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Happy New Year

Nounties buy twin Bundespolizei buy New Zealand step up to 429 Air ambulance growth On Britain's beaches LE Bell 505 delivered

## **EDITORIAL**

Drones grabbed the pre-Christmas headlines in Britain when one or more of the small craft appeared uninvited close to the second busiest airport – London Gatwick - and caused a major security scare that closed the airport and disrupted the journeys of over 140,000 travellers.

The authority's tardy reaction to the emergency did not result in them being showered with praise, what emerged was almost universal condemnation and although Britain became a laughing stock there was clear evidence that other airport authorities were shocked out of their own complacency and into action. It was apparent that no coherent plan was in place to deal with the emergency and this despite the airport being in the county of Sussex. The police in Sussex hold themselves up as being something in the way of UK drone experts and *Sussex Police* Assistant Chief Constable Steve Barry is the NPCC lead on drones. Well someone must be leading from the back of the pack or perhaps seeking a post retirement job as an entertainer.

One source claimed that part of the airport 'plan' was to send alerts out to the local neighbourhood watch. I checked, and it was not April 1. What are the airport authorities even doing with access to contact details for neighbourhood watch? Is someone suggesting that the safety of the nation and an international airport lies in the retired curtain twitchers of Sussex?

No doubt much of the problem is to do with a lack of money, airports are large and drone detection equipment is expensive, but there is evidence that suggests that viable planning was not there either. A good plan might have at least presented a coherent reaction to the many questions that were raised. Many are blaming government ministers but, they are just front men who work on advice given - who advises them? If anyone should fall on their sword it is the advisors.

They said there was a plan, but the truth will always come out. We know all too well there was not a robust workable High-Rise Rescue plan in place when the multi-fatality Grenfell Tower fire took place not so many months ago. There the plan was flawed despite readily available advice. Thinking about a problem in isolation without testing and consultation with international experts is rarely going to lead to a viable plan.

The visible defence rolled out at Gatwick was officers with rifles – when it has been proven conclusively in extensive international police trials that they are next to useless. The fact that they are potentially illegal seems glossed over. Time and again we were treated to media images of net firing drones bringing down hovering drones. Threat drones do not meekly hover. Have you seen how nimble a drone flown by an expert is?

The oft repeated refrain is that an organisation should never claim to have a plan when they do not have one. A faulty plan will undoubtedly damage an organisation, many an ego and the corporate credibility when it faces being put it into action.

Even having the best detection equipment in the world on site does not further progress if there is no coherent concept on how you are going to remove the drone threat. Flying a drone near an airport may result in the perpetrator being imprisoned for 5 years but under international law destroying or hijacking an aircraft - even a mere drone – can attract a life sentence. Clearly that yawning gap in credibility needs to be addressed at government to government level before the security personnel can start interfering with or bringing down the threats with a clear conscience.

No officer wants to spend 6 months of life suspended from duty and trying to prove to the courts that what they did was right just because an NPCC pen usher decided it is from the safety of the back of their limousine.

Changing the law to exclude uninhabited machines from being classed as 'aircraft' needs to be by international consensus and as far as I am aware such a change is not yet on the cards.

**COVER:** Airbus Helicopters H135 D-HZSR on winch training. The Federal Police in Germany [Bundespolizei] have been buying additional helicopters. Two H135 [EC135P3] are included and they are for high altitude rescue operations from the Munich region. A third helicopter is undergoing conversion to the 135T3 standard to support the two new airframes. Details can be found in the story on page: 7



This time they were lucky, poor levels of detection in place now suggest that the threat was lower than the reaction. Tell that to those who lost their holidays at Christmas. The point is that next time it may be a swarm of them and they may include a bomber.

This buffoonery needs to stop. The usual suspects in the police and security services have had so many no-cost chances to improve their knowledge and each time they declare that they already know it all. It is patently clear that they know very little and the world is currently laughing out loudly.

Get a plan and get it now!

Oh, yes, and a Happy New Year!

Bryn Elliott

## LAW ENFORCEMENT ARGENTINA

**MENDOZA:** Metro Aviation have been undertaking extensive 12-year inspections and upgrades on a fleet of ten Mendoza State AS350 airframes. Last month they revealed the final specification of the modifications incorporated in LQ-BEZ, one of a pair of AS350B3 originally built by Helibras used by the Policia de la Provincia de Mendoza alongside an EC145.

Metro removed the existing avionics systems and replaced them with Garmin GTN 650 & GTN 750, GTX33HES Transponder, pilot-co-pilot audio system, G500H Integrated Flight Display, Standby Attitude Module, GDL 69HXM, and KRA405 Radar Altimeter. The aircraft now sport a new paint scheme.

Mendoza dignitaries accepted the aircraft on behalf of its police force, which received two of the AS350 rebuilds from Metro Aviation. The Shreveport, Louisianabased completion centre outfitted the helicopters with a Bambi Bucket for Fire Fighting, upgraded avionics systems and a premium paint package.

"These aircraft are going into service following their 12year inspections. The helicopters include upgraded navigation systems and



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equipment updated to the newest standards," said Pedro Martinez, Metro Aviation's long-time business partner stationed in Argentina.

Once in service, Martinez noted that the aircraft will "perform law enforcement operations, search and rescues, high mountain missions and EMS missions."





### CANADA

RCMP: Airbus has delivered Canada's first H145 helicopter to the Royal Canadian Mounted Police (RCMP). The versatile twin-engine Airbus H145 is the latest variant of the BK117 family of aircraft. RCMP's Air Support Unit will utilize the H145 for a variety of missions including surveillance and pursuit, fast roping, hoisting, Emergency Response Team operations, harbour surveillance and ship landings, and mountain search and rescue.

The aircraft will be based in Langley, B.C., and will operate mainly in the Vancouver Lower Mainland region, with the ability to deploy elsewhere as required.

The H145 has been equipped with a wide variety of mission specific equipment including external hoist and rope down device, Trakka A800 searchlight, Enhanced Reality System, Health Monitoring System (HMS), FLIR, Night Vision Goggles, Tactical Flight Officer (TFO) workstation and internal long-range fuel tank system.



## **CAYMAN ISLANDS**

The Royal Cayman Islands Police Service is doubling its Air Operations Unit later this year. With the help of the U.K. government, the agency is purchasing a new Airbus Helicopter H145 as its primary machine and retaining the venerable twenty-years old EC135 as its second helicopter.

Officials said the new helicopter will boost Cayman's capability in the areas of search and rescue, law enforcement and border protection operations. The aircraft will also be used to respond to disasters and other emergency situations in the other U.K. Caribbean Overseas Territories.

Unlike the current helicopter, the new one is equipped with a winch capability that can be used in rescue operations. It also has a search and radar system and will no longer be restricted by the lack of an autopilot that saw it withdrawn from UK police service as unfit to fly at night and in poor weather conditions.

The U.K.'s Conflict, Stability and Security Fund will pick up 25% of the US\$11M cost, with the Cayman Islands Government paying the rest. Like the existing aircraft the aircraft will be expected to perform police, SAR and ambulance transport roles. With both in service they hope to provide a year-round 24/7 capability for its aviation unit and the ability to assist other territories in the region in times of crisis and disaster.

The details of the purchase were announced by Foreign and Commonwealth Office Minister of State for the Overseas Territories, Lord Ahmad of Wimbledon. Two new tactical flight officers are being recruited from within the RCIPS and an additional pilot will also join the aviation team. In addition, one of the existing flight officers will be sent to National Helicopters in Trinidad for a three- to four-year period to train and obtain flying hours in order to become a pilot captain before returning as the first Caymanian helicopter pilot with the RCIPS.





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Premier McLaughlin said in a statement, "I'm very happy that we are moving forward with a second helicopter and I thank the Governor's Office for their assistance and the U.K. Government, in particular Lord Tariq Ahmad, for partnering with us. This helicopter will provide invaluable support to our newly formed Coast Guard agency and the broader national security agencies.

The ability to provide air cover for RCIPS ground units, to help rescue people at sea and to transport critically ill patients from the Sister Islands is critical to the safety of everyone. The unit also showed its capability and willingness to deploy overseas last year to support relief operations following Hurricane Irma. This has been recognised and the Unit will now take on a wider regional role." [Cayman Compass]

Ed: All so different from the early days. In 2008 the Cayman Auditor General's report on the acquisition of the Eurocopter EC135T1 for the RCIPS declared that poor communication was at the heart of a dispute over the machine's operational capabilities. The aircraft was due to be withdrawn from UK police service because it lacked an autopilot and was therefore due to be declared unfit to fly at night and in poor weather conditions – and it seems that no-one had made the connection that the same restrictions applied in the British Protectorate. \$2.96M was spent buying it from the East Midlands ASU in the UK. It spent a long while in Louisiana, USA, until the worries subsided. In 2009 everyone was still blaming former Commissioner of Police Stuart Kernohan for buying the wrong aircraft.

The Auditor General estimated that converting the existing airframe to a usable configuration [low skids SPIFR] would cost around \$665,000. The daunting figure that the UK operators had rejected in deciding to replace it with a later EC135P2. The result was that they stuck with their 'bad' aircraft and entrusted it to a man from Lancashire to make it work for them.

Perhaps Steve Fitzgerald, the former Lancashire Police ASU UEO, should never have been allowed to leave the UK! To take an out of date, but far from worn-out, early model EC135T1 with marginal economics and capability and turn the 'management' around to move heaven and earth to support it must take

someone special.

The aircraft configured on high skids could not have a winch or floatation devices fitted, yet it successfully sought to overcome its clear limitations and operate overwater missions around the islands against the odds. Even maintaining the aircraft was a long drawn out affair requiring an annual 1,000-mile oversea transit to Louisiana that left the islands denuded of any cover for significant periods.

And still he sold the deal and made them want more!



It will be years before there is a local pilot in place, meanwhile the ex-UK staff continue to serve. Recently Dave Knight (ex RN) was their Chief Pilot. They now have Nigel Pitt and Richard Morcombe, both ex-Army Air Corps with time flying the UK Police.

## EUROPE

**FRONTEX:** The Selex Galileo Falco EVO has been selected by the European Union's Frontex border control agency to explore the use of medium-altitude long-endurance (MALE) unmanned aerial vehicles (UAVs) for maritime border surveillance.

Leonardo has deployed the Falco from the island of Lampedusa in the Mediterranean Sea as part of the Frontex surveillance research programme to test its ability to monitor the EU's external borders.



Leonardo was selected by the European agency under a service contract tender for drone operations for maritime surveillance across the Italian and Maltese civil airspace in an agreement providing for 300 flight hours. This may be extended.

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The Falco EVO is equipped with an electro-optical/infrared (EO/IR) sensor; the Leonardo TS Ultra-Light (UL) surveillance radar; a beyond-line-of-sight (BLOS) satellite communications link; an Automatic Identification System (AIS); as well as a communications relay suite. It is also equipped with a heavy-fuel engine, enabling the aircraft to conduct extended-range day and night-time missions (the UAV has an endurance of 20 h). Under the deployment, Intelligence, Surveillance and Reconnaissance (ISR) activities are organised by Guardia di Finanza under coordination of the Ministry of Interior and are undertaken by Leonardo from Lampedusa also thanks to the decisive support and collaboration of ENAC and ENAV. Leonardo's flight crews and maintenance teams are present to support the operations.

The Falco EVO will operate under a "Permit to Fly" issued by the Italian Civil Aviation Authority (ENAC), which authorizes flights in the Italian and Maltese Flight Information Region (FIR)'s civil airspace. The innovative agreement reached with ENAC guarantees compliance with national and international regulations and coordination with relevant authorities. The agreement also provides for close involvement from the Guardia di Finanza as subject matter experts with operational experience in defining mission profiles and ensuring the best operational conditions in which to undertake the 300-hours test programme. *Ed: It is worth noting that this unmanned aid to surveillance is not as labour saving as might be supposed. A manned operation with similar capabilities can be compact in that it requires just a pilot and observer, access to fuel, an engineer for support and perhaps someone covering ground communications. The sophisticated unmanned option still requires a pilot and observer on the ground but being unique it needs the fuel, a specialist engineer and mobile control suite close at hand.* 

## GERMANY

**FEDERAL:** The German Federal Police (Bundespolizei) has taken delivery of three H215 (formerly the AS332 L1e) helicopters, with a fourth to follow in June 2019. These twin-engine multi-role Super Pumas will enter operation at the beginning of later this year supporting the Central Command for Maritime Emergencies (CCME or Havariekommando), which oversees maritime missions off Germany's coast. Not a primary SAR role, more aerial reconnaisance, transportation, pollution control and shipboard fire fighting. fourth one is in production and the oldest AS332 L1 in the fleet will be retired.



The photo shows #1 in the first ground run in July last year.[BPphoto]

"The H215's speed, long-distance performance and high availability rate in harsh conditions are well suited to meet the demanding needs of our maritime team," said Thomas Helbig, Head of the German Federal Police Air Support. "We've had a long and successful experience with the versatile Super Puma, and are eager to continue flying them with this new version, the H215, which comes with a state-of-the-art glass cockpit and 4-axis autopilot."

These aircraft will complement the German Federal Police's existing fleet of Airbus Puma helicopters which have been undergoing a glass cockpit upgrade for some time.

The Bundes Polizei has bought another two pre-owned Airbus Helicopters H120 Colibri for basic training. The type is out of production and the operator is acquiring them as attrition replacements. One of the Colibri's has been out of service for more than half a dozen years.

In addition in late July two new H135 (formerly known as EC135 T3) were acquired for the HEMS-Fleet. One HEMS-EC135 T2+ is currently undergoing upgrade to T3 standard giving the police three hot and high 135s exclusively operated by the Squadron in Munich-Oberschleissheim for the southern Bavaria alpine HEMS-centers in Traunstein and Kempten.

After all these deliveries have taken place later this year the fleet will be 90 airframes consisting of - 8 H120; 24 EC135 T2+ for Police tasks; 15 EC135 T2+ HEMS; 3 H135 HEMS; 19 H155; 18 AS332 L1 and 3 H215



## INDIA

The Israeli-based aerostat company RT LTA Systems Ltd. has won a tender in India, and will provide its SkyStar 180 aerostat system, together with a small tactical UAV, to an unidentified State Police Service in India. The systems will be delivered to the customer by the end of 2018 and will be used for police and intelligence applications.

SkyStar 180 is a small-sized mobile aerostat, designed for tactical mid-range surveillance and public safety, as well as for police and military applications. Based on a towable trailer, the system has a stabilized day/night electro-optical payload suspended from a helium-filled aerostat, tethered to a ground system. It operates continuously at wind velocity of up to 40 knots, and can lift a payload of up to 20kg, providing surveillance coverage from an altitude of up to 1,000 ft. for up to 72 hours, after which it is brought down for a 20-minute helium refill. Only 2 people are required to fully maintain the system. SkyStar 180 is Ideal for police and intelligence applications, HLS, defence, border control, strategic infrastructure protection and public safety missions. www.RT.co.il

## NEW ZEALAND

**AUCKLAND:** The Police Eagle helicopter will soon leave its central city airbase. Police have announced a change in supplier would result in the Air Support Unit moving from its current base in Mechanics Bay, central Auckland, to Auckland Heliport in Onehunga.

The change in contractor followed a tender process earlier this year that will result in the operation giving up its Squirrel's for three twin-engine Bell 429 helicopters. Police did not name the new supplier but said they were "tentatively scheduled" to commence from July 1, 2019.

Auckland City acting District Commander Jim Wilson said there would not be a significant impact to response times to jobs around Tamaki Makaurau and further afield.

Ed: The police may have been reticent in naming the company that won the new contract but a helicopter charter company called Advanced Flight are based at Auckland Heliport and their fleet already includes a Bell 429. Advanced Flight have nine helicopters configured to operate passenger charters. The fleet includes twin engine models - the Bell and Eurocopter AS355NP (Twin Squirrel) and single engine Eurocopter EC130. <u>http://www.advancedflight.co.nz</u>



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### POLAND

**POLICJA:** The Lockheed Martin owned Sikorsky subsidiary in Poland, PZL Milec, has delivered two examples of the S-70i International Blackhawks to the Policje in Poland. The pair are fleet numbers A-101 and A-102 registered SN-70XP and SN-71XP.

The official ceremony of the locally produced Blackhawks attracted the Polish Prime Minister Mateusz Morawiecki and Minister of Interior and Administration Joachim Brudzinski, to the hangar of the Police Aviation Administration, where aircraft will be stationed on a daily basis. The delivered helicopters will be joined by a third one, contracted in November, and scheduled for delivery by the end of March 2019.

The agreement provides training for ground staff and pilots, a logistics package and service support in the first months of use providing support for anti-terrorist activities carried out by the Anti-Terrorist Operations Office. Funding was allocated from the budgets of the Police, Border Guard, State Fire Service and State Protection Service 2017-2020.

Ed: Although stated to be multi-mission it would appear that the prime role equipment is restricted to a winch. There is no sign of any police specific role equipment including EO/IR.

There are lots of apparent twists and turns related to the Polish Police air operation. The police operation is low key and based on a fleet of Eastern Bloc Mil helicopters of uncertain availability, a Bell 206 and a Bell 412. They have no apparent experience with EO/IR equipment. Regular readers will recall that Bell thought they were on the verge of selling a Bell 407 to the police last year when negotiations were cancelled by Bell [PAN June 2018]. All that fell apart as PAvCon Europe was about to start last May. Tenders to upgrade and re-equip the venerable police Bell helicopters are out there but it is uncertain whether they have progressed.

It became clear last year that the police do not have the equipment and EO/IR was a complete mystery to them. Although they were the host country of the conference event at no time did any of their aircraft appear.

The Blackhawks look suspiciously like a political football utilising local production and giving four state operations modern transport and utility airframes. The PZL Milec media page suggests that this event is but one of a succession of high profile 'delivery' ceremonies in the past three months. In September one aircraft was a star at the International Defence Industry Exhibition in Kielce and again wheeled out in November for the signing of the third aircraft contract. More than a sniff of 'Fake News.'

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Robinson Helicopter Company delivered two R44 Raven IIs to long-time Robinson dealer, PHU Polinar of Poland and they in turn delivered the aircraft to the Polish Air Force University, for military training. Founded in 1927, the Polish Air Force University is an accredited state-owned institution that offers undergraduate degrees for officers in the Polish military as well as commercial ratings for civilian students. More than 70 civil Robinson helicopters operate in Poland.

## UNITED KINGDOM

**NPAS:** All quiet on the Yorkshire front. We know that the 'latest' Annual Report is out there in print and PDF ... it was featured in last months edition ... has been read by the members of NPAS... but it still remained out of the public domain until the middle of December. It is not on the must-read list. Key achievements of NPAS in the year under review are that they have provided 'borderless air support 24/7/365 from a national network of 15 bases across England and Wales to all police forces. Unfortunately the customers believe they are getting a vastly inferior service.

As part of agitation to devolve police air support to Wales data released via a Freedom of Information request in North Wales does not print a pretty picture. According to the data police officers who had grown used to the peace of mind offered by their force helicopters have now been left without helicopter air support 451 times over three years.

Between September 2015, when the Rhuddlan, North Wales, base closed, to February this year there were 2,374 requests for cover and 20% of them could not be accepted due to the aircraft being unavailable at the time. The figure also showed incidents are often concluded by the time the aircraft arrives overhead.

In the corresponding 24 months before the in-house service ended in September 2015 there were 3,447 requests by North Wales Police. Where the old set-up allowed for local launch the request has to be made to West Yorkshire, adding significant time to each mission.

Still no movement on the minutes of the Strategic Board, last month PAN reported that we were waiting for the June and September minutes and we are now additionally due for the 'December' edition. Maybe we are going for a record here? This is a Public Body but despite being an open society spending public money its activities are being undertaken like some latter-day secret society in the Russian mould.

Even the rumours have more bite that reality. If you cannot have a real redacted report or set of minutes you may try to make one up. The latest is that there is "a report" that squeezes the size of NPAS even more, down to 8 bases. It is not true, but it keeps the pressure on and masks the frustration everyone gets from NPAS redacting every thought they ever had.

Meanwhile the public face of what NPAS is shrinks quietly. With Boreham being a name rather than an operational location and Doncaster seemingly very quiet the reality is that the organisation is shrinking all by itself and they cannot put one operational aircraft in all of the greatly reduced bases they have anyway. Flying time is half what it was and at times the organisation is suffering a 30% drop in service delivery. I recall writing in similar terms about the poor serviceability of the MD Explorer fleet in Dorset and Sussex many years ago and even if totally correct, that caused an absolute furore in the individual forces involved. Protest seems absent in NPAS land, the criminal fraternity must be quaking in their boots.

There are 14 NPAS Bases but Doncaster is currently just a fixed-wing testing station so can be discounted. There are seven EC135P2, a similar number of EC135T2 and four EC145 in the rotary wing fleet. Only the EC145 helicopters have a 'usual' base [London and Exeter] each of the others float about between bases although they might linger at some for a while.

The November/December edition of the APSA magazine *Air Beat* includes articles by a number of world police operations in Australia [New South Wales], Europe [Netherlands and Hungary] and the UK. The contribution provided by NPAS was written by Ollie Dismore.



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Many were aghast that the mere presence of a drone would close an international airport so comprehensively, but it was only a matter of time before it happened somewhere and, in the form of London Gatwick International, Britain reluctantly stepped up to the plate.

Speculation still drives the story. It seems that the fleeting presence of a unidentified drone was enough to trigger a Health & Safety driven reaction that might not have affected other countries quite so severely. The airport was closed for two days as the authorities brought in the nations 'drone busters.' Detector systems were drafted in but the sticky questions on how to remove drones from the proximity of aircraft remained unanswered.

Although NPAS do not claim to be experts in the field Captain Paul Watts, Chief Pilot and T/Director of Flight Operations at NPAS was soon quoted as saying:

"The National Police Air Service has been involved in helping search the area near Gatwick Airport for the drone pilot and guide police on the ground.

"Sussex Police requested our support shortly after 9pm on Wednesday, and again this morning at 9am. So far, we have used three helicopter crews, from our NPAS Redhill, NPAS London and NPAS Benson bases."

Although they are not too worried about bird strikes airline pilots declare themselves worried about the situation and their representatives is the British Airline Pilots Association. BALPA Head of Flight Safety, Dr Rob Hunter, said:

"The public needs to understand that drones are not just toys and could have catastrophic consequences if they collide with an aircraft. We know a lot of drones will be under people's Christmas trees and we implore them to ensure they're aware of the rules and fly their drones in a safe and sensible manner.

"These drone sightings at Gatwick are further evidence that tougher laws and enforcement are required to keep drones clear of manned flights. That's why we need the registration and education process in force sooner rather than later, so people flouting the law can be caught and prosecuted. At the same time, BALPA is also calling for the Government to consider toughening the law to create a larger no-fly zone around airports.

"We need to ensure people flying drones take responsibility for their actions and do so responsibly with the knowledge that if they endanger an aircraft, they could face gaol."

There is evidence once again that while experts are being consulted their advice is rarely acted upon. Most of what happened at Gatwick was quite predictable, the lack of preparedness was also sadly predicted.

Ian Povey who was one of the experts consulted and he has a take on this: <a href="http://clearvisionsecurity.co.uk/uncategorized/moving-beyond-gatwick/">http://clearvisionsecurity.co.uk/uncategorized/moving-beyond-gatwick/</a>

Ed: The next edition of 'you will never believe it' may well be enacted in the English Channel. As winter draws in the numbers of desperate first time mariners from far off places increases. It was thought dangerous when they set off on 200 mile and more trips from Tunisia to Malta and Italy. Fortunately the bodies that were washed up on the beaches were far away from the sensitive souls in England. For the migrants those 21 miles from France will appear as nothing. The deep cold and the busy shipping lanes will soon result in bodies piling up on the wind lashed sands of Brighton and Hove. Will the Royal Navy still declare that one vessel is all they need to deter the deaths?



### January 2019

## UNITED STATES

**NEW YORK:** Famous across the world for their highly capable helicopter air support operation last month the New York Police Department announced that its Unmanned Aircraft System (UAS) was now operational within the Technical Assistance Response Unit (TARU).

It is envisaged that the drone unit will be primarily used for search and rescue, surveying inaccessible crime scenes, hostage or HAZMAT situations.

The TARU provides specialised investigative equipment and tactical support to all bureaus within the NYPD, from officers on patrol to the Emergency Service Unit (ESU). The unit's expertise in audio/visual technology helps: enhance investigations through the recovery of surveillance video footage; record police action at large-scale demonstrations and arrest situations; and provide crucial live video to incident commanders during ongoing emergency situations.



Drones are seen as yet another cutting-edge technology tool that the NYPD can deploy in select circumstances to help gather crucial information as situations unfold whilst reducing risk and lessening harm to others. Current equipment includes eleven examples of the DJI Mavic Pro quadcopter, two DJI M210 RTK quadcopter, and a single DJI Inspire 1 used for training and testing.

It is now estimated that there are more than 900 state and local police, fire and emergency units with UAVs. During the NYPD's research and development stage, NYPD officials met with other police departments to learn about their operations.

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**VERMONT:** The State Police have ended a longstanding arrangement that used military helicopters to search for illegal marijuana farms.

Vermont Public Radio reports state police decided to stop the aerial missions as the state Department of Public Safety focuses on opioid investigations. The flights had been a part of the Marijuana Eradication Resource Team and were partially funded by federal grants, leading to the confiscation of some 6,400 marijuana plants annually.

Officials say state police will continue to investigate large-scale pot operations. However, police will now rely heavily on "confidential informant information." [Vermont Public Radio]

## AIR AMBULANCE

### CANADA

**ORNGE:** Ornge, Ontario's provider of air ambulance and related services, and HeliMods, an Australian aerospace technology company, have reached an agreement for the installation of an enhanced stretcher system in the Ornge fleet of AW139 helicopters it ordered in 2008. The original specification included a poorly designed interior that made it difficult to undertake CPR on the patient.

For Ornge, this agreement follows an exhaustive search and competitive procurement process to find the right solution for Ontario patients and staff. The new system features a self-loading power cot with an equipment bridge which will be able to hold all medical devices in all phases of flight. The system will also allow Ornge to enhance its current bariatric transport capabilities without reconfiguring the aircraft as it currently does.

The centrepiece is the Powered Aero Loader (PAL<sup>TM</sup>), a zero-lift, push-button operated powered stretcher loader system for rapid loading and unloading of land ambulance stretchers into air ambulance helicopters.

By significantly reducing the need for paramedics to manually lift or transfer patients between different stretchers and vehicles, the PAL improves safety and efficiency and allows for improved response times whilst significantly reducing the risk of patient and paramedic injury. Ornge and HeliMods have worked together to find new efficiencies where main elements of the integration can be carried out by Ornge's engineering team during major services with training and support provided by HeliMods technicians. Installation will take place on an aircraft-by-aircraft basis and the first PAL-equipped Ornge helicopter is expected to go into service early this year.

### INDIA

GUWAHATI: King Air Ambulance Services based in Delhi are expanding their services to a new base in Guwahati that will also cover Patna. They are claiming to be offering low cost services with their King Air based air ambulance. The aircraft medical fit includes a ventilator, defibrillator, suction pump, infusion machine, oxygen cylinder, and portable power supply. King depute an experienced specialist Doctor and paramedic to accompany and care for the patient on-board.

King has recently upgraded its aircraft with CAT C system, allowing an enhanced ability to operate in fog and bad weather that are prevalent in the region in winter. Air ambulance remains relatively rare in the region, King also offer transfers using several modes of transport including road, railways and commercial airlines. Jet Airways serve Bagdogra, Delhi, Imphal, Vadodara, Kolkata, Mumbai and Silchar, IndiGo serve Bangalore, Imphal, Kolkata, Mumbai, Agartala, Ahmedabad, Bagdogra, Dibrugarh, Hyderabad and Delhi, SpiceJet serve Bagdogra, Chennai, Delhi, Kolkata, Mumbai, Bangalore, Agartala and the National Arline Air India primarily serves Imphal, Kolkata, Bagdogra and Delhi.





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www.world-border-congress.com



## SWITZERLAND

**REGA:** Bombardier has delivered a third *Challenger 650* aircraft to Swiss Air-Rescue Rega, completing a next-generation fleet of air ambulances tasked with rescuing and repatriating Swiss citizens around the world.

Rega, a long-standing Bombardier customer, took possession of two other *Challenger 650* aircraft earlier in 2018. This trio of aircraft replaces Rega's *Challenger 604* fleet, demonstrating the foundation's long-standing commitment to the Bombardier.

The three *Challenger 650* aircraft, with their widestin-class cabins, were specially outfitted with two state-of-the-art intensive care units including two patient beds. Bombardier's signature smooth ride provides a comfortable environment during special missions.



Swiss Air-Rescue Rega is a non-profit foundation and one of the world's pioneers in aeromedical evacuation. In addition to repatriating patients from abroad with three ambulance jets, Rega carries out air-rescue operations in Switzerland with a fleet of 17 helicopters. Rega acquired its first *Challenger* aircraft from Bombardier in 1982 and has operated Challenger aircraft since.

The *Challenger 650* aircraft offers an impressive range of 4,000 nautical miles and a cabin that is quieter than ever. The *Bombardier Vision* flight deck reduces pilot workload and can be equipped with an advanced Head-up Display featuring Enhanced and Synthetic Vision.

### UNITED KINGDOM

**NATIONAL:** Some major charities are having something of a shaky time recently in the UK. Several child abuse cases affecting such as Oxfam and funding issues affect Kids Company and others have come to light and the *aid* sector in particular has been accused as having "collectively failed" to tackle the problem which is said to have dated back to at least 2001. The identified charities have seen giving severely reduced.

It is doubtful that the value of overall giving has reduced, but a shift in recipients has taken place. The allegations have led to trusted charities receiving even more funds in their healthy accounts. For some this has led to them becoming embarrassed the growing size of their bank balances. In the case of air ambulances, you could buy a new operating site, a helicopter, give the staff a raise or, heaven forbid, let the CEO have a bit more. But still the average air ambulance bank balance, at a few million, appeared too large for comfort. It was assumed that the numbers would raise hackles at the Charity Commission.

They need not have worried. In early December a new charity shock-horror story broke that took the immediate pressure off all of them. The Charity Commission, with its office bound investigators, was apparently wholly unaware of what was to break.

Motorbility a company providing taxpayer-funded cars for the disabled burst into the public consciousness over the alleged cover-up of a not-so-secret £2M bonus for its CEO, Mike Betts. Newspaper investigators had been on the case for years, trying to work out why the scheme was so expensive and riddled with anomalies - a well-off disabled person could easily buy a taxpayer funded limousine under the Motorbility rules.

I am unsure what the average UK air ambulance CEOs get but Mr Betts salary already dwarfs the lot. He earned £1.7M a year even before the suspect bonus. It was soon time for him to resign his post, exit Mr Betts for someone else to answer the questions. Motability is wholly public funded, all its money comes indirectly from the public purse, and the hoard that they have is currently estimated at £2.4 billion. An attempt to offload some £500M of the embarrassing funds on deposit into the Motability Charity arm account only placed it in a position of having a wholly unwieldy bank balance and nowhere to spend it. All of which puts the previously awkward bank deposits of the air ambulances in the file marked "insignificant". [Daily Mail/PAR]

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**ESSEX & HERTFORDSHIRE:** Planning permission for a new build £4M base for the air ambulance operation at North Weald has been submitted alongside a plan to gain a very long lease that will provide security of tenure for themselves and North Weald as a flying base. If Epping Forest District Council approve the plans, the charity plans to start building work in 2019 and to complete by October 2020. In addition to the proposed new airbase at North Weald, the charity is considering ways to improve and future-proof facilities at its Earls Colne site.

Chairman of trustees Jonathan Trower said: "The decision to proceed with this development, which will cost in the region of £4M, was taken after long and careful consideration by the trustees and the executive team.

"Having looked at all the options for securing the long-term security of our operation, we believe that building our own facility at North Weald is the best way forward. It will give us security of tenure after October 2020, when our current lease expires, and building ourselves results in significant cost savings compared to leasing a new building built to the same specification."

Cliff Gale, operations director at EHAAT, said: "The proposed structure will contain areas for training, mentoring, patient liaison and cross-training with other emergency services, which will benefit both EHAAT and the local pre-hospital care community."

The new structure will be built in between the NPAS base currently being built and The Squadron. As a result the short cross runway will not be used for take-off and landing in future. It will form a taxiway and access to additional hangar storage space and a shared flight path for the use of the emergency services helicopters.

**MAGPAS:** In general, the UK air ambulances are financially comfortable, they raise funds well and always plan for potential bad times – hence the sometimes-awkward large bank balances and the move into land ownership. All of which makes the situation at the Magpas charity strange. Magpas Air Ambulance is one of the UK's oldest emergency medical charities, established in 1971. The charity was founded by two doctors from Cambridgeshire and initially had nothing to do with helicopters. They were mainly about medical training and dealing with local emergencies and road accidents.

When Cambridgeshire Constabulary got a helicopter in the late 1990s the doctor group started flying with them in a small way as the Mid Anglia General Practitioner Accident Service (MAGPAS). The operation was low key and not particularly expensive to run. When the police lost their helicopter in the roll out of NPAS they too were without an air component and although declaring severe funding problems they acquired a lease on an orange MD902 and flew it out of the old Cambridgeshire Police helicopter base at RAF Wyton, near Huntingdon as the MAGPAS Air Ambulance.

The lease of the MD902 G-HMDX is costing them somewhat short of £1M each year for which they need to fundraise. The latest [2016] figures lodged with the Charity Commission suggested that they are struggling and yet they are clearly set to spend on a greatly more expensive helicopter and an enforced move

from RAF Wyton [which the RAF is closing, probably by next year] to a new site at Alconbury Weald part of the former USAF base of RAF Alconbury.

The Magpas AW169 G-MGPS is now allocated marks, this will replace MD902 G-HMDX in due course. The AW169 c/n 69077 was formerly flown as I-RAIT at the factory, the owner is now shown as Specialist Aviation Services Ltd., Gloucester. The airframe was delivered to Staverton on the evening of December 14.



The financial figures lodged with the Charity Commission suggests Magpas made a loss in four years out of five although the overall result was a meagre profit of just £8,029 profit. Not a promising result so PAN asked Magpas what was missing.

The CEO of Magpas, Daryl Brown MA, BAHons, DipHE, aged 26 years, has a significantly different take on the public domain figures.

Daryl states that contrary to the Charity Commission figures Magpas has experienced significant growth in its fundraising over recent years which has allowed the charity to provide and grow its clinical service.

"Magpas Air Ambulance ran a competitive tender for 18months and recently chose a 10-year contract for an AW169 with SAS from a long list of strong contenders. In recent years Magpas has grown its fundraising income by double digits year on year, it has been running its service on a 24/7 basis since 2016 making it one of the only level three critical care services in the UK entirely charity funded to respond 24/7."

Last year saw a record 1,603 dispatches but not all of them will have been air related. Magpas has plans to develop a new airbase and headquarters and purchased 2.2 acres of land for an air ambulance station, hangar, garaging for the helicopter and its emergency vehicles, together with landscaping, parking and easy access from Ermine Street. Magpas plan to release further information on this project in April, once the AW169 is in operation at Wyton.

Magpas has seen quite a few Trustee changes in the last 15 months, four departures and no appointments – although that still leaves them with eight members. Three new trustees are due to join the board this month.



January 2019

**WILTSHIRE:** Her Royal Highness The Duchess of Cornwall officially opened Wiltshire Air Ambulance's airbase at Semington, near Melksham, in mid-December. The official opening comes seven months after Wiltshire Air Ambulance moved to the purpose-built airbase in May 2018. This significant milestone brought together the helicopter, operational, fundraising and administrative teams on to one site and on land the charity owns for the first time, securing its future.

The Duchess, who is Patron of Wiltshire Air Ambulance, was welcomed by The Lord-Lieutenant of Wiltshire, Mrs Sarah Rose Troughton, and presented with a posy of flowers by four-year-old Mia Burry. Mia, who lives in Semington, was treated by Wiltshire Air Ambulance's paramedics when she was four weeks old and struggling to breathe. She made a full recovery after being treated in hospital for pneumonia and sepsis.

HRH was given a tour of the airbase and met the charity's trustees, staff, paramedics and pilots. She also met some of the charity's celebrity ambassadors, patients who were airlifted, representatives of architects CMS, who designed the airbase, Rigg Construction (Southern) Limited, the primary contractors of the airbase, and some of the corporate supporters who raised funds for the build.

In the charity office The Duchess, on behalf of Wiltshire Air Ambulance, presented a trophy to long-standing volunteer Colin Smith. Colin, of Chippenham, has volunteered with the charity for 19 years, coordinating the distribution and collection of tins all over the county without claiming a penny in mileage expenses.



The Duchess was also given a demonstration of the state-of-the-art immersive simulation suite, with a scenario including a parachutist injured on the ground by the Westbury White Horse. The charity's highly trained paramedics use the room to develop their critical care skills. Before being shown the charity's Bell 429 helicopter, The Duchess unveiled a commemorative plaque in the hangar to mark the official opening of the airbase, in front of 150 guests.



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## FIRE

VIGILI DEL FUOCO: In a move to enhance its emergency multirole airborne capabilities to more effectively counter the increasing risks of firefighting duties, the Italian National Fire Corps (Vigili del Fuoco) has signed a contract for the supply of three AW139 intermediate twin engine helicopters. The AW139 has been selected by the customer following a competitive tender launched in 2017. The order, valued at around €45M, also includes integrated logistic support and training for pilots and technicians, and encompasses an option for 12 additional helicopters. Deliveries of the three new aircraft are expected to start shortly and to be completed this year.

Over 816,000 rescue operations occur every year countering fires across Europe, including many in Italy. The 7 tonne AW139s of the Italian National Fire Corps are expected to progressively replace their AB412s helicopters which have been in service for decades. The new aircraft feature an external rescue hoist, cargo hook with Bambi bucket provision, weather radar, multi-band and satellite communication systems, high definition Forward Looking Infra-Red / Low Light TV (FLIR/LLTV) system, Leonardo's high definition mission console with digital recorder, high definition down link, Leonardo's Optical Proximity LiDAR System (OPLS), Night Vision Goggle (NVG) capability, new generation Trakka searchlight, emergency floatation system and external life rafts, external loudspeaker, medical rack and bubble windows.

## UNITED STATES

**CALIFORNIA:** The Santa Barbara County supervisors have approved the submission of a competitive bid for the fire department to purchase a Blackhawk helicopter from the National Guard.

Currently the agency operates two Bell OH-58A+ helicopters used primarily for law enforcement operations and three Bell UH-1 Huey and Rescue/Firefighting aircraft: The Huey Aircraft are equipped with rescue hoists, capable of lowering rescue personnel into remote or otherwise inaccessible locations and extricating lost or injured persons who could not be rescued by conventional means. The Huey aircraft are also capable of fire suppression missions using either fixed water tanks or removable long-line buckets.

According to an article in the Santa Ynez Valley News the used Blackhawk helicopter should cost less than \$1.73M, significantly lower than the prices quoted for other recent purchases. There will be some additional costs to remove military-specific equipment from the Black Hawk and install the gear necessary to turn it into a Firehawk aerial firefighting unit. These costs will bring the total up to about \$4.7 M. The costliest task will be the installation of the 1,000-gallon water tank including extending the landing gear, raising the aircraft to make room for the tank. The helicopter they hope to purchase has been used as an air ambulance by the National Guard. It has about 3,200 hours on it and was built in 2002. [Wildfire Today Blog]

## SEARCH AND RESCUE

## GERMANY

**BUNDESWEHR:** The Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINWBw) has ordered seven H145 helicopters to replace the German Armed Forces' (Bundeswehr) obsolete Bell UH-1D search and rescue fleet. The aircraft will be delivered in 2020 and will be stationed at the sites in Niederstetten, Holzdorf and Nörvenich. Airbus Helicopters will also be responsible for logistics support, repair, and maintenance of the helicopters.

According to an agreement with the Federal Ministry of Transport, the Bundeswehr is also responsible for search and rescue operations in the event of aircraft accidents on German territory. It therefore maintains a fleet of search and rescue helicopters on permanent standby; and these helicopters are also available for use in national disaster management operations. The Bell UH-1D model currently in use by the Bundeswehr first entered into service in the early 1970s.

Among other features, the H145 LUH SAR helicopters are equipped with high-performance cameras, searchlights, emergency beacon locator systems, a full suite of medical equipment, rescue winches and load hooks that can be used for fire-extinguishing tanks for example.

## INDUSTRY

US company **Logos Technologies** has successfully demonstrated its Redkite Wide-Area Motion Imagery Pod over several days in November to a large European audience.

The demonstration of the sensor pod was undertaken underwing on AEC Air Support's Stemme S-15 powered glider to a large number of representatives from several Defence, Security, Law Enforcement, and Civilian agencies in The Netherlands.

The event was hosted by AEC Air Support BV at their Bosschenhoofd (Breda International) airfield. The flights mark the first time any European government officials have seen the lightweight WAMI system in operation.

Housed in a platform-agnostic pod, [see left wing of the image] Redkite has been specifically designed to support a wide variety of defence, border security, public safety, and humanitarian assistance missions. Weighing less than 35 pounds (16kg) in the pod format, Redkite continuously images a city-sized area, or 12 square km, in medium resolution, all at once. It automatically processes the images into an orthorectified, geo-registered, time-referenced series of images (a "video"), which is refreshed twice a second. This allows WAMI operators to detect and track all significant movers in the entire scene.

The Redkite system can record and archive up to 8 hours of imagery in the airborne sensor pod, as well as provide multiple WAMI operators on the ground immediate access to all imagery—allowing them to perform real time forensic analyses that can uncover previously unknown activities, relationships and/or locations of interest.

Additionally, should an operator need a closer look at a specific location in real-time, Redkite can also semi-automatically task other sensors on the aircraft, such as the FMV turret camera, while continuing to maintain situational awareness of the whole area.

As part of its family of WAMI sensors, Logos Technologies also offers the Redkite-I, which



has been specifically designed to integrate into the Insitu Integrator UAS and has completed final flight testing with Insitu earlier this year. <u>www.logos-technologies.com</u>.

Ed: The advancement of technology. A few years ago, the ability to undertake similar wide area surveillance was being promised by companies using complex arrays of multiple video cameras suspended from the bottom of fuselages, the equipment was fairly heavy and stitched together the video images and the alterations in the scene electronically. The capability required a fixed wing aircraft to continuously circle the point of interest in a tight high-G turn. The modern system scans electronically and requires a less intense flight profile.



**Airbus Helicopters** will be adding a maintenance, repair and overhaul (MRO) complex adjacent to its existing facility in the Kobe Airport Facility in Japan. Construction will commence in June 2019, with the new facility expected to be operational in November 2019.

The company's existing facility is capable of accommodating up to 25 medium-sized helicopters simultaneously. It also houses its regional engineering hub and the country's first and only helicopter full motion full-flight simulator, which has trained over 500 pilots and engineers in Japan and across the region.

With this expansion, Airbus Helicopters will have the largest footprint in the aviation business sector of the Kobe Airport Facility, occupying a total space of 19,685sq m. Its overall capacity will increase by 60% to handle about 40 medium-sized helicopters at one time. The new building will feature a state-of-the-art hangar, an administration office, and a purpose-built warehouse.

Warwick, UK based **telent Technology Services Ltd**., has been awarded a multi-million-pound contract to test the Emergency Services Network (ESN) for the Home Office as it transitions to 4G based communications.

The win will see telent deliver the ESN Assure service and follows an announcement from the Home Of-

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fice in September for a 'new strategic direction' for ESN. It aims to save £200M in public money per year by fully replacing the current radio-based network with a mobile 4G network.

Emergency service users including police, fire and ambulance services can use data services over the network from early this year, with voice capabilities following soon after. The move aims to transform the emergency services way of working, especially in remote areas and at critical times when faced with network congestion, giving them priority over commercial users.

The telent contract for ESN Assure includes the full testing of the 4G commercial network from all of the mobile network providers for the emergency services. telent will also handle up to 150 individual user accounts and 50 simultaneous user logins for access to all software analysis of testing, with the possibility to develop the application to allow for more capabilities once ESN is made available.

The contract will also include drive and walk test services for the ESN and 4G commercial networks; the provision of a helpdesk to support and maintain all components of the solution; a training service and full reporting on all tests carried out.

The German motor club and emergency helicopter operator **ADAC Luftrettung GmbH** is supporting a feasibility study for the use of the Volocopter in two areas of Germany.

The project with manned multicopters manufactured by Volocopter in Bruchsal/Germany is looking to get emergency doctors to patients faster. Volocopter's are novel vertical take-off and landing craft which are based on drone technology and electric-powered. Within the framework of the pilot project, they will be specifically adapted for emergency services and used as air shuttles for emergency doctors. The object is to get the physician to the patient faster than rapid response vehicles can to provide better care.

This makes ADAC the first air rescue organisation in the world to test the use of manned multicopters in emergency medical services - both in theory and in practice. Two model regions have been selected in Germany: the emergency service area of Ansbach with the Dinkelsbühl HEMS base in Bavaria, and the State of Rhineland Palatinate. Starting in the spring of 2019, the Institut für Notfallmedizin und Medizinmanagement (INM, Institute for Emergency Medicine and Medical Management) at Ludwig Maximilian University in Munich will computer-simulate aeromedical missions using Volocopter's for both regions.



Initial research flights will be carried out in just a few months' time. The first results showing the potential usability and the cost-effectiveness of such aircraft in emergency medical services are planned for the autumn/winter of 2019.

Scheduled for 1.5 years, the feasibility study will cost approx. €500,000. The charitable ADAC foundation is supporting the study in connection with its funding priority of rescue in life-threatening situations.

Rotor blade manufacturer **Van Horn Aviation** (VHA) recently received Supplemental Type Certificate (STC) validations from the aviation regulatory authorities of both Canada and Brazil for its 206L series composite main rotor blade. The authorities issued the STC validations after reviewing the documents associated with FAA STC SR02684LA issued on August 16, 2018 for the same product.

The VHA 206L main rotor blade features corrosion and damage-resistant carbon fiber skin, titanium root grip plates, foam core, and electroformed nickel and stainless-steel abrasion strips along its entire leading edge. Its NASA-designed laminar flow airfoil allows air to move more efficiently over the blade; operators have already reported speed increases of one to three knots when flying over the same routes using VHA blades over the OEM blades.



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Another busy airfield is under threat. A group calling themselves **Fairoaks 2020** is calling on the UK Government to step in as it fights to keep its airfield from being turned into a housing estate for 1,000 dwellings on the 400-acre airfield.

The volunteer campaign group is fighting the plans with a formal objection to Surrey Heath, Woking and Runnymede Borough Councils and has stepped up canvassing local residents in the face of an independent report that claims a future for Fairoaks Airport is 'not viable' and that operators move to other nearby airports.

It is pointed out that there are few other viable options, some are a long distance away [Southend] or having a dislike of General Aviation [Farnborough]. Redhill, the NPAS and air ambulance base is under threat. Blackbushe Airport may not get the permission it is seeking for expansion, Other options put forward [Denham] are already reporting they are close to capacity and not that close.

The acute future global demand for pilots - 100,000 new pilots needed in Europe by 2035 – is going to put severe pressures on all the existing airfields without reducing the number of available sites.

In the past the emergency services were based at Fairoaks - police air operations go back to the 1970s -

and even today there is a lifesaving operation with a base there. One King Air 200 based at Fairoaks has a high utilisation rate of organ transplant work, which is time critical, regularly requiring operations into the night and early morning. The twin turboprop can fly in and out of Fairoaks in all weather conditions.

With the likes of Redhill under threat the loss of Fairoaks would further reduce future options for alternative bases.



Late in November **United Technologies Corp**. announced the completion of its acquisition of Rockwell Collins and the company's intention to separate its commercial businesses, Otis and Carrier (formerly



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CCS), into independent entities. The separation will result in three global companies:

United Technologies comprised of Collins Aerospace Systems and Pratt & Whitney. Collins Aerospace was formed through the combination of UTC Aerospace Systems and Rockwell Collins.

Otis, the manufacturer of elevators, escalators and moving walkways; and

Carrier, a global provider of HVAC, refrigeration, building automation, fire safety and security products with leadership positions across its portfolio.

UTC's acquisition of Rockwell Collins is one of the largest in aerospace history. It brings together Rockwell Collins and UTC Aerospace Systems to create Collins Aerospace Systems, an industry leader with a global presence of 70,000 employees in 300 sites and \$23 billion in annual sales.

The separation is expected to be completed in 2020, with separation activities occurring within the next 18 -24 months. There can be no assurances regarding the ultimate timing of the separation or that the separation will be completed.

**Airborne Technologies** (ABT) has announced its innovative system integration solution Airborne LINX is on duty with the Swiss Air-Rescue Organisation Rega and has already saved lives during their demanding SAR operations in high mountain regions. Airborne Technologies has equipped two Rega helicopters, type AW109 SP, with the necessary mounts to assemble a WESCAM camera system on a moveable lifting device outside the helicopter, as well as the advanced operator workstation inside the cabin.



With the development of an external camera lift, mounted on the LH-side of the helicopter, ABT has eliminated one of the recurring problems in airborne surveillance: the impaired downward visibility due to the landing gear. Now, Rega's WESCAM MX-15 in its extended position on the lift enables unobstructed 360° view.

The operator workstation provides real-time information displayed on two large 21' monitors which support split-screen functions, infrared imagery and moving map information simultaneously. Additionally, these advanced features are controllable via an easy-to-use touchscreen, which has increased the situational awareness of the operator significantly.

Wolfgang Grumeth, CEO of Airborne Technologies, said: "Endurance and payload always matter. Most of

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Police Aviation News includes materials produced for it by Ian J Commin of Insight Design of North Burnham, Slough SL1 6DS. This includes the banner titles and the PAvCon logo. In addition from time to times images specifically altered by Insight Design and others but originally produced for McAlpine Helicopters [now Eurocopter UK], Oxford, will appear with permission of the original owner. In some cases it may not be possible to indicate the source of this material directly associated with the images used.

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the components used for the lifting system and the workstation are made of carbon fibre and are particularly lightweight. This helicopter is equipped with the most modern surveillance equipment which is optimal tailored to Rega's special operations."

**Airborne Technologies** Sales Department, has reported that 2018 was a very successful year for them. With new partners in South Africa and Japan, two important countries and global regions complement Airborne Technologies' worldwide sales network.

In Japan, Airborne Technologies has established a new partnership with Aero Facility Co, Ltd., with a signing ceremony of the Agent Agreement taking place at the Japan Aerospace International Exhibition in November.

Luthando Prinsloo, Director Business Development Africa is based in Cape Town, as Airborne Technologies' new representative for the African region. As an ex Naval Officer, ship's captain and aviation expert he combines his military experience, physics and business background to represent Airborne Technologies and to co-design customised solutions.

The **Avlite** Medium Intensity Obstruction Light is now Certified to FAA standards and available for immediate supply.

The combined FAA and ICAO Medium Intensity Obstruction Light is designed to comply with FAA L-864, L-865, L-885 & L-866, as well as ICAO MIOL Type A, Type B and Type C requirements for marking a variety of obstacles such as telecommunication towers, wind turbines, buildings and other tall structures.

Advanced optics within the upgraded obstruction light feature multiple high intensity LEDs for efficient operation, and corrosion resistant lens to maximize light intensity and uniformity. Other features include, GPS Synchronization; multiple lights set to the same flash pattern to flash in unison and remote alarm monitoring.



The FAA and ICAO Medium Intensity Obstruction Light is available either as a stand-alone fixture or part of a complete turnkey obstruction lighting solution. All of Avlite's obstruction lights offer a compliant, energy efficient and cost-effective solution for all obstruction marking needs.

The Carlyle Group has agreed to acquire **StandardAero**, a global provider of aftermarket engine maintenance, repair and overhaul (MRO) services for the aerospace and defence industries, from Veritas Capital. The transaction is subject to customary regulatory conditions and is expected to close by the end of the first quarter of 2019. Financial terms were not disclosed.

Russell Ford, CEO of StandardAero, said, "We are excited to partner with The Carlyle Group, and we thank Veritas Capital for its

Founded in 1911, StandardAero is one of the world's largest independent MRO providers offering extensive services and custom solutions for commercial aviation, business aviation, military and industrial power customers. As an OEM-aligned strategic partner, StandardAero has developed a reputation for quality and performance that drives a sustainable competitive advantage and positions the company for future growth.



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Textron is to upgrade the flight deck of all of the **Cessna Caravan and Grand Caravan EX** turboprops completed in 2019. The features aim to provide pilots with greater control and connectivity, Textron says. New standard equipment includes dual audio panels with 3D audio capabilities. Textron says the 3D system spatially distributes the audio and simulates how the human ear naturally determines directional sources, reducing the confusion that can occur when pilots hear multiple audio sources simultaneously. The Caravans also will get dual audio panels as standard equipment. New options include Garmin's enhanced automatic flight control system, with automated features designed to help pilots retain an optimal envelope, including electronic stability and protection, underspeed protection, emergency descent mode, coupled go-around and an auto-level function. Another new option is Garmin's GSR 56 Iridium satellite data transceiver link, which provides near-worldwide access to downlink weather services as well as satellite voice communication and text message capabilities.



The first serial **Airbus Helicopters H160** to roll off the new assembly line in Marignane, France, flew for the first time on December 14 last year. The H160 will be delivered to launch customer Babcock in 2020. The aircraft's unique livery is a testimony to the several hundred people working towards the platform's certification at the end of this year, they have all signed the helicopter.

The first serial aircraft will join the three prototypes, which have already accumulated over a 1,000 flight hours, in the final steps of the flight test campaign, namely confirming that the modifications that have been introduced through the serial configuration have no impact on the helicopter's excellent handling qualities.

The **DART Aero** proprietary Emergency Float System (EFS) designed exclusively for the Bell 505 Jet Ranger X recently received certification from EASA. With its successful track record in the field and STC approvals granted by FAA, TCCA, and JCAB earlier this year, the sixpod EFS is available as a factory installation or retrofit option.

Designed and manufactured by DART in collaboration with Bell, the EFS has a tri-bag design for greater stability, a custom-made lightweight urethane-coated fabric and includes skid extensions, among other features. The EFS is eligible for worldwide R&O support. DART's first EFS was delivered to the Japanese Coast Guard (JCG) in April 2018.



Lurking in the many pages of Linked-In last month was a story regularly covered by PAN at the time but largely forgotten since.



Our new High Dynamic Range capability allows objects to be shown with new levels of clarity, resolving detail on subjects in low light or back-light situations across all lighting conditions.



Ten years ago, Shobdon, Herefordshire, based Tiger Helicopters completed a bespoke training programme for the Kuwait Police Department and qualified sixteen young Police Officers. This course allowed them to commence their careers as operational helicopter pilots. The Tiger Helicopters Team struggled hard to win the contract, offering, not only a bespoke foundation Police Training programme, but a promise of quality!

The contract came to notice when Tiger bought a ten-year-old AS355F2 Twin Squirrel [G-CAMB] from Cambridgeshire Police to train the first group of six Kuwaiti police officers. The training commenced on the Robinson R22, progressed onto the Bell 206 JetRanger and finally onto the Squirrel which still retained the police equipment, including the EO/IR camera, microwave downlink, searchlight and police radio system.

The initial 18-month training course started at the end of January 2006 and replaced earlier contracts with Oxford Air Training, and Police Aviation Services in Gloucester. I recall that at the time some pretty snide comments were circulating about 'Tiger' but naturally they were above such things and the proof is now evident.

A further eighteen months of demanding and challenging helicopter pilot training culminated in the graduation of ten helicopter pilot trainees from the Kuwaiti Police Department on Friday August 15, 2008. The AS355 was disposed of in 2010.

Late in November last year Alan Ramsden one of those involved in those contracts announced that he had confirmed that each of the qualified sixteen remained operational helicopter pilots and that Tiger had met promises made to the customer at the time to provide good comprehensive training, to teach safe operating procedures, and also a promised that the trained officers would have a long, safe and prestigious pilot career.

All sixteen of the pilots who attended the Tiger Training Programme, after ten years of service, are ALL still working safely as Police Helicopter Pilots! Not only that, NONE of them have had an accident flying the helicopters.

Tiger continues to design and deliver bespoke Aviation Training courses for OEMs, Governments and individuals. These include elementary and advanced Helicopter and Aeroplane Pilot courses, as well as Aviation Engineering courses. Qualifications are for both Civil and Military operations. [AR/LI/PAN]



## **ACCIDENTS & INCIDENTS**

**1 December 2018 Kamov Ka-32T HL9419** Korea Forest Service (KFS) firefighting helicopter. While operating from Gimpo Airport to put out a fire on Mount Youngchuk in eastern Seoul. Apparently crashed while drawing water from the Hans River near Gangdong Bridge killing one person and injuring the two pilots. They were able to rescue the two pilots alive, but a mechanic, only identified by his surname, Yoon, died of an apparent cardiac arrest. (Yonhap)

**5 December 2018 AgustaWestland A119 N.** Air ambulance Mercy Air Flight [Care Flight] made a precautionary landing after a warning light illuminated while transporting a patient. The helicopter came down on scrubland alongside US Highway 95 near state route 165 south of Las Vegas, Nevada, USA. Another helicopter arrived to pick up the patient. [www]

**9 December 2018 Helicopter [believed Mil Mi-8].** Sudan Government operated. While flying from the city of Gedaref to the border city of Galabat on a security tour crashed near the Ethiopian border killing at least seven including the Governor of Sudan's eastern state of Gedaref and six state officials. The dead included the deputy director of police Al-Nur Ahmed Osman, border coordination official Salah al-Khabeer, and the director of intelligence El-Rayah Mohy al-Din. There were other security services survivors. The wreck burned but was said to have exploded before impact. [www]

**15 December 2018 Eurocopter EC135T2 OK -BYB.** Policie Czech Republic. The helicopter departed its base at the airport in Prague Ruzyně to attend a medical emergency at Stara Hut near Dobříš in district Příbram. The helicopter appears to have become entangled in a soccer goal net while landing on a hard court sports field. It landed upright but has some damage to the main rotor, and the tail boom is partially parted at the fuselage junction. Low skids partially collapsed at rear. No injuries. [ASN]



**15 December 2018 Agusta A109S I-EITC** Air ambulance of the Portuguese Instituto Nacional de Emergência Médica (INEM) operated by Babcock International dropped off a patient in a Porto hospital and was returning to base at Macedo de Cavaleiros, Braganca in poor weather when it crashed into wooded high ground at Valongo near Porto killing the four crew of two pilots, a doctor and a nurse. The wreckage and four bodies - "two inside the cabin, and two on the outside" in an area of difficult access 700 metres south of the small chapel of Santa Justa. Names of dead given as pilot João Lima, co-pilot Luís Rosindo, and nurse Daniela Silva, attached to the Bombeiros Voluntários (volunteer firefighters unit) of Baltar. The doctor who died in the crash was a Spanish national, named as Luis Vega, aged 50.

**20 December 2018 helicopter.** Air ambulance. Helicopter made an emergency landing at Wendell Ford Airport, Perry County, Kentucky after reporting engine problems. The helicopter landed safely without damage or injuries. [WYMT]



## FLIGHT SAFETY

A Special Bulletin issued by the UK AAIB early in December revealed that the primary cause of the loss of control of Agusta AW169 G-VSKP was a mechanical failure.

The accident occurred at 1937 hours on 27 October 2018. The AAIB published Special Bulletin S1/2018 on 14 November 2018 to provide preliminary information gathered from the site investigation, subsequent technical investigation, recorded data, and other sources.

On Saturday, October 27, the Thai billionaire and Leicester City football club owner Vichai Srivaddhanaprabha in company of a pilot and three passengers lost their lives in the crash at King Power Stadium. According to an eight-page report from the Air Accidents Investigation Branch, the helicopter suffered a mechanism failure after the pilot's pedals disconnected from the tail rotor blades, thereby causing the £6.7M 2016 AW169 to crash into a fireball. Read more: <u>https://www.legit.ng/1208095-official-report-</u> reveals-caused-leicester-owners-helicopter-crash.html

The evidence gathered to date shows that the loss of control of the helicopter resulted from the tail rotor actuator control shaft becoming disconnected from the actuator lever mechanism.

A World War 2 Spitfire almost came into collision with an EMS AW169 recently. The Spitfire was flying at 220mph and the AW169 155mph. The helicopter's ambulance crew stated that the Spitfire was doing aerobatics and was finishing a loop. The helicopter pilot had to perform a steep left turn and they missed each other by 400 yards.

## UNMANNED

Schiebel is expanding its facility in Wiener Neustadt, Austria, to meet the growing demand for its marketleading Vertical Take-off and Landing (VTOL) Camcopter S-100 UAS.

Schiebel's high-tech facility in Wiener Neustadt, a well-known and highly visible landmark in the region, opened in 2006. Comprised of a production plant of 2,300 m2 and a spacious office area of 1,600 m2, the location has since grown from 50 employees to approximately 120 employees. The current expansion will double the size of the location to 7,770 m2 to house production and maintenance, logistics, training and office space for an expected 150 employees by 2020, with room for further growth of up to a total of 200 employees.

Schiebel has been awarded the maritime surveillance service provision contract by the European Maritime Safety Agency (EMSA). Schiebel's CAMCOPTER® S-100 UAS was selected based on its service record in the maritime domain, as well as its proven maritime surveillance expertise. Payload capabilities and VTOL abilities from shore and from vessels were further qualifying factors.

In fulfilment of this contract, Schiebel will be able to provide simultaneous maritime surveillance services at several sites. The S-100 will be equipped with an L3 Wescam MX-10 EO/IR camera gimbal and an Overwatch Imaging PT-8 Oceanwatch payload, as well as an Automatic Identification System (AIS) receiver.

While Schiebel is making inroads into the military market it has been very slow. Slower still are successes in the commercial sector. A year ago, it was expected that the FAA would certify the S-100 for use as a craft that could undertake utility patrols and inspections. Although a lot of private equity was aimed at the project, it remains pie in the sky. There are currently articles appearing in the drone dedicated press that suggest that drones may not be delivering parcels and pizzas anytime soon either. You can almost hear the pennies dropping as people realise that regulation will inevitably delay all the pipe creams – but who knows how long for.

Back in the December 2017 issue of PAN there was an upbeat story on how a new dawn was promised. The Federal Register was asking for comments on the design standards needed for the Naples Florida registered FlightScan Corporation [FSC] Camcopter S-100 to fly safely in U.S. airspace.

The company had Austrian connections with ownership interests in the President and Treasurer, Johannes Podhragy and Peter Vitz acting as the VP and Secretary as well as local US input from Broadcast Microwave Services [Poway CA] and David B Morton who is the VP of Operations and Safety. The latter was very much the expert on US civil drone operations and much of the legislation now in place was crafted on his watch before he retired from government service and went on to work in industry.

The S-100 would operate Beyond Visual Line of Sight (BVLOS) commanded by a radio control uplink and downlink undertaking utility line patrols. There was no customer specified so we do not know whether this



was wires, pipelines or some other utility.

The requirement was that the aircraft met Sense and Avoid provisions or some viable alternative. Clearly as no-one has yet developed an acceptable Sense and Avoid Morton had to put across a really good alternative strategy. Based on his knowledge of how drones were supposed to work in US airspace he was able to present to the FAA a concept that was based upon the fact that US utilities have an exclusion zone extending to 500 feet vertically and 2,000 feet horizontally. He proposed that thanks to the no-fly-zone the S-100, and no other, could fly in its own exclusion zone, thus avoiding the need for the ultimate technical solution.

Slowly he made headway with the FAA, but they were obliged to make sure their radical moves were transparent and put the matter out for comment.

At the time of the last PAN article the plan was that after the comment period ended December 18, 2017, the FAA would evaluate the public comments to determine if any changes should be made to the proposed airworthiness criteria. It appears that no-one commented before the December date, so the FAA extended the comment period several times into last summer.

The few comments received were not promising but equally they were apparently ill-informed. Finally, in November the certification authority quietly granted the requested exemption.

Question is whether after all the delays FSC are still able to find a customer and even afford the operation!

Schiebel, in cooperation with ELTA Systems and Overwatch Imaging, integrated two new payloads for an active army exercise. The Australian Army conducted a two-week activity with the Camcopter S-100 to gain further insights into future capabilities and payloads in support of Project Land 129-3.

Specifically, they tested ELTA Systems' stateof-the-art ELK-7065 Compact Airborne HF COMINT/DF 3D System for one week then Overwatch Imaging's TK-5 Firewatch during a second week of the exercise.

The S-100 and the ELK-7065 offered a highfrequency (HF) communications intelligence (COMINT) capability that provides rapid spectrum exploration, analysis and detection of ad-



vanced HF communication signals in real time and with off-line analysis tools.

Overwatch Imaging's TK-5 Firewatch payload, which was tested during the second week of the exercise, bridges the gap between small drone mapping cameras and satellite mapping systems. The wide-area multi-band land mapping with automatic small object detection enables regional-scale applications in real time with optimal resolution. It includes colour, near infrared (NIR) and temperature-calibrated thermal long-wave infrared (LWIR) sensors that operate at the same time, including simultaneous on-board image processing.

In Florida there is a proposal to make a law that allows law enforcement to use drones to monitor large crowds for safety and security, but specifically prohibiting the unmanned devices being equipped to fire on crowds. The proposal is put forward by Senator Darryl Rouson, Democrat – Tampa, Florida.

Rouson's proposal (SB 132) creates an exemption to state law so that drones could be used to monitor large-scale events – defined in the bill as comprised of more than 10 people – for evaluating crowd size, assessing public-safety vulnerabilities, determining staffing levels for public-safety personnel or identifying possible criminal activity.

Under Rouson's bill, drones used to monitor crowds may not be used to fire projectiles or be equipped with "tear gas canisters, stun gun technology, or any other dangerous or deadly weapon."

Currently 2013 Florida statute bans law enforcement agencies from using unmanned aerial vehicles for surveillance or evidence gathering.

There are still restrictions on police powers though, this proposal places the decision to allow any such flight in the hands of a judge. A warrant allowing the use of drones if there is a "high risk of terrorist attack" or if officials fear someone is in imminent danger needs to be obtained. Rouson's bill was filed after House Republican



EUROPEAN CIVIL RPAS OPERATORS & OPERATIONS FORUM

MADRID, SPAIN 23 & 24 JANUARY 2019 Rep. Clay Yarborough introduced legislation (HB 75) that would allow law enforcement agencies to use drones for crowd control and traffic management.

Under Yarborough's proposal for the 2019 legislative session, which begins March 5, law enforcement agencies would also be able to use drones to collect evidence at crime scenes and traffic crashes, while other state agencies and local governments could use the unmanned craft to assess damages from floods, wildfires and other natural disasters, or for land management.

FLIR Systems, Inc. are working with DJI, the world's leader in civilian drones and aerial imaging, to integrate the FLIR Lepton<sup>®</sup> micro thermal imaging camera within its DJI Mavic 2 Enterprise Dual drone. This fully integrated, compact, gimbal-stabilized system will expand the close-range capabilities of commercial pilots, helping them to work better, safer and quicker with side-by-side thermal imaging and visible imagery.

## LETTERS

### Dear Sir,

This formulation used suggests, in particular non-native English readers, inadequate maintenance by CAE is partially responsible for causing the accident. This is particular shocking and even insulting to all CAE personnel involved in our operations.

We strongly suggest you read the full BEA-E accident investigation report, and in particular the chapter with conclusions:

### 4.1. Preventive measures linked directly to the event

### 4.1.1. Appropriate maintenance

With a "normal" category Certificate of Airworthiness, in the absence of any special instructions or documentation, the maintenance company maintained the aircraft in accordance with a standard maintenance programme drawn up by the type certificate holder, even though the aircraft had undergone certain modifications that were classified under ITAR. This is notably the case of the modifications to the flight controls and SAS.

Consequently, BEA-É recommends to CAE Aviation that it conducts maintenance appropriate to the modified aircraft that are registered in the USA.

The aircraft concerned, as well as the rest of our fleet, are immaculately maintained in accordance with the maintenance programs published by the type certificate holders, supervised and approved by the respective Civil Aviation Authorities. Statements such as 'application of inappropriate maintenance' are wrongly chosen and used and indeed 'inappropriate' and even insulting to all CAE personnel. An appropriate correction published into your next edition, clearly stating correct information towards maintenance would be mostly appreciated.

Schéi Gréiss / Best Regards LUC *LUC AUDOORE* Deputy General Manager CAE AVIATION Luxembourg Tel +352-43.68.11.223 Mob + 352-621.19.96.00 Luc.audoore@cae-aviation.com Editor: The much reduced precis of a long text did not intentionally seek to highlight poor maintenance in general terms. But the BEA the report pointed out that *in the absence of any special instructions or documentation* these were special modifications that were difficult to write a maintenance regime for. *Consequently, BEA-É recommends to CAE Aviation that it conducts maintenance appropriate to the modified aircraft that are registered in the USA* In the case of a precis of any lengthy report the writer will always run into the danger of rewriting the odd nuance of language in a manner that a team at the BEA probably took weeks to craft even before the document was translated. It is all too easy to pluck seemingly damning statements from an original text. Nonetheless *Police Aviation News* apologises unreservedly for causing offence where taken.

## PEOPLE

After service in Cumbria Constabulary, West Yorkshire Police and lately NPAS Inspector Simon Hepworth has left the police service and his control room post at NPAS Wakefield. He returned early in December in a police staff role as Assistant Operations Director (South West) for NPAS.

For any matters concerning the NPAS Operations Centre or Service Delivery Unit, Shaun Turner is now supervising these functions. For general Ops Centre matters, please email ops.centre@npas.pnn.police.uk

Former Mainfreight Europe boss Mark Newman has been appointed chief executive of the Auckland Rescue Helicopter Trust following the departure of its head, Greg Barrow in the wake of bullying allegations that came to the fore about two months ago after pilots complained. Barrow has been chief executive since 2013 and the trust said he came from an extensive background in aviation as a pilot of both helicopters and fixed-wing aircraft. He officially left at year end.

## **MOVE ALONG THERE**

In the USA the Office of Justice Programs' (OJP) Office for Victims of Crime (OVC) awarded more than \$16.7M in Antiterrorism and Emergency Assistance Program (AEAP) funding to aid survivors of the October 1, 2017, mass shooting in Las Vegas, Nevada.

Fifty-eight people were killed and more than 600 physically injured when a man opened fire on the Route 91 Harvest Festival, an open-air music venue, from a hotel room on the 32<sup>nd</sup> floor of the Mandalay Bay hotel and casino on the Las Vegas strip. When officers located the gunman and entered the room, he was found dead with self-inflicted wounds. In June, the Department awarded over \$2M to support first responders in the aftermath of the shooting. In addition, the Department announced a new \$8.7M grant to provide multi-disciplinary, scenario-based active shooter training to first responders across the country.

The funding, totalling \$16,735,720, will assist victims of this incident, including ticket holders, concert staff, vendors, witnesses, law enforcement personnel, and other first responders. It also will support close family members, medical personnel, coroner's staff, taxi drivers, and others who helped the concert attendees. The grant will defray the costs of counselling and therapy, vocational rehabilitation, and trauma recovery for victims and emergency responders. Funds will also help with legal aid and supplement the massive outlays incurred by the Nevada victim compensation.

No point saying anything of course as Piers Morgan found out when he came to renew his contract.

## **NEWLY ANNOUNCED EVENTS**

The 2019 edition of the **PAvCon Europe Police Aviation Conference** will take place in Amsterdam on 4-5 June 2019.

The detail was only finalised in mid-December 2018, so the organiser needs to go to Amsterdam and assess the venue and hotels at Schiphol Oost Airport before writing the prospectus and suggesting booking hotels.

The outline programme will see a two-day conference with half of each day dedicated wholly to police air support training. Industry will be asked to submit papers focussed on new technology and training. These will be of a length that focusses on the subject to the exclusion of overt branding. A call for papers will be issued in February. This year's event will again be directed by Police Aviation Research from the Waltham Abbey, UK, office www.pavconeurope.eu president@pavconeurope.eu



21-23 October 2019 The 5<sup>th</sup> OFSEC - Oman Fire, Safety and Security Exhibition, Oman Convention and Exhibition Centre, Muscat - Sultanate of Oman. OFSEC EXPO 2019 is designed to meet the needs of the local, regional and international markets by linking practitioners, suppliers, distributors and manufacturers from the fire, safety and security industry, with key decision makers from the government and private sectors. The 3-day exhibition will seek participation from a large number of exhibitors and representation from over 30 countries, with product and service launches. <u>www.muscat-expo.com/ofsec</u>

## DIARY

23-24 January 2019 RPAS CivOps 2019, the 7th Annual European Civil RPAS Operators & Operations Forum, is taking place in Madrid, Spain. This event is coordinated with & hosted by AESA (The Spanish Aviation Safety & Security Agency). Forty-five speakers from across Europe will address regulation, oper-

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ational and training issues. These will be drawn from civil drone councils of France, Germany, The Netherlands & Spain, from national aviation authorities + air navigation service providers of France (DGAC DTA + DGAC DSAC), Germany (Federal Ministry of Transport & Digital Infrastructure + DFS), The Netherlands (Ministry of Infrastructure & Water Management + Human Environment & Transport Directorate + LVNL) & Spain (AESA (6x) + ENAIRE + CRIDA). In addition, representatives from the European Commission, EASA, SESAR JU, Eurocontrol, OECD, EMSA, EUROCAE, ASD-STAN, Spanish Ministry of Public Works & Transport, Spanish Ministry of Economy, as well as the European U-Space Demonstrator Network, the Interreg-ICAReS consortium, and the Rescue Drones Network will be on site. It is a crowded programme with 45 presentations over 2 days, so it appears that many will be trying to squeeze in their important words into a tiny 10-minute slot. <u>https://rpas-civops.com</u>

### **INTO SERVICE**

The first law-enforcement completion of the Bell 505 was configured by Hangar One Avionics and Maintenance for the police in Sacramento.

Hangar One are based near San Diego at the Palomar Airport in Carlsbad California.

The aircraft is fitted with a Trakka searchlight and an MX-10 EO/IR turret and cost \$2.8M of which over \$1M is the role equipment.

The top image is the airframe as delivered to the police late last year, the bottom image was before painting was completed.

The next 505LE delivery expected later this year is for Stockton.



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28-30 January 2019 International LiDAR Mapping Forum, Denver, Colorado, USA Diversified Communications technology group <u>www.lidarmap.org</u>

26 February – 3 March 2019 Airshow Avalon, Geelong, Australia. The major show in Australia just along the coast from Melbourne. The 2017 show attracted 664 companies from 25 countries, 33,000 trade visitors, 634 aircraft including over 60 from the Royal Australian Air Force and 367 members of the media. There were 158 delegations and 44 conferences and symposia associated with the event. Contacts with the Avalon Sales Team: PO Box 4095 Geelong, Victoria 3220, Australia +61 (0) 35282 0500 <u>ex-po@amda.co.au</u> <u>www.airshow.com.au</u>

14 February 2019 Lippitts Hill Camp – the story. An illustrated talk by Bryn Elliott. Chingford Historical Society meeting at 7.30pm at Chingford Junior School Shaftesbury Road, London E4 7BP. The doors will be open from 7 pm. The school is about 10 minutes' walk from Chingford Railway Station. Limited parking on site. <u>www.chingfordhistory.org.uk</u>

4 March 2019 APSA Rescue Summit. Atlanta Georgia USA www.publicsafetyasviation.org

4-7 March 2019 HAI Heli-Expo, Atlanta, GA. Exhibits open 5-7 March.

