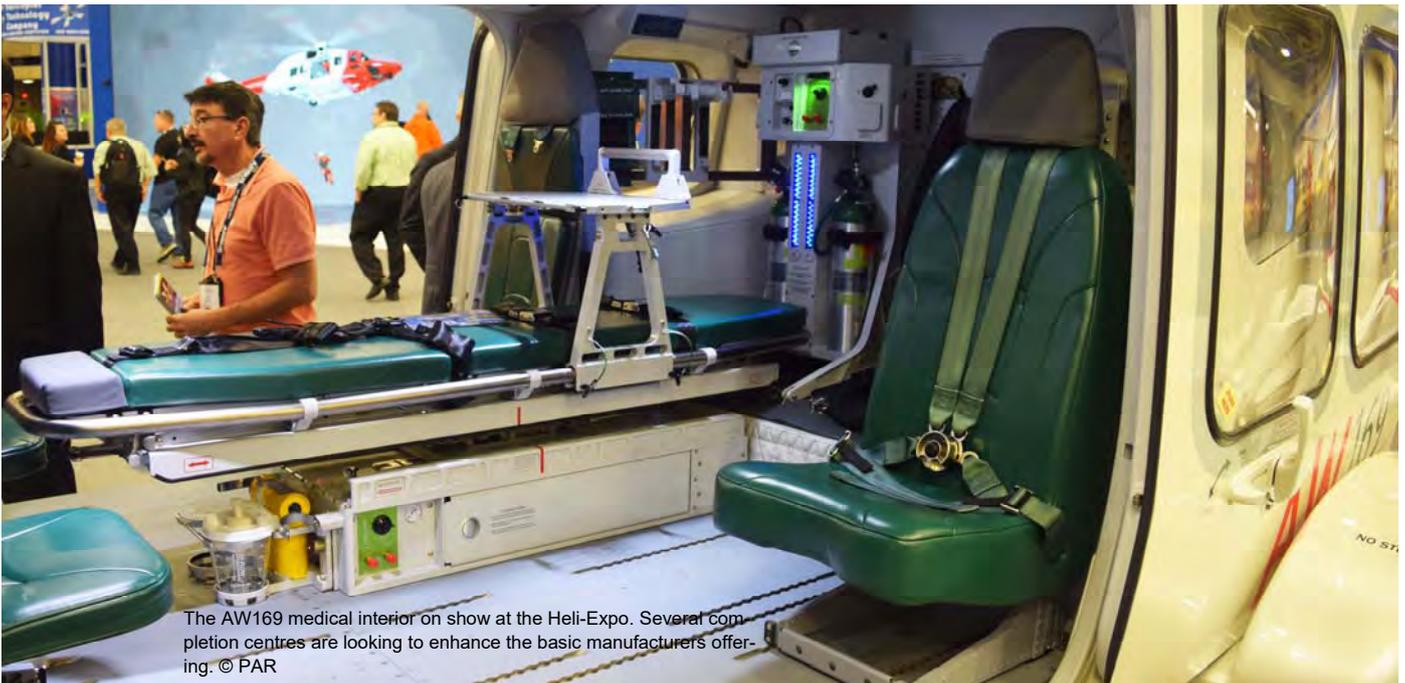
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The two Leonardo AW189 operated by Bel Air of Denmark had exceeded 6,000 flight hours by January, setting a new milestone while demonstrating exceptional availability and mission effectiveness performing long range offshore transport missions in the North Sea. This milestone confirms Bel Air as world fleet leader for the AW189 model in a demanding operational environment. Bel Air has installed the Limited Icing Protection System (LIPS) onto its two AW189s. LIPS permits flight within a known and defined envelope of icing conditions provided that the capability to descend into a known band of positive temperature is available throughout the intended route. LIPS allows operations in more severe weather conditions when other competing types are confined in the hangars.

With agreements for over 150 units, orders and options, and over 30 helicopters delivered to customers worldwide for offshore transport, SAR and transport duties, the AW189 is the outright market leader in its class. The AW189 is unique in having a 50 minute 'run-dry' capable main gear box, exceeding current certification standards and offering unmatched safety and reliability for long range offshore operations. A Full Ice Protection System (FIPS) is also available on demand, allowing the aircraft to operate in full icing conditions.



The AW189 medical interior on show at the Heli-Expo. Several completion centres are looking to enhance the basic manufacturers offering. © PAR

BELL

Bell Helicopter were showing 525 Relentless in its VVIP MAGnificent form, 505 Jet Ranger X, a pair of 429, 407GXP and presentations on the upcoming V-280 Valor. Additionally, customers had an opportunity to customise their own demonstration flight in the virtual reality experience for the Bell 525, 429, 407 and 505.

The main attraction though was a concept airframe which sat centre stage and attracted interest right up until the show closure at 4pm on the last day. Reminiscent of one of the early drawings for the Bell MAPL that led to what became the 429 [an outcome that looked nothing like those early images] and including a fan in tail boom that had not previously seen the light of day as a mock-up. All very attractive as a show headline but we may never see it fly.



© GarethDavies

The Arizona Department of Public safety has signed for a Bell 429, and the manufacturer naturally hopes it is the first of a few as the Arizona DoPS are long term users of Bell products and recent deliveries to them have been Model 407 and the 206 before that.

The Bell 505 JetRanger X is now on the verge of delivery and has seen a good take-up on the previous options and large additional orders from some customers, but it is not yet ready for law enforcement. The design will need get some service history behind it before Bell will be offering a definitive in-house solution although one of the completion companies much favoured by many of the law enforcement operators may start to develop a solution ahead of the factory.

Bell and Reignwood Investment, Ltd., (Reignwood) signed an amendment to their agreement confirming the purchase and delivery of fifty Bell 505 aircraft over three years. This is in addition to 10 Bell 505s previously ordered. With 60 Bell 505s Reignwood will become the largest 505 operator in the world, adding the 505s to their current fleet of Bell 206, Bell 407GX and Bell 429 helicopters that are currently completing a variety of missions across China.

AIRBUS

US manufacturers continue to find times hard against the European invaders. Overall, US production is on the up but in terms of units it still tends to be in favour of the imported production lines of US made Airbus and Leonardo models.

Think back not too many years and World police air support was mostly populated by the US product, a Bell or an MD, but the numbers of agencies now buying into new Bell's and MD's is low. The only glimmer of positivity is that in terms of sheer numbers in the US the former military fleets of 50 year old Huey's, Kiowa's and Cayuse keep the names up front and in majority. At the same time this numerical supremacy is leeching away as those 1960s models literally fall apart.

To hear the US law enforcers talking about the H125 [the AS350B3e] you would think it was new and exciting and not based on a 40 years old airframe. This latest development just seems to blow them away in its capabilities, agility and power. Recent improvements in crew seating and fuel tanking have improve safety, bringing it into the 21st Century although not of course meeting all of the latest construction requirements.

Safer fuel tanks are just the latest enhancement being offered on the H125



Los Angeles Police Department converted to the European AStar many years ago and now plans to strengthen its Air Support Division this year with the addition of four new Airbus H125 AStar's as part of a long-term plan to upgrade its entire patrol helicopter fleet.

LAPD Capt. Sean Parker said the H125 proved to be the most suitable replacement for the division's fleet of AS350 B2 AStar's, an earlier model in the long-running and acclaimed Airbus single-engine helicopter family. "The H125 was the best fit for us for numerous reasons," Parker said. "The pricing is competitive. The platform suits LAPD's missions well, and we are satisfied with the reliability of the aircraft."

Two of the H125s have been delivered and are currently undergoing completion, and two more are scheduled for delivery to the completion facility in the second quarter of this year. LAPD plans to purchase additional aircraft in future years to complete replacement of its patrol helicopter fleet. LAPD's airborne law enforcement program began operations in 1956 with one helicopter. Today, the Air Support Division is the largest municipal airborne law enforcement operation in the world, with 75 pilots and tactical officers.



REACH Air Medical Services, a subsidiary of Air Medical Group Holdings, has placed an order for five new Airbus H125s, marking the first time the company has turned to an Airbus Helicopters aircraft for its single-engine rotary platform solution. Previous helicopter orders were for variants of the Bell 206.



The Airbus H135 is fitted with the Helionix system, an advanced avionics suite that increases mission flexibility and enhances flight safety. ©PAR

The company selected the H125 after requesting a high-altitude demonstration and “fly-off” of the Airbus H125 and H130 models, and the Bell 407 in Colorado in summer 2016. Airbus state that the resultant data suggested that both the H125 and H130 exceeded flight envelope expectations, with the H125 emerging as the best performer followed closely by the H130.

Two H125s are scheduled for delivery to REACH in June, with the other three to be delivered in the third quarter. The new aircraft will primarily serve mountain communities in the western United States. Airbus Helicopters Inc. will install the air medical equipment packages.

It is clearly nothing to do with the age of the product. The H125 is but a development of a well-designed French Aerospatiale design that is in itself some 40 years old. When, 30 or so years ago, the type started to take a grip on police aviation it was regularly criticised by early users for being little more than a flimsy toy. The manufacturers took note and the rest, as they say, is history.

Airbus Helicopters took sixty orders at the show but even before the event they were claiming to retaining their position as leader on the civil market in North America in 2016, taking 73% of new helicopter bookings.

STAT MedEvac will soon be the first air medical transport service in North America to operate Airbus H135 helicopters equipped with the innovative and powerful Helionix avionics system. The Pennsylvania-based critical care transport team has placed orders with Airbus Helicopters Inc. for three new H135s to replace older aircraft in its fleet, with delivery scheduled for the fourth quarter of 2017. [Continues page 12]



Exterior bottle by METRO Aviation ©PAR



Gas bottle rack on the Bucher booth ©PAR

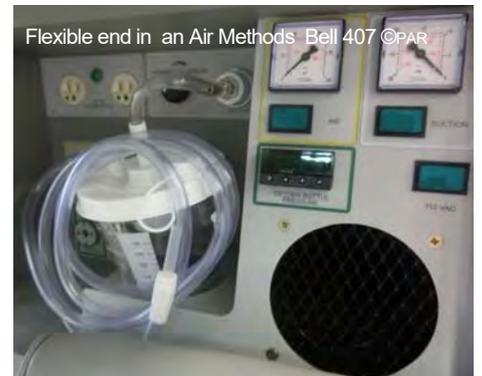
OXYGEN

The lingering problems relating to the certification of oxygen systems within the air ambulance community continue and visiting the greatest helicopter show seemed a good place to pick up some tips on how others were facing up to the apparent European problem.

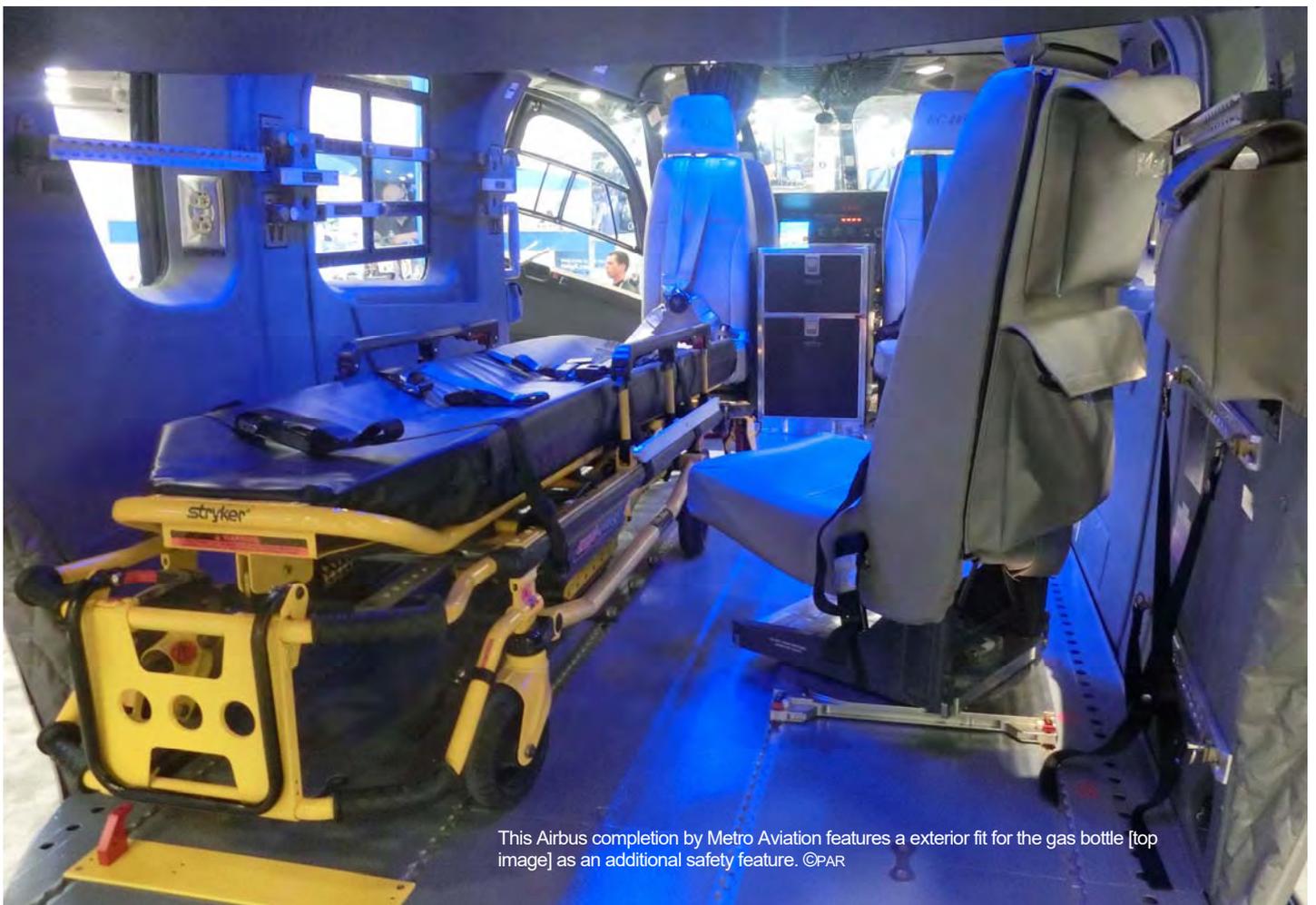
Regular readers will be aware that in the UK the HEMS AW169 fleet is being severely delayed by an on-board oxygen bottle issue where SAS is trying to certify a new system. Via a far from fast EASA. Other operators of the H145 having selected a pre-certified Bucher system escaped the problem.

I was surprised to find that this is no longer something Europe is messing about with. The whole of the northern hemisphere seems to be making things difficult for HEMS integrators and operators and the integrators are having to sit up and pay attention.

Even back in England where this appeared to start (but did not really) someone has actually managed to get the main gas supplier [British Ox-



Flexible end in an Air Methods Bell 407 ©PAR



This Airbus completion by Metro Aviation features a exterior fit for the gas bottle [top image] as an additional safety feature. ©PAR

ygen] to start cooperating and supplying the specifications for its gas bottle equipment. In the end their business might be affected if alternate suppliers were to pop up to deal with the result of their initial intransigence.

Once gas bottles were heavy steel affairs familiar in hospital wards across the world but in recent years aviation bottles have moved to lighter materials, often aluminium covered in glass fibre, and the flexible piping has had to give way to rigid pipes up to the mask feed. Even that has not met every issue and tanks are often being taken out of the cabin altogether, being placed in external pods or in luggage lockers.

As in many countries, in Canada flexible lines are not allowed on fixed oxygen installations. New installations must include rigid lines from the bottle, which if nothing else makes bottle changes more difficult.

To have a tank failure inside the cabin would be catastrophic but no-one has cited an instance of this happening. LOX is considered even more dangerous—especially inside the cabin—so the systems are simply compressed gas.

There is talk of adopting the military system that produces oxygen on board but at the moment the drawback with that system are that it is not medical gas quality. The on-board generated oxygen fed to fighter pilots is high in oxygen content and that would tend to make the medical patient 'hyper' and potentially more difficult to handle.



Gas bottle rack in the AW169 at the Heli-Expo show [detail from the image on page 7] ©PAR

On the Leonardo Booth this legacy build standard AW119 Koala air ambulance fit helicopter destined for the Far East escapes many of the problems now plaguing some of its newer stablemates. ©PAR



The Airbus Helionix system is an advanced avionics suite that increases mission flexibility and enhances flight safety, will be standard equipment on new production H135s. Comprised of two computers and a one-of-a-kind cockpit layout, Helionix includes up to four electronic displays designed to improve pilots' situational awareness. The system provides a four-axis autopilot to reduce pilot workload and a Traffic Advisory System that improves safety by assisting pilots in detecting and avoiding other aircraft.

The recently certified show display H135 with its standard advanced Helionix avionics suite and Stylence interior was scheduled to embark on a three-week demo tour of the U.S. and Mexico on the Monday after the show.

At the show attendees were able to try out the H160 experience and take a look at the H160's VIP, oil and gas, and EMS configurations more closely with an interactive virtual reality and 360° presentation.

There was no sign of any full-size H160 or the H175 at this year's event, the latter's target market of oil and gas remains depressed, but NHV Group and Airbus Helicopters were able to announce that NHV's H175 fleet has logged its first 10,000 flight hours. The milestone indicating the rotorcraft's capabilities and reliability in highly demanding operations, especially the transportation of personnel and supplies to offshore oil and gas platforms.

The 10,000 hours have been accumulated by NHV's fleet of eight H175s. The first two aircraft were introduced to the fleet in December 2014 with NHV being the launch operator. The rotorcraft has since completed more than 4,750 flights; with certain missions conducted in challenging North Sea weather conditions, and non-stop flights performed to distances of 180 NM with passengers and cargo.

With 12 H175 now in operation and demonstrating the performance and reliability of the aircraft worldwide, the medium twin-engine helicopter continues to be enhanced in order to bring more value to operators.

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CHURCHILL NAVIGATION

Earthscope is a cloud based video management tool for law enforcement users that offers powerful control over all the video captured within the organisation. Clearly it's about storing aviation footage but the system on offer is actually about vehicle dash cams, body worn cameras and CCTV as well. The system allows all this footage to be uploaded and be retrievable with each element effectively interacting its embedded information so that any enquiry might be able to draw several historical video clips relating to the same location and for them to originate from a range of devices.

There is a tendency for some operators to prefer not to use the cloud -especially one based out of their home country - and to meet those policies the cloud can be configured in the form of an in-house server employing the same flexible storage.

PRATT & WHITNEY CANADA

It is big numbers time for Pratt & Whitney Canada. It will not be too many weeks before the 90 years-old company will be announcing the delivery of its 100,000th engine . With an annual flight hours build up running at 3 million there is little wonder that the current total hours flown by their product is in the region of 700 million of which some 60 million are helicopter hours.

Like the rest of industry P&WC has been hit by the slowdown in oil and gas and has been obliged to find ways to reduce the impact of the slowdown. These often financially related easements help the customer but clearly cut margins and the management already acknowledge that there is no realistic way in which the costs can be clawed back at a later date. Therefore P&WC is looking for other ways to fund that in-house shortfall.

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P&WC have managed to continue to inject between \$400 and \$500 annually in investment but the outcomes have been in the form of steady improvements in the existing products rather than some major new products. As they put it "...many things at the same time..." They are working on a 2,000shp engine but the official announcement on this is unlikely to be made public until year end.

Pratt & Whitney Canada's PW200 helicopter engine has achieved 10 million hours of flight powering the majority of light-twin helicopters around the world such as the AW109E Power and AW109 Grand from Leonardo, the H135 from Airbus Helicopters, the Bell 427 and Bell 429 from Bell Helicopters and the MD 900/902 Explorer.

"This is an important milestone that must be viewed in the context of the more than 700 million hours that P&WC's entire engine fleet has flown over the years," says Irene Makris, Vice President, Marketing, P&WC. "The numbers represent an incredible critical mass of on-wing experience, and provide us with a rich database of information that drives our customer service programs and lets us serve our customers on a highly reliable basis. The numbers also speak to the enduring relationships we have developed with operators around the world – some 12,300 of them in more than 200 countries and territories."

On December 23, 2016, P&WC celebrated the 25th anniversary of the certification of the first PW200 engine – the PW206A which was selected by MD Helicopters to power the MD 900 Explorer. A later variant of the helicopter, the MD 902 Explorer, is powered by the PW207E engine and the engine continues to attract more customers and offers a compelling value proposition for the helicopters it powers.

DRF Luftrettung is poised to significantly extend time on wing for its fleet of 17 H135P2 helicopters from Airbus Helicopters powered by Pratt & Whitney Canada's PW206B2 engine. Germany's aviation authority, Luftfahrt Bundesamt, has approved the extension of the TBO on DRF Luftrettung's engines from 4,000 hours to 4,500 hours on all 17 helicopters.



Day 1: Maria Della Posta Senior VP with the P&WC Marketing team hosts a visit by MDs Lynn Tilton. MD are looking for more from their PW200 engines in the MD900 series of helicopters. © PAR

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As is practice in such instances, DRF Luftrettung submitted two of its PW206B2 engines that had reached 4,000 hours to P&WC for inspection. Based on the condition of those two engines, P&WC recommended the remaining fleet of engines could have their TBO interval increased from 4,000 to 4,500 hours. Subsequently, the German aviation authority approved P&WC's recommendation.

The TBO extension enhances the value the engines provide to DRF Luftrettung and its EMS missions by keeping the aircraft flying longer. It also allows DRF Luftrettung to fly its engine fleet for another 16,000 hours before incurring overhaul costs. The extension was made possible because the engines fly a common mission under common operating and environmental conditions.

AIR COVERS

UK based John Pattinson has been in the business of producing covers for a range of aircraft for a good many years now. The covers come in all sizes, grades and capabilities. Prices can vary somewhat at well. You get what you pay for and if it's around £1,000 it will be a simple cover for a cockpit; the more sophisticated options act like a close fitting hangar with a great deal of technology that protects the airframe from the worst the elements can present. The prices reflect that.

One of the more challenging capabilities presented to Air Covers is keeping airframes and equipment cool in the furnace like heat of the tropic sun. An airframe stood out in full Tropical sun will ramp up a temperature of something like 80C [176F]. Pattinson has been able to demonstrate to many customers that his covers can produce a reduction to 40C without resort to any mechanical air conditioning equipment. Although still hot those numbers can be very important when hoping to get into the aircraft and operate equipment like EO/IR sensors that need to be cool.

The British Army ran a challenging trial that became a demonstration with two airframes side-by-side in the sun and both suffering the damaging interior temperatures of 80C. After the Air Covers equipment was fitted to one of the military airframes [Lynx] its temperature slowly fell by 40C while the unequipped airframe remained firmly at the higher figure.

It is one thing to demonstrate it and another to sell. The military and oil magnates will pay but often the price for the high technology covers is way beyond budgets.



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TRAKKA

Trakka Systems are mainly known for their innovative and streamlined searchlight but have long had other product lines that were pushed into the background as the company promoted the searchlight. Now though those older products and other new ones are coming to the fore. Trakka announced the launch of its new TM-100 Map and Video Management system to add to last years line-up of EO/IR cameras as newer products marketed by the company.

Trakka say that their new TM-100 Map and Video Management System provides a cost effective, augmented reality mapping system with metadata video and audio recording capability that adds mission capability to all Trakka's camera systems. Markers or pins can be dropped and saved anywhere on the map. The mapping system provides each pin's position, altitude and distance information. The TM-100 can slew the camera system to any point on the map, via pin touch, address, intersection, city, points of interest or coordinate entries. The flexible architecture is easily customizable with open source and users' databases. The software can run on various computer platforms; ranging from notebooks to ruggedized laptops. 3D, street, satellite and custom map views are available with augmented reality overlays on live video imagery. The map can centre on the aircraft icon, the camera footprint or a pin and orient towards the aircraft's heading, the camera's footprint or north. It also offers picture-in-picture, split-screen, map-only or video-only viewing modes and much more.

During the show Trakka Systems announced that Italian Guardia di Finanza have selected the TrakkaBeam A800 tactical searchlight for their new fleet of six Leonardo AW139 multi-mission helicopters.



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VAN HORN

Van Horn Aviation continue to move forward with their replacement tail and rotor blades. Having received the Federal Aviation Administration (FAA) Supplemental Type Certificate (STC) in February 2016 and Transport Canada STC in November 2016, the composite VHA 206B main rotor blade currently features an 18,000-hour service life (more than triple the life of the original metal blade) with overhauls every 2,800 hours. While beginning certification tests for the 206L LongRanger main rotor blade, the VHA engineering and test staff are already working on the fatigue tests required to bring both the 206L and 206B main blades to 20,000 hours service life and 5,000 hours TBO. Increasing the TBO to 5,000 hours will match the service life of the OEM metal blade.

The VHA 206B main rotor blades feature carbon fibre skin and spars, an efficient NASA-designed laminar-flow airfoil, tapered tip, and a combination of stainless steel and nickel abrasion strips that cover the entire length of the blade for erosion and lightning strike protection. The VHA blades use the identical installation configuration as the OEM blades, allowing direct replacement without hub modification. The overhaul includes removal and replacement of the root grip plates, root bolts and nuts, and bushings, plus repaint. The overhaul is estimated to take no longer than two weeks and cost approximately \$3,500.

VHA achieved the first flight of its composite 206L main rotor blades, completing ground tests, hover flight, forward flight reaching speeds of more than 100 knots, and turns with up to 45 degrees of banking during the test session at Falcon Field in Mesa, Arizona. The tests mark the beginning of the flight testing required for Federal Aviation Administration (FAA) Supplemental Type Certificate (STC) approval. The LongRanger main blade is based on the (206B) JetRanger blade certificated last year, though it is modified to incorporate a 22-inch increase in length and other detailed improvements that means it is essentially a new blade.

VHA expects FAA certification of the 206L main rotor blades by the end of 2017 with a 20,000-hour service life (four times that of the OEM metal blade) and overhauls every 5,000 hours. The VHA blades use the identical installation configuration as the OEM blades, allowing direct replacement without hub modification. The overhaul will include removal and replacement of the root grip plates, root bolts and nuts, and bushings, plus repaint. The cost and time involved should match those of the Bell 206 blade.

SAFETY

Airbus Helicopters, Inc. and Precise Flight, Inc. have announced approval of the amended Supplemental Type Certificate (STC) from the Federal Aviation Administration (FAA) for the Pulselite® Bird Strike Prevention System. This approval comes as an amendment to STC SH3319NM, bringing the total number of Airbus rotorcraft models certified for the Pulselite® System to 67. This includes all 135, 145 and 350/125 models.

The Pulselite® System is an FAA certified lightweight electrical system controller that alternately pulses the landing and auxiliary lights of a helicopter, thereby increasing its visibility and reflecting the speed and directional movement of the aircraft. In addition to enhancing the margin of safety by increasing aircraft recognition, some studies have shown the Pulselite® System to reduce bird strikes by up to 66%, according to Precise Flight.

The Pulselite® System is installed on more than 25,000 aircraft around the world, and has been proven to make flying safer.





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NEW KID ON THE BLOCK

A regular attendee of past edition of the PAVCon Europe event run by PAR, Germany's ESG Elektroniksystem- und Logistik-GmbH took a large booth to present a selection of its broad service portfolio as well as the helicopter modular mission operator workstation. With this workstation external sensors and different communication devices can be controlled in order to provide all mission-critical information.

The console allows the aircraft mission operator to perform demanding missions in an easy and effective way. It is available in different configurations and can be used with many aircraft types; moreover, it can be adapted for specific user needs. The modular construction of the console allows adjustment to achieve the best ergonomic position for the operator. The ESG mission management software enables the operator to plan the missions in advance and supports him with comprehensive data, map and video management functions while on operations.

For fifty years, ESG has been one of Germany's leading companies for the development, integration and operation of complex, security-relevant, electronic and IT systems. ESG is an aviation engineering company in line with EASA Part 21G, EASA Part 21J and LBA Part 145 as well as an approved aviation company for aviation devices for the German Army and is currently bidding for prestigious contract with police in Europe.



The ESG workstation as featured in European police airframes © PAR



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On the show floor in Dallas © PAR

THAT CHINOOK

Columbia Helicopters celebrates its 60th anniversary throughout 2017. The company founded in April 1957 with a single Hiller 12B helicopter has been leading the way in heavy-lift helicopter operations for commercial and military customers, always working to expand its capabilities and improve its level of service both while flying important missions, and when providing critical maintenance, repair and overhaul (MRO) support.

Columbia Helicopters is a global provider of helicopter services in support of a range of missions, including firefighting, construction, logging, and oil and gas exploration. The company recently installed and deployed two 2,800-gallon Fire Attack System (FAS) internal water tanks in two Boeing CH-47D Chinooks to provide more effective firefighting capabilities, and added NVIS capability to three of its Vertol 107-II helicopters.

Columbia is actively flying and supporting multiple helicopters in Afghanistan, carrying troops and cargo, supporting construction and other infrastructure programs. The company works closely with international military operators to field, fly and support those fleets from its facility about 25 miles from Portland in northwest Oregon.

During 2016's fire season, seven of Columbia Helicopters' aircraft logged nearly 1,500 hours, fighting more than 50 fires in 16 states, with an availability rate of more than 95%. The season also marked the first full season that Columbia Helicopters had used the new 2,800-gallon internal FAS for firefighting duties, logging more than 740 hours during the season.

Ed: I always jokingly said that the amount of gear police aircraft want to carry would leave them having to operate very large machines. The fire suppression business is already there.

#



Arriving at the show in Dallas © Alan Norris

IBF

The certification doubts continue to hover over Inlet Barrier Filters but the sales continue. Twelve new AW139 air medical helicopters – all equipped with Donaldson AW139 Inlet Barrier Filters (IBFs) – have entered service in New South Wales, Australia, joining numerous other air operators that already use the advanced filter to keep their aircraft flying at peak performance. Two new operators – Toll Helicopters and Hunter Westpac Life Saver Rescue Helicopter Services – chose to have Donaldson IBFs installed on their AW139s. It marks the largest AW139 IBF contract sale in Australia to date for Donaldson Aerospace & Defense, a division of Donaldson Company, Inc.

The helicopters will operate across a vast range of environments across NSW from coastlines to regional areas and the Outback, so having a superior engine filtration system is critical to completing their lifesaving missions. AW139 IBFs are available for installation on new aircraft at the factory, MRO facilities or completion facilities. They are also offered as an aftermarket installation to upgrade fielded aircraft.

COBHAM

The company that hides many different skills behind the same façade is launching its own brand of helicopter training through the newly-established Cobham Helicopter Academy this year.

From comprehensive ab initio training, to the specialist skills required for search and rescue missions, tactical operations and commercial operations, Cobham provides helicopter training to Government Agencies, Military, Emergency Services, Coast Guard, Original Equipment Manufacturers, and Oil, Gas and Wind Farm Companies.

Duncan Milne, Vice President, Cobham Helicopter Services said “Cobham has been providing ab initio training, specialist flight training and engineer and support training to helicopter pilots, crew and engineers since 1997.”

“Our instructors are among the best in the world - they are all British ex-Military, with considerable operational experience gained from the same demanding conditions that students may one day find themselves operating in.

“So whether they’re effecting a rescue in an urban conflict zone, or delivering essential maintenance equipment and crew to a remote wind turbine site, our training makes sure they have the outstanding airmanship, captaincy, judgement and risk analysis they need to get the job done – professionally and safely,” Mr Milne said.

Cobham has been training helicopter pilots and rear crew to the highest standards at the UK’s Defence Helicopter Flying School for over 20 years, including the provision of intensive aviation language training for international students. Now, for the first time, Cobham’s niche expertise is being made available to a broader spectrum of potential customers around the world.

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As an EASA approved engineering training organisation, Cobham also provides training for aircraft engineers and technical support staff to the highest standards, using modern teaching and training methods. This includes ab initio, type and on-the-job training, including helicopter familiarisation, Part 147 type A and B, for AS350, AS365, A109, AW139, Bell212 and Bell412. Cobham owns and operates a range of specifically configured helicopters to match customer requirements, and delivers a premium training experience in a safe and nurturing environment that guarantees to develop best-in-class pilots, rear crew and engineers.

CURTISS-WRIGHT

Every airframe integrator and operator seeks ever lighter systems to enable the growth of fuel and payload weights to enhance the attractiveness of the airframe to the final customer. To enable their own part in this process the engine, parts and systems manufacturers are stuck on a never ending process of enhancing their product to give more whilst weighing less and less. The resultant finned boxes are barely attractive to the casual eye but they are an important element of shows such as Heli-Expo.

The Defense Solutions division of Curtiss-Wright introduced the XMC-554 solid state drive at the show. It delivers up to 2 TB of MLC/SLC NAND flash memory. With an increasing number of sensors on airborne, land and naval platforms, the challenge of storing large amounts of data without adding unwanted weight or power, the new XMC-554 is ideal for applications that require high-density data storage. Because it uses solid-state memory, the card eliminates the need for traditional rotating hard disk drives (HDD) or any other associated moving parts, such as fans, and offers significantly lower power consumption and improved reliability when used in environments with high-vibration, such as manned and unmanned rotor-wing platforms.

For detailed information on these and other Curtiss-Wright's Defense Solutions product lines please visit www.curtisswrightds.com.



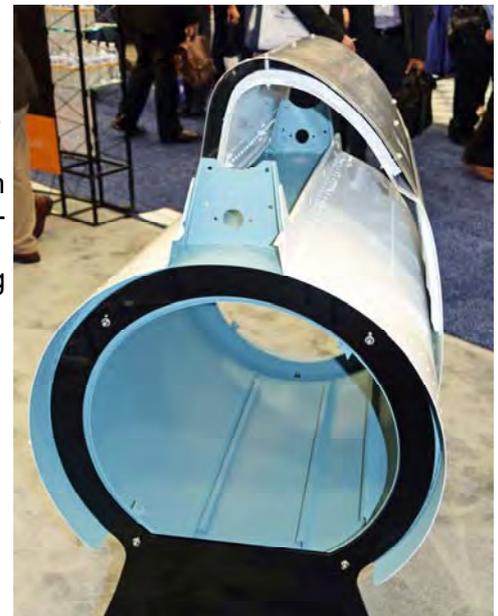
Part of the Curtiss Wright Range is the Parvus DuraCOR 8083 a modular mission computer designed for use in civil and military fields in fixed and rotary wing © PAR

AXNES

Wireless intercom technology innovator, Axnes has announced the introduction of the new MP30 handheld transceiver as a follow-on to the MP50 unit debuted last year. The MP30 is a smaller, lighter, and lower cost alternative to the MP50 and includes many of the same comprehensive features. These include single band UHF frequencies, full duplex transmission and reception, built-in noise and echo cancelling, along with secure proprietary waveform and protocol technology, all encased in rugged water and dust resistant aircraft grade aluminum housing. Common headset and microphone connections along with a 20G certified charging cradle that integrates into aircraft, marine, or ground vehicles, are standard equipment.

Other robust features include a battery life of up to 15 hours of continuous operation or 40 hours of standby capability and the latest airborne environmental and software standards. A night vision goggle (NVG) compatible screen with both voice activated (VOX) and push to talk (PTT) function allow users to easily integrate the MP30 into multiple critical and routine civil and military mission profiles. Secure voice technology ensures that communications by MP30 handheld users cannot be compromised by others.

Options for the new MP30 include GPS positioning, AES 256 software encryption, and custom headset or helmet connector options available for quantity orders.



According to BLR you can do great things with even older airframes. This is the profile of their sculpting of the tail boom of the venerable AS350/H125 design to impart Coanda effect and take much of the load off the tail rotor assembly. ©PAR



HOIST OPERATORS CONFERENCE

After a short period where they were not held UTC Aerospace Systems continue to run their annual Goodrich Rescue Hoist operators Conference with a two day event held at the Omni Hotel next to the Conference and Exhibition Center. I was unable to attend the first day due to travel plans so only day two can be recited in any detail.

Day one was an eight hour mix of operator testimony and technical presentations on the product by Goodrich technical and sales staff. Included among the group was Erik Sabiston from the US Army who also brought with him a book on his experiences in Afghanistan which we hope to review shortly. The other operators storyline came from Ventura County Fire. Day2, a shorter 5-hour session, was primarily about operator stories from the Irish Coast Guard SAR operations undertaken by CHC, the Texas DPS and Maryland State Police.

I was struck by the massive differences in operator efficiency in how the different hoist users actually undertake hoist operations. It is clear that funding is the prime lead on these differences. Let us just say that if you ever need rescuing and have a choice [which you will not have of course] make sure it is the Irish Coast Guard that arrives.



A crowded conference room underlines the popularity of the UTC event. © PAR

The CHC/ICG operation is well funded and as good as it might get, cost regardless. It is a civilian organisation, government funded and includes highly efficient and expensive training as part of the tight contract. It is a gold standard SAR capability with some other duties including HEMS and medical transfer. If you ever get the chance to sit in on a presentation by Dublin based CHC winchman Derek Everitt take it! Full of humour but also jam packed full of safety information on how it should be done. Unfortunately it comes with a financial caveat. Safety should never be restricted by money but it always is.

As we all now know not long after I wrote those words the Sikorsky S-92 at Derek's home base in Dublin suffered an as yet unexplained multiple fatality accident off the Atlantic coast. I still see no reason to retract my words. Suffice to say that Derek was not directly involved in the accident.

The other operator testimony revealed the standard problem faced by the majority of SAR resources in that they are mostly organisations with another primary purpose that allows a secondary SAR capability that may or may not include a good level of the very necessary training. Both the Texas DPS and Maryland have primary tasking of law enforcement and HEMS respectively. They simply do not have the resources to train up to the CHC standard. That does not in any way detract from their enthusiasm or professionalism but clearly their hoist operating capabilities are never going to be honed to the level of such as CHC and Bristow.

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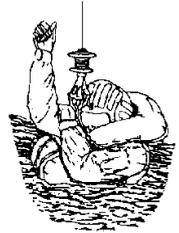
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One aspect that came out of the whole event was that there are serious problems relating to main rotor downdraft and its effect on the casualty – particularly those in the water. The new class of rescue helicopter brings safety in the airframe but requires a significant alteration in technique.

Compared to the Sikorsky S-61 and Sea King the S-92 is larger and more capable but has required rescues to be undertaken from a greater height, usually 180-200 feet – a height that makes hand signals from the winchman to the winch operator in the cabin virtually redundant. This also results in yet more hoist line being lowered, placing greater stresses on the line and making height judgements in heaving seas that much more difficult, in that exposing more of the cable to the effects of the elements can lead to problems with the lift.



At night various measures have been put in place to enhance the visibility of the winchman – simple stuff like more light reflective strips on the arms to improve crew visibility of arms and hands but the prime new tool is the rise and rise of the Polycon body worn radio that allows clear verbal conversation. Even without the downwash problems the pilots of the S-92 are out of the equation, they cannot see what is on the winch so voice communication is the way forward. The Polycon was mentioned and illustrated several times without actually identifying the main producer Axnes of Norway. It appeared at times that Everett was struggling with inventing different superlatives for describing the Polycon.

At the end of the proceeding Derek accepted the award for the '2017 Rescue of the Year on behalf of his colleagues at Rescue 118 the CHC helicopter based in Sligo. The absent crew were Ciaran Ferguson [Commander], Sean Redahan [co-pilot], Michael Treacy [winch operator] and Gary Robertson [Winchman/Paramedic]. None of them was involved in the crashed S-92 but no doubt the accident will have taken much of the gloss off their well deserved award.

Subsequent to the main Heli-Expo event organisers Helicopter Association International provided the attendance statistics for the HELI-EXPO 2017 in Dallas.

According to the figures 17,778 attended the show—which was significantly higher than the 14,000 recorded last year at Louisville Kentucky but lower than the expectation by a fair margin.

They claim that 100% of the available show floor was in use but those on the floor were aware of wider walkways than needed and one or two gaps where someone appears not to have turned up on the day. Nonetheless 322,800 net square feet of space was in use for exhibits and displays (a new record) by 731 exhibiting businesses and organisations. Some 62 aircraft were on display.

HAI claim that the exhibiting companies are very pleased with this year's show, and they are looking forward to the show in Las Vegas. I saw no evidence to query that claim.

The next Heli-Expo event is in Las Vegas, Nevada from February 26 to March 1 with exhibits open on February 27. Last time, in 2013, Las Vegas attracted a record 20,393 attendees.

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