

# Police Aviation News

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Show Number—Farnborough and ALEA Phoenix 2014

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## A.L.E.A. PHOENIX



## FARNBOROUGH AIR SHOW UK



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*This is a Special Edition of Police Aviation News providing the Editors viewpoints on some of the exhibits to be found at the 2014 Farnborough International Air Show. The UK based show could only be visited for one short day and therefore does not attempt to offer more than a brief view on that very large event prior to jetting off to the US for the whole of the ALEA event.*

## FARNBOROUGH 2014

Pressures created by trying to be in both the UK and the USA at the same time resulted in only one day being allocated to take in the basics of this year's premier British air event in Hampshire.

This year's event may well be best remembered more for the politics rather than any individual advance in orders or technology. The UK Government restricted access of the Russian delegates and visitors to visas, we may argue whether it was intentional and related to the situation in the Ukraine or a case of understaffing, the outcome was the same. The result was that not many of the Russian staff did make it to Farnborough and these were duly withdrawn and as a result Russian exhibits soon closed up and sat forlorn and empty except for a few far from welcoming 'security' personnel making sure nothing was pilfered. As will be evident later in this report, the two concurrent events set thousands of miles apart were to be drawn together in a most unfortunate manner.



The view from the Press Tent ©PAR

**COVER IMAGE:** Perhaps the bringing together of two world class events. An image issued at Farnborough by L-3 Wescam and clearly relating to the other part of this report starting on page 13 — the ALEA in Phoenix it illustrates the MX-10 sensor fitted to the Bell 429 N429MJ operated since late last year for Flathead County Sheriff by Two Bear Air in Whitefish, Montana. This Bell is also equipped with the Trakka searchlight. [www.twobearair.org/flathead-county/](http://www.twobearair.org/flathead-county/) and Farnborough International images.

Elsewhere there was plenty to see if time could be found to seek it out. Fortunately it seems that some elements of the industry supporting the airborne emergency services were of a like mind to the absent Russian's and this resulted in a none too unusual lack of 'material' from the PAN market sector.

Farnborough has tended to be lean pickings for helicopters and smaller ISR aircraft for many years – the event is mainly about airliners and military craft – but it seems that the Airbus Group and its Divisions were doing little to demonstrate the full length and breadth of its helicopter subsidiary Airbus Helicopters where EADS [the precursor] was actually going the other way in 2010 and 2012 in building up a Eurocopter presence from virtually nothing. Notwithstanding my limited time on the day it seemed that the Airbus claim to have presented a wide array of cutting-edge products and emerging technologies that are shaping the future of the aeronautics industry at the Show seemed with little substance simply because they failed to take and display any full size examples of the helicopters at the show. What they did display was fetchingly shrouded behind frosted glass threateningly guarded by prominent and badly placed 'special invitation' only signs—nothing new there then. By the time I had worked out what was meant I had lost interest. Still the UK Prime Minister was welcome enough. Significantly even the camera ship recording the event for the organisers was a Bell 206.



A number of large Airbus aircraft were on static display, including the new A350 XWB, although that has been seen before in these pages this year at Singapore and never likely to be a craft of major interest to airborne law enforcers except as a means of transporting the odd long distance prisoner. The A350 XWB was part of the flying display together with the military A400M and C295 military airlifter's. The Group also showed its smaller E-Aircraft innovations in the field of propulsion systems, the E-Fan, an all-electric general aviation training aircraft exhibited with the hybrid electric motor glider Diamond DA36 E-Star 2 but none of these have a direct relationship to the PAN market sector just yet.



There may not have been any helicopters at the show but Airbus did seek to promote its rotary craft models and their place in global law enforcement marketplace – primarily the twin-engine EC135 T3/P3 and EC145 T2.

With a civil market share of 49%, Airbus Helicopters remains market leader in the UK as well as in each civil market segment (EMS, Public Services, Private/Business Aviation, Commercial, and Oil & Gas) and the situation might therefore be seen as little more than cost savings in show logistics - or perhaps a dose of complacency.



Among the news items not relating to the airliners was an update on the current position of the intention to flight test a Diesel engine in the near future. A high-compression engine currently is completing its test bench evaluations at Airbus Helicopters, and will be installed on an EC120 for ground-based testing. A scale model of the engine was displayed on the Clean Sky initiative's exhibit.

If you discount the airliners, military hardware and big sticks that are at the core of Farnborough it is a case of concentrating on other helicopter manufacturers or the fixed wing sector like Dahar-Socata presenting a demonstrator wing box for business aircraft made entirely of composite materials. The 14-metre long part is a product of the ECOWINGBOX R&T project.

This programme was born out of a need on the part of aircraft manufacturers to reduce the weight and drag of their aircraft and to minimize their environmental footprint. At the same time, they wanted to make advances in wing design, which was a question that was proving hard to address using metal manufacture, and to do all this at an optimised cost. To meet these needs, in 2009 the manufacturer launched the ECOWINGBOX project, to design & manufacture a composite wing box and to assess its benefits compared to a metal design.

Five years later, the goals of the project have been more than achieved: the weight of the part is 25% less and manufacturing costs are 10% less than for a metal wing box.

The manufacturer acquired out-of-autoclave technology and automated it; assembled the part by bonding and/or riveting, according zoning and load distribution; designed and performed bending / torsion tests on a 2.5 metre section of the wing; automated machining of large parts and assembled the 14 metre wing.

The resulting exhibit in the halls may not have attracted great crowds but it did offer hope for the future of aircraft manufacturing in France in the wake of the loss of such as Reims. The activities of Dahar-Socata and such as RUAG with the extensive structural reworking of the Dornier 228 contrast with the Britten-Norman static display in demonstrating lessons apparently not being learned in certain quarters of industry. BN may have been fortunate in the last year in that they have sold a few examples of their useful but venerable aircraft – including a BN2-4000 Defender to the Police Service of Northern Ireland but generally the progress of this manufacturer in the law enforcement field has been ever negative.

In the static at Farnborough this year was the aircraft formerly operated by the Greater Manchester Police, at the last Farnborough in 2012 a similar aircraft operated by Hampshire Police signified an earlier instance of UK police turning its back not on fixed wing but on fixed wing as represented by the venerable [first flight 1965] BN product.

Both these instances related to the approach of the National Police Air Service, Hampshire was the first sacrifice and Manchester simply could not survive as a stand alone resource wholly funded by the individual police budget in Greater Manchester.

Sources suggest that a lack of investment is at the heart of the demise of BN in the police market. With single aircraft assigned to units nominally offering a 24/7/365 service to public safety any significant maintenance downtime becomes a major issue and the metal wings of



*An older generation of fixed wing aircraft can gain a new lease of life if they are continuously updated and substantially alter the manufacturing processes involved in their build—as illustrated by a number of types including the Dornier 228 [left] and the Viking DHC Twin Otter below background.*



older generation fixed wings tend to be labour intensive – resulting in operators changing to a less maintenance hungry type or even helicopters to get around downtime.

For the modern customer new composite technology aircraft appear to be the preferred product of the future – and incorporating reworked structures embracing plastics may be an acceptable alternative. Older fixed wing aircraft are not necessarily blighted by the onset of complete or partial composite structures as shown by the continued popularity of the ever popular Beech 200 series. It continues to serve the emergency services and surveillance in a variety of roles but it is something of an exception.

Another acceptable design with a long history is the Twin Otter. Viking Air Limited of Victoria, British Columbia, has assigned the former Reims Agent Bob Crowe Aircraft Sales Ltd. of Bedford, England, to become the exclusive sales representative for the Viking Twin Otter Series 400 and Guardian 400 aircraft in the United Kingdom.

Bob Crowe Aircraft was selected as the ideal candidate to represent the Series 400 Twin Otter in the UK due to their extensive hands-on experience with a wide variety of twin engine, turbine, and amphibious equipped aircraft, including the legacy de Havilland Twin Otter. In addition, their in-depth knowledge of special mission aircraft and government procurement policies will be an asset to representing the Twin Otter Guardian 400, the military variant of the Series 400.

The Special Mission Guardian variant already has customers, including the Vietnam Navy and these will feature a range of sensor fit modifications. Field Aviation, a fellow Canadian company to Viking, was at Farnborough in the Viking section of the static display line offer-



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ing their own take on a special mission nose. The example shown featured a L3 Wescam MX-15, a sensor on loan from Wescam for the show but a sensor of that level of sophistication might not be readily available to many nations under the ITAR regulations.

The Viking Twin Otter Guardian 400 MRSA is a multi—role surveillance version of the basic Twin Otter that is being developed by Field Aviation in association with Viking, Martin Baker, Selex EX, L3 and CarteNav.

Deliveries have continued with the earlier Vietnam Navy contract, with the arrival of the third Series 400 Twin Otter at the Navy’s base in Nha Trang in early April. The Navy have a total of six aircraft on order, configured for amphibious float operations with convertible interiors for standard passenger, VIP, and utility seating. Three of the Vietnam Navy Twin Otter aircraft are being delivered as Guardian 400 military variants, to be used for maritime surveillance, search and rescue, transport, resupply, and other specialized government operations. These will not feature the Field nose.



Bell Helicopter took their usual spot to the right of the main entrance and AgustaWestland with a similar aircraft type line up to last time. With the recent changes in ownership the Textron group now owns Beechcraft and as a result the Bell helicopters were joined by Beech and Cessna aircraft. Four helicopters were on display, the 525 Relentless mockup mock-up configured for Search and Rescue (SAR) missions, the newer 505 JetRanger X – also in mock-up form, which is concluding its three month tour of Europe, along with two by now familiar ‘real’ airframes the 407GX and the 429 configured for Helicopter Emergency Medical Service missions, which is also completing a demo tour throughout Europe leading up to the show [which included the PAVCon in Brussels].



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It was indeed a surprise to again encounter an example of the stylish and even evocative Edgely Optica G-BOPO sitting in the static park. Like a craft from the Orevician Period\* in pre-history the Optica has a habit of reappearing when you least expect it. This fixed wing observation craft has always looked good but has never made the grade.

The new company includes many old and enthusiastic faces intent on relaunching the type hopefully using the money of others. Along the way the Optica picked up another 'unlucky' British aviation project, the FLS1, now known as the Sprint. Years ago this publication reported on plans to build the pair at North Weald, Wales and even Waco in Texas. Although each plan showed promise and indeed the North Weald period saw some Sprint's built, nothing came of these various projects other than the promotional material. The flaw seems to have been that the promoting enthusiasts were dependent upon others to provide the money. As each year progresses the designs get older and can exhibit those same manufacturing and maintenance flaws that I highlighted on page 4-5.

Anyway good luck to them yet again. If you have a spare million of any currency AeroElvira Limited, based at Furzlease Farm, Tisbury, Wiltshire would love to hear from you.

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At an event where large aircraft hold sway to the apparent rejection of middle weight helicopters there remains a fairly plentiful light unmanned craft presence in the halls. A few years ago there were dozens vying for the interest of the attendees but not so many this year as the actual level of interest in civil UAS if better reflected. On day one it seemed a little muted and I am unsure whether it actually recovered. Here and there were interesting items of UAS technology, like the tekever AR1 Blue Ray in the colours of an unknown POLICIA operator. It transpired that this was the police in Portugal and may well be the first police owned air asset in that country. The AR1 is a light, 1.5kg, fixed wing autonomous unmanned system offering the carriage of a number of nose mounted payloads for up to 3 hours surveillance. The company were also showing the AR-5 Evo their latest project in the static park—having unveiled it on day one of the event, [www.tekever.com](http://www.tekever.com)



 **THE EMERGENCY SERVICES SHOW**

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On the flightline next to Diamond Aircraft their UK agent [since the last Farnborough] DO Systems were exhibiting a number of DA-42 surveillance aircraft they operate of contracts in mainly Europe and Africa and hosting a presence of Aurora Flight Sciences, a small company who produce the optionally manned DA-42 and The Skate UAS. In previous Farnborough's this craft was flown in the indoor display area to good effect – exhibiting its fairly unique VTOL capabilities.

Aurora Flight Sciences developed the family of small systems tailored for use in urban or crowded environments where people will get injured in something goes wrong. They are designed to be lightweight, easily portable, deliver long endurance on quiet electric power, and provide autonomous operation.

Skate UAS merges the simplicity and endurance of a fixed wing platform with the maneuverability and mission flexibility of a vertical take off and landing (VTOL) asset. Independently articulating motor pods allow the Skate UAS to rapidly transition between vertical and horizontal flight. Transferring from hovering to wingborne flight increases the endurance and range of the system to levels characteristic of a fixed wing platform and far beyond those of a traditional VTOL asset

The thrust vectoring provided by the motor pods also enables extreme maneuverability and rapid navigation of congested environments such as city streets and urban canyons. Skate's modular airframe provides a substantial sensor payload capability, as well as quick deployment and easy field repair.

Something that might be reasonable safe in the hands of most police personnel in stressful situations but it, like most unmanned systems, is still primarily aimed at soldiers not the civil market.

In recent months it has become evident the Safran/Turbomeca has been cutting back on its show presences – having seen both efforts it appeared that the US exhibition at the far smaller ALEA event was more impressive of the two.

Turbomeca (Safran) brought the Makila 2 (1,800 - 2,100shp) and the RTM322 (2,100 -

2,600shp) – to Farnborough Air Show.

The Makila family powers Airbus Helicopters' Super Puma, Cougar and EC725/225, as well as the Denel Aviation Rooivalk attack helicopter. Over 2,200 engines have been produced, so far generating ten million flight hours for 90 customers in 50 countries.

The latest variant of the Makila, the 2B, is under development to power the EC225e. It features a new combustion chamber and high-power turbine blades provide up to seven per cent more power; thus delivering considerable payload and range improvements. Certification is planned for 2015.

The RTM322, is designed and certified for both civil and military helicopters. It currently powers the three-engine Agusta Westland AW101 Merlin and MCH101, as well as the twin-engine NH 90 and WAH64 Apache. This engine also staked a place in aviation history by setting a new world speed record of 255 knots, while installed in the Airbus Helicopters twin-engine X3 hybrid rotorcraft.

News on other Turbomeca programmes include the Arrius 2B2 Plus for the EC135T3. The new variant provides greater hot & high performance with four percent more power throughout flight envelope. Certification of the 2B2 Plus is anticipated later this year. Other member of the Arrius family, the Arrius 2R to power the Bell 505 Jet Ranger X with first flight planned by the end of 2014. The Bell 505 Jet Ranger X was unveiled last February at the Heli-Expo 2014 convention in Anaheim, California, and approximately 200 letters of intent have already been signed, indicating a high level of market acceptance.

Within the emergency services arena the majority of the new stories have been helicopter related and very much in favour of AgustaWestland.

The Kent Surrey and Sussex Air Ambulance are to operate an AgustaWestland AW169 supplied by Medical Aviation Services [SAS/PAS/MAS] of Staverton, Gloucestershire. This was announced as a new order but the company, the primary UK operator of the MD Explorer, announced an order for two of the type some time ago so this is effectively a 'placement' rather than a fresh order.

Dorset and Isle of Wight Air Ambulance also announced they are to acquire an AW169 but the support status of this is currently unclear.

At the last edition of Farnborough L3 Wescam displayed the MX-10 and MX-15 sensors on a post at their plush chalet. This time around the two sensors fitted side by side were the MX-25 and the MX-15, and the contrast in size is such that it looks as if the MX-10 is the smaller ball.

The company was also promoting its own take on the surveillance aircraft. Many of the light military surveillance aircraft variants sent out to service in Afghanistan were quickly put together to meet a specific short-term need and not necessarily ergonomically thought through, the L-3 SPYDER is the groups take on how many aircraft types should have been designed in the first place. Whether the military will ever be able to afford to get this 'Rolls Royce' version in a modern world of cost cutting when they have so many other nearly as capable aircraft is another matter.

Across the industry sensor technology is now pretty much in a plateau. The electronic contents of each of the three Wescam sensors is the same, the ball size simply allows an enhancement in the optics and the option to multiply the number of different sensor enhancers, the laser rangefinders, spotters scopes etc, in the turret ball.

How long this technology plateau will hold sway remains to be seen, most major sensors can now offer capabilities way beyond the needs – and training – of the average operator.

Demand for its MX-10 and MX-15 electro-optical and infrared (EO/IR) systems within the Airborne Law Enforcement (ALE) market continues to grow in support of critical surveillance



missions worldwide, with recent sales to customers in Algeria, Australia, Canada, Korea and the United States, including Puerto Rico.

“The requirement for medium- to low-altitude tactical mission systems in the ALE market has resulted in over 83 agencies utilising the MX-10 and MX-15 systems across 22 countries,” said Paul Jennison, vice president of government sales and business development for L-3. The technologies within L-3 Wesam’s imaging systems deliver highly detailed imagery and provide customers with clear sighting capabilities across the visible and infrared spectrums.

The recently launched Kinetic suite aids operators in gaining an accurate indication of the speed at which ground vehicles are traveling and can detect multiple moving targets in an image stream. [www.wescam.com](http://www.wescam.com).

FLIR Systems, Inc. announced that the Star SAFIRE 380-HD electro-optical/infrared (EO/IR) sensor has been selected by The Boeing Company, Boeing Defense, Space & Security as baseline EO/IR sensor supporting various Maritime Surveillance Aircraft missions including search and rescue, anti-piracy patrol, and coastal and border security.

FLIR Systems Star SAFIRE 380-HD, the latest addition to FLIR’s industry-leading family of HD Surveillance systems, is a gyro-stabilized, multi-spectral, high-definition, digital ISR system. It is designed for the demanding operational requirements and environmental conditions of a wide range of fixed wing aircraft, helicopters, UAS, and ships. Its performance has been proven worldwide in over 20 countries by delivering precise geo-stabilization, and unmatched thermal, visible, and lowlight imaging on numerous platforms.

“This selection highlights FLIR’s position as a leading supplier of thermal HD imaging sensor systems,” said Andy Teich, President and Chief Executive Officer of FLIR Systems. “We are pleased to partner with Boeing in providing situational awareness and real-time surveillance to help protect allied nations worldwide.”

Star SAFIRE 380-HD integration and testing with the MSA platform began in August 2012. [www.flir.com](http://www.flir.com)





Guns were a rare sight at the English air event, prolific in Arizona.

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By the close of the exhibition, airshow organisers, Farnborough International Ltd (FIL), confirmed the total sum of orders and commitments at the Farnborough International Airshow had reached US\$201bn, beating all previous records set for the show. The figure represents an extremely positive note for the global aerospace industry. Across the course of the five days, orders and commitments for civil jet engines reached 1,600 units with a total value of US\$34.5bn and over 1,100 aircraft totalling US\$152bn, a further US\$14.5 was also achieved in service contracts all reflecting a buoyant aerospace industry internationally and in the UK. The event has been viewed well with visitor numbers standing at 100,000 and strong government attendance with the Prime Minister, David Cameron opening the show and a tranche of cabinet officials and other government figures attending.



Russians were a rare sight at the English air event, and even rarer in Arizona.



Rarer still was this Grob G520 Egrett one of the world's largest fully composite optionally manned aircraft.. First flight 1991.... Looking for a buyer?

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*Falcon Field, Mesa, the home of MD helicopters puts on the entertainment at their Open House Show thanks to a winching, roping and flying display on MD products by ARS [Air Rescue Systems]*

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## ALEA

Each year the Airborne Law Enforcement Association holds its annual training and networking event in one of the southern US States at the height of summer. Each event is nominally hosted by local police force air units and their members and the hosts traditionally partake in an opening ceremony complete with a splash of unashamed Nationalism. For the non-US outsider this little bit of flag waving and anthem ceremonial is often the added attraction of attending.

In that vein it is therefore unfortunate that one of the designated host units received confirmation of bad news relating to its future as the show opened.

A recent city audit deemed the Phoenix Police Department's air-support unit fleet too large and redundant and some of its practices too costly so, the department will soon surrender three of its helicopters.

The fleet reduction, combined with other recommended changes, could save about \$3.3M during the next fiscal year in moves that the city auditor, as ever, claims will not impact services.

The number of aircraft on the floor of the exhibition hall was low this year, the transportation into the hall was difficult and even though the rooftop usable as a helipad was at the same level as the exhibition it did restrict the type of aircraft that could get in. Some years the venue can allow large fixed wing aircraft easy access but, aside from whether the vendors even wanted to bring them, the Phoenix building was not user friendly in that area.

This year the hardware was restricted to a pair of Airbus AS350, one each of the Bell Huey II, 407 and 429, a Cirrus, an Enstrom 480 and a Robinson R66. There were a few UAVs displayed but the netted area set aside for displays was surprisingly quiet and one exhibitor promoting their craft, Aerovironment, did not even choose to make use of the facility. This display area remained pretty much deserted throughout the event and raises questions



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about recent home truths being learned about the whole civil unmanned craft industry across the developed world.

Bell Helicopter brought a 407 and a 429 to the event. The latter was unusual in that it was marked as being for the Georgia State Patrol and yet it retained its Canadian civil registration. The reason given as the show opened was that this was their aircraft but they had not actually signed on the dotted line for it; this unusual situation was regularised later in the show.

Bell duly announced the signing of the purchase agreement with Georgia State Patrol for the Bell 429 and the signing ceremony took place in front of the aircraft on display at the Bell Helicopter booth #209. "We are excited to add this great aircraft to our fleet," said Sergeant Greg Mercier of the Georgia State Patrol. "We will rely on the Bell 429 for its power, speed and large, accessible cabins for our parapublic missions."

The Georgia State Patrol Aviation Division has operated Bell helicopters since the 1970s with a Bell 47. The unit supports public safety for the citizens of Georgia. Currently, the Georgia State Patrol has a fleet of six Bell 407s, one Bell 206, five Bell OH-58s and one Cessna 182 airplane, and a total of six field hangers located throughout Georgia. The aircraft will be used for a wide array of law enforcement missions, including surveillance, search and rescue and support of ground personnel.



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"This year, we are proud to showcase one of our airborne law enforcement customer's new Bell 429 as well as have a signing ceremony on site," said Anthony Moreland, Bell Helicopter's managing director of North America. "The Bell 429 fulfils Georgia State Patrol's mission needs, and we continue to see a strong customer response throughout North America." They may have signed for the very aircraft that appeared but it will be a while before it enters service as the next stage is to see it back in the workshops for the role equipment fit. PAN understands that it will be a fairly light process and the airframe is intended to be multi-role and quickly switched between tasks.

While the US event was setting up news supposedly emanating from the owners of Swiss searchlight and electronics company REVUE Thommen came in from Europe.

Apparently spurred on by the visa row in Britain Russian news agency, RAI Novosti, carried a statement that simply announced a long awaited police flight trial of the searchlight in the United States but then added an awkward political twist.

*"The Oklahoma police department tested Russian-produced searchlights, the searchlight developer, Russia's Transas Group, said in a statement released on Tuesday.*

*This came despite sanctions imposed by the United States. The projector, fixed on a MD500 helicopter, underwent comprehensive testing by the Oklahoma police department's pilots.*

*"After the initial tests, the searchlight got high marks from the air crew. They noted the brightness and color balance of the ray, fast projector position change capabilities, and the possibility of directing light down. They also said the projector effectively operates in the vertical range," Transas reports....*

*"The United States and the European Union did not recognize the results of the Crimean referendum held in March. Following the Crimea's reunification with Russia, a number of Western countries have imposed sanctions against some Russian companies, officials and politicians.*

*Moscow has repeatedly stated that these measures are "counterproductive" and warned that the sanctions would have a so-called "boomerang effect" on Western economies.*

A day later the matter of the visas took a significant downward spiral when a Boeing 777 airliner of Malaysian was shot down over Ukraine taking nearly three hundred souls with it.

Where the tone of the Transas statement may have been a misjudgement is that for the first time it highlighted a little heeded truth that the Transas Group, founded in the 1990s, was Russian and although registered in Ireland that it had bought into REVUE Thommen, a Swiss company that was vainly trying to seek Western Certification of a [Russian] searchlight that was tipped to challenge the superiority of the Spectrolab SX-16 by being fully certified by EASA and the FAA. There is still no certification of the searchlight and now everyone knows that this is a Russian product not a Swiss one when they seek to consider whether Ukrainian sanctions matter.

The Oklahoma Police Department did indeed undertake trial flights of the Thommen on one of its MD500E helicopters N689F.

Such was the newness of the statement released by Russian News that the staff of Thommen displaying the searchlights at Phoenix were only partly aware of the circumstances.

Some brief confusion arose when the US arm of Airbus announced that it was displaying a Oklahoma State AS350B3e carrying a Spectrolab at the show. The two are different agencies in the same state.

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The Oklahoma DPS AStar role fit includes the Garmin G500H electronic flight information system, Wescam MX10 thermal imager, Spectrolab SX-16 searchlight with IFCO lens, and the Churchill Augmented Reality System (ARS) moving map system displayed on a Frederick Aero 17-inch monitor.

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Airbus Helicopters Inc. (AHI) featured the recently-delivered Oklahoma Department of Public Safety (DPS) AS350B3e helicopter on its booth.

The Oklahoma DPS AStar features an advanced avionics and mission equipment suite, including the Garmin flight information system, Wescam EO/IR, Spectrolab searchlight and the Churchill moving map system. The helicopter is also equipped with a hoist boom, for use in search-and-rescue missions. All completion services were performed by Airbus Helicopters Inc. in Grand Prairie, Texas.

"The Oklahoma DPS AS350B3e is a prime example of a next-generation law enforcement helicopter cockpit," said Ed Van Winkle, AHI Sales Manager for Airborne Law Enforcement. "The most modern avionics and mission equipment gives the State of Oklahoma significantly greater capability to respond to a wide variety of missions in order to support the men and women of Oklahoma DPS." AHI will be highlighting the multimission capability of the AS350B3e at the ALEA conference, as well as the low purchase and operating cost of this proven helicopter.

In addition to the Oklahoma DPS AStar, completed in-house by Airbus, other recent law enforcement deliveries by AHI include the Mississippi Department of Public Safety AS350B3e, two Oklahoma City Police Department AS350B3e [delivered from Airbus but currently in role fit for later delivery by Hangar one avionics in Carlsbad and service with the operator] and an already delivered Tulsa Police Department AS350B2. This aircraft was completed by Metro a few days after the show and is now working up to service with the customer. Additionally, the Texas Parks & Wildlife Department recently ordered an AS350B3e to upgrade their mission capability throughout the State of Texas, with this helicopter to be delivered before the end of the year. Each of these law enforcement agencies is a new AHI customer.

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Aviation Specialties Unlimited Inc. (ASU) unveiled their new white phosphor night vision goggles (NVG) in Phoenix and were demonstrating them at their booth.

"The new white phosphor night vision goggle is the first technological breakthrough in aviation goggles since the Generation III goggle was introduced," said President Jim Winkel.

ASU's Director of Pilot Training and Retired Army National Guard Pilot, Justin Watlington said, "I have been flying with night vision goggles for 27 years and would characterize the new white phosphor system as a distinguished milestone in NVG technology. In all aspects of flight, from the highly illuminated urban environment to the darkest regions of the Idaho mountains, the white phosphor NVGs outperformed the traditional green phosphor NVGs. It is not enough to say the white phosphor NVGs outperformed the GP NVGs, they significantly outperformed the traditional green phosphor NVGs."

Aviation Specialties Unlimited (ASU), <http://www.asu-nvg.com> was established in 1995 to meet the growing demand for aviation night vision systems. Since that time, the company has earned a reputation as a leading innovator in aviation night vision imaging system design, manufacturing, installation, certification, sales, training and service. In Latin America, ASU is a choice supplier of premier ground-based night vision goggles, training programs and maintenance initiatives. ASU continues to invest in the development of innovative products and solutions. In 2014, ASU expanded its corporate headquarters and staff to better serve customers around the world who operate in the air, on land, and by sea.

*Ed: Meanwhile the company remains tight lipped about the status of their UK market partners PremiAir. The latest rumours suggest that the company has faced a lock out from their Blackbushe, Surrey, base.*

AgustaWestland were marketing their full range of helicopters but restricted its display to showing a single example of the [PZL] SW-4, a type they are hoping will see favour in the region.

A few years ago Tyler Tech were regular exhibitors at the ALEA event pushing their TSOP tactical helicopter platform designed for improved mission safety and effectiveness. TSOP's primary function is the transporting and deploying of personnel where it is acceptable for them to sit/stand outside the helicopter cabin.

TSOP is a pair of externally mounted platforms, equipped with anchor points for seatbelts or safety harnesses and offers an optional fast-rope or rappel capability.

Then came news that the marketing of the platform was being entrusted to DART and the product could be seen among the myriad of special equipment that the company markets. It seems it was not a happy development and, by mutual agreement, Tyler has taken marketing back under its own control.



In the heavy metal corner of the exhibits was the ISSYS-POD, fresh from a successfully demonstrating in Swedish live-fire trials. The system was successfully demonstrated as part of the SALT II (Surface-to-Air Launch Trial II) live-fire trial hosted by Sweden's Defence Materiel Administration (FMV) in Vidsel in May 2014.

All of the 25 live Man-Portable Air Defence Systems (MANPADS) missiles fired were successfully tracked by the production-standard SelexES Miysis Directed Infrared Countermeasure (DIRCM) system, which operated in combination with the ISSYS-POD system. Saab's-MAW-300 Missile Approach Warning System, also integrated in the ISSYS PODSystem, was used to cue the Selex ES Miysis DIRCM.

Developed by RUAG Aviation in cooperation with Saab, the Integrated Self-Protection System (ISSYS) is a reliable system for alerting helicopter crews to imminent threats and for supplying protection through effective countermeasures. Deployable against both ground and air-based attacks. ISSYS' existing pyrotechnic countermeasures make use of between 2 and 16 modern chaff and flare dispensers to neutralise approaching threats, which are detected via radar, laser and UV threat emissions from incoming missiles.

The integration of Miysis into the system newly adds a DIRCM countermeasure as either an alternative or a supplement to the pyrotechnic countermeasures, thereby enhancing the capability of ISSYS and the safety and security of helicopters and crews.

A specially designed Plug-On Device (POD) allows ISSYS to be mounted to the hard points of helicopters and selected fixed-wing aircraft within 15 minutes by just two people. This enables easy sharing across multiple platforms, including older platforms that are no longer



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compatible with fixed installations. In addition to its military applications, ISSYS-POD can be EASA certified for use on civilian special mission helicopters, e.g. for protecting air ambulances.

Fitting cameras to rescue hoists is not new. Breeze Eastern based in New Jersey is seeking to enhance the information that is derived from cameras fitted with its new Mission View situational awareness system.

Mission view integrates in the images derived from day/night cameras, adds input from a cable payout sensor, a laser rangefinder, visible laser plumb line, and uses a hook with LED lights and sensors feeding into iPad tablet hand-held computers. The system is still in development and will therefore be altered to fit in with as yet to be realised customer aspirations but primarily it will integrate off the shelf technology into the lightweight tablet based system that is not necessarily tied to the Breeze hoist product and therefore equally applicable to a mixed fleet user.

All crew members can be in a position to quickly assess the rescue situation by reference to the tablet displays that provide at a glance information about the length of cable payed out, its position planes and the load it is carrying.

With an integrated aircraft based system there would be cross-border certification costs and issues where streaming the video and other information to tablets seeks to overcome those high costs. [Breeze-Eastern]

Terry Ascherin a former Los Angeles County Sheriff crewman who worked with Breeze Easter now works on his own company Skyhook developing a variety of ideas for safety in winching. The latest product he has been promoting at a range of events is a roof or floor mounted inboard winch system favoured by operators of Bell Huey's and their derivatives [212 and 412 etc].

The EERD Hoist is equipped with a with 650 watt brush-less motor, weighs 15.9 kg/35lbs compared with the standard Bell system at 17.2 kg/38 lbs., and can take a maximum load of 272.5Kg/600lbs. The fourteen tooth main drive gear and thirty-six tooth sprocket gear, provides 35-40 feet a minute at 600 pound loads.

The 650w 36 tooth motor provides max victim retrieval, for its size, speed & weight and the system provides manual override if the motor or power fails by means of an inserted crank handle.

Skyhook offers a range of portable, lightweight manual and electric rope winches are designed for rescue, tactical, military, Haz-Mat, fire and public service rescues, industrial safety operations, telecommunication, and telescope services. The SkyHook winch has been used in entertainment featuring Cirque Du Soleil and amusement park operations for over 15 years. The manual winches are supported by electric 110 AC volt and 28 DC volt battery motor systems. Manual rope rescue and SkyHook winches are utilised for the manual & powered single and manual only double handle winch systems applications.

[www.skyhookrescue.com]





*As ever the event was about learning new skills, finding new equipment and networking and there were numerous opportunities for vendors and the customers to meet up at food and entertainment events around Downtown Phoenix as well as the ALEA member AGM and a separate one for vendors. ©PAR*

MD Helicopters Inc (MDHI) brought two variants of the MD500 to the show and additionally entertained a number of attendees to their factory at Falcon Field in nearby Mesa to see the current situation in manufacturing. The MD Helicopters family includes the twin-engine MD Explorer, and single engine versions of the MD 600N, MD 520N, MD 500E, MD 530F, MD 530A, MD530G and MD 540A. The NOTAR system for anti-torque control with no tail rotor is used exclusively by MD Helicopters to provide safer, quieter and confined-area access capability.

The main thrust of production remains the 500 and the manufacture and completion clearly reflects that with seven on the line and a number of others scattered around the complex in various stages of completion, painting and flight testing.

The construction numbers are in a number of series reflecting whether they are straight 500E or the enhanced versions. The MD530F due to go to Colombia is c/n 0213F [N4250K] where elsewhere can be found c/n 0621E, 709FF, 0214FF, 0215FF and 0216FF. It will probably be a suitable subject for a business course to understand what the actual production levels are. I did ask but the answer was not as precise as I was expecting! Lets call it around 30! Currently not every model listed above is to be found on the production line and that includes the MD600. There is nothing sinister involved, simply no orders for that type currently.

The last of the Turkish MD900 shells [0144] is on the line awaiting starting the completion process behind four of its brethren. Some have started the build process but 0144 is largely untouched. Still present at Mesa is U138 and that will be delivered this year.

When the new build 900 shell production commences the 500s now on the line will go to another building in the complex leaving the current production building with the dual side by side line to 900s alone. New skills will be imported, the metal 500s are made in a Tilton car factory in Mexico but the new composite 900 shells will be 'all American' and built in Mesa

from the floor up.

Production of 900s remains a treat for 'tomorrow' whenever that is and it seems it is at the least 12 if not 24 months off. Current production of the existing outdated avionics variant appears to be around 2-3 annually. Meanwhile frustrated MD902 operators are actively buying types produced by other manufacturers.

MDHI held a ceremonial delivery of a new MD 500E helicopter for the Polk County Florida Sheriff's Office (PCSO). The acceptance took place at the MD Helicopters booth.

"We are honored to deliver a second MD 500E to expand the mission capabilities of the Polk County Sheriff's Office Aviation Unit," said Craig Kitchen, Chief Commercial Officer of MDHI. "The 500E offers outstanding speed, agility, low operating costs and unmatched versatility to enable safe and efficient airborne law enforcement missions. We look forward to providing exceptional support to the PCSO and are pleased to showcase this renowned aircraft at the ALEA show, near our home base in Mesa."

"The Polk County Sheriff's Office is proud to take delivery of this exceptional MD 500E aircraft," said Rob Oakman, Captain at PCSO. "This newest addition to our fleet has been equipped to significantly increase our support capabilities to ground units with pursuits, backup, surveillance, and search and rescue missions."

The new aircraft is the second MD 500E delivery to the PCSO, continuing their modernization plan of remaining OH-58 aircraft. The helicopter will be equipped with a 420-shp Rolls-Royce 250-C20B turbine engine and a complete law enforcement performance package. The MD 500E cockpit configuration will include a full complement of modern avionics with NVG lighting, a Garmin G500H glass cockpit, an AeroComputers moving map system and a Technisonic tactical radio. Utility features include a Meeker mount, Nightsun searchlight, 2,000 lb. cargo hook, auxiliary fuel tank and wire strike protection kit.



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*A small diversion from the mainstream of the event was discovering a large and probably expensive team moving the prototype of the MD540 in a rear of the Sheraton Hotel. First guess was that it was on its way to the display at the nearby Convention Center. But no, it never turned up there.*

*It was a day or so before it transpired that its presence was simply as a central attraction at a MD Dinner Party in the hotel. It was back at Falcon Field a couple of days later.*

*Makes a change from an ice sculpture on a table I guess.*



Equipped with seven full-time pilots and 10 part-time flight officers, the Polk County Sheriff's Office Aviation Unit began back in 1972, when it started with two fixed-wing aircraft. Helicopters were added to the aviation unit in 1982.

And then it was all over and time to dismantle the exhibits and arrange the fly out.



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All ready to go—except for the little matter of fitting the third MRB and the Wescam turret



## Police Aviation News

Even as the show was being dismantled there were gems to be found. I was just returning from the fly-out of those exhibits that could depart from the rooftop when I stumbled upon a later packer in the form of Scott Snell of General Dynamics Mediaware.

The company is usually selling into the military market but recently clinched a sale into the Australian Police that effectively opened up a new market sector for their video archiving product D-VEX.

Mediaware is a small Australian based software company

that was bought a few years ago by General Dynamics. Until the Victoria Police sale customers have been military and mostly UAV operators. The software that so impressed the Vic Police makes use of video with embedded metadata and is platform independent. It addresses a common problem faced by law enforcement operators that record hours of images then files them without any sensible means of retrieval.

In many respects the quality of the footage being generated by law enforcement agencies is substantially better than that of military operators but most police operators are either not recording the footage or burning it to DVD after the flight and getting no further value from this resource. The software could give police operators a further tactical advantage and a chance to show senior officers that they are getting greater value from their precious aerial asset including instant access to up to date library footage of locations either specifically visited or just overflown.

The software can be used to efficiently index, organise and analyse video collected from airborne operations, foster collaboration between agencies and strengthen intelligence reporting.



*\*The reference to the Orevician Period was 'set up' for this edition [i.e. could I get it in this edition in context] and it just means old, there were no man made flying devices [even the Optica] in that period!*

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