

Police Aviation News

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Issue 287

March 2020

A photograph of a helicopter engine mounted on a test rig in a factory setting. The engine is yellow and black, and is surrounded by yellow safety railings. The rig is blue and has the text 'A412BT' visible on it. The background shows a large industrial space with various equipment and structures.

New Zealand move in Christchurch
GAMA Aviation UK HEMS planning
UK Coastguard fixed wing - official
UK Coastguard Unmanned Trials
Electric drive anti-torque trials
Bell based in Singapore

EDITORIAL

It has been a busy month, most of it anywhere but in England. Throughout my journeys to the USA [Heli-Expo in California] and the blighted Singapore Air Show it has been travel under the threat of the Corona Virus. Fortunately, the killer disease left me pretty much alone but its effect on others has been plain to see. If everyone in Singapore who was wearing a surgical or builders mask was indeed following the government edict of wearing one only when feeling ill half, the population must have gone down with it. Thankfully not so, *operation fear* again raises its head. That said the ordinary people of Singapore have been hit significantly with shops taking far less and hotels placing staff on enforced furlough and shutting down half of their beds.

Aircraft companies lost tens of thousands in the thwarted attempt to take part in the most important air show in the region and lost again many more thousands in late cancellations of travel and accommodation. It is fair to say that even without the air show related drawback, the City State of Singapore continues to take the hit in the days and weeks that followed. The main tourist traffic and customer base comes from mainland China which remains pretty much in lockdown. Multi-cultural it may be, but Singapore has pretty much nailed its colours to the Chinese mast. It may need to rethink that policy and there are already signs that reality is sinking into the one-party state legislature. We may sneer at the political make-up in the country but its effective control of the population has enabled an iron grip to be placed on the detection and treatment of what we now call Covid 19 because of its alleged negative effect on a pretty good brand of beer. Howls of horror in the West as Singapore gave chapter and verse on Covid but that is because they were on top of it. Remember, that it is the likes of North Korea with its low percentage of medical care and a high percentage transient Chinese population that report no cases.

Until very recently the northern hemisphere was seeing this virus as an Asian problem but that has now changed dramatically. But the numbers remain small – except in the eyes of the media and politicians. Why let the truth get in the way of a good headline?

I seem to recall that it was not so long ago that eyes turned to the Far East as the growth areas of aviation. If the region now struggles that puts the growth in doubt for everyone. In the wider world market, at a time when such as Boeing, and to a lesser degree the oil and gas industry providers, are taking a massive hit due to other pressing problems it appears that this virus is going to have a massive negative effect on progress towards recovery as China falters. Let us not ask ourselves whether a temporarily disabled China might become a dangerous neighbour.

In the West the shortage of cash flow may seriously effect philanthropy [air ambulances may need to rely a little more upon those reserves] and the supply of tax funds for upgrading the other emergency services may also be affected. Tricky times.

Bryn Elliott

LAW ENFORCEMENT

KENYA

NATIONAL POLICE SERVICE: The ministry of the interior remains under the spotlight over its 4.9 billion-shilling three helicopter deal with Leonardo in 2017/18.

The new aircraft acquired are an AW139 LE, AW139 VIP, and AW119 KX. Some Sh900M additional spending was due to extra specifications that were not initially provided and Sh76M was simply to make up for fluctuating exchange rates. An audit report revealed that due process was not followed in the purchase of the helicopters.

The helicopters for the Police Airwing were initially tendered at Sh4 billion (\$40M), but the figure was later reviewed upwards to Sh4.9 billion (\$48M). It is claimed by the Interior ministry that the variation was as a result of errors during the tendering process. The full flight safety equipment specification had not been allowed for and neither had inflation.

Appearing before National Assembly Public Accounts Committee (PAC) last week the Interior Principal

COVER: Go to pages 20 and 21 for a new visit to the Bell support and training facility in Seletar, Singapore.

The last short item on the plant was over five years ago and much has improved as the facility has become busier. Lots of unanswered questions about the identities of the airframes used in the training courses.

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Secretary Karanja Kibicho said the over Sh900M additional spending was due to extra specifications that were not initially provided. [Nation]
Ed: Although Kenya has suffered from some runaway inflation rates in the recent past it has dropped from the 45% of the mid-1990s to a more manageable 5-6% in recent years.

NETHERLANDS

POLICE: The latest EC135P2 upgrade airframe being worked on at the Babcock facility in Staverton, Gloucestershire, PH-PXB, has commenced flight trials and can be expected to return to the Netherlands imminently. [MJ]

NEW ZEALAND

POLICE: Compared to the United Kingdom the reach and capability of police air support in New Zealand is tiny. The United Kingdom is approximately 243,610 sq km, while New Zealand is slightly larger at approximately 268,838 sq km. In US terms this is about the size of Colorado, slightly smaller than Oregon. Populations are vastly different, the population in the UK is 64.4 million people where around 5 million live in New Zealand, comparable with Colorado (5.6M) and Oregon (4.2M). Tax dollars are therefore scarce.

Since 1988 NZ police air support, now known locally as Eagle, has provided effective air support operations restricted and mainly centred upon Auckland. Outer areas have in the past begged, borrowed or leased local helicopters to meet immediate needs. The service recently took delivery of three pre-owned 2011 Bell 429 helicopters to replace a long-standing fleet of Eurocopter Squirrels last July. On average the crews of air support attend 6,000 incidents each year.

The latest move is the setting up of a five-week trial of a single Bell helicopter in Christchurch. It started in mid-February and is scheduled to operate until March 20.



The three Bell 429s previously served in Australia but, as was the case with the earlier fleet, their individual identities [c/n 57047/8/9] are cloaked in the dark paint scheme. ©NZPS

Outside Auckland, Canterbury had the second highest number of events attended by Eagle, however about 96% of deployment was in Auckland, but a helicopter had been in Christchurch four times since the 15 March mosque attacks, to provide surveillance, and for the visit of HRH Prince William.

The project was launched by Police Commissioner Mike Bush and he is keen to investigate whether there was demand to expand the Eagle service beyond Christchurch.

With one aircraft deployed at Christchurch Helicopters at Christchurch Airport, services will remain operational in Tāmaki Makaurau with two aircraft, subject to maintenance availability. [Facebook]

Ed: The appearance of the police helicopter in Christchurch was not appreciated by all. As soon as operations started the helicopter was targeted by a laser. On a more positive note the helicopter was also quickly involved in a life saving mission when they landed at an incident outside Christchurch Park. The crew set up a defibrillator carried on board, and monitored the man's condition until an ambulance arrived.

NIGERIA

POLICE: The police in every country operate differently and from a recent report coming 'out of Africa' actions there are very different from normality in Europe. In the incident recounted one police helicopter was damaged.

The Nigeria Police Force has said that a force consisting of the Police Mobile Force, Counter Terrorism Unit, Special Forces, Intelligence Response Team, Special Tactical Squad, and Special Anti-Robbery Squad, successfully eliminated 250 bandits and terrorists in Kuduru Forest, Birnin Gwari, Kaduna State in early February [5].

The combined police force stormed one of the largest operational camps of the Ansaru terror group (also housing other bandits and kidnapers) with the intent of crushing terror and criminal elements in the super camp associated with terror-related violence, kidnappings, gun-running, cattle rustling and other heinous crimes across the country.

Two pilots manning a Police Bell 412EP helicopter 5N-ANS came under fire as they provided surveillance cover were shot at with rifles and a GPMG and they sustained minor injuries. The pilot and the co-pilot who demonstrated uncommon courage and expertise, successfully landed the aircraft at the Air Force Base, Kaduna, without further incident. [Sahara Reporters 5/2]







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Ed: According to the Flight Safety Foundation the skies of Africa are getting ever more dangerous for airlines too. Two advisories last month warned operators on both Kenya and Mali to beware of small arms fire and worse emanating from extremists and terrorists. [FSF]

UNITED KINGDOM

NPAS: In keeping with the Freedom of Information request by PAN last year, NPAS has recently published the minutes of the September 2019 board meeting on their website. As these minutes are currently five months old the content is barely 'news' but I guess it is an advance on no minutes at all.

The ten pages [seven pages of editorial] contains a few nuggets of information. After starting with a review of Safety within NPAS the minutes note that there has been a decline in the use of NPAS by police forces in the UK. The latest decline of 8.9% is presumably additional to the previously noted annual declines

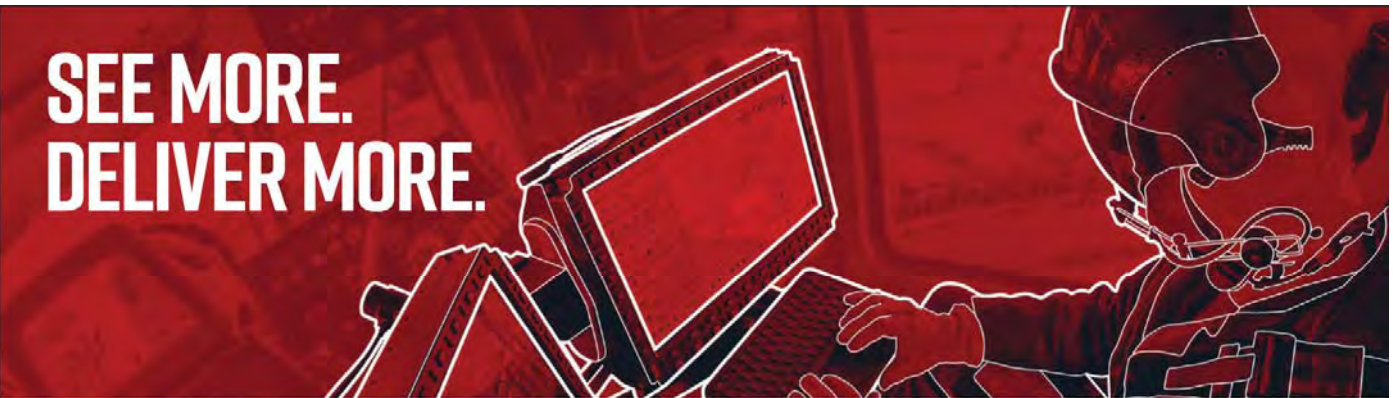
There is an update on the ongoing NPCC Aviation Strategy. Although there were around 20 'attendees' at the meeting it is clear some were not recorded as being there in the official roll. One of the non-official attendees was T/ACC Jason Masters who has been seconded on to the NPCC Aviation Programme Board working alongside Richard Brandon and Ollie Dismore. The ACC advised members that the main focus of the review is the funding model, governance and operating model. The Programme Board will also look at how NPAS can link in drones alongside helicopters and aeroplanes.

Early feedback from forces shows that there will never be a solution to suit everyone. The Programme Board are to look at trial sites and it was stated due to the uniqueness of London that this is proposed as one of the trial sites along with the North West and East Midlands region which is representative of cities where there is potentially a lack of alignment from where the helicopter operates from and where threat risk and harm is.

Even as the Cambridge based group independently seek a means to an end in resolving some if not all the problems, NPAS are looking inward and have come up with NPAS Vision by which they might overcome the problems from within.

There are short reviews of the known issues over pilots, their retention and the possibility of increasing the retirement age from 60 to 65. Subsequent and constant adverts for new NPAS pilots in the months since this meeting suggest that the problem has not gone away.

The passage of time since the meeting are a problem with the Fixed Wing Update in the minutes. The minutes report that in September there were issues over the non-issue of the National Airworthiness Review Certificate (NARC) for the P-68R. The reason related to a time difference between when the modifications were put on the aircraft and when the certificates for the parts to be used on the aircraft were signed off. The three remaining airframes were being delayed by the paper trail in September, but we think we know they are now flying.



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The expected redactions of text in these minutes affect mainly the fixed wing and almost all of the text relating to the troubled Emergency Services Network [ESN]. The latter might be expected as it seems no-one knows what is going on even though a competent contractor [Cobham] now has the unenviable job of bringing the project to fruition. [NPAS]

Ed: Not a classic set of minutes but better for their availability on the NPAS website.

UNITED STATES



TEXAS: The latest Airbus H125 for completion for the Texas DPS is N844TX. Last month the green helicopter was flown in stages from the Airbus plant in Mississippi to Mesquite for completion. After some cajoling the tail number was chosen by Lt. Clay Lacey, one of the team tasked with configuring most of the recent fleet of TDPS airframes. The sequence is simply the month and year his late mother was born. [Facebook]



Three earlier R44s were purchased ©UPS

URUGUAY

POLICE: The police have taken delivery of a new white Robinson R66 CX-MIEZ. This is in addition to at least three earlier examples of the piston Robinson R44 Raven/Police known to have been acquired in December 2016. (see Industry for a comment on how Robinson sales have been faring in this past year).

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AIR AMBULANCE INTERNATIONAL

AIRLINE: MIME Technologies, a medical technology spin-out from the University of Aberdeen, has unveiled a smart device set to revolutionise how medical events are managed in the air – with the potential to benefit the many thousands of travellers who fall ill on flights each year.

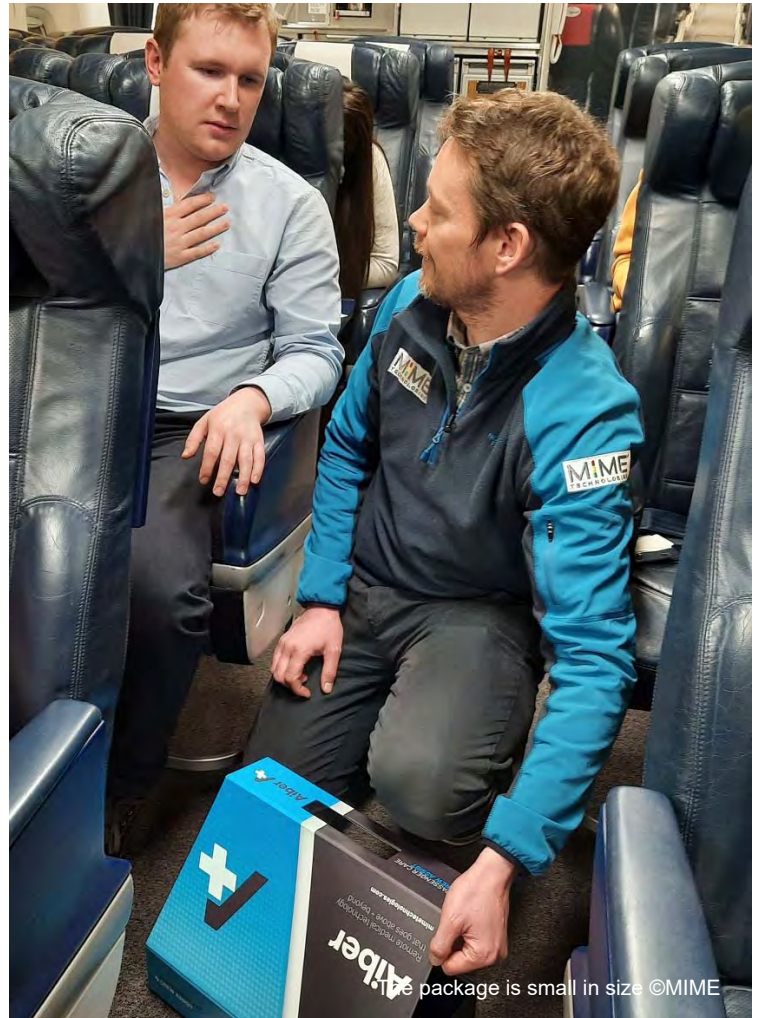
In a single year, flight diversions for medical reasons can reach sixty for a single airline and costing between £38,500 - £464,000 per diverted flight.

A team of physiologists, technologists and aviation medicine specialists have created a new wireless technology aid, named Aiber, that offers to provide fast and accurate support to cabin crew, pilots by connecting them with clinicians on the ground and allow the air crew to make more informed decisions on the urgency of the medical events they are presented with.

Cabin crew are responsible for passenger care in-flight and receive detailed and specific first aid training, refreshed annually. While some larger airlines can already call on clinical support on the ground support this is not a mandatory requirement for all flights. Calling the ground can also be difficult, requiring the crew to leave the patient's side to use the on-board phone or existing headphone technology, which is prone to serious challenges like noise interference.

Aiber is technology capable of 'live' streaming a wide range of passenger data to the ground, allowing real-time digital communication between the crew, the passenger and clinical support.

Anne Roberts, co-founder & chief executive officer of MIME Technologies, explains: "An in-flight medical event, even of a minor nature, can be hugely stressful for cabin crew. Our affordable technology guides them through their first aid training but, crucially, its live streams medical event updates to the ground.



"This is hugely significant as it allows a more informed decision about how stable a passenger is and whether the flight should divert or continue. It allows cabin crew to stay by the passenger's side throughout and, using AI, it automatically stores and transmits essential information that can often be missed or only recorded after the event.

"For the first time, clinicians on the ground will be able to follow, in real-time, the deterioration or improvement of a passenger in the air using wireless technology and the tech provides a seamless handover to emergency services meeting the aircraft. We believe the technology will help avoid unnecessary diversions but, more significantly, it will help save lives by providing 'eyes in the sky' on flights globally."

Developed with input from two of the world's leading airlines and suitable for use by commercial airlines and business jets, the technology can integrate wireless, clinical-grade, heart sensing equipment; specifically designed for non-medical professionals like cabin crew. [hottinroof]



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AUSTRALIA

NEW SOUTH WALES: Australian regional airline Pel-Air a subsidiary of Regional Express has signed a 10-year contract with New South Wales Ambulance to provide the New South Wales Ambulance with five fixed-wing aircraft, pilots, and engineering support. This will enable the aerial transport of NSW Ambulance's medical personnel and patients in NSW's regional communities.

In 2009, Pel-Air was awarded a similar deal with Ambulance Victoria, who recently extended the contract until 2023.

POLAND

LPR: Bombardier has announced the sale of two Learjet 75 Liberty aircraft to North Dakota-based Fargo Jet Center (FJC). The aircraft are to be converted to dedicated medevac configuration and delivered to air ambulance service provider Lotnicze Pogotowie Ratunkowe (LPR), based in Warsaw, Poland.

Following an extensive international competitive tender, LPR selected the Learjet 75 Liberty aircraft, with FJC's proposed medevac interior, to serve its expanding operations.

Fargo Jet Center has extensive experience converting aircraft interiors for medevac use. FJC is expected to take delivery of the Learjet 75 Liberty aircraft from Bombardier in late-2020, then deliver the converted EMS aircraft to LPR in Poland in 2021. Spectrum Aeromed, also based in Fargo, has been selected as the air medical equipment provider on the project. The Spectrum Aeromed team will contribute to a highly customized, state-of-the-art dedicated air ambulance interior for the two Learjet 75 Liberty aircraft.

UNITED KINGDOM

SCOTLAND: Gama Aviation has provided an update on its £20M order for three Airbus H145 helicopters, previously the subject of a press announcement in December 2018 [see PAN February 2019 page 9]. The Company has completed this purchase and taken title to all three helicopters. Preparations for the deployment of the helicopters from June 1, 2020 in support of a long-term contract are proceeding to plan.

Gama Aviation has operated the Scottish Air Ambulance for many years but has changed the format of the contract. Under their contract Gama originally supplied the fixed wing element from their fleet of King Air and entered into an agreement with Bond Helicopters/Babcock International to provide the helicopters.



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The helicopters are now being owned and operated in-house.

The purchase was funded through a new £20M term loan secured with HSBC on competitive terms. The Loan is separate from the Group's \$50M revolving credit facilities which was transferred from RBS to HSBC on improved terms last November. The Loan and the RCF are subject to customary banking security arrangements.

On March 2, Gama are holding a dedicated press event at their Farnborough Airport Group headquarters that focuses on their plans to move into the UK HEMS market as well as other rotary markets. PAN hopes to be able to report on that meeting.

UNITED STATES

FLORIDA: The moves against high air ambulance billing to individuals continue to be addressed at State level rather than National solutions. In Tallahassee the State of Florida passed a bill that would put an end to surprise medical bills following emergency air ambulance rides for Floridians.

HB 747, sponsored by Republican Rep. Jayer Williamson, closes a loophole left open by the Legislature's 2016 law that otherwise ended the practice of balance billing. At the root of the exorbitant bills are underpayments from government insurance such as Medicaid and Medicare, which cover less than half the cost of an air ambulance ride, typically around \$11,000 including all costs and profit. Current rules allow air ambulance providers lump the balance from the underpaid trips together and split them across the handful of insured patients who needed a helicopter ride to the hospital, a common practice in the health care industry known as cost shifting.

When the bill comes, the insurance company pays the actual cost of the ride, but that can still leave patients with a five-figure medical bill.

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SEARCH & RESCUE

SOUTH AMERICA

COLOMBIA: Droneresponders, the world's fastest-growing non-profit programme supporting public safety UAS and Drones for Good™, arrived in Latin America.

AIRT and APD Humanitario officially unveiled the Spanish language-based initiative during a special week-long workshop for emergency services professionals held from January 21-25 in the capital city of Colombia. The Droneresponders Public Safety Alliance was launched in April 2019 at AIRT's UAS DRONES Disaster Conference in Miami, Florida, USA. It was headed by retired fire chief Chares Werner, has quickly expanded to over 1,500 member-organisations reaching across more than 33 different countries.

The Latin America rendition is spearheaded by APD Humanitario, a Bogota-headquartered non-profit organisation that promotes the humanitarian use of drones for emergencies and disaster response. In June 2019, AIRT and APD executed a memorandum of understanding to facilitate drone-based public safety and disaster response training and facilitating deployable resources for the region.

THAILAND

The Royal Thai Army (RTA) signed an MoU with the country's Department of Disaster Prevention and Mitigation (DDPM) on 30 January, to use Ka-32A11BC helicopters for disaster relief and to maintain their readiness for operations. The MoU's objective is to promote aviation co-operation between the two agencies to use equipment and Ka-32A11BC aircraft, including aviation personnel, with the aim of increasing disaster relief effectiveness.

For the RTA's part, it will support air operations and aircraft management, including arranging personnel to operate and use the helicopters. In addition, a joint aviation working group has been appointed to supervise aircraft utilisation for the purposes of both departments. In the past, the RTA made available personnel such as pilots and mechanics, plus aircraft hangars, for disaster prevention and mitigation.

The Ka-32A11BC disaster relief helicopter is designed for firefighting in urban areas, and it can be adapted for missions such as forest firefighting, search and rescue, disaster prevention and the transportation of people and equipment. Special equipment includes water spray devices, chemical fire extinguishers, a 3,000-litre water tank that can be filled without having to land, a ten-litre foam tank, a 5,000-litre water basket, electric rescue hoist and emergency lifesaving equipment. The DDPM purchased two Ka-32A11BCs from Kamov for THB1.862 billion (\$60 million), and they were delivered in September 2019 under the supervision of the Army Aviation Centre in Lopburi.



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UNITED KINGDOM

MARITIME AND COASTGUARD AGENCY: The official press release announcing that 2Excel Aircraft at Doncaster has the contract for supporting the helicopters of HM Coastguard arrived last month. Regular readers may recall that PAN published an image of one of the aircraft operating out of Doncaster in November [December 2019 edition].

It is now known that 2Excel has a five-year contract with 2 years of possible extensions to provide HM Coastguard with two aircraft. Their role is to use multiple state-of-the-art sensors capable of spotting a person the water at up to 40 miles away and can drop emergency locator beacons, communications and first aid equipment to those in danger. The pilots and observers are on stand-by to respond to emergency situations around-the-clock - conducting wide-area searches around the UK coastline.

2Excel already operates counter pollution Boeing 727 aircraft from the base.

The new aircraft will join HM Coastguard's existing helicopter fleet which are stationed at 10 bases around the UK including at Newquay, Caernarfon and Sumburgh in the Shetland Islands. It is envisaged that the aircraft will each complete approximately 1,000 hours of flying every year.



One of the 2Excel aircraft types being operated under contract to the Coast guard.
©MCA



Elbit Systems UK has been selected by the Maritime and Coastguard Agency (MCA) to conduct maritime demonstration flights in the UK using a number of its unmanned aerial systems (UAS) including the Hermes 900. The demonstration flights are designed to demonstrate the advantages of using long-range unmanned capabilities in civilian airspace, with the ability to utilise multiple sensors on a single platform.

Elbit Systems UK will collaborate closely with the UK Civil Aviation Authority, supported by additional UK companies, including Inzpire and Aviation Systems Group.

Compared with the UAS recently operated in the role over the English Channel the 15 metre wingspan, 1.2 Ton Hermes 900 Maritime Patrol is a major military asset. Designed for long-range maritime surveillance system designed for use over water – primarily coastlines and blue water operations. It features maritime radar, an Electro Optic payload, Satellite Communication, an Automatic Identification System receiver and an Emergency Position-indicating Radio Beacon receiver. The Hermes 900 Maritime Patrol enables persistent monitoring of vast swathes of sea and long coastlines with effective advanced search capabilities to support with valuable search and rescue work as well as the identification of potential hazards. Elbit Systems' Skylark I-LEX will also be taking part in the demonstration flights.

Ed: The trial will support the MCA in their existing efforts to provide 24-hour maritime search and rescue services around the UK coast and in the international search and rescue region through HM Coastguard. The prime aim is to determine whether technology has advanced enough to allow the use of large craft like these in a civilian role. No-one has yet declared that a successful and acceptable commercial 'sense-and-avoid' has been achieved. Air traffic crossing the waters surrounding most of the United Kingdom is dense and operating something the size of a small manned aircraft multiplies the supposed dangers of a near miss or collision with a DJI drone many fold.

It has been pointed out to me that the MCA aircraft resources are swelling at a rate only equalled by the apparent decline in the National Police air Service.

With 20 SAR helicopters, plus spares, at 10 bases, plus six assorted fixed-wing, four at East Midlands and two at Doncaster, plus the one or more drones [be that a Tekever or an IAI Hermes 900] and the two Boeing 727's, also at Doncaster, it looks as though the MCA/HM Coastguard now has more aircraft than NPAS. The UK charity air ambulance service with nearly fifty aircraft on call is still the biggest fleet of aircraft in public service in the UK most of them are individually owned.

This may still be an illusion of course as contracts start and end. It depends whether MCA/HM Coastguard

is still using all its contractors. These are the Bristow Group with the SAR helicopters is an easy one, then there is the RVL Group with three Cessna 406's and one Cessna 404 (G-LEAF, G-TURF, G-FIND and G-EXEX) at East Midlands on Fishery Patrols and at Doncaster we have 2Excel with the two (40 years old) King Air B200's (G-HMGA and G-HMGB) plus a 1978 Piper P-31 Navajo (G-SCMR) and a couple of ancient 35 years old Boeing 727's with oil dispersant capability.

The question is who is going to operate an unmanned aerial system for them. The Tekever is relatively small but the Elbit Hermes 900 is a very large machine with only the UK military with any experience of operating 'military grade' drones in the form of Watchkeeper and the MQ-9 Reaper.

Even with all these resources the UK charity air ambulance service with nearly fifty aircraft on call is still the biggest fleet of aircraft in public service in the UK.

BRISTOW: The current operator of the MCA SAR is Bristow Helicopters, at conference held in London last month Russ Torbet – the Director of UK SAR at Bristow Helicopters – gave a presentation on their operation and how they envisage the inclusion of unmanned craft in their future bids for renewal of the contract.

The current Bristow contract has seen Bristow fly ten Sikorsky S92s and eleven Leonardo AW189s under contract to the MCA., and details of the next contract and its requirements are due to come out from later this year. Invitations to Tender are due from 2021.

Torbet told the conference that Bristow are working with Schiebel and will soon be launching trials with two S-100 Camcopter from the SAR base at Caernarfon in North Wales. This project will look at splitting a typical SAR mission into two parts – with the UAS engaged up front for the Search, and then bringing in a helicopter for the Rescue. Torbet quoted a figure of 25% of their SAR airborne time being used in the Search aspect of the mission, and by replacing an S92 or AW189 with the much smaller S-100 Camcopter in that role, cost savings could be made and crews would be less fatigued in what is often a gruelling environment.

In reporting on the conference HeliHub.com commented that they believed the trial would look at the effective operational radius of the Camcopter in the SAR role, the types of call-out that do (or do not) warrant UAS use, and how to calculate the delay time after launching the UAS to determine when the helicopter should follow.

Since early January this year Bristow has had two 2019 Schiebel S-100 Camcopter UAS registered in their name with the UK CAA, appropriately G-UASA (000424) and G-UASB (000425). They are shown as chartered rather than owned. [HeliHub.com]

Ed: There are major differences in size, capability and potential role between the UAS known to feature in the MCA trials and those being proposed by Bristow. The MCA trial craft might represent a more strategic search or patrol sortie not necessarily associated with the SAR mission outlined by Bristow.



No images are known of the 'Bristow' Camcopters but this is one that was on the manufacturers stand at the Singapore Air Show last month. ©PAR



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INDUSTRY

Sky Power GmbH a leading manufacturer of 2-stroke combustion engines and Wankel engines for Unmanned Aerial Systems (UAS) as well as hybrid applications based in Bad Homburg, Germany has received ISO 9001:2015 recertification. The UAS engine manufacturer see the recognition as important to them as an international company. ISO 9001 defines the requirements for quality management. UAS-customers expect the highest quality, due to regulations for the use of UAS in different applications and of course because of the costs of unmanned systems. It has always been important for the manufacturer to meet these expectations ever since the company was founded.

In addition to its own development and production, Sky Power produces all engines in Germany. Customizations, new developments and the expansion of the performance of the internal combustion engines are a further corporate goal. www.skypower.online

As I have noted numerous times in PAN, airships of all kinds have simply not made the grade in the emergency services market. Yet from time to time they put themselves forward as the ideal solution for an as yet under defined airborne emergency services tasking.



The latest craft to come out of the ancient airship sheds at Cardington, Bedfordshire, UK is the Airlander 10 — a hybrid aircraft vehicle with multiple uses. It was first announced by its maker **Hybrid Air Vehicles** as the world's longest aircraft, and since it was rolled out in its latest form on January 23 it is now even longer.

The new production design changes in the announcement that included its new length — increased by 5% — shows improvements in multiple areas of the aircraft, including an increase in its efficiency and functionality, according to its maker.

The company is also currently working on creating electric propulsion capabilities with Collins Aerospace and the University of Nottingham with the hopes that future iterations of Airlander 10, which is projected to be hybrid-electric, will emit 90% fewer emissions.

Airlander 10's maker claims it has "minimal" infrastructure needs and is relatively quiet. It has a 10-ton

maximum payload and can be in the air for five days with a maximum range of 4,000 nautical miles, about 4,603 miles. It can also soar to 20,000 feet maximum.

The manufacturer claims that Airlander 10 has multiple potential applications: defence and security, logistics, luxury travel, maritime and coast guards, and private transportation.

Ed: And on the subject of lighter than air miracle gas bags I happened across an article in a late 2014 edition of PAN that repeated a Straits Times story about the Singapore Air Force. That story claimed that the Government in Singapore had ordered a radar equipped Aerostat which it intends to fly at 2,000 feet above the country as an early warning defence asset that would be cheaper to operate than conventional aircraft with airborne radars [AEW]. Well the promised savings of about \$29M [£15M] in annual operating costs and more in first cost compared to buying in one or more specialist AEW aircraft. I can confirm no-one has reported sighting the high-flying blimp but the RSAF does have some expensive and efficient AEW aircraft. I suspect someone in the RSAF HQ did some research about gas bags in wind. They really do not get on.

At one time police forces scrambled around obtaining spare images of their local area from contacts in police air support. It was very hit and miss – and of course you needed an air unit of your own to avail yourself of images. Then along came h likes of Google Earth except that it was poor for planning purposes and all the images were low resolution and dated. The transfer of air support to NPAS further distanced access to 'free' imagery.

This gave space for private contractors to offer up to date image services.

The latest aerial photography is helping North Yorkshire Police save time and resources and transform policing in the largest county in the UK. Supplied by **Bluesky International** and **Getmapping** under the Aerial Photography for Great Britain (APGB) contract with the Geospatial Commission, the high-resolution imagery is widely used across the force.

Accessed via desktop Geographical Information System (GIS) and mapping software the up-to-date photography is benefiting operations and day-to-day services with applications including missing person searches, surveillance planning, anti-social behaviour management and crime investigations.

The advertisement features a dark blue background with a white and light blue graphic design. In the center, there is a silhouette of a large military helicopter in flight, with several smaller helicopters visible in the background against a sunset sky. In the bottom right corner, there are silhouettes of two soldiers in full combat gear. The text is arranged as follows: 'BMS' in large white letters at the top left; 'VIDEO | DATA SOLUTIONS' in blue letters at the top right; 'REAL-TIME MISSION CONTROL' in white letters on the bottom left; 'ULTRA LONG RANGE DATA LINKS' in white letters at the bottom center; and 'bms-inc.com' in white letters at the bottom right.

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Complimenting existing mapping resources including Ordnance Survey MasterMap data and the recently introduced What3Words geocoding system, the APGB imagery provides additional detail and real-world context.

The APGB imagery is available at a resolution of 25 centimetres for the whole of North Yorkshire with urban centres, such as the city of York, at the ultra-high 12.5-centimetre resolution. Available as an additional map layer within the force's Northgate GIS software, users of the photography include the Force Control Room for the identification of locations for resource deployment, Police Search Advisors (POLSA) to define and manage search areas, Analysts to advise strategic and operational activities as well as Investigators, Emergency and Tactical Planners and Business Advisors.

Applications of the imagery by operational officers and staff also include use by the Rural Crime Teams for detecting, recording and investigating crimes such as hare coursing, egg thefts and badger baiting, Surveillance Teams for planning and carrying out undercover operations, Firearms Licencing checks and use by Neighbourhood Policing teams. North Yorkshire Police also has access to detailed height measurements under the APGB contract. The Digital Terrain or 'bare earth' Models (DTMs) and Digital Surface Models (DSMs), which include ground features such as built structures or trees, are initially being used by missing person search teams and in business planning for the siting of radio masts.

<https://www.bluesky-world.com/> <https://www.getmapping.com/>



Last month the **General Aviation Manufacturers Association** (GAMA), based in Washington presented the 2019 year-end aircraft billing and shipment numbers, during its annual State of the Industry press conference. This relates to GA rather than commercial aviation, but it does cover some of the smaller light fixed wing and helicopters used in emergency services use.

It was a report of two halves. Generally, the fixed wing element presented upbeat figures, but the rotary wing did not. Aircraft deliveries reached a value of \$26.8 billion, an increase compared to \$24.3 billion in 2018. The number of piston airplane deliveries experienced the largest growth among the segments at 16.4%. Business jet deliveries were at their highest since 2009. Meanwhile, turboprop and helicopter deliveries decreased.

The piston engine airplane market in North America accounted for 66.4% of overall shipments. The second largest market for piston airplanes for the fifth year in a row was the Asia-Pacific market at 12.8%.



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Turboprop airplane shipments to North American customers accounted for 50.3% of the global deliveries. The second largest market for turboprop airplane deliveries was Latin America at 16.8%. The North American market accounted for 67.1% of business jet deliveries.

The figures paint a very poor picture for Robinson Helicopter Co, with unit production down 38% in 2019 compared to the previous year. Turnover fell from \$167.3M to \$110.1M, a drop of 34%. Production of the R22, R44 and R66 counted 19, 123 and 54 units respectively in 2019, each figure representing the lowest (or equal lowest) for each model since the deep recession of 2010. The 2018 equivalent numbers were 33 R22s, 209 R44s and 74 R66s. This equates to a drop in units produced for the R22 of 42%, the R44 of 41% and the R66 coming out best with a drop of “only” 27%.

Robinson is the high-volume production supplier, and it remains so, but the numbers speak for themselves and there have been similarly significant fluctuations before. By comparison Guimbal production was down 4% from 26 to 25 units and Enstrom 21% down from 14 to 11 aircraft but neither product is currently in the emergency services market wish list.

Turbine remains king and it is the relative successes of the entry level light turbine products from Robinson, Bell and Enstrom that are of most interest. The R66 performed better than its piston siblings, but was still down 27% from 74 to 54 units, in a market which saw Enstrom 50% down with just four 480s leaving the Michigan factory, and Bell 13% down with 101 505s built against their 2018 figure of 116. It shows that Bell have clawed back some of the market with its 505 after the R66 had a pretty much clear field for years. Airbus dropped out of this lower-end market when they closed the production line of the slow selling H120. MD Helicopters do not provide the independent GAMA with data, but the numbers are low, possible one or two into the US law enforcement market in the last couple of years. [GAMA/

Helihub.com]



In the wider helicopter market **Airbus Helicopters** maintained their eminent position in the market in that they logged gross orders for 369 helicopters in 2019 (310 net orders), combined with its support and services revenue, worth more than €7 billion. The company delivered 332 rotorcraft, including the landmark 1,000th Super Puma to the Bundespolizei, thus maintaining its lead in the civil & parapublic market with a 54% market share in terms of units.

On the civil side, the H125 and H145 remain best-sellers on the market with 130 and 91 bookings in 2019 respectively. [JP]

In recent months Bell in Canada have been flying an experimental 429 with the normal tail rotor system replaced by a four-fan electric motor driven system. The electrically distributed anti-torque system or EDAT aims to offer a system that improves efficiency reliability and at the same time offers reduced noise levels. The trial installation currently looks fairly rustic and manufactured from sheet metal – where a production developed version might be cleaner and lighter.

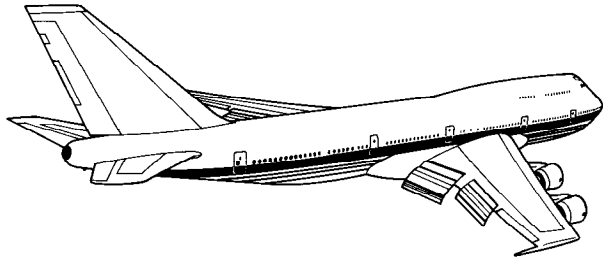
Editor: Some uninformed discussion over the use of four rather than one fan has taken place and it would appear that the combination allows for lighter installed system and redundancy -it is unlikely that a total loss of tail rotor authority would ever take place except in the case of electrical failure. The system probably closes down in cruise, being reliant upon the new enlarged fin area. The current four fan system appears to employ fixed rather than variable pitch fans.

Bell originally conceived the 429 without a tail rotor but nothing came of the NO-TAR like alternative. Bell investigated a ring tail... a few steps away from a Fenestron that might have infringed Airbus copyright before ending with the standard production offering of a rather low set tail rotor that has required the inclusion of protective barriers to protect crew by the rear clamshell doors from danger. This new system therefore addresses several important issues.



Western Power Distribution have the **CarteNav AIMS-ISR** mission software on their Eurocopter EC135 P1 – enabling efficient airborne power line inspections & defect reporting. The system employs screens sourced from Avalex.

Kopter Group has received a production go-ahead for its SH-09 helicopter. The certificate attesting that Kopter has in place qualified personnel, the necessary methods, processes and procedures, as well as a reliable quality system was handed to them by FOCA. It is a major milestone for Kopter making it eligible to produce and ramp up its light single-engine SH09 helicopter. The production model of the helicopter is visually very different to the prototypes so far exhibited and flown.



With airlines shutting down or reducing flights on many routes, **IATA** is projecting that Coronavirus could result in \$29.3 billion in lost revenue for global airlines in 2020. During recent flights in the Far East it was not entirely obvious, but some numbers are down in some countries.

Italy-based **Piaggio Aerospace** has put out a call for buyers. The company is currently under extraordinary administration, a procedure designed to protect the “assets, goodwill and employees” of large insolvent companies. Piaggio Aerospace is involved in design, construction and maintenance of civil and military aircraft along with construction and maintenance of aviation engines. The company reports it currently has approximately €450 million (\$489.5 million) in orders with further agreements in the works for an additional €450 million. The plan is to complete the sale within the year.



File image of a Piaggio ©PAR

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Safran Helicopter Engines opened CAP 2020, its new industrial campus in Tarnos, southwest France last month. Present were Florence Parly, French Minister of the Armed Forces, Geneviève Darrieussecq, Secretary of State to the Minister of the Armed Forces, Ross McInnes, Safran Chairman, Philippe Petitcolin, Safran CEO and Franck Saudo, President of Safran Helicopter Engines. Launched in September 2015 and after a total investment of 50 M€, CAP 2020 represents a significant upgrade to the Tarnos facility. Now with 1,550 employees, Tarnos is the manufacturer's second largest facility. Tarnos is mainly dedicated to the support of in-service helicopter engines and MRO (Maintenance Repair & Overhaul) activities. CAP 2020 will act as the hub for the company's global support network. The new industrial campus comprises three new buildings with a total footprint of 33,000 m²: These are an 8,500 m² parts and component repair shop, dedicated to MRO of turbines from Safran Helicopter Engines' worldwide support sites. An 14,500 m² repair shop for in-service engines and a 10,000 m² office building to manage global support and services.



Boeing has won an \$11M judgement against MD Helicopters Inc. (MDHI) over the rights to its AH-6i Light Attack Reconnaissance helicopter, with an arbitration panel ruling that the aerospace giant owns the intellectual property and right to produce the type, and that MDHI must stop interfering with Boeing's attempts to do so.

The dispute has been ongoing since a 2005 when an agreement was signed that effectively allowed both MDHI and Boeing to independently make derivatives of the former Vietnam era Hughes OH-6 for the modern military market.

Both companies have facilities across the street from each other in Mesa, Arizona, and were originally one company that Boeing briefly owned. McDonnell-Douglas and Boeing merged, and the new owner sold its commercial helicopter lines in 1999 to a Dutch holding company but retained rights to the more lucrative military lines [Apache and Little Bird] and the McDonnell-Douglas name.

After the Dutch entity foundered it was purchased by Patriarch Partners in 2005 and operated as the modern MDHI.

Around this time, Boeing and MDHI made a financial agreement that would provide Boeing to bid for U.S. Army's Advanced Reconnaissance Helicopter (ARH) program in the knowledge that it could call on MDHI to provide parts for. The contract went to Bell but was cancelled in 2008. The type remained on offer by Boeing as the AH-6i, primarily intended for sale to foreign governments. The fuselages of these were to be built by MDHI.

The panel was asked to resolve two primary issues: if Boeing has the right to make and sell the AH-6i Little Bird, and whether Boeing must disclose all improvements it has made to the MELB to MDHI.

Finding in Boeing's favour, the panel is making MDHI pay Boeing's \$4.2M arbitration costs (and its own \$7.4M costs). An agreement that let MDHI supply the basic airframes to Boeing seems to have now evaporated as MDHI has now been ordered to provide Boeing with tooling and one set of tooling drawings by April 30. Whether Boeing will find production of small numbers economically viable remains to be seen.

The panel denied MDHI's counterclaims for an order to force Boeing to share data on its improvements to the MELB, and for \$9.36M in damages to cover MDHI's costs in developing substitute technology to compete in the marketplace.

MDHI sells a few of the MD530/540 helicopters into the US law enforcement market but it has found that in terms of numbers it needs to be supplying foreign military markets around the world and effectively both entities are chasing the same markets with visually identical airframes. This led to claims and counter claims and, it is said, disinformation on the rights of the others being bandied about industry forums and the courts. [Vertical/PAR]



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The Asian region demonstrator Bell 505 JetRanger X N505LQ c/n 65054 was operating limited customer flights from the rear of the facility in Seletar during the week of the Singapore Air Show ©PAR

FEATURE BELL in SINGAPORE

In 2014 Bell Helicopter moved its Singapore based Helicopter Service Centre into a newly built complex at Seletar in the north of the island. Pressure on all aerospace companies operating in the island state was for all of them to move to a single location that offered them an existing runway and improving infrastructure. Seletar Airport was built in 1929 and completed by the British just before the Second World War, when it served as a military base. In 1968, it was handed over to the then Department of Civil Aviation (DCA) to manage. Seletar Aerospace Park includes 160 hectares operated as the airport managed by Changi Airport Group and is home to international aircraft charters, private flights, medical evacuation, maintenance, repair and overhauls as well as freighter operations. The rest of the site is production and maintenance plants occupied by some of the bigger names in the industry.

Textron took over a large double hangar and split operational responsibility between its fixed wing (Beech/Cessna) and rotary wing operations. They are treated as two separate businesses. For Bell the new location was formally certified to perform inspection, testing, repair and modification for current production Bell Helicopter aircraft under the regulatory authorities of Singapore, Thailand, Indonesia and the Philippines.

In 2014 PAN was able to visit the new facility but at the time it was still winding up so there was little to see and understandably photography of the few incomplete rooms and hangar was declined. There was more



Bell supplied this image of the front of the facility in 2014.

to see and report on the Bell marketing efforts at the ongoing Indo Defence 2014 in the Indonesian capital, Jakarta.

I commented at the time that Bell Helicopter were probably obliged to exhibit in Jakarta simply in order to make a break through into the wider market – but others including Sikorsky shied away – there was after all the Dubai Helishow operating on the same dates a few thousand miles further north. The event was the first for their new regional manager Mike Greene, he arrived from Texas in the summer and took over the Bell facility in Singapore. He was still assessing the wider sales prospects locally with the help of his sales team. Their main task was to loosen the iron grip of Airbus Helicopters on the wider Indonesian market, Bell were faring better in the then healthier offshore oil market.

The 2014 PAN visit was at the invitation of Mike Greene and he outlined the plans in place for the Singapore facility to take on a role of training the growing need for engineers in the Bell product as support to the marketing team. It was very much a work in progress and the paint was barely dry. In 2014 the airframe parts set aside for students to dismantle, including rotor assemblies and gearboxes, were crammed into corridor like side rooms, quite usable but not yet part of the training plan. Most of those had probably been in the training school at Fort Worth before being passed on to Singapore, so are of an uncertain age. They are still there but now supplemented by additional airframes and other instructional aids. Despite the lack of 'real time' images it was a useful introduction to the facility.

In July 2015 Bell Helicopter announced it had gained the approval of the Civil Aviation Safety Authority (CASA) of Australia, to perform maintenance and customization on all Bell 412 models that are registered for operations in Australia. The CASA certification marked an important milestone in Bell Helicopter's strategy to increase our support level throughout the region and drive business to the new facility. By early 2016 the facility in Singapore had successfully completed 5,000-hour inspections and customization for two Bell 412EP's for a private customer located in Australia.

As with most such facilities keeping tabs on the day-by-day flow of work through the facility relies on the activities of outsider interest. In the case of Seletar and Singapore the authorities are less than welcoming to outsiders and every image taken is best framed to include anything but the subject. It is known that the airframes passing through the facility are repeat visits of aircraft on maintenance and new airframes being prepared for service. The latter includes work on a significant order for Bell 429 helicopters for the Royal Thai Police.



Gearbox and MRB assembly with a backdrop of a Bell 407 ©PAR

In the wake of the less than exciting 2020 Singapore Air Show PAN was again invited to see the Seletar facility and to see how the previously cramped training facilities had evolved into a new larger part of the complex.

In addition to the training aids represented by the airframe and power train modules there are now several non-airworthy airframes to provide hands-on experience to the students. As originally set up there had been a single Huey derivative 412 helpfully identified but anonymous as N412BTA, but that is now joined by a



Three Bell airframes in the training facility include a 429s, 505 and 206. ©PAR

206, a 407, 429 and 505 JetRanger X. All have seen better days but have had their identities thoughtfully masked to cover whether their journey there was caused by accident or age. I am aware that the orange 505 was a very early development model, C-FTVI 65002, and was previously a training tool at Fort Worth. The identities of the others were less obvious.

Some of the airframes were surrounded by maintenance access towers but mostly they were devoid of engines, training is primarily aimed at servicing the Bell product not those of other manufacturers. As a prime capability student can remove, disassemble and rebuild the gearboxes and rotor assemblies and reinstall them in the airframes. As most of these items have been receiving the attention of the students since at least 2014 no-one is prepared to even guess how many times they have been taken apart.

At the time of the visit a training course for police mechanics was in progress but not using the mechanical facilities. Course dates are flexible and currently designed to fit in with the needs of the individual customers.

Where the camera was not allowed to roam included the customer hangars of both of the Textron elements. The fixed wing side was near full of a variety of large bizjets, a similar number of smaller helicopters on the Bell side meant there was space enough for more. Included in the customer aircraft line up were a fire fighting Huey, a green 407 airframe newly arrived and two Bell 429s due for delivery to the Thai Police shortly. This pair are 3209 and 3210, the last of a ten airframe order that commenced deliveries in 2017 and was famously introduced to the world at large with its part in transporting the Thai cave children to medical facilities after local and foreign divers evacuated the boys and their coach from the flooded Tham Luang cave complex, where they had been trapped in June and July 2018. The latest pair are both configured in the EMS role.



The Singapore facility plays a small part in the support of the New Zealand Police Bell 429s.

ACCIDENTS AND INCIDENTS

29 November 2019 Bombardier LearJet 45 N126EC. Air ambulance of Guardian Flight, LLC, South Jordan, Utah, USA. Aircraft in cruise flight with patient on-board when approximately 150 miles from landing airport in Anchorage, Alaska, USA, when the crew noted a Low Engine Oil Pressure indication on the left engine. The engine was shut down. They continued the flight to Anchorage airport with an uneventful single engine landing. After landing and securing the aircraft, the pilots conducted a preliminary inspection of the aircraft and discovered a large amount of oil on the exterior of the left engine cowling, this was traced to a failed o-ring of the engine oil tank filler cap, which allowed the oil leak. [Concern]

1 February 2020 Leonardo AW139 JA139F. Fukushima Prefectural Police helicopter. Helicopter transporting a medical team and organ donation cargo crash-landed in Koriyama, Fukushima Prefecture, north-eastern Japan, leaving all seven people on board injured, including four seriously. Aboard the helicopter

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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 Airbus Helicopters 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, or such information may have been lost. Such images may be marked 'File' or 'PAR Collection'.

“Azuma” were five police officers and two medical workers. A 59-year-old police officer and a 39-year-old doctor were among the four seriously injured. The helicopter appeared to lose tail rotor authority and spiralled downward from a cruise flight to crash in a rice field and turn over on its left side. The impact was relatively low and there was no fire. The helicopter had departed from a hospital in the Fukushima city of Aizuwakamatsu bound for Fukushima Airport. Parts subsequently found along flight path.



11 February 2020 AgustaBell AB 206 JetRanger I-VFAE Vigili del Fuoco (National Fire Corps), attached to the 72ND Wing, Italian Air Force. On a training flight from its home base at Frosinone when the pilots, an instructor of the Italian AF and a Fire Corps' trainee pilot, had to make an emergency landing in a field. Landed upright with some damage to the skid gear.

13 February 2020 Cessna T210M Turbo Centurion II C-57. Carabinos de Chile had fuel problems and was scheduled to land at Santiago-Eulogio Sanchez-Tobalaba Airport (SCTB). The crew was ordered to divert to Arturo Merino Benítez Airport (SCL/SCEL), where it landed on runway 17R, collapsing its main landing gear and veering off the runway. No one on board was hurt and the aircraft sustained relative minor damage.

27 February 2020 Leonardo AW139 9M-PMC Polis Diraja (Malaysian Police). The helicopter crashed in the General Operations Forces Camp (4th Battalion) Jalan Air Panas, Tawau ending up on its left side with MRB wrecked, fuselage structurally intact, but no fire. The six policemen on board escaped with one having unspecified injuries. The helicopter was flying from Tawau Airport to the camp. Scenes from crash show aircraft down in thick vegetation and a damaged metal utility pole. [Pprune/ASN]

SAFETY

Last month Safety Directive (SD) came into force to promulgate the use of cockpit and crash recorders by operators conducting State emergency services Public Transport (PT) helicopter operations in the UK. On November 29, 2013, an Airbus Helicopters (formerly Eurocopter) EC135 T2+ helicopter being operated by Bond Air Services Limited in support of Police Scotland crashed into the Clutha Vaults Bar in Glasgow. The three occupants of the helicopter and seven people in the bar were fatally injured. Eleven others in the bar were seriously injured. 1.3. The Air Accidents Investigation Branch (AAIB) conducted a comprehensive investigation into the causes of the accident and released its report 3/2015 in October 2015. Arising from its analysis into the causal factors, it made seven Safety Recommendations (SR); three were directed to the European Aviation Safety Agency (EASA) for action and the remaining four to the Civil Aviation Authority. Most of the SRs concern the provisioning and installation of crashworthy flight recording equipment meeting acceptable international standards.

The latest directive is an update and changes the compliance dates. The dates have been amended to reflect continuing challenges faced by the affected operators with the availability of equipment and progress of the procurement and implementation programmes. The extended period will assist in alleviating the need to withdraw line aircraft from UK emergency services cover during the process of upgrading. As the equipment focusses on pilot actions and cockpit management leading up to an accident it includes airborne image recorders that capture general cockpit views including crew activity. As no similar equipment is currently required by air operations regulations thought has been given to ensuring the footage is not misused. Operators will be required to implement procedures to control the use of any recordings in a way similar to that used for Cockpit Voice Recorders (CVR). Likewise, following any accident or incident, it would be necessary for the investigating authority to ensure that the information is not used for purposes other than the safety investigation.

As reported in PAN last year the death of two on-duty police officers on the ground was nearly missed. They died as an aside in one of the most bizarre accidents in policing. Neither was aircrew but they were on duty in an aviation environment.

A Summit Air Let L-410UVP-E20 Turbolet impacted a Manang Air Eurocopter AS 350B3e helicopter (9N-ALC) during a takeoff attempt at Lukla-Tenzing-Hillary Airport in Nepal on April 14, 2019. The aircraft and helicopter were destroyed. One helicopter (Shree Airlines Eurocopter AS 350, 9N-ALK) sustained minor damage. The copilot of the Summit aircraft and two police personnel on the ground at the helipad sustained fatal injuries.

The L-410 was repositioning to Ramechhap after flying passengers and cargo to Lukla. The captain taxied



the aircraft to threshold of runway 24 and handed over control to the co-pilot. Within 3 seconds of the take-off roll the aircraft veered to the right and exited the runway, travelling about 43 ft across the grassy part on right side of runway 24, before striking the airport inner perimeter fence. It then continued to skid for about 43 ft., hit the two police officers standing beneath its right wing and engine before crashing into the upper helipad. It struck the turning rotor blades of 9N-ALC. The moving rotors cut through the cockpit and the helicopter toppled onto the lower helipad 6 ft below. The left-hand wing of the aircraft broke the skid of another helicopter, 9N-ALK, and came to a halt with 9N-ALC beneath its right-hand main wheel assembly. Lukla Airport is located on a mountain at an elevation of 9334 feet (2845 m). The runway is 1729 ft long (527 m) with an 11.7% gradient. Takeoffs must be performed from the downsloping runway 24. The helipad is located to the right of the runway, about 100 meters past the threshold.

It was concluded that the probable cause of the accident was aircraft's veering towards right during initial take-off roll as a result of asymmetric power due to abrupt shifting of right power lever rearwards and failure to abort the takeoff by crew. There were not enough evidences to determine the exact reason for abrupt shifting of the power lever. Contributing Factors included the relative inexperience of the co-pilot in taking control to initiate correction. The PIC's attempted corrections of adding power could not correct the veering and the subsequent application of brakes further contributed to the veering towards right. One year on from the accident we do not know the names of the two officers.

For years, the NTSB (National Transportation Safety Board) and EUROCAE (European Organization for Civil Aviation Equipment) have required professional crash-proof image and data recorders for light aircraft and helicopters. The new update of EU regulation ED-155 forces the issue.

Hensoldt Sensors GmbH and Kappa optronics GmbH, have joined forces to present a lightweight, all-in-one solution for comprehensive crash recording. This fully ED-155 qualified system consists of the Kappa FE 320 LCR camera, combined with the lightweight SferiRec® LCR recorder. Flight-data is stored together with high-quality cockpit voice and video data in crash-protected memory.

The system is EASA approved. A Supplemental Type Certification (STC) for the Cessna Grand Caravan utility aircraft is upcoming, with more to follow. Numerous OEMs at the HAI Heli Expo in Anaheim CA (USA) showed great interest, indicating that the system's size and performance are exactly what the industry had been looking for. [Kappa]



Ingolf Popel (Kappa) and Thomas Ilzhöfer (HENSOLDT) © Kappa optronics GmbH



UNMANNED

After one year of police officers flying about a dozen DJI Mavic Airc to fight crime and respond to emergencies, the Santa Cruz County Sheriff's Office has released its first report on their use. The annual drone use report is part of the Sheriff's Office transparency policy that explains the agreement between the police and the community on how the unmanned aerial systems are allowed to be used.

The Sheriff's Office UAS is comprised of 12 drones, a system costing about \$35,000 for the drones, batteries and other equipment. One of the vendors for the drone technology is Enterprise UAS, a 5-year-old company based in Chatsworth.

In 2019, the UAS was deployed 21 times for service, including search and rescue operations, suspect searches, crime scene documentation, high-risk incidents involving firearms and search warrants.

The UAS Team consists of 14 members of the Sheriff's Office, included deputies and a sergeant. Of these team members, 11 are certified to fly drones in a commercial capacity and three team members are in the process of getting their licenses, according to a Sheriff's Office press release. The UAS Team trains monthly on coordinating drone deployments, critical incident response, how to use visual observers and to receive updates. In order to use the UAS, the team has to adhere to constitutional and privacy rights and regulations from the Federal Aviation Administration. [Santa Cruz Sheriff]

Ed: With 14 members undergoing extraction from street duties for monthly training of at least a few hours each to produce just 21 deployments it would seem that in this case there is little chance of good value being demonstrated.

On January 14, for the first U.S. Democratic debate of the year held on Drake University campus in Des Moines, Iowa, CNN deployed a Elistair tethered drone system with the support of Vector Solutions, product reseller and tether expert, to provide persistent aerial video transmission of the area for the newscaster CNN.

Every four years, the Presidential Candidate debates attracts tens of millions of viewers (69 million on average in 2016). As an important political event, it is the most watched television programme in the United States after the Super Bowl. On January 14 and 15, the live broadcast of the first debate of the year attracted 7.3 million viewers.

The use of UAVs has become essential for these media organizations who want to offer aerial images to complement ground shots. The benefits of Elistair Ligh-T tethered station lie in the unlimited flight time it provides to UAVs, and its compatibility with most drones on the market. Users of the tether can now broadcast a continuous stream of aerial images to their viewers, without the need to land to change the batteries.

During the debate CNN Air flew its DJI M210 tethered at a height of 60 metres for 8 hours on the first day and 5 hours the second day. The images were instantly fed to the control vehicle and then live transmitted via a 4G link to the production team.

One of the UK's leading drone experts has urged British property owners and business leaders to offer under used land for drone testing, to help accelerate the rate of growth of the UK drone industry, in the face of what he described as 'an emerging 'bottleneck' to growth'.

Robert Garbett founder of the UK Drone Delivery Group, which is the first industry initiative to provide guidance on the steps required to enable accelerated commercialisation of the UK Drone Industry, stated "There is a current unnecessary 'bottleneck' in the evolution of the drone industry and this primarily lies in the lack of controlled testing locations which can provide trial areas and safe environments to accelerate the development of drone technology, help to shape its standards, and ensure appropriate but non constricting regulations".

He commented "The British Government has played a constructive role to date and the UK is a world leader in drone technology... but to stay ahead in this fast moving game, then business, local authorities, police, fire & rescue services and even members of the public, must work together in a partnership of participation and cooperation.

HOME OFFICE

SECURITY & POLICING

Farnborough International Exhibition and Conference Centre, Farnborough, Hampshire

3-5 March 2020

Examples of desirable drone technology testing locations include not only large airports and aerodromes that may already be approved by the Civil Aviation Authority, but also forests, remote coastal areas and ports, through to residential areas and other dense urban environments. Testing will need to include everything from simple potential drone tasks such as parcel delivery, to much more complex applications such as smart motorway monitoring, law enforcement rapid response and search and rescue."

The economic benefits offered by drone technology are estimated to be massive, with significant growth expected to accelerate across surface, underwater, air and space, as well as emerging hybrid drone applications. In November 2019, analysts at Barclays predicted that the commercial drone market could grow tenfold from \$4bn in 2018 to \$40bn in five years, resulting in efficiency cost savings of some \$100bn... and these predictions relate to solely air drones. If you add on the fast-growing possibilities for surface, underwater or space drones then the potential growth is substantially greater.

Diamond Aircraft Austria has completed the Factory Acceptance Test for two DA42 Special Mission Aircraft for delivery to its long long-term partner Aurora Flight Sciences. These aircraft are the first DA42 Special Mission Aircraft painted in a "passive surveillance grey" paint scheme, which is a direct result of Diamond's new composite manufacturing process and a new resin system, which allows the company to produce nearly every colour except black. The aircraft itself is fully pre-configured in order to allow Aurora to convert the platform easily to their Optionally Piloted Aircraft (OPA) "Centaur". The aircraft can be configured with mission equipment customized for different mission requirements. In the nose section, the aircraft is able to carry Electro-Optical/Infra-Red cameras up to 15" gimbals and 65kg. The belly section is designed for radar or communication systems. Live data from the aircraft can be transmitted in real time via a Line of Sight or Beyond Line of Sight link to any designated ground station. The Centaur combines manned and unmanned aircraft capabilities, including three modes of operation:

Manned
Unmanned
Augmented

Developed from Diamond's DA42 Special Mission Aircraft platform, it offers a versatile, flexible airborne sensing platform with exceptional range, high efficiency and extremely low life cycle cost for a range of mission types including intelligence, law enforcement and science.

It's an excellent solution for operations over controlled airspace, utilizing the high degree of safety and redundancy required for manned aircraft, with the payload capacity and flexibility of a large unmanned system.

PEOPLE

Helicopter Association International (HAI) is deeply saddened to announce the passing of Matthew S. Zucaro, the immediate past president and CEO of the association.

"Matt was one of a kind in our industry," says current HAI President and CEO James Viola. "Helicopters were part of his life, beginning with his US Army service in Vietnam. Throughout his career, he made safe helicopter operations his priority, and we are a better, stronger, and safer industry today because of his efforts on behalf of rotorcraft. Speaking on behalf of our industry, we have lost a good friend who will be missed. We extend our deepest condolences to his wife, Doreen, and his family."

A HAI member since the early 1980s, Matt was elected to the HAI Board of Directors in 1987 and served as chairman in 1991. He was named president of HAI in 2005 and retired in January of this year. During HAI HELI-EXPO 2020 in Anaheim in January, Matt was honoured with the FAA's Wright Brothers Master Pilot Award, recognising his 50 years of professionalism and skill as a pilot.

Among his many accomplishments, Matt may be best remembered for a column he wrote for ROTOR magazine in 2013, encouraging pilots to "land the damn helicopter" in situations where proceeding would endanger themselves and passengers. From that column, HAI's Land & LIVE programme was born, saving countless lives around the world—a fitting legacy for a man who was passionate about safety in the industry he loved so much.

As mentioned, Matt was present at the recent HAI Heli-Expo in Anaheim and appeared to take a full and active part in many of the events including the *Salute to Excellence Awards* only a month before his passing. That lunch was perhaps his last public appearance. Apart from using an electric mobility cart in recent years to get around the often-giant venues, outwardly he appeared healthy enough to the end.



MOVE ALONG THERE

There have been remarkably few airborne emergency services incidents fit to fill this space in the last month—or more likely I missed them in my travels. That said on my travels there were several photo opportunities presenting themselves that border on the infantile so I will use those instead.

Over in Anaheim I was some what confused to find that the vast convention hall filled with miles of oversize carpeted 'corridors' beautifully air conditioned by giant coolers sought to exhort the visitors to save energy by not using the dozens of perpetually moving escalators. Alongside the empty rattling stairways was a sign asking visitors to seek elevators [lifts] and non-moving stairs.



Covic 19 could not be missed from the line up of course, and there are plenty of suitable (or unsuitable) images on offer to choose from.

As I became more aware of the hysteria being whipped up about another strain of flu that has killed virtually no-one in a world population of nearly 8 billion it was possible to feel sorry for unfortunate business owners who had not only made a bad choice in naming their bar but had then made a point in stocking that bar with the brand of beer that both bar and beer were named after. Not sure on the Ass either. This particular bar sits on the edge of the city in the popular Custom House district of Singapore but it was totally empty. They would have been more successful if they had been selling sanitizing gel or wipes—items long since missing from the shelves of pharmacies in the region.

It shows my age when I thought Corona was a brand of sweet fizzy drinks delivered door-to-door as a special treat for children in the 1950s and 1960s or a cigar. Still I managed to find a few Corona beers elsewhere in Singapore and they are not bad at all, just clearly not the name of the moment. It can only get better.

EVENTS

Sustainability will be in the air for this year's British Business and General Aviation Association (BBGA) conference and AGM at the Luton Hoo Hotel complex on 5 March – with politician and TV personality



Stanley Johnson as keynote speaker. Booking is now open for the event, which will be followed by the association's spring golf day on 6 March. Johnson, former Conservative MP for Wight and Hampshire East is also an author and has emerged as an expert on environmental and population issues – not to mention being the father of the present prime minister. With the conference titled 'Flight to Sustainability', the focus will be on both the environmental aspects of the subject for the business and general aviation sector during the morning and business sustainability in the afternoon. Delegates are promised an "extensive and interesting" mix of speakers to address a range of subjects including future jet fuels, illegal charter and the future sustainability of the UK's airports and airfields.

The main conference will end with a session headlined by the British Antarctic Survey on how business aviation acts as an enabler for climate change research.

Delegates are asked to book online – go to the website and follow the link to BBGA Conference 2020.

<https://bbga.aero>

FUTURE EVENT

Spending on police training, equipment and connected technologies in the next three years will accelerate as the UK Government delivers on its pledge to invest £1bn and put an additional 20,000 officers on the streets. To showcase the latest innovations available for the police sector, The Emergency Services Show has launched Future Policing: a new feature which will enable police visitors to see, handle and experience the latest equipment and technology while discussing their requirements with leading suppliers.

Free-to-attend, The Emergency Services Show 2020 takes place from 23-24 September at the NEC in Birmingham, UK. The show brings together all disciplines from the emergency services sector to discover innovative technologies and operational solutions, share experiences and unite in a collaborative approach to public safety.

Future Policing, sponsored by Audax, has the full backing of the Police Federation of England and Wales and will feature a Microsoft Partners Policing Pavilion as well as a two-day CPD-accredited high-level conference. Showcasing a senior line-up of speakers, the conference's themes will include: Policing Vision 2025; policy and transformational change; changes in crime: violent crime, drugs, online crime; a policing model out-paced by technology; successful collaboration between emergency services; and creation of a Home Office Technology Innovation Hub.

Future Policing is supported by an Advisory Council, chaired by Lord Hogan-Howe, the former Commissioner of the Metropolitan Police Service. The council will feature representation from key police sector bodies, including: The Home Office, National Police Chiefs Council, Police ICT Company and the College of Policing, among others.

Lord Bernard Hogan-Howe said, "I am delighted to Chair the Advisory Council for Future Policing at The Emergency Services Show. With £1bn of additional funding committed to put an additional 20,000 officers back on our streets, something I have actively campaigned for, the timing is perfect to pull together government, agencies and operational stakeholders."

"Future Policing offers a unique opportunity for police officers of every rank as well as professionals working in the security, custodial, counter terror and public safety industries to collaborate with leading suppliers and representative organisations. This direct access to technological innovations, expertise, and support services is key to meeting the demands of future policing in the UK and abroad," adds David Brown, Event Director, The Emergency Services Show.

The Emergency Services Show is now in its 15th year and is the UK's only annual event for all emergency services responders, with a keen focus on emerging technology for the sector. The show also offers over 80 free CPD-accredited seminars and a host of live demonstrations. Mental health and wellbeing are set to feature strongly again this year with the return of a dedicated Health & Wellbeing seminar theatre.

Exhibiting companies include leading names in first response, communications, IT, protective clothing and uniforms, body-worn video, medical supplies, drug testing, vehicles and fleet, vehicle equipment, drones, outsourcing, training, community safety and station facilities.

In the networking hub of the show, The Collaboration Zone, visitors can also meet with a range of charities, voluntary groups and NGOs which can offer practical, emotional and sometimes financial support.

Entry to The Emergency Services Show exhibition and seminars (all of which are CPD-accredited) as well as parking, remains free. It takes place from 23 to 24 September at the NEC in Birmingham, UK. To register for free entry visit www.emergencyuk.com

Companies and organisations wanting to book a stand at The Emergency Services Show 2020 should contact: David Brown on 020 8947 9177 or email: davidbrown@brodenmedia.com

PAvCon FUTURE

Although companies including Avalex, Axnes and Rocket Route had indicated that they were intending to be in Berlin for the 2020 PAvCon Europe at the time of the Helitech Replacement show in Farnborough during November 2019 it was a close run thing between Axnes and a new attendee from Germany as to who was going to sign up first. In the end it came down to invoices versus receipts!

Munich based LICO Stahl- und Kunststofftechnik GmbH's signed and paid on January 3, probably something of a record. Their products are high-quality machines and accessories with outstanding functional characteristics and a proven high degree of usability, compared to others in the industry. Thus, thanks to their unique performance characteristics, our products always offer our professional customers the desired solutions for their specific area of use.

They supply the aviation and automotive industry with perhaps their aviation star turn being the Heli-Loader 3600 a helicopter lifting device that must challenge the TLC Helilift in flexibility.

The Heli Loader 3600 enables a helicopter weighing up to 3.6 metric tons to be moved without a towing vehicle. A single operator can easily transport the helicopter. Thanks to precise handling, helicopters and other aircraft can be manoeuvred to the desired position even in cramped hangars. Because it is simple and compact to handle, the Heli Loader 3600 is very safe and also has a wide variety of integrated security systems. This minimises the danger of accidents and consequent damage to the helicopter. Its high-performance capability and variable speed control up to 6 km/h mean that it has no problem covering longer distances. Even minor inclines and uneven ground are no obstacle for the Heli Loader 3600, which can easily get over them thanks to its two separate lifting devices controlled by a steering drawbar or optional remote control.



The LICO Stahl booth at the recent HAI Heli-Expo in Anaheim California.
©PAR

LICO Stahl have been in the business for 30 years developing and producing ground support equipment for helicopters, especially for Airbus helicopters.

They count among their customers Airbus, the German Bundeswehr, Babcock, ADAC/ALT, DRF and German helicopter operations. If you want to know more ahead of the event contact Thomas by e-mail on thomas.kabilka@lico-solutions.de or check out their website www.lico-solutions.de



Enquiries and bookings for this year's PAVCon Europe to be held in the police headquarters in Berlin are burgeoning -if somewhat delayed by the editor being in the USA and Singapore over the last month. The bookings have been made but the paperwork needs to catch up with the demands expressed last month.

In addition, alterations need to be made to the three-day programme. Day 1, the Monday, is traditionally a mix of police only instruction aimed at pilots and air observers as well as the day that the exhibitors arrive to set up their spaces for the open conference and exhibition over day two and three.

Monday June 8 **Aircrew Tactical Session**, a day similar to that undertaken in Amsterdam last year. As the name implies it is a day for Aircrews working in Law Enforcement and for street police. This day will all be about tactics.

This year we again welcome Texan Lt. Clay Lacey as the lead instructor for the Monday, he will be joined by several European and US instructors in support.

Other than sponsoring and promoting this day it has nothing to do with PAVCon Europe management, it is purely a police activity with timings they have arranged. Last year this event was size restricted by the available room at the police air unit. This year there is significantly more space available to the planners of this police only section of the event.

FLY SAFE IN 2020



On the afternoon of the same day the vendors/sponsors can start to put together their table top booth space etc. in time for the main two-day event to start the following morning — Tuesday 9 June 2020.

Lead sponsor this year is again **Leonardo** and as soon as the contract is confirmed the website and documentation will reflect their major part in supporting the event and that of long standing supporters Bell and Airbus Helicopters. It is all in the detail and the signatures.

With the activities on days two and three [Tuesday and Wednesday] PAVCon Europe sets up the broad programme for a range of speakers to ensure that the larger number people attending get their tea and coffee and meal breaks set at a time that works for the local management and catering. That is a job to be address this month by another site visit to Berlin to negotiate with the staff at Schöneberger Ufer 1, 10785 Berlin.

Other technical issues will need to be addressed as the Victorian building has relatively few power access points and they are often in the wrong place. The floor plan reflects this dearth of power access points but they need to be individually checked.

The closing dates for the special hotel discounts draw ever closer so if you wish to stay at the Grand Hyatt Berlin, grandhyattberlin.com the Grimm's Hotel, Potsdamer Platz www.grimms-hotel.de the Holiday Inn Express Berlin City Centre located at Stresemannstraße 49 now is the time to get your booking made. Under the PAVCon Europe deal the they are quoting rates that include breakfast. There is a city tax payable on each but that will be waived if you state that the visit is for business purposes. As ever you will need to know the detail so check out the Event Guide at the website.

One potentially looming problem that will have to be kept an eye on is that Corona Virus and its possible effect on travel and gatherings. It does not matter that the numbers under health threat are relatively small, in the end it is the public and political perception that will control the ultimate fate of the event.

NEW SHOW ANNOUNCED

In November a new helicopter related event is to be held in Cologne, Germany.

The European Helicopter Association (EHA) and the European Union Aviation Safety Agency (EASA) have launched a new annual conference and trade show called **European Rotors**, to be held from November 10 to 12, 2020 in an inside venue in the City of Cologne.

Already the event has secured the backing of the major helicopter manufacturers, Airbus Helicopters, Bell and Leonardo and negotiations continue to provide other content at this new venue. Police Aviation Research will be backing this event and hopes to be able to announce the extent of that support shortly.

THIS WEEK

3-5 March 2020 **Home Office Security and Policing Event**, Farnborough International Exhibition and Conference Centre, Farnborough, Hampshire UK. The official UK Government global security event, offering a world-class opportunity to meet, network and discuss the latest advances in delivering national security and resilience with UK suppliers, colleagues and Government officials. The three-day event is attended by senior Government officials and it is planned there will once again be a line-up of senior keynote addresses led by Ministers. Over 300 exhibitors will showcase their latest products and services, along with a variety of product demos, panel discussions and immersive experiences addressing security and law enforcement challenged faced in the UK today. <https://www.securityandpolicing.co.uk>





PAvCon 2020

Berlin, Germany, June 8 - 10, 2020



The Networking continues

www.pavconeurope.eu