

Police Aviation News



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Issue 306

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AUSTRALIA BUYING N.P.A.S. DISMANTLING EVENT REPORTS

***DRONES IN LAS VEGAS
EMERGENCY SERVICES - DSEi***



LAW ENFORCEMENT

AUSTRALIA

WESTERN AUSTRALIA: Last month the Government announced \$27.5M funding for a second police helicopter to give WA Police access to the newest and most advanced air support available, as part of the 2021-22 State Budget.

The helicopter is in addition to the new helicopter already being built for WA Police. The announcement means WA Police will become the first law enforcement jurisdiction in the southern hemisphere to operate two new state-of-the-art Airbus 5-bladed H145 helicopters. The new finance will see the Eurocopter Dauphin, which was originally acquired in 2011, replaced.

The funding includes \$7.6M for operating and maintenance costs, along with the recruitment of two licenced aircraft engineers to be based at Jandakot. This new investment means the Government is now investing more than \$54M in upgrading the Police Air Wing fleet, with delivery of the first new police helicopter scheduled for next year.

Maintaining a fleet of two identical helicopters will also generate operational efficiencies and result in a greater number of annual flight hours available.

Ed: What a massive, supportive, difference in attitude in Australia. In Britain the government of the day seems hell bent on starving its police of support, money, and resources and yet, in difficult financial times, it is pouring all it has into the Border Force and policing in France.

Comments attributed to Police Minister Paul Papalia: "On the ground and in the skies, we're ensuring our police have a strong presence to keep our community safe". I wonder what a similar speech from Home Secretary Priti Patel would sound like?



NETHERLANDS

POLICE: News that the Dutch Police AW139 PH-PXZ undertook an evening test flight at the Babcock facility at Staverton, UK on September 8 could easily have been ignored were it not for the current interest in the health and wellbeing of Babcock itself.

To the casual viewer the police aircraft operated to the north of the airport for around 45 minutes before returning to the Babcock Mission Critical Services Onshore hangar. A few days later the last Dutch Police AW139 in the upgrade programme returned to Schiphol on September 13.



Ed: The background to this presence goes beyond the flight. I understand that it was part of a presentation of the Babcock Mission Critical Services Onshore, police role fit to an interested customer. The role fit for the Dutch police is one of the best kept secrets at Staverton and Amsterdam, Schiphol. It has been around for over two years and yet remains hidden under cloak of mystery, a cloak that even the 2019 PAvCon Europe at Schiphol did not penetrate! I understand that many senior marketing figures at Babcock have also remained at arm's length from the project. It therefore required the police to be present to promote their product to the prospective customer.

Babcock may now out of the offshore market and having a mind to sell off parts of the group but there are clear indications that Babcock Mission Critical Services Onshore intends to remain at the forefront of police aviation for the foreseeable future.

COVER IMAGE: As reported on page 17-19 of this issue, late last month over several days Bristol UK based **Nova Systems** and **GVH Aerospace** were presenting system demonstrations of a Next Generation Modular Airborne law enforcement and SAR mission system to prospective customers and the media at Brighton City Airport on the south coast of England at Shoreham. The Nova Systems EC135 was kept busy flying the demonstration sorties to an important audience that often required keeping apart! It might not be acceptable for such as the media to be able to recognise the full line-up of attendees on each day!

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UNITED KINGDOM

LONDON: Two years almost to the day the Metropolitan Police returned their air operations to their former base at Lippitts Hill, High Beach on September 13.

The time and financial resources wasted in being involved with the National Police Service (NPAS) will take a long time to turn around. In meeting the overbearing needs of the Wakefield crowd some very able and intelligent people have been cast aside, forced into resigning before their time or simply made redundant.

Only the Metropolitan Police officers are being retained as TFOs so those from other origin police forces have remained at North Weald. I understand that the forces involved are Essex, Herts, Suffolk, Surrey, BTP and a civilian. North Weald therefore becomes the replacement for the facility at Boreham near Chelmsford. It is over large and effectively in the wrong place with Lippitts Hill reactivated.



Lippitts Hill is active again in the service of London taxpayers. ©MP Twitter Account

In meeting the misplaced ideals of incompetent managers, a maintenance system that worked well was cast aside, and money better spent of upgrading and renewing airframes was frittered away on an expensive and over large new hangar that simply duplicated the existing facility at Lippitts Hill and on a fixed wing project that has now fallen from favour.

NPAS has built two very similar large £2.5M Rubb temporary hangars at Doncaster at North Weald. It would appear that in relation to having an extended police career they are blighted. One designed for six fixed wing aircraft will never see more than four airframes kept there, and only two of those are operational. The other at North Weald was designed for four helicopters and a fixed wing but it is now the cavernous home for a single EC135T2. It will seemingly never house fixed wing and the reluctant main occupier, the Metropolitan Police, are out back where they never wished to leave.

Leaving Lippitts Hill was a purely political move on the part of certain senior officers with NPAS. It was they who sought the destruction of links between existing sites mainly based on their history. After it became clear that several bases declined to rip 'historic' insignia from walls, it was apparent rage that sought to relocate at all costs. At some bases, including that at Filton, Bristol, a fortuitous move meant they could abandon and destroy historic wall paintings the unit preferred not to. There are others. At Lippitts Hill, leaving the site meant that the awkward presence of a control room overlooking the expansive scene of operations could be designed out in the new North Weald hangar. With a management team so hell bent

of controlling their operations and bending the minds of their staff there is little wonder that they lost sight of what they were really supposed to be doing – saving money by bulk buying and negotiating.

On current information there was never a real need to vacate Lippitts Hill until the Airwave Radio System became defunct with the in-service date of the Emergency Services Network (ESN). That milestone may have resulted in the location losing another of its police tasks. Local pressures saw to the removal of firearms and dogs from the remote site. The ESN communications project continues to fail in meeting its deadlines year on year there is no current expectation that Airwave will be switched off in favour of ESN before 2028.



NATIONAL: This month two leading figures in the National Police Air Service, Chief Pilot Paul Watts [below left] & Pete Botchett [right] the Head of Compliance Monitoring are to appear as Keynote Speakers at the Helitech event in London.

Their presentation, titles “Helicopters Planes and Drones – Future Police Air Support Delivery” will draw upon the fact that NPAS is a collaboration established to deliver air support to 43 police forces in England and Wales. It will be based on a new user requirement of December 2020. NPAS is actively seeking to replace its aging helicopter fleet with new machines whilst also exploring the potential of Beyond the Visual Line of Sight (BVLOS) drones to deliver a blended service over the next 10 years. The seminar they head up will explore how this may change the delivery of air support in the future.

Capt Paul Watts is an ex-Fleet Air Arm helicopter pilot who has worked in Police Aviation for 22 years. Having begun his civilian



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career as a contract pilot for McAlpine Aviation, he has held posts as a Police Line Pilot, Head of Safety, Head of Training, Chief Pilot and is currently Head of Flight Operations for the National Police Air Service.

Pete Botchett is an ex-Army Aircraft Engineer who has worked in Police Aviation with NPAS for 7 years. Prior to this, his civilian career began with Baines Simmons as an Airworthiness Surveyor and Safety Management consultant, delivering training and support to civil and military organisations. He has held the Head of Compliance Monitoring for NPAS for the past 4 years and is the lead for the NPAS Futures and Innovations workstream.

Editor: A question that hangs over this item of course. Is there going to be an NPAS in six months' time? Meanwhile there are two competitions to supply police with aircraft. Perhaps the easiest one to go forward with is that for the Metropolitan Police at Lippitts Hill. I assume that will be for the operation and support of 2-3 new aircraft. Depending on the expectations written into the contract that may amount to 3-4 airframes to allow the contractor to assure the delivery of the airframes on the day. Barring the detail this should be the easy task as the police team is in being and we assume that they know what they want. The rest of the country – NPAS – is far more problematical. Rumour suggests that there is still no lead police force identified. Until that decision takes place the selection of the team responsible for the task will be held back. There are identifiable individuals who will be involved in the task, but they will not be able to move forward until there is an infrastructure in place. There is another rumour that having been given the opportunity, industry turned down the opportunity to bid for the wider NPAS contract. If true that is potentially catastrophic but hardly surprising in that it is clear that there is no great attraction in working with an organisation that has demonstrably failed. The apparent failure of the organisation to set up an alternate lead operation will not help.

People identified as being involved with both of these competitions were at the recent DSEi event at ExCel in London talking. It's good to talk.

UNITED STATES

ARIZONA: The Phoenix Police Department, in the state of Arizona, signed a new order with Airbus to upgrade its fleet by incorporating five new H125 units, which will be delivered starting next year.

The H125, which represents nearly half of all single-engine intermediate helicopters delivered for tactical missions in the United States over the past decade. It is built at Airbus Helicopters production and maintenance facility in Columbus, Mississippi.

Led by Paul Apolinar, chief pilot for the Phoenix Police Department, a team spent a long time analysing which platform best fitted their operational needs for fleet renewal. The H125 met all of the requirements for operating in the difficult conditions in Arizona – hot and high and difficult terrain.

According to the City of Phoenix's official website, currently, the local police department's air support unit has:

- 1 Leonardo AW109E Power
- 5 Eurocopter AS350B3
- 1 Cessna 172
- 1 Cessna 182
- 1 Cessna P210R
- 1 Pilatus PC-12NG

Ed: Stretch back 40 years and Phoenix was clearly identifiable with the Hughes/MDHI product, they were the chief advocates of the MD520N and NOTAR in the early 1990s. The disastrous years where all MD products were under supported led to the Phoenix PD losing all faith in industry as a whole. The operation was wrecked by dire support and as a result they declared that they would never again rely on a single company to supply their helicopters. In 2006 the NOTAR was gone from their unit, replaced by Eurocopter AStar's and Agusta 119 Koala's. It has taken many years for that distrust in industry to heal. Meanwhile the MD product and NOTAR have been dealt numerous hammer blows primarily brought about by company failings.

Against the grain of that original edict Airbus Helicopters Inc. has become the leading helicopter supplier for Phoenix and much of law enforcement in the United States – mainly based upon the venerable AS350/H125 and the BK117/H145/UH-72 Lakota models with a regional fleet of nearly 3,100 helicopters in service.



CALIFORNIA: The next American Heroes Air Show in California is being held on November 13 between 9:00 am - 4:00 pm at the Hansen Dam Recreation Area, Lake View Terrace, CA 91342. For those still holding out for a Heroes Air Show near Los Angeles, its time has come. Delayed [of course] by the challenges and turmoil of the pandemic now the wait is over and fittingly the event has returned to the venue where it was first held in 1996 – the Hansen Dam Sports Complex in Los Angeles,

Since 1996 this unique aviation experience has grown both in scope and mission. Over the years rotary-wing enthusiasts who journeyed to Los Angeles to see what the emergency services event was all about returned home and worked to land the Heroes Air Show concept in their own cities across the USA.

The mission to EDUCATE – COMMUNICATE – DEMONSTRATE the dynamic capabilities of rotary-wing aviation to the public, media and community officials has widened. The Heroes Air Show now introduces the community to a significantly diverse group of recruiting teams from law enforcement, fire/community safety, the military and homeland security. It is also a unique privilege at many of the events to co-host with the U.S. Citizenship and Immigration Services a special Naturalization Ceremony where members of communities spend their first day as American citizens at the American Heroes Air Show.

Check out the Heroes Air Show Channel on YouTube for the just released Countdown-CA.2021 video which profiles the upcoming date for this unique admission-free, helicopter-only aviation experience. They have a web site at www.heroes-airshow.com [CA Event Director SteveGoldsworthy@Gmail.com]



FLORIDA: The Martin County Sheriff's Office is replacing its existing military surplus helicopter with a new hoist equipped Airbus Helicopters H125 N814MC

Sheriff William Snyder on launched the new \$5.2M helicopter on September 14th. It is fully role equipped for policing and SAR and is expected to replace the current Bell airframe.

Martin County has operated a mix of mainly DoD surplus airframes (Hughes OH-6A and the Bell OH-58 since the mid-1990s. The decision to replace their old helicopter was made due to its usable lifespan, maintenance costs and lack of available military parts.

FLORIDA: The Polk County Sheriff's Office based at Winter Haven, covering the Barstow area east of Tampa and south of Lakeland. has selected GovDeals to offer a 2013 MD Helicopters MD369E helicopter N911GJ 617E for sale to the public. The eight years old airframe has just 3,650 hours on it.

The 2013 helicopter has been steadily maintained by Dixie Jet and Rotor Service, LLC in Lakeland, FL since purchase. The airframe powered by a 420-shp Rolls-Royce 250-C20B turbine engine offers auxiliary fuel tankage, a 2,000 lb cargo hook and has NVG compatible lighting. If the future owner meets the criteria, they will be able to purchase the role equipment fitted to the MD, Garmin 650, G500 avionics, Techno sonic 9100 3 band radio, Aero computer mapping, a FSI sensor turret and a Spectrolab SX-5 searchlight on Meeker mounts.

The Polk County Sheriff's Office is one of more than 15,000 sellers who use GovDeals to support their sustainability initiatives and Power the Circular Economy by selling valuable surplus items online to approximately 4 million buyers worldwide.

All potential buyers are required to pay a \$5,000 bid deposit prior to placing their first bid. The deposit will go towards the final price of the auction for the winning buyer and refunded for all others. All interested parties had until October 1st to submit bid deposits and place bids on this auction.

Ed: GovDeals presents itself as the leading online auction platform for government agencies and educational institutions to sell their surplus equipment, unfortunately in this instance the claim of professionalism was severely damaged by them offering the helicopter as being a McDonald Douglass product, something bordering on Disney.

When Polk acquired two MD500s in 2013/14 they were to replace a fleet of government surplus Bell OH-58 helicopters, a new direction was signified earlier this year when Polk introduced a Robinson R66 to the fleet.



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MICHIGAN: While the process appears to be unnecessarily extended, plans for the Flint Police Department to lease in a helicopter are moving forward.

The police Department has finalised its contract with Michigan Helicopters, with a view to have already deployed at some point last month, weather permitting.

City Council members approved a three-month lease in July 26 for the helicopter at a cost of \$304,050 as a surge in violence pushed the number of homicides to nearly 40 for the year. Since the funding was passed by council, the number of homicides in the city has risen to 50.

Initially, the police department had hoped the helicopter would be up and running before the end of summer, but “red tape” and logistical issues have continued to push back the launch date. The main holdup happened when the department was waiting for a piece of communication equipment that had to be ordered from California, once the part arrived and was installed, it took two valuable weeks to test the equipment. There was also the need to train three tactical flight officers.

With winter now approaching there is an expectation that much of the financed programme will be deferred into 2022. Snow affects the region from November into March so the majority of the contract will be revisited in April next year. The money must be spent before the end of the city’s fiscal year, which ends June 30.

NEBRASKA: The Omaha City Council has approved purchase of a new helicopter to be added to Omaha Police Department next year.

The OPD air support unit currently has three helicopters, but these are wearing out. A newer \$3M helicopter is deemed a “necessary expense” by city council members.

The helicopter of choice is the Bell 505, it will be outfitted with a camera, mapping system and spotlight alongside thermal imaging equipment. Included in the purchase price - training for pilots and ground support personnel.

Funding will come from the City’s Capital Improvement Fund; it will take a few months for the purchase to be completed. By contract, the city has to pay around half a million dollars within 10 days of signing the contract. Payment for the rest of the helicopter will be made over the next 15 years. [WOWT]

Ed: Current operations are based on older Bell helicopters including Bell 206 JetRanger’s N106PD and N176PD and a more recently delivered Bell 407GX N402PD acquired last year.

WASHINGTON: On October 6 the Spokane County Sheriff’s Office are conducting a one-day, APSA sponsored, Safety Stand To at their Air Support Unit Hangar, on Felts Field – 5505 East Rutter, Spokane, WA 99212.



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AIR AMBULANCE

EUROPE

GERMANY: DRF Luftrettung successfully held its first International Helicopter Hoist Operation (HHO) Symposium last month. The main conclusion from it is that significant advances in hoist operation safety can be made when operators and manufacturers exchange their practical experiences. The presentations and discussions held from 2 to 3 September 2021 at the DRF Luftrettung Operation Centre at the Karlsruhe/Baden-Baden airport brought together roughly 70 experts. They made it clear that key aspects of HHO are connected to the contrasting demands of quality standards, government requirements and everyday mission complexity.

Amongst the programme were presentations based on practical experience, rescuing at high Alpine altitudes or in the Ahr Valley flood zone, as well as with a practical hoist demonstration by DRF Luftrettung.

UNITED KINGDOM

DORSET & SOMERSET: Last year, Dorset and Somerset Air Ambulance were tasked to 2,016 incidents. Their critical care team also provided 38 time-critical inter-hospital transfers and administered blood products to 35 patients, drastically improving their chances of getting to hospital alive.

EAST ANGLIA: The charity held its official base opening in Norwich last month which tied in with the UK national Air Ambulance Week.

On September 10, East Anglian Air Ambulance (EAAA) celebrated Air Ambulance Week 2021 with a special event in Norwich to mark the official opening of the charity's newly extended and renovated 24/7 operational base and headquarters at Norwich Airport.

During the event, the base, which is called Helimed House, was also blessed as part of a multi-faith ceremony to wish the air ambulance crews and patients the utmost safety.

Twenty-two key figures representing the lifeblood of the charity, including former patients, donors, crew, a staff member, and a volunteer, cut a yellow ribbon to officially open the base, which was completed earlier this year.



The refurbished base officially opened at Norwich Airport. ©EAAAcount

Building the state-of-the-art facility has been a long-term organisational goal, enabling the charity to operate a 24/7 service by air and road for the first time. The new headquarters will help future-proof the organisation, bring more teams under one roof and provide adequate rest and welfare facilities for the Anglia One crew. The new base also includes an immersive training suite for the clinical teams.

Matthew Jones, CEO of EAAA, said: "It was wonderful to be able to officially open and celebrate the new base with so many of the people who have made this incredible facility possible. This building provides everything we need for our crews to do their jobs to the best of their ability and will do so for many, many years to come. We're also very proud to now have a community hub and our own training and conference facilities here, to help us be an even bigger part of the local community which keeps us flying.

"Developing the base was an enormous project and long-term goal of ours and was financed through lots of very generous gifts left to the charity in supporter's wills over recent years. These gifts have been used to safeguard the future of our operation across Norfolk and East Anglia and we're incredibly grateful to now have such a world-class facility to call our home in Norfolk."

One of the significant gifts left to the charity which made the new base possible included the sale of a 1964 Ferrari Nembo Spider, which was also present at the event to mark the special occasion. The Ferrari belonged to the late racing driver and motor enthusiast Richard Allen, who passed away in 2016. The sale of the car at auction generated over £500,000 which was used to purchase the land for the building. Members of the Allen family were present at the base opening to see the impact of this gesture.

LINCOLNSHIRE & NOTTINGHAMSHIRE: The charity air ambulance severed its ties with Specialist Air Services a while back. Their earlier Leonardo AW169 G-LNAC has been at Staverton for at least a month.

A new AW169 for the Lincs & Notts, G-LNCC, 69139 arrived in the UK on September 25. It is registered to Heli-Service International Ltd., HEMS Way, Bracebridge Heath, Lincoln, LN4 2GW which is the address of the Lincs & Notts Air Ambulance. They are currently operating with an AW109 until the new AW169 comes on line.

Ed: It is currently unknown how long it will be before the new airframe will be operational. I understand it is role equipped but it will be several weeks before the crews are trained up on it.

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SEARCH & RESCUE

FOR THOSE IN PERIL ON THE SEA

The International Organization for Migration (IOM) and UNHCR, the UN Refugee Agency, say the deaths of 47 people who were onboard a boat heading to the Canary Islands from North Africa's Atlantic coast highlight the urgent need for more support to prevent further tragedies at sea.

The boat left on August 3 carrying 54 people, including three children. After two days at sea, engine failure left passengers stranded without food or water for nearly a fortnight. When located by the Mauritanian coast guard on August 16, only seven people were alive on board.

Survivors were taken to Mauritania's northern city of Nouadhibou for medical treatment. Four people in critical condition were transferred to the hospital. UNHCR is working to provide assistance and to determine whether any survivors have international protection needs.

The tragedy came ten days after another 40 people lost their lives along the same route. It adds to the spiralling number of deaths as more vessels depart for the Canary Islands. As of January, this year, more than 350 people have died, while over 8,000 refugees and migrants have reached Spain using this sea route.

Meanwhile, since October 2020, more than 1,200 people have been rescued off the Mauritanian coast and received medical assistance as part of a first aid programme set up by IOM.

Ed: It is reported that there have been further deaths among those crossing the English Channel from France.

NEW ZEALAND

TARANAKI: The Taranaki Rescue Helicopter Trust announces it will replace the Agusta A109 helicopter that has served the region for the last 12 years. Its replacement, a BK117 aircraft is the most common rescue helicopter in New Zealand. It is a larger aircraft that can comfortably accommodate the increase in equipment required to enable the best possible level of care for patients.

The demands on the Rescue Helicopter have grown, with the number of missions annually in Taranaki steadily increasing over the past three years. A record-breaking 287 missions were carried out in 2020.

The Agusta – known locally as Bumble due to the distinctive black and yellow markings – has been absent over Taranaki skies since February, it was sent for scheduled maintenance at the start of the year and in addition to the comprehensive service, several additional parts requiring attention were identified which resulted in the Trust pausing to consider the best course of action for the community. The Trust's decision



Due to leave service, the A109. ©Taranaki

comes with the opportunity to align the aircraft with the rest of the fleet; hence the acquisition of a leased BK117 helicopter. The type has been utilised while the A109 was out of service, familiarity with the larger airframe has led to acceptance that it is the way forward. A common airframe across the fleet offers other cost bonuses in crew and flight training, maintenance and parts

UNITED KINGDOM

ENGLISH CHANNEL: The migrant invasion continues and as ever, despite the growing air effort to track and the surface tasking to turn back the migrant's flotilla the numbers simply grow and grow.

More than double the number of migrants have set forth to cross the sea gap between England and Europe this year. With days to go before September closes the official numbers have passed 17,000 people. Last years number was 8,400.

It cannot be said that the forces of law and order have not been trying to stop the flow. It appears that everything available has been sent onto and over this busy stretch of sea to detect and deter the human traffic.

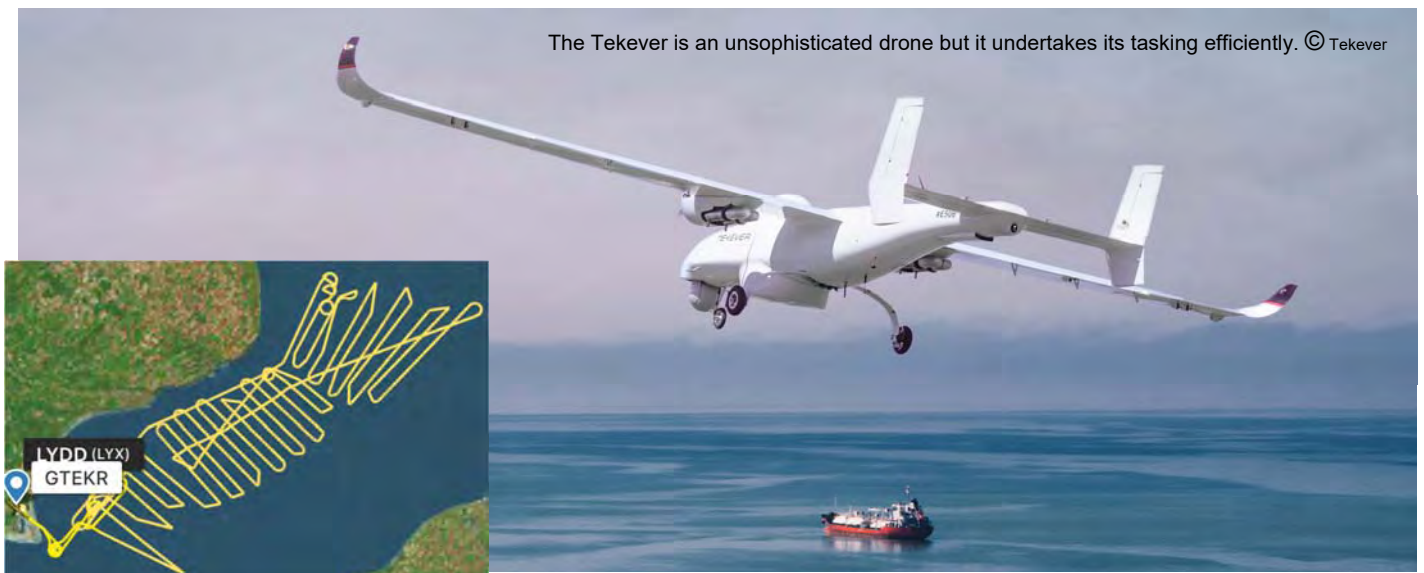
New kid on the block—the RAF Sea Guardian. © GA-ASI



Towards the end of the month, with the weather turning, it appears that the usual airborne surveillance suspects were taking a rest for the day. Then on September 25 up pops a strange drone, flying at slow speed and at 12,000 feet, dropping to 7,500 feet (certainly BVLOS). It had transited down from Scotland to the south coast of England and set up a surveillance line in mid-Channel. In line with an apparent intention to throw everything possible at the cross-channel migrant problem. It appears that the RAF were trying out their new General Atomics Aeronautical Systems Inc (GA-ASI) MQ-9B Protector RG1 medium-altitude long-endurance unmanned aircraft system. Basically, it is a Predator. Normally based at RAF Waddington in Lincolnshire it had recently been detached to RAF Lossiemouth for trials associated with Exercise Joint Warrior. Operated at all times by a fully qualified pilot, Protector is the World's first RPAS to be designed, built and certified against stringent NATO and UK Safety Certification standards equivalent to manned aircraft. [RAF/BBC/TC]

Editor: After the constant reports of tens of millions being expended on the border issue in bolstering the budgets of foreign police formations why should there be a query on the latest £100M bit of equipment being thrown at the problem? I guess there will be no bill winging its way to the Home Office to cover the cost of using this latest costly asset, it will no doubt be set against the military training budget in one way or another. The thing is that this is just one further item of evidence to place at the door of the Home Secretary when seeking reasonable (or even grossly unreasonable) funding for police aviation in the United Kingdom. Just what are they waiting for?

The Tekever is an unsophisticated drone but it undertakes its tasking efficiently. © Tekever



INDUSTRY

Collins Aerospace has signed an agreement to acquire FlightAware, a digital aviation company providing global flight tracking solutions, predictive technology, analytics and decision-making tools. Financial terms have not been disclosed.

Closure of the acquisition is subject to the completion of customary conditioners and regulatory approvals. Following closing, FlightAware will join Collins' Information Management Services portfolio within the company's Avionics strategic business unit.

Early last month **Babcock International** announced the completion of the sale of its Aberdeen based oil and gas aviation business to CHC Helicopters for £10M.

Babcock said the divestment is part of a targeted disposal programme which aims to generate proceeds of at least £400M. The oil and gas helicopter business employs more than 500 people and operates around 30 aircraft.

CHC said the Babcock business will be held "separately and operate independently" while it seeks approval from competition authorities in the UK and Australia.

In recent days though the Competition and Markets Authority (CMA) in the UK has given notice that it will review the merger of the offshore operations of Babcock and CHC. Although CHC has acquired Babcock's offshore operations in UK, Denmark and Australia, the UK authority only has jurisdiction over the UK aspect of the acquisition. To assist it with this assessment, the CMA is inviting comments on the transaction from any interested party by October 7. Fuller details on this can be accessed on the pages of www.helihub.com

Draken Europe has announced plans to close its UK-based Helicopter Academy at the end of this year with the impact of the COVID-19 pandemic a key factor in the decision, as limitations on travel to and from the UK reduced its ability to secure new orders.

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The academy, based at Cornwall Airport Newquay, provides basic, advanced and special mission (Search & Rescue) training to government agencies and international strategic partners, using a variety of helicopter types including some of the AS350 Squirrel HT1 helicopters previously assigned to the Cobham military training programme of the Defence Helicopter Flying School was a military flying school based at RAF Shawbury in Shropshire, 1997-2018.

Operations at the academy will now wind down over the coming months, ceasing on December 31, 2021.

Ed: The closure of the Helicopter Academy will not affect Draken Europe's wider business, and the firm will continue operations at all other UK sites and presumably it will remain an element of the upcoming new SAR contest. Late in the month there were reports of several complaints that Draken were using airfields not normally used for training. The decision to close the facility will presumably make this 'inappropriate' activity history.

Textron Aviation has announced that its Beechcraft King Air 360/360ER and 260 twin-engine turboprops have earned their European Aviation Safety Agency (EASA) type certifications. The 360—along with the longer-range 360ER version—was introduced in August 2020 and received FAA certification the following October. The King Air 260 was unveiled in December and FAA certified in March.

The King Air 360 offers a range of 1,806 NM, top speed of 312 knots and useful load of 5,145 pounds, while the 360ER version has a 2,692-NM range, 303-knot maximum cruise speed and 7,145-pound useful load. Both versions are powered by Pratt & Whitney PT6A-60A engines. The Pratt & Whitney Canada PT6A-52-powered King Air 260 has a top cruise speed of 310 knots, 1720-NM range and useful load of 3760 pounds. The 360/360ER and 260 are equipped with the Collins Aerospace Pro Line Fusion avionics suite and feature upgrades including the Innovative Solutions & Support (IS&S) ThrustSense auto throttle and a new digital pressurisation controller.

In early September **Leonardo** participated in the 25th anniversary celebration of the Hunterverein at Mollis airfield showcasing on static and flight display an 8.6 tonnes AW189 from its Training Academy and an example of the Kopter AW09, the new generation single-engine high-performance helicopter currently under development at the Kopter facilities in Switzerland. Leonardo acquired Kopter last year.

The 25th Hunterverein Mollis (Hunter Club Mollis) Airshow was held at Mollis airport, a “sleeping” base of the Swiss Air Force.

Since March 1996 the Hunter Club took care of the Hawker Hunter Mk58 J-4015 “Graffiti Hunter”, donated to the club by the Swiss Air Force, the Hunterverein Mollis event has played a leading role in the Swiss aviation environment over the past 25 years. The Club have organised some of the best air shows in Switzerland and Europe.

Other exhibits at the show included Patrouille Suisse, the Pilatus PC7 Team and the Swiss Air Force Super Puma Display Team and the aircraft of the Fliegermuseum Altenrhein.

Airbus Helicopters has selected Broughton in North Wales as the location of the final assembly line for the H175M should the super-medium twin be selected to replace the Royal Air Force's Puma HC2 fleet. Airbus already has a substantial industrial presence at Broughton, with the site manufacturing wings for the vast majority of commercial aircraft produced by the company.

The location is within the main Airbus airliner complex and not the hangars operated by Airbus Helicopters (the former McAlpine). While details of the capabilities required from the NMH are still vague, Airbus Helicopters has indicated it plans to offer the H175M – a new military variant of a 7.8t rotorcraft that has previously only been sold in the civil market. Colin James, managing director of Airbus Helicopters UK, said during a 10 September media briefing ahead of next week's DSEI exhibition that as part of its “evaluation process” Broughton had been “identified as the best industrial location for the project”. Basing the final assembly line at its existing site will allow the helicop-



The SAR role equipped 175 is currently flying in China with the Hong Kong GFS ©Airbus

ter division to “benefit from all the commercial manufacturing and supply chain knowledge from the bigger Airbus group”, James says.

He anticipates that a final assembly line for the H175M could be established within 12 months of contract signature.

Although initially building H175Ms for the UK, James stresses that the site will also assemble examples for the export market, which he believes could number around 250 aircraft over the coming years.

In its Integrated Review paper in March the MoD said it was aiming to retire the 23-strong Puma fleet to by mid-decade. However, James believes the process will be accelerated “due to budget constraints”, with the Pumas leaving service around 2023 and the ministry accepting “a capability gap for as short as possible”.

Deliveries of the NMH would then begin from 2025, leading to a “deployable capability” in the 2027-2028 period.

Airbus Helicopters will face competition for the NMH from Leonardo Helicopters with the AW149, which it intends to build in Yeovil. In addition, Sikorsky could offer the UH-60/S-70i Black Hawk.

Last month Sywell, Northampton based **Sloane Helicopters** marked 50 years in business. There are very few helicopter companies that can demonstrate 50 years in business. Sloane Helicopters in the UK is one of them. Just five years after the company was founded by David George, he had the foresight to become the distributor in UK and Ireland for Robinson helicopters and has been responsible for the sales of over 500 helicopters from the factory in California.

Alongside 45 years for one manufacturer, Sloane has also got 26 years’ experience selling new Agusta and Leonardo helicopters into the same countries – and has sold over 90 AW109s alongside AW119s and AW169s in smaller numbers. The company also flies an AW139 on a scheduled route between Penzance Heliport and the Isles of Scilly Sloane recently announced their fifth UK base at Elstree will open early in 2022.

In the early days of UK police aviation Sloane Helicopters promoted and leased Robinson and Agusta helicopters to British police forces.



Robinson R22 leased to the Northamptonshire Police 30 years ago. ©Sloane



Last month **Maverick Aviation** revealed the first images of its hands-free jetpack, in partnership with grant consultants Catax. The jetpack is the first in the world designed to be flown with a built-in autopilot system. The world’s first hands-free jetpack created by British entrepreneurs Matt Denton and CEO Antony Quinn looks remarkably like a similar design marketed by another company Gravity and featured in last month’s edition of PAN. This jetpack is the brainchild of a Hollywood animatronics expert and Royal Navy Commander.

It uses a unique Vertical Take-off and Landing (VTOL) system and is designed to be operated hands-free, allowing people to make safer flights, and precision landings on structures that are difficult to access — from wind turbines to military hard-

ware, buildings and construction projects.

The Maverick Jetpack can be configured as a heavy-lift drone capable of being operated remotely and carrying ten times the payload of current similarly sized systems on the market — easily enough to lift a casualty like a stricken climber to safety.

Unlike the Gravity design the engines are supported on a common framework whereas the former keeps the jet engines separate and attached to the wearer's limbs.

The jetpack is unusually light because Maverick exploited advanced manufacturing techniques like 3D printing and materials including aluminium, titanium and carbon fibre. It will travel at between 10mph and 30mph depending on the task.

The control system is extremely intuitive, and the operator can switch on an in-built autopilot so they can multi-task while in flight if necessary. Early work on the control system software was funded by a £97,000 grant from Innovate UK, secured by Maverick's grant partner Catax. This money also helped pay for patent applications and the creation of a concept demonstrator. The team has since received much more funding, including grants and business mentorship from the University of Southampton Science Park. The first manned test flight is scheduled for next summer and the company is about to start seeking further investment to take the jetpack to market.

Dufour Aerospace and Swiss Air-Rescue Rega are jointly developing an air ambulance version of Aero3, Dufour Aerospace's new and innovative aircraft for patient transport and emergency medical services. The Aero3 is the first of its kind to feature a tilt-wing design with exceptional space, load, and range for emergency medical services (EMS) and patient transport. This piloted, hybrid aircraft is an extension of the Aero2, a smaller, unmanned version of the aircraft first test flown by Dufour Aerospace in 2020. During product development, Rega will support Dufour Aerospace with know-how on medical and aviation equipment and will advise on operational standards and certification. Dufour Aerospace offers Rega the opportunity to influence the development of the Aero3 at an early stage.





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The Aero3 will meet the requirements for demanding patient transport, combining vertical take-off with sufficient load, high speed and range. Aero3 will be more efficient, less expensive and quieter than today's helicopters and will integrate seamlessly with existing infrastructure and systems.

A year ago (PAN September 2020) reported that **Adams Aviation Supply Co Ltd** had placed an initial stocking order for the Titan Digital Audio Management System and will engage their marketing and distribution network in Europe to represent the new airborne audio line to OEM's and aircraft integrators, and at various industry trade events.

Titan is a suite of audio controllers and audio management units designed for light-to-medium rotary and fixed-wing aircraft. With capabilities such as Spatially Separated Audio, Relay & Simulcast, and Bluetooth Interface, Titan will enable agencies like Police, Fire, and Helicopter Emergency Medical Services (HEMS) to perform tactical missions using smaller aircraft, while enjoying the robust audio capabilities typically found in larger aircraft. Titan also delivers features specifically designed for the light business jet and turboprop markets, such as Clearance Recorder, High-Fidelity Music, and Stereo Headset Support.

A year on Adams Aviation has been able to confirm the arrival of the new Titan unit from Canyon Aerospace (Formally Cobham) for the European market.

Contact Richard Turner the Territory Sales Lead with Adams in Crawley, West Sussex. He is on +44-(0) 1689-808977 (Direct line) or e-mail him at: rturner@adamsaviation.com

Adams Aviation Supply is Europe's largest distributor of parts and accessories for general and business aviation. www.adamsaviation.com

The **Tekever** twin engine drone from Portugal is becoming more familiar thanks to its exploits over the English Channel but the number in service remains very low. Designed as an unmanned craft for the commercial sector its brief is relatively narrow and yet it made an appearance at the recent DSEi military orientated show.

The market, although civil focussed, encompasses third world countries with a view that this type of unsophisticated craft should be attractive to unsophisticated military formations unable to afford highly technological craft. (www.tekever.com)

Immediately prior to the DSEi Show the company announced that they had added a new life-saving capability to the maritime patrol version of the AR5 UAS, with eight-person life rafts that can be precision-dropped to aid people in distress.

This new capability has been fully proven and demonstrated during multiple search and rescue exercises over the Atlantic Ocean and will already be delivered under upcoming contracts in Europe and Africa.

With fully automatic operation, the Tekever AR5 Lifesaver onboard system can detect, identify and locate people on the water, and then precisely calculate the optimal drop-point and re-route the aircraft for without human intervention, enabling the life-raft to be deployed at a close enough, but safe, distance. The system automatically considers weather conditions and flight plan restrictions, allowing the Lifesaver to be easily used in a wide range of situations.

The twin engines and redundancy of critical flight systems & flight surfaces in the AR5 assure safety. Despite the relatively low number of airframes built the system is so far proven by thousands of flight-hours in real-world deployments. Its full complement of sensors, satcom, and 12-hour endurance guarantee extended capability. Artificial Intelligence features provide ease of operation and information processing. Its combination of price / performance / reliability has proved to be attractive to customers despite the occasional technical issue. The effort over the English Channel has relied heavily on the Tekever unmanned craft.

Ed: Tekever's UAS product-line is designed and engineered to deliver advanced technical and operational capabilities, with extreme ease of use, and a business model that makes it easily available at a global scale. Tekever has Engineering and Production facilities in the United Kingdom and Portugal and works closely with a global partner network to provide local support to customers worldwide. Nonetheless currently production is around eight airframes and the operating model currently favoured is to offer customers a full support lease rather than to sell systems.

For all the wrong reasons the new high profile product to come to notice in the last two years has been a strange stretcher from Norway. Now the City of Oslo and Innovation Norway have marked the success of the newborn company that has probably saved many lives with a local award of their own.

The medical technology startup EpiGuard was selected as the 2021 recipient of the prestigious Oslo Innovation Award (OIA).

Last month Oslo Innovation Week, on behalf of the City of Oslo and Innovation Norway, proudly announced that **EpiGuard** (www.epiguard.com), is the recipient of the 2021 OIA. Presented during the first day of the of Oslo Innovation Week, the Scandinavian city's annual week-long technology festival, Ellen Cathrine Andersen, CEO of EpiGuard, collected the award from Vegar Andersen, advisor for the City of Oslo's Vice Mayor for Business Development and Public Ownership.

Now entering its 14th year, the award is designed to highlight the city's most innovative startups. The panel

made up of previous recipients of the award, business leaders and impact investors, sought out a recipient that had demonstrated their ‘business worthiness’. The company had to be a growth company that had proven their ability to scale up their business. In that the world is their witness. EpiGuard was selected as winner due to their determination to protect healthcare professionals and patients during treatment and transport. During the pandemic EpiGuard’s product - EpiShuttle, a patient transport isolation unit used during transport of infectious patients on land, at sea and in the air - have been an efficient tool in securing the capacity in the health care systems worldwide.

EpiGuard (www.epiguard.com) is a Norwegian company established in 2015 by a group of doctors at the Oslo University Hospital, together with co-founders Inven2, Eker Group, and Hansen Protection. The team of medical experts and engineers develop products that provides better solutions for safe transportation of contagious patients. Our first product, EpiShuttle, was developed based on analysis and clinical first-hand experience from previous global epidemics.

Last month EpiGuard had an opportunity to present their world beating isolation equipment at the DSEi in London Docklands. [PAR]



COVER STORY

Late last month over several days Bristol UK based **Nova Systems** and **GVH Aerospace** were presenting system demonstrations of a Next Generation Modular Airborne law enforcement and Surveillance mission system to prospective customers and the media at Brighton City Airport on the south coast of England at Shoreham.

The temporary base for the Nova owned Eurocopter EC-135 G-NSYS equipped with the C4ISR mission system was at the A2B Helicopters base at Hangar 4, at the airport. A2B look after this helicopter at their Oxford base and that was where it was prepared for the demonstration role. Their Shoreham base suited the scenario in offering easy access to the waters off the south coast to fit in with an over-water segment for the demonstration. The aircraft is equipped with a modular, extensible, connected, and intuitive mission system by integrating products and equipment from Safran Electronics & Defence, CarteNav, Smith Myers, Astronautics, RDDS Avionics and Avalex. The sensor and aerials were attached to Meeker step mounts fitted externally either side. All of the equipment was selected to be ITAR free.

The front right mounted sensor is the Safran Euroflir 410 EO/IR attached to the Meeker step by a Meeker goose neck bracket.

Based on a military system selected by the French defence procurement agency DGA (Direction Générale de l’Armement) to suit the needs of the new Airbus Helicopters H160 for the French Navy. Safran are now promoting the high specification turret to the commercial market to broaden their wider market penetration.





CarteNav's AIMS-ISR Mission Software Achieves DO-178C Qualification for Integrated Flight Planning with Flight Management Systems is familiar to current operators including NPAS and 2ExCel. CarteNav has now announced DO-178C qualification for AIMS-ISR, allowing enhanced navigation data transmission and automated flight planning with select Flight Management Systems (FMS) – advancing the critical link between ISR operators and flight crew.

The new flight planning capabilities enable mission operators to create flight plans within AIMS-ISR contextualized with sensor and mission data. Operators can then push those flight plans to the cockpit FMS for acceptance by the flight crew. This integration is compatible with multiple FMS installations, with AIMS-ISR supporting cross-fill functions for safe and efficient flight deck management.

The Smith Myers element is focussed on SAR. Regular readers will be aware that there is technology available to detect the signal of mobile phone systems typically carried by persons buried in snow, this meets a very real and regional need. The Smith Myers Artemis product draws upon the same technology but is aimed at a wider market, not just snow, it is aimed at phones anywhere the need arises. That is anywhere remote – crowded places tend to swamp the detection capability. The principle is that the search airframe can find phones on 3G, 4G or 5G that might be out of range of the cell towers of the phone provider. The SAR asset effectively acts as the phone provider and the phone handset out of touch with its provider network eagerly seeks to connect with it giving away its IMEI and location. As this locator uses



GPS it is not an exact position but perfectly adequate for the purpose. Even with a phone handset seriously down on battery power the ability to interact is expected to be good. In the customer product the SAR asset will identify itself as something other than a telephone provider. This is customer selected but acceptable suggestions range from "999" "118" "SAR" "Emergency" etc. Once a connection is made communication with the victim can vary from text to voice. Simpler phone technologies work equally well but there may be some limitations on interacting with the device.

RDDS Avionics provided the ruggedised night vision compatible touchscreen displays in the demonstration set up. They are one of RDDS' core product ranges. With over 25 years' experience in the design and manufacture of these units, from early CRTs through to the latest in Display Technology, they have experience in the design, manufacture and support of this equipment. The displays are all designed and manufactured in-house with several off the shelf options, and they offer customers hardware modifications and bespoke solutions.

Due to bandwidth limitations the clarity of the camera image arriving on the ground is significantly less detailed than that viewed in the aircraft.

Avalex provide the recorder, the system offering removable memory on micro-SD and SD or built-in memory. They are capable of recording multiple HD and SD sources simultaneously, along with options for event marking, KLV data, image snapshots, jog playback, playback while recording, and remote operation.

Each of the demonstrations was recorded in the aircraft to show back on the ground, therefore highlighting the differences in quality between downlinked images and those available to the crew.

Astronautics provided the air to ground communications system (AGCS) set up. For the purposes of the demonstration these were a secure data gateway between the aircraft and ground including 4G LTE cellular access. The AGCS provides high bandwidth and connectivity at a fraction of the cost of a typical satcom set up.

Finally, for the purposes of the demonstration the in-aircraft elements were connected by ethernet rather than hard wired. Although primarily affecting such as keypads and crew devices it both simplifies the replacement of elements going offline and, subject to security considerations, allows the introduction of carry-on devices, including i-Pads etc by others. The ethernet is confined to the immediate vicinity of the aircraft and is secure.

The several days of demonstrations followed a standard pattern of a technical overview of the proposed demonstration activity, an overview of the mission system capability followed by the opportunity to chat with the equipment suppliers on an individual basis. The numbers attending each session resulted in 2-3 flying and several others observing the downlinked output on the ground and then jointly observing the recorded footage.

Several scenarios were demonstrated.

The EC135 lifted off and spent several minutes settling the camera and other systems. What followed was camera work allied to seeking the output from cell phones in several different challenging scenarios. A device in a boat offshore demonstrated a cell phone in a remote location and out of range of a provider's aerial tower. Other scenarios demonstrated finding individual devices onshore where they might be also interacting with their provider in or out of an SOS environment. They were able to demonstrate an ability to 'find' individual cell phones planted on Brighton Pier some 21km distant.



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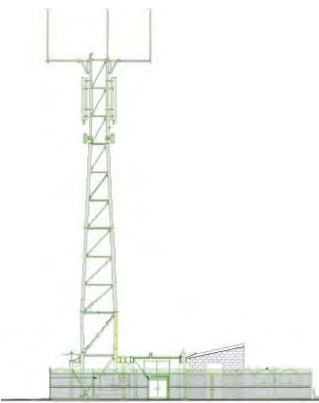
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Last month **Oil Spill Response Ltd.**, **Flylogix** and **2Excel Aviation Ltd** successfully carried out the first stage of an aerial deconfliction project. The project is to seek information on how a fixed wing surveillance aircraft and an unmanned craft/drone operating beyond visual line of sight (BVLOS) can operate safely. The scenario was an oil spill simulation, but the problems extend to all aviation sectors.

The exercise focused on each platform being able to operate at a safe distance in horizontal and vertical planes while completing ladder searches of a fictitious spill.



Difficulties continue for the build-up of the **UK ESN** communications system. In one, probably isolated, incident it seems that the authorities in the Yorkshire Dales have refused an application for the upgrade of an existing cell phone mast to the 4G emergency services standard. The spot is already identified as a black spot of poor reception, it seems that pending an appeal the poor reception issue may remain. [Thomas B]

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Airbus Helicopters, in partnership with the French Civil Aviation Authority DGAC, has started flight testing an engine back-up system (EBS) onboard its Flightlab H130 helicopter. The project opens the way to a future hybridised propulsion system for light helicopters while delivering concrete flight safety improvements in the short term. The campaign's main target is to enhance flight safety of single engine operations by providing emergency electrical power in case of a turbine failure.

To conduct these tests the Flightlab was equipped with a 100 Kw electric motor connected to the main gearbox, which can provide electrical power for 30 seconds in the event of engine failure. By giving the pilot extra time to react and maintain rotor speed, the engine back-up system contributes to a safer and smoother autorotation maneuver to the ground. The current flight tests include the simulation of engine failure in different flight conditions, including takeoff and landing procedures and corresponding limitations. While evaluating the safety margins and performance benefits, the flight campaign also aims to demonstrate a performance increase, thanks to the prompt electric power input. The potential benefit in terms of Maximum Take-Off Weight is to compensate for the mass of the EBS system itself and to provide helicopter operators with additional payload.

Because the EBS flight campaign also looks at ways of easing the possible introduction of this technology onto future production aircraft, the various components of the system have been designed with serial production in mind.



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ACCIDENTS AND INCIDENTS

27 August 2021 Robinson R44 Raven N544SH Yavapai County Sheriff's Office, Arizona USA. "Rescue 1" The helicopter was damaged during a rescue mission after responding to a call of two hikers in distress on Pine Mountain. After searching for a landing spot for around 30 minutes, the pilot found an area to land and brought water to the hikers. It was decided to fly the hikers out of the area. As they lifted off, reaching a height of 3-5 feet, power was lost and the R44 it drifted to an area of rocks and trees in the wind. The rotor hit a tree and the power fully failed, forcing the pilot to land; no injuries were reported. The hikers were then guided out of the area, 8-miles, by the pilot. [Media]

7 September 2021 Airbus Helicopters EC135 N138HN/N102HN. Air ambulance of HealthNet Aeromedical Services, operated by Air Methods Corporation in Martinsburg, West Virginia, USA. In repositioning two helicopters on the ground by hover taxi a collision occurred damaging both airframes. The flight crew was exchanging aircraft from a spare aircraft back into their normal duty aircraft which had just recently come out of a 1,000-hour maintenance interval. The pilot-in-command for the day shift elected to move the spare aircraft (N102HN) off the aircraft dolly in preparation for its later departure. The pilot then planned to move the base aircraft (N138HN) onto the dolly. The PIC relocated N102HN in a low altitude hover to the ground with its nose facing away from the dolly. The distance between its Fenestron and the dolly was not sufficient to allow N138HN to relocate onto the dolly facing the opposite direction. During this move the Fenestron of N138HN struck the Fenestron of the parked aircraft (N102HN). The contact was forceful enough to yaw the parked aircraft to the right. The aircraft were still in contact after shutdown and damage was visible to the Fenestron on both aircraft. Both aircraft were immediately removed from service. [Concern]

12 September 2021 Airbus Helicopters EC145 F-ZBQG Sécurité Civile air ambulance callsign Dragon 38 on a rescue mission crashed on high ground at Villard-de-Lans in Isere and burned. Five people on board, one, a mechanic, died. The aircraft was on its way to rescue a mountain biker in difficulty when it lost altitude. [ASN/News of India]

13 September 2021 Eurocopter AS332L2 Super Puma EC-NBT Firefighting helicopters operated for INFOCA by Babcock MCS Spain. When taking off the rotor wash created poor visibility (Brown Out through dust) at Sierra Bermeja, Malaga, with 19 occupants contacted tree at low height and fell to the ground upright with damage to the main rotor blades. Damaged but no injuries reported. The disabled helicopter was later engulfed in the fire it had been fighting and destroyed. [ASN/Seaside Gazette]

13 September 2021 aircraft undertaking water drop at Sierra Bermeja, Malaga hit fire fighter on the ground with the water load causing him cracked ribs. It is reported that 51 aircraft were involved in dousing this fire. [Seaside Gazette]

23 September 2021 Kamov Ka-27PS RF-19590 FSB Border Guard (Russian Federal Security Service's border department for the Eastern Arctic). The helicopter was on a training mission when it crashed. Wreck discovered around 10 km northwest of Nikolayevka at 950 metres altitude on Mount Ostraya, Kamchatka, Russia. Five fatalities. [ASN]

23 September 2021 Kazan Ansat GMSU RA-20014. Air Ambulance. The helicopter made a hard landing at the 1st Republican Hospital, Izhevsk, Russia. Landed upright on the roof with its skids collapsed and tail boom buckled and hanging off the roof edge. One of the paramedics received a head injury. [ASN]

SAFETY

PSNI BN2 incident AAIB Bulletin: G-CGTC AAIB-27032

Last November one of the fixed wing twin aircraft operated by the Police Service for Northern Ireland suffered a double engine failure. The Air Accidents Investigation Branch has now issued its report on the incident which it concludes is likely due to intake icing.

The plan was to depart Belfast Aldergrove Airport and route to an operating area, climbing to an altitude of approximately 10,000 ft AMSL. The crew consisted of the pilot and two observer passengers. Before flight the crew conducted a briefing in which the meteorological information was an area of particular concern as a cold front was approaching the operating area bringing extensive cloud and reducing temperatures. The pilot was conscious of the risks of airframe icing and during the brief decided to operate the



aircraft below the 0°C isotherm. The aircraft taxied at approximately 1950 hrs for departure from Runway 17 at Aldergrove.

While taxiing, the aircraft was given a different ad hoc task. The pilot informed ATC of the change and arranged a new departure clearance. Shortly afterwards the pilot was told by one of the observers that the new task had been resolved and therefore the aircraft was to revert to its original plan. The pilot requested an appropriate departure clearance, but the aircraft was then required for the ad hoc tasking once again.

The pilot again requested a change of departure clearance and stated he felt somewhat exasperated by the frequently changing situation. The aircraft took off from Runway 17 at 2005 hrs and routed to the new operating area. This tasking was at lower levels, so the pilot climbed to approximately 1,600 to 1,800 ft amsl. The lower altitude allowed the aircraft to operate clear of cloud, and icing conditions were not an issue. The task was concluded and continued with the originally planned operation. During the transit the pilot decided to stop the climb at approximately 7,000 ft amsl to remain below the 0°C isotherm. During the transit the aircraft entered cloud and as it did so the pilot recalled selecting the engine anti-icing on. After around five minutes on task the pilot noticed that the torque indications for both propellers were reducing, with a related decrease in airspeed. After a while he informed the crew of the difficulties he was experiencing with the engines and stated an intention to return to Aldergrove. The right engine failed, followed shortly by the left engine failing. He established the aircraft in a glide and then completed the engine shutdown and propeller feathering drills, declared mayday to Aldergrove ATC and asked for vectors toward the nearer field of Eglinton. After 1 minute 30 secs after the second engine failure he was able to restart the right engine at approximately 2,100 ft amsl. The left engine restarted at the second attempt. He then made a powered landing on the unlit runway. After landing the pilot taxied the aircraft to the main parking area and completed the shutdown checks. All on board were uninjured.

The full report can be read at [AAIB](#)



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UNMANNED

Travel remains difficult from Europe to the USA so even though the venue was Las Vegas the editor had to defer to inviting Mark Colborn [Dallas PD Retired and something of a whizz when it comes to comment on unmanned craft] to attend on his behalf.

The event was the Commercial UAV Expo Americas one of the major events for the technology Stateside.

Naturally, with foreign interaction depressed, the content was US centric. Attendees were treated to a Drone Regulation Update from FAA Administrator Steve Dickson along with pertinent items on marketing, healthcare transportation and logistics. As ever the draw was the opportunity to get hands on with new drones and equipment and to see them fly. Virtual events can never overcome the hands-off effect of distance.



REPORT: For All Things Drones: The Commercial UAV EXPO Americas 2021, Mirage Resort, Las Vegas, Nevada, September 7 thru 9, 2021

by Mark Colborn – PAN Correspondent in America. Former Pilot Dallas PD.

For all things drones, or what many would prefer they be called – Unmanned Aircraft Systems – the Commercial UAV EXPO Americas at the Mirage in Las Vegas was the place to be September 7th through the 9th. This year's EXPO wasn't just geared toward commercial UAS operators, but a large contingent of first responders in attendance also. DRONERESPONDERS hosted a Public Safety Summit consisting of at least 15 separate conference sessions over two days. On Wednesday, their focus was on public safety UAS program management and on Thursday, operations and tactics.



On the first day of the EXPO (Tuesday), the mercury climbed to 43° C by the end of the Live Outdoor Flying demonstration lead by Douglas Spotted Eagle and his excellent team at the Sundance Media Group. "But it's a dry heat," everyone always jokingly remarks about the dry desert valley in which Las Vegas resides, but out in the direct sun, it's just plain hot. Participants, for an extra fee of \$50, were bussed to the eastern Vegas suburb of Henderson at 8 a.m. to a city park at the base of the mountains and underneath high voltage transmission lines! Live flight demonstrations were conducted for three hours by several big public safety drone providers and several new commercial drone entrants I'd never heard of before.

After being ushered to a set of bleachers in the blistering sun, the first company to launch a drone was Skyfront. Dr. Troy Mestler, Founder and CEO of Skyfront introduced the Perimeter 8, a hybrid gas/electric powered eight-rotored design that can carry a maximum 7.5kg payload for one hour or a 5kg payload for 2 hours. The Perimeter 8 is fuel-injected and turns gasoline into electricity in flight. This gives the UAS, according to the company, extreme endurance and redundant power. Their UAS is smooth and impressive, but very noisy.



Commaris, a new company on the commercial scene, showcased their Seeker, a "cutting edge VTOL solution that brings modular payloads and long endurance to your industry," a company brochure states. The Seeker is an airplane that takes off vertically, then can easily transition into forward flight. The Seeker can be fitted with multiple payloads and the company boasts Hi-Voltage LiPO technology that provides more power per cell than any other UAS on the market.

Next to launch was an eight-rotored, South Korean produced hydrogen fuel cell powered UAS by Doosan Mobility Innovation called the DS30W. The drone has a 9.6kg system weight, with a maximum takeoff weight of 24.9kg. The company claims it will fly for two-hours on one DMI H2 hydrogen tank, which company representatives told me could be changed out in less than 30-seconds. The UAS is amazingly quiet for its size and was virtually impossible to hear as it flew over the takeoff area in front of the bleachers at 91 meters. Currently, Fortress UAV, headquartered in Plano, Texas, is the sole distributor of Doosan in America.

Next up was the AEE Mach 6 heavy lift six-rotored UAS. The Mach 6 can be fitted with an "extremely loud" megaphone, called the Thunderhorn, which the company claims is a powerful tool for public safety and first responders. The megaphone is capable of clearly communicating live and prerecorded messages that

are effective nearly a mile away, according to company literature. The live demonstration of the megaphone was unfortunately overshadowed by the sound of six idling diesel motor coaches parked 30 meters behind the bleachers. AEE also showcased the “Fly to address” capability that enables a first responder to enter an address or grid coordinates into the automated flight system and have the drone deliver and deploy a compact AED system. Arriving at the designated coordinates, the Mach 6 locates and identifies the victim in distress using the on-board thermal camera, then descends to about 3 meters and drops the AED.

Following a 30-minute break, which gave attendees time to visit each participating vendor’s static display tents, Autel Robotics launched their Dragonfish VTOL tilt rotor design with an interchangeable payload system. Many in the industry have been watching the Dragonfish mature for several years, and from the buzz around the Autel tent in the static area, they now have a powerful competitor in marketplace. Autel demonstrated the AI tracking capabilities of the machine and the quick assembly system which the company claims will change the game in every sector from public safety to agriculture.

Thankfully, event coordinators provided plenty of bottled water and sodas during the event to keep attendees hydrated. Bags of chips and boxes of granola bars were available also.

Skydio followed the break with an autonomous demonstration of their new X2E quadcopter design boasting a 35-minute flight time. The X2E according to a company brochure is equipped with six 4K navigation cameras for 360° obstacle avoidance and a dual sensor payload that includes a 12MP color camera and FLIR® 320x256 thermal sensor. As a short time owner of a Skydio 2 quad, I can speak from experience that it is very difficult to run a Skydio into an obstacle. This feature makes the company’s drones very popular with companies that conduct roofing inspections.

The last drone to launch was developed for law enforcement, specifically to conduct indoor building searches and enhance officer safety during dynamic warrant entry operations. Adorama Business Solutions (a distributor) teamed up with BRINC and Truck Vault (modular cabinets that fit in LE SUVs that can safely transport drones) to bring a total drone solution to public safety professionals. Members of the Las Vegas Metropolitan Police Department played a big role in the design of the BRINC Lemur following the tragic shooting at the Mandalay Bay Hotel in 2017. The drone features a 31-minute flight time, a 10-hour perch time providing fully functional audio and video, and a powerful 2-way communications suite to communicate with a suspect or barricaded person through an on-board microphone and integrated speaker system. Streamed video is provided by a 1080p 60fps wide angle fixed lens with built in night vision and IR illuminator. The drone is made of carbon-fiber reinforced nylon PA6, is water resistant, and uses LIDAR-based pilot assist and autonomy to make it easy to fly. And demonstrated during the event, the drone can push open doors that are ajar and can right itself if it flips upside down. The company calls this feature the Turtle Mode and it really works! But the big attraction for law enforcement agencies is the drone can break windows, and this was successfully demonstrated during the demo also. The demo pilot also donned a set of virtual reality goggles and flew the machine into the open window of a school bus, searched the inside and successfully flew back out the same window. The drone also has a general-purpose dropper that can deliver a cell phone or a pack of cigarettes.

Starting on Wednesday morning, DRONERESPONDERS hosted a public safety breakfast, ran a session for selecting the right sUAS technology to achieve mission success, and one for developing and maintaining proficiency for public safety remote pilots. They hosted a public safety UAS conversation with the FAA, and a class on building the foundation for a successful public safety drone program. Of particular interest to me as a retired police pilot, who now serves as a volunteer reserve officer, is helping our department stand-up a UAS Squad, DRONERESPONDERS offered lessons learned conference sessions by first responders who have already been there and done that. Specifically invited to speak about their particular programs were the City of Los Angeles Fire Department, Southern Manatee Fire and Rescue District (Florida), Security and Emergency Training Center and Boulder PD (Colorado), Las Vegas Metropolitan Police Department (Nevada), Torrance and Chula Vista Police Departments (California), U.S. Forest Service with a UAS aerial ignition use case (Idaho), and the Scappoose Fire District (Oregon).



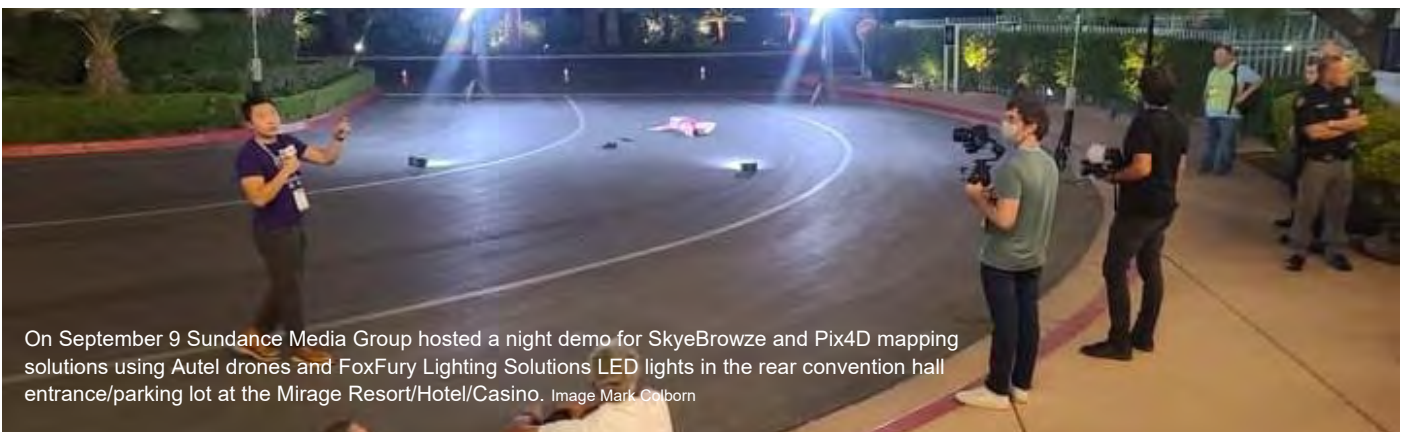
Tomas Pribanic from Undefined Technologies promotes his Ion powered drone © Colborn



Every agency in attendance, but especially Scott Mlakar from Lake County UAS (Willoughby Fire Department), was quick to point out that everyone is still writing the book on UAS public safety operations and that nobody has all the answers. Lance Liggett from Jacksonville Sheriff's Office (Florida) stated he was more concerned in the beginning about finding out what did not work, and specifically why it didn't work. He said there is plenty of experience out there with what works, to reach out to other agencies that are doing it, and that there is no reason to re-invent the wheel. Panelists on the Building Foundations for a Successful Program session were asked what their biggest hurdle was in getting a program up and running. Mike Hanson from Madison Police Department (Wisconsin) responded that providing coverage to their entire city was a big issue and proving to the brass, and also to the public, that the program could work. Lance Liggett felt that legal restrictions placed on LE from the Florida State Legislature hampered operations and created issues. Also, the integration and adoption of UAS with other users on the department (SWAT was mentioned) proved to be a struggle. D.J. Smith with the Virginia Department of State Police said they had a problem with terminology and the higher ups were worried about surveillance issues. Lance Liggett also advised the attendees not to try to do too much at the start. Concentrate on one or two specialties, keep it small, get really good at those, then branch out and expand the type of operations that can be done with the UAS. Mike Hanson recommended that a start-up UAS program identify their critical operations and stay within those parameters because one mission failure can kill a program for good. He also recommended that the right hardware and equipment be chosen for the particular type of missions or jobs the agency plans to conduct; and to do this long before purchasing anything. Don't just buy drones and hope they can do the job. Scott Mlakar also said that pushing out education to the rank-and-file on the department, and what the UAS program can provide, is very important in the beginning.

Program acceptance came quickly according to several panelists after their first successful search and rescue operation. And the acceptance was even greater when the brass could actually watch the drone's video in a live-stream or later on a big-screened TV. Lance Liggett credits the UAS for possibly saving two motor officers from injury or damage to their motors in Jacksonville during one of their many anti-police protests last year. Two motor officers were posted at an intersection that was out of view from other officers and the drone showed command that the two officers were about to be overrun by an angry mob of protesters. The command post was able to notify the officers that they needed to vacate the area quickly. Jacksonville PD used the UAS to provide actionable intelligence on the movements of the crowd so they could pull resources to other areas as needed. Affordable and reliable solutions for live streaming drone video still remains a problem for many agencies.

The main attraction at the show was a keynote address on Wednesday morning by FAA Administrator Steve Dickson. Administrator Dixson is very supportive of the integration of UAS into the National Airspace System and stated to the crowd that this is the most exciting period in aviation history. His remarks were recorded and a link to his speech is available on the Commercial UAV News website. There were a number of keynote addresses by several luminaries in the UAS industry, but the individual that really caught my attention in particular was Chula Vista, California, Chief of Police Roxana Kennedy. She is energetic and extremely supportive, almost to the point of being ambassadorial, to the employment of drones in the support of law enforcement operations. The City of Chula Vista is located halfway between the downtowns of San Diego and Tijuana, Mexico. Chula Vista is small (only 134.9 square kilometers) and has a population of around 250,000 people. The town's airspace is completely in Class G, which gives them greater flexibility for operating an automated drone program. Chief Kennedy stated they would never be able to afford a manned aviation unit; and using drones for aerial observation is just the solution they needed. She advised it is very important to build relationships with the community when starting any drone program, to engage slowly and use a crawl, walk, run philosophy to maturing a program. She admitted that they have just arrived at the walk stage and still have a lot to learn. It was encouraging and refreshing to hear a Chief of Police express her support and speak so highly of her agency's drone program and the people who have made it a success.



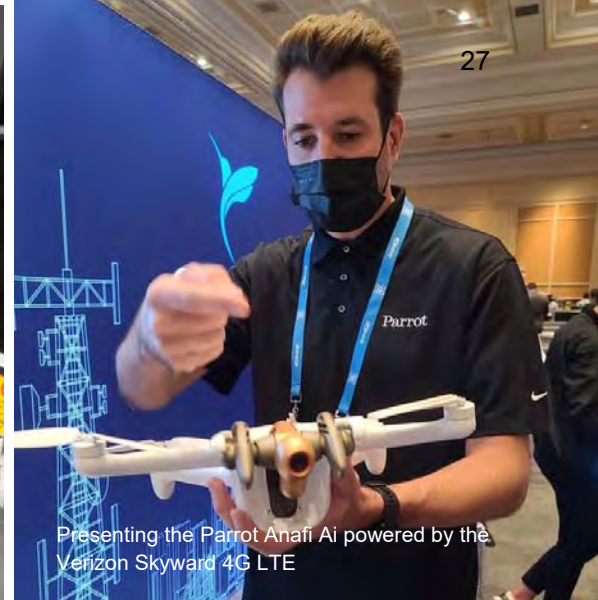
On September 9 Sundance Media Group hosted a night demo for SkyeBrowze and Pix4D mapping solutions using Autel drones and FoxFury Lighting Solutions LED lights in the rear convention hall entrance/parking lot at the Mirage Resort/Hotel/Casino. Image Mark Colborn



Dual RC high endurance electric.



Mirage Resort/Hotel/Casino. Images Mark Colborn



Presenting the Parrot Anafi Ai powered by the Verizon Skyward 4G LTE

There was another keynote address at 4:00pm on Wednesday that didn't receive much fanfare and, unfortunately, was weakly attended. The presentation was conducted in the exhibit hall theatre by Minkyu Lee, Deputy Director for the Ministry of Land, Infrastructure and Transport (MOLIT) in South Korea. Essentially, Director Lee is the South Korean equivalent of FAA Administrator Dixon. Director Lee discussed Korean drone policy and challenges. Although his PowerPoint slides were "busy" (and all statements below in quotations are verbatim from those slides), the takeaways from Director Lee's talk are encouraging for the South Korean drone industry. The drone market size in Korea has experienced rapid growth in both manufacturing and utilization. Due to reasonably priced equipment, the utilization of "flying equipment is increasing especially in the areas of agriculture, filming, observation and pilot training." The MOLIT's strategy is to establish a market led by the public sector, to support an ecosystem that supports testing and promotes start-ups, supports manufacturing and utilizing companies by improving regulations on drones by life-cycle, encourages market creation, promotes on-site utilization, and prepares for the future by developing core technologies, which according to his PowerPoint slide includes future/duty purposed drones and a K-drone system (UAS Traffic Management System or UTM). Director Lee spoke of the Drone Utilization Facilitating Act (effective May 2020) which outlines plans for assigning "regulation-free area for drone manufacturer," installing, and operating a drone traffic management system (K-Drone), "offer financial support for outstanding company and start-ups," and create and work on a Master Plan for the Drone Industry (5-year promotion plan). The last slide shown by Director Lee was the most interesting and covered research and development for future and duty-purposed drones. The "Needs" for Personal Drones or Optionally Piloted Personal Aerial Vehicle (OPPAV) and a K-Drone System are – "Congestion in road traffic network, and Air traffic network." The "Deeds" for both systems are – "Realize transportation function of personal drones, drone taxi, etc." Drones for Public Purpose consist of firefighting or support of disaster sites, police (search for missing person), fishery (crackdown on nautical marks), environment (check on fine dust) and defense (remote patrol).

As a professional writer and an occasionally pressed into service journalist (mainly because our gregarious PAN Editor was being held hostage in Waltham Abbey by the British government because of COVID and unable to travel to Las Vegas for the Expo), I was intrigued by an event held at the exhibit hall theatre at 3pm on Wednesday called "Pitch the Press." The hour-long event featured a group of 17 (out of 131) exhibitors that were given about three minutes to rapid-fire pitch their newest product, service, or solution to a panel of four journalists. At the end of each participant's presentation, a journalist was allowed to ask one or two quick questions. It was fast and fun, and the presentations were very informative. The "Pitch the Press" panel included Patrick Sherman, Founder and CEO of Roswell Flight Test Crew from Lake Oswego, Oregon (no affiliation with the actual Roswell, New Mexico, but he wears a patch depicting aliens on his khaki shirt under his photojournalist's vest), Miriam McNab from DroneLife, Stewart Walker from LiDAR Magazine and Danielle Gagne from Commercial UAV News. Patrick Sherman ended up asking most of the questions – and challenging questions they were! Winners of the "Pitch the Press" event went to Emesent for their Hovermap platform, BRINC Drones, and vHive for their software solution that allows the capture and combining of large amounts of scanned data with multiple drones.

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One presentation in particular stood out from the rest, if for no other reason than the peculiar design of the drone being presented. Tomas A. Pribanic, Founder and CEO of Undefined Technologies headquartered in Doral, Florida, introduced an experimental drone that employs an all-electric silent ion propulsion system. The propulsion system itself is square shaped and uses some type of stacked, ribbed material. The design employs a square box or hub in the middle, which presumably contains the flight controller, additional on-board electronics and batteries. Since the drone is still in development, a mock-up was on display at the show. But the company features a video link on their web site narrated by Dr. Pribanic showing a test unit actually flying.

The Commercial UAV Expo Americas is organized and delivered by Diversified Communications, a trade events and media company. I have attended a fair share of conventions in my 30+ year career in law enforcement and can honestly say that this conference was a very professionally-run operation. All events started on time and the exhibit hall was full of vendors. Despite the heatwave and having to wear a mask during the entire event, this EXPO fully exceeded my expectations. It was refreshing to interact in person with friends and colleagues again after a year and a half of virtual meetings. I will be returning to Vegas next year for the Commercial UAV Expo Americas 2022.

Ed: Thank you Mark for a very detailed report on the event. I hope that by next year I will be released from the grip of Covid and will again be able to travel more freely to the 'States. I hope to make the Las Vegas show and to savour the best bit of desert real estate I know! Mind you the continued wearing of masks over there worries me more than anything else. How do you find each other?

MILITARY DRONE IN A CIVIL ENVIRONMENT

As revealed under the SAR section of this issue, the UK's Civil Aviation Authority for the first time approved a point-to-point domestic flight of an unmanned aircraft that utilised the UK's airway's structure when General Atomics Aeronautical Systems flew its MQ-9B Sea Guardian Remotely Piloted Aircraft from Lincolnshire, England to Moray, Scotland on September 12.

The manufacturer owned RPA flew from Royal Air Force (RAF) Waddington to RAF Lossiemouth and the Sea Guardian flight was controlled by NATS, the UK's civilian Air Navigation Service Provider.

Commenting on the flight Tom Gratton, CAA Airspace Regulator stated that *"The Airspace Coordination Notice issued by the CAA for this series of demonstration flights in UK airspace is the largest and most meticulous we have ever produced so that the airspace integration of Sea Guardian is at the highest level of safety."*



Protector RG Mk1 is the RAF's designation for the 16 examples of the MQ-9B based RPA they have ordered from General Atomics.

Among the capabilities on display is GA-ASI's revolutionary Detect and Avoid (DAA) system, a safety and situational awareness enhancement designed to support Protector's flight in non-segregated UK airspace, as well as the platform's capability to integrate into broader European airspace. DAA will enable Protector to operate amongst normal aviation traffic in the UK's national airspace, unlike any other aircraft in its class. The demonstration flights are also assisting RAF Waddington, the future home of the RAF Protector Force, to prepare and integrate the new aircraft into its daily operations.

BABCOCK IN SPAIN

Babcock the aerospace, defence and security company is now the only operator in Spain with permission to fly commercial drones, weighing more than 25kg, beyond line of sight.

In practical terms this means Babcock can now fly its own design, the LUA drone, in rural areas, night or day, carrying emergency support payloads of up to five kilograms each trip. Thanks to the Spanish Aviation Safety Agency (AESA)'s cross-border arrangements, Babcock's permissions extend beyond the Spanish borders and into other European countries where enhanced drone flights could make a world of difference to first responder emergency services or those at risk on the ground.

Capable of flying autonomy of up to four hours, Babcock's LUA drones can be deployed in less than ten



minutes and are ideally suited to complex emergency missions, and in particular those that require the urgent transportation of medical materials, such as medicines, blood, and cardio-protection systems. This approval is the culmination of exceptional work by our team of Research and Development (R&D) engineers in Babcock Spain who have developed LUA within the framework of a Civil UAVs Initiative programme promoted by our client, the Galician government's innovation agency, GAIN.

Jose Luis Saiz, R&D Director Babcock Spain said "With AESA permission now in place we are keen to see how our LUA drone adds a new dimension to our emergency medical response in rural or hard to reach areas, or during floods and extreme weather. Babcock will continue to work closely with AESA to ensure the safety of these complex operations."

PEOPLE

It is unlikely that any of the readers will have heard of his name but for the editor is with some sadness that I announce that early last month one of the most generous US based historians died. At 99 years old he hung around far longer than many. **William T. Larkins, 1922 – 2021** was one of the last of the great vintage aviation photographers and historians from the early days, he will be missed by many. Early in my research into police aviation, at his own cost, he sent me large sections of newspapers from California covering local attempts to set up police air support in Concord. Scanning was a thing of the future. He also sent some of his own images of such as NYPD in the 1930-50 period. Invaluable assistance. Due to COVID restrictions, the funeral was held in private with only the family attending.



More trouble in the Kenya airborne emergency services. The head of the newly created National Air Support Department [NASD], **Brigadier Chrispin Odhiambo**, is dead. Brigadier Odhiambo, of the Kenya Air Force and formerly of the National Defence College, who was appointed the head NASD in December 2020, died at the Karen Hospital in Nairobi last month after an illness. He was the third senior officer to die at the Wilson Airport based police unit this year. In August Evans Ochieng, an Assistant Inspector General (AIG), and who was Col Rogers Mbithi's deputy also died. A few months earlier, former Airwing Director Eng John Patrick Owino also died after a short illness.



NASD is a multi-agency unit created to consolidate and ensure efficient utilisation of national aviation assets. It was brought together by President Kenyatta to provide a centralised management of national aviation assets for optimal utilisation, management and serviceability of air assets, enhance safety, response and quality of aviation services. Brig Odhiambo [right] was in charge of the aircraft owned by the National Police Service, Kenya Wildlife Service, Kenya Forest Service, Kenya Power, Kenya Pipeline and Kenya Electricity Transmission Company Limited among other state agencies.

More positive is the story of female aircraft engineer with the National Police Air Service, **Chief Inspector Justine Ouya**. Last month she rescued two girls who had been kidnapped from their home in Nairobi. A suspected child trafficker identified as Jackson Mutinda, 31, is said to have lured the two girls aged three and four from their home in Muthurwa with a promise of buying them soda.

The suspect was ferrying the minors to an undisclosed location when he was noticed by the police engineer. After a brief observation of the three, the police officer noticed that something was amiss and decided to stop and interrogate the man and the children. From the questioning, she established that the man was not the father of the girls, she arrested him and called in assistance from colleagues at Wilson Airport. After a few hours, the girls were reunited with their mothers who were looking for their children after they disappeared. Meanwhile Jackson Mutinda is languishing in prison awaiting trial.



Cornwall Air Ambulance has welcomed a new Chief Executive Officer, **Tim Bunting**. Tim brings a wealth of experience with him, having previously worked for BBC Children in Need and held senior fundraising roles in the Southwest.

MOVE ALONG THERE

Virgin Galactic says nobody was in any danger, including its founder and CEO Sir Richard Branson and three other passengers, aboard the landmark July 11 flight of its Unity spacecraft despite an FAA probe into the flight. The agency announced on Thursday that it was banning any further flights until it completes an investigation into the highly publicized flight in which the spacecraft deviated from its planned course. The deviation, which lasted a minute and 41 seconds, reportedly could have put Unity out of reach of a safe glide back to the company's spaceport in Las Cruces, New Mexico. Virgin Galactic admits the deviation occurred but says it was all handled properly by the crew.

As reported earlier in this edition, NPAS (nearly removed) are having a speaking slot at the Helitech show in October. Feedback on the whole event suggests it is shrinking daily and it may be that my editorial visit there may amount to little more than a chance to take coffee with members of the PAvCon team.... However, each time I looked at that NPAS speaker line up for edit purposes for this edition of PAN I am tempted to ask why they are going when it appears that the whole future of what we call NPAS is at best fluid. That alone may well make the relatively unimportant speaking slot very interesting, revealing and appealing. We can but hope so.

Next year, 2022, will be a busy one for An Garda Síochána [the police in Eire] as they celebrate their centenary.

Some 6,000 former members and family members of the GSRMA, the retired officer's organisation, are banding together to collect as much information as possible to put together a history of the Garda in a project entitled "Capturing our history".

The end result should result in the compilation of papers, images and oral history recordings to be able to present the struggles, pain and sacrifices that successive generations have endured. Any material can be sent to the General Secretary, Mick Lernihán at GSRMA, 5 Harrington Street, Dublin DO8 AE6X or emailed to

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EVENTS

Last month the UK aviation industry [and many other organisations] restarted the experience of live events. The two main events were the Emergency Services Show in Birmingham and DSEi at London Docklands. Neither was able to fill all the gaps, both were smaller events than their 2019 iteration, but both of them showed promise for the future.

EMERGENCY SERVICES SHOW

As ever the event inclines towards the fire service, with less focus on the other emergency services. Even with the numbers down it was clear that fire engines and ambulances outnumbered police cars in the exhibit spaces inside and out. The emergency services volunteers' groups were less in number and some glaring aviation absences were noted – including the Civil Air Patrol, an organisation that has featured in reports of the event for many years.

The organisers pushed a greater involvement by the police this year and by all appearances they had achieved significant success. With individual police restricted by regulations from working with them the organisers worked with organisations representing police including the NPCC and the Superintendents Association although the booth area of the latter was not manned.

**THE EMERGENCY
SERVICES SHOW**

For this year only the venue also co-located The Security Event, The Health & Safety Event, The Fire Safety Event, The Facilities Event and the National Cyber Security Show, all moved by Covid. Those five events dwarfed the ESS and took a great deal from it in terms of impact and time. Although the names suggested a link, in the event they were barely complimentary. It is perhaps fortunate that the intention is to return to normality next year, they will return to ExCel in London during April 2022 leaving the ESS in its right and proper place to grow the emergency services focus.

There was very little aviation in the ESS. There were drones but sighting them was rare. A Netherlands start up with an unusually configured drone – the Avy Aera – has been busy testing configurations but they face the same problems as all the other commercial drones, densely populated airspace and the continuing absence of an acceptable civil aviation 'Sense and Avoid.' Until drones can look where they are going and stop themselves from hitting other drones and humans they are going nowhere fast.



Avy Aera © PAR

The Aera has been going down the same path as most of the others in running puny loads of supplies from A to B and testing this and that. Despite the regular over hyped headlines in some newspapers, the fact remains the craft need someone qualified to see it lift off and someone else equally qualified to see it performs its task and lands safely. You may as well drive it there in a van.

Potentially one to watch Avy has already worked with the police in its homeland. They can be contacted at Donauweg 211043 AJ Amsterdam, The Netherlands +31 6 4082 7303 fly@avy.eu

The large military drones may be able to work in the civil environment but they have a massive support network that costs eye watering amounts of cash, cash that may never again be in the sector. If there was money to be had we can be sure that the Emergency Services Network (ESS) will suck it out of front line policing. Has anyone else noticed that since policing lost its simply, earthy, side and embraced technology at any price it has all gone wrong? On behalf of a diminishing cadre of front line officers the NPCC has embraced a range of technology that industry have assured them will seemingly make easy all kinds of operational problems from sending officers into various dangers to

solving the most difficult crimes. Unfortunately all of them soak up people to make them work and rarely produce the desired outcome. Meanwhile less and less officers are standing out in the rain.

Hygiene Pro Clean, the UK's leading manufacturer and decontamination service provider, were exhibiting at this year's show. Recently Hygiene Pro Clean have been undertaking testing and trials with the Welsh Ambulance Service Trust (WAST) in conjunction with SBRI & DSTL Porton Down. The Trust was seeking a way to reduce the time needed to disinfect and effect the rapid sanitisation of ambulances in order to return them to active service more quickly. They required a cost-efficient and reliable method to deliver rapid, safe and effective sanitisation, and considered nearly 300 applications.

After over 6 months of assessment, analysis and consideration, WAST has moved to make HygienePro Clean its' sole provider of decontamination equipment for the sanitisation of ambulances. This was awarded without a 'competitive tender' on the basis that due diligence through SBRI and the trial had demonstrated that HPC was the most beneficial system for ambulance sanitisation, and that there were no competitors offering a comparable system.

A key feature is a multi-dimensional approach that HPC uses to deliver effective decontamination. The Ultrasonic Atomisers manufactured and supplied by Hygiene Pro Clean Ltd. ensure that the cleaning agent is delivered dry and not leading to the creation of short circuits wiring exposed to a wet sterilising process. According to SBRI some of the key benefits realised include an incredible 86% reduction in Ambulance cleaning times leading on to a cost reduction of 82%, whilst maintaining a 'gold standard' of cleaning. The equipment has undertaken brief trials with the air ambulance community. The results were promising but have not yet led to contracts being signed.

Despite the supposed higher involvement with the police, front line officers were less evident. For the two previous events [2018-19] the attendees were able to marvel at police drone operators from Birmingham interacting with fire workers, there was none of that this year. Also missing were the fliers of Sky Watch Civil Air Patrol (they often brought drones and even an autogyro in the past). They, like other regular attendees, were somewhat distracted this year. Perhaps next year we will see the event repairing the missing bits. Even so it was a welcome return to live events

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DSEi

Being an event with a greater international element this military equipment exhibition was significantly affected by Covid. Many exhibitors made their attendance planning decisions very late in August. Canada for instance suddenly found themselves able to attend but some cut back their presence from booths to walking the floor. That led to wasted time. For those chasing around looking for a booth position that was not built can be frustrating! Several booths' positions were never manned.

Naturally most of the exhibits were out of the league of the emergency services but there was plenty to interest especially after nearly two years of no shows at all.

Not likely to see use round the shores of Britain is the latest patrol vessel from Sweden. Travelling for the first-time outside Sweden Saab's Combat Boat 90 NG (CB90), a new generation of this fast assault craft, has toured the Thames visiting London landmarks creating some interesting video footage and photo opportunities before arriving in the line-up at ExCel London.

Building on the previous generation of more than 250 boats operating worldwide, the CB90 Next Generation (CB90 NG) features new capabilities. Designed to swiftly transport marines and other forces, CB90 NG is renowned for the ease by which troops can rapidly get onshore and depart again, be it a beach or an awkward, elevated rocky shore. Depending on the mission, CB90 NG can take on different roles such as to search for threats, share intelligence, rapidly deploy troops and attack the enemy. CB90 NG includes a new combat management system and sensors for surveillance, ballistic protection, as well as further improved stealth, manoeuvrability and speed. By providing amphibious forces with multi-mission capabilities, CB90 NG is an even more potent means by which to project force from the sea.



Regular readers will be familiar with AUDS drone detection and defeating system, it has appeared at past PAVCon Europe conferences. It is a fully integrated, mission-deployed, TRL-9 rated C-UAS system which can detect, track and defeat a drone in less than 15 seconds at ranges of up to 10 km (6 miles). The system brings together three companies to offer a complete system to customers. In more recent times the three partners have been working with other companies to supply the elements of AUDS to other manufacturers – effectively to top up competing technology.

With this in mind UK-based Chess Dynamics has announced the release of the new Hawkeye Modular Mission POD (MMP) long-range surveillance device. Hawkeye MMP is a robust, fully modular and reconfigurable system with payload options ranging from surveillance to targeting and C-UAS scenarios.

Meanwhile Enterprise Control Systems (ECS) has been offering Claw their UAS disabling part of AUDES, the forward pointing multiple aerials, to a military market that can use it. In most nations disabling drones in a civil scenario remains a taboo subject – a capability the military are able to employ.



The familiar range of downlink black boxes remain available, added to by Tove, ECS small new form factor, low power, high performance RF Data link, certified to DO-160 standard (RTCA). Tove can be integrated into an unmanned system such as a drone to cost-effectively carry out Intelligence, Surveillance and Reconnaissance missions in air, sea or land. It benefits from Software Defined Radio technology, allowing seamless integration with existing ECS ground receiver infrastructure whilst maintaining robust long-range connection with rapid link re-gain-delivered in a lightweight form factor with significantly reduced Size, Weight and Power. Tove can also be provided with proprietary encryption and encryption management systems.



The third part of AUDES is provided by Blighter Surveillance Systems (www.blighter.com) the British designer and manufacturer of electronic-scanning radars and surveillance solutions. They were showing an innovative A800 3D multimode drone detection radar at DSEI. Blighter's A800 radar a ground-based solution to threat detection, utilising multi-mode surveillance capability usually reserved only for large-scale radar systems and packaging it into a smaller, more flexible radar with a maximum range of 20km. The A800 3D multi-mode radar is ideally suited to border and perimeter surveillance, capable of being mounted to fixed towers and masts, as well as to land vehicles and mobile surveillance trailers.



Not much sign of FLIR branding on the new look Teledyne booth © PAR

In fairness the strange times meant that virtually no-one [except Hensoldt] had turrets as getting them ITAR approved in time for the event was impossible this year.

With DSEi being primarily a military event, it is not surprising that most of the most striking exhibits are war machines. As ever it is the visiting ships and waterborne demos that attract a great deal of attention. Five Royal Navy and international visiting ships were hosted on the dockside at London ExCeL. The vessels will provide an exclusive showcase of maritime technology and capability for visitors to explore. It was no surprise that the pandemic reduced the variety of nations represented, most vessels were British. The visiting ships were HMS Argyll, HMS Biter, HMS Ranger, HMS Magpie, and the outsider was the Belgian coastguard support vessel BNS Pollux.

DSEI hosted a range of daily waterborne demonstrations at the Royal Dock alongside ExCeL. Allsalt Maritime in partnership with Simrad and Ambex, will demonstrate the Very Slender Vessel (VSV) 50, a 16m carbon fibre interceptor, fitted out with shock mitigation seating from Allsalt and a full suite of Simrad navigation and comms equipment, ideal for high-speed chases or a test platform. SAAB's new multi-mission combat boat, the Docksta CB 90HSM. A smart and flexible craft that can be

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used for intelligence gathering and ops coordination. The platform is based on evolutionary design from CB90 with over 250 units in operation world-wide.



Across the hall and nominally co-located due to Covid was a quiet place. Counter Terror Congress (CTC) and Forensics were two shows in one but by the time I arrived there the rush, if there was one, had taken place. Both events were moved by Covid and it failed to take the breath away in its temporary slot in Excel.

There was no aviation content as such but one familiar brand showed up at the back of the hall but I am unsure where the context was in relation to the other exhibits in the two shows in one. It is all about choosing your shows carefully, you simply cannot go to all shows.

RIEGL is best known in the police world for selling its terrestrial laser scanners to parts of the police with no aviation connection. They provide detailed and highly accurate 3D data rapidly and efficiently, the device is an upright portable pillar that can be quickly and easily moved around a site to take measurements.

Applications are wide ranging but for the police they map major road accidents and major crime scenes. Terrestrial laser scanners are rugged and fully portable instruments, tested under strict conditions for a reliable performance even under highly demanding environmental conditions.



UPCOMING EVENTS THIS MONTH

5-6 October 2021 Helitech Expo – billed as the UK's largest event for the aviation industry – is back this year under the new management of the Prysm Group, and promises to deliver some incredible features, from industry-leading keynote speakers, to helicopter safety workshops! With industry leading exhibitors, 100 seminars and an incredible schedule of keynote speakers.

The organisers claim that the Helicopter Safety Workshop has been designed to provide masterclass sessions focused on the latest technologies and techniques that are further enhancing the safety of your helicopters, further decreasing the risk of injury or fatality to your workers and customers. Health and safety measures are always a priority, particularly in the aviation industry where we have seen some high-profile tragedies in recent years, and these mini masterclasses provide the perfect opportunity to educate yourself on ways in which you can minimise any risks. These sessions are completely free to attend and will be running every hour throughout the two days.

Keynote Theatre will see industry-leading experts in person discussing key topics, including the latest developments and what the future holds for the aviation industry. This is the only event where you can have access to all this information under the same roof, over two unmissable days.

Editor: Helitech are promoting themselves as having 300+ exhibitors, a figure few believe still relates to the actual number of booths and yet their biggest rival – and the former partner – European Rotors in Cologne in November are happy to announce 135 registered exhibitors in the knowledge that they include the main MROs – Helitech does not have them. Other observers have commented that the Helitech Expo is looking like a very small shadow of its former self and suggest that the actual figure of 300 is closer to 100 and split pretty equally with drones.

LATE NEWS

Mission Wireless Intercom innovator and leader Axnes has announced that California's Department of Forestry and Fire Protection (CAL FIRE) received an additional S-70i Firehawk helicopter recently with their PNG Wireless Intercommunication System (WICS) installed. This makes seven Firehawk's delivered to CAL FIRE thus far, out of an order of twelve. The PNG WICS features NVG compatibility, push-to-talk (PTT) and voice activation (VOX) functions that allow easy integration of the MP50 handset transceiver into their mission set, along with multiple civil, para-public and military mission profiles.

The integration of the Axnes PNG WICS was performed by United Rotorcraft in Denver, where the S-70i airframes are equipped with mission equipment, including internal audio integration and two PNG MP50 handsets, to allow crews to operate inside and outside of the aircraft with full-duplex crew communication via wireless intercom.

The MP50 handsets used by CAL FIRE is housed in a waterproof, rugged aluminium case and includes a two-to-three-mile range and secure AES 256-bit secure encryption. Battery life of the MP50 handsets include 30 hours of standby time and up to 12 hours of continuous operation.

The DO-160G (environmental-airborne) and DO-178C (software-airborne) qualified PNG WICS is integrated with the aircraft Becker Avionics DVC6100 digital intercom system, increasing mission capability and operational safety for the most challenging scenarios, particular during rescue hoist missions.

Mercury Systems, Inc. (www.mrcy.com), has signed a definitive agreement to acquire Avalex Technologies Corporation, based in Gulf Breeze, Florida. Avalex is a provider of mission-critical avionics, including rugged displays, integrated communications management systems, digital video recorders, and warning systems.

Mercury is building an impressive business in the platform and mission management domain, and believe Avalex will be an excellent complement to their portfolio.

The transaction is currently expected to close during Mercury's fiscal 2022 second quarter ending December 31, 2021.



As this edition closes there are reports in the Daily Telegraph that the Home Office has cut its illegal migrant enforcement budget by £40M. The move comes as the numbers making the crossing reach unprecedented numbers (over 17,000 and climbing almost daily).

The alleged finance cuts are drawn from comparing overall figures for 2018-19 and 2020-21 where the bill fell by 10%. The number of officers employed on illegal immigration fell from 5,121 to 4,855 according to Home Office figures unearthed by the newspaper.

In stark contrast to the figures for the background operation of migrant control, Border Force the front line as it were, saw its budget rise from £140M to £558M—that coming along with an extra 1,100 staff. Other elements of that steep rise will be new equipment and ships.

Meanwhile, on the tiny Italian island of Lampedusa—just off the coast of north Africa—a rusty old boat turned up with nearly 700 people crammed into it.

On a lighter note, just as the latest and much delayed James Bond film arrived in the cinemas Cal Meeker was there to remind us that he had his part in the process by releasing some images of one of the camera ships. They used his engineering skills in providing the camera mounts. Filming of *No time to die* was ancient history of course... 2019 ... but the image is a timely reminder even so!

Movie cameras are a little larger [and contain less sensors] than we expect our law enforcement airframes to transport around... but often the detail in the output is a little more dramatic and exciting!

You and I are going to have to watch the movie to see where the image was taken. That AW139 looks a little Scandinavian.

