

Police Aviation News

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SHOWS REPORT



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AVALON Australia HELI-EXPO USA

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AVALON & HAI

This issue covers reports from the Australian Air Show at Avalon, Australia and the Heli-Expo in Orlando, Florida.

All of the content is the editorial take on two events far apart and therefore flawed in meaning that the editor could only stay at Avalon for one day in order to reach Orlando in time to cover that event.

The cover images come from the Heli-Expo in Orlando, Florida and show the latest Airbus Helicopters H125 AStar for the Hillsborough County Sheriff's air unit based near Tampa arriving at the event and on its booth. H125? Yes that's the news—I guess we will get used to it eventually.

Bryn Elliott

AVALON

Avalon, less than 60 minutes outside Melbourne in the southern state of Victoria, draws together representatives of the world of aviation and more particularly Australian companies and research centres wishing to sell their new ideas, technologies and products to the world. The event attracted over 170,000 visitors and 600 exhibitors over the course of the 6 days but that includes the weekend public days. The world at large may not be of a like mind to be in Avalon but there were fortunately sufficient representatives there to get the message out.



The Beech line up at Avalon ©PAR

In terms of the marketing the show could easily be likened to the Australian version of the Farnborough or Berlin Air Shows but the slick marketing may well be hyping it up a little too much. The relative isolation of the Antipodes does tend to dilute the number of nations willing or able to attend no matter their level of interest and it is an isolated market place with only 'the locals' as customers. That fact is somewhat underlined by the apparent absence of three of the most successful regional aviation businesses from the event. All three, Trakka, Spidertracks and Avinet, were travelling to widen their world sales at the Heli-Expo in Orlando. The basic reason for all three is that they have virtually achieved market saturation at home, even if staying for Avalon they, like me, only had time to visit not exhibit.

As we shall see though some exhibitors actually managed to exhibit in both Avalon and Orlando – but they needed to move out from their exhibits before the public days and have a surfeit of staff or alternatively some very dedicated staff on a very tight schedule!

As with Farnborough and Paris defence customers at Avalon are at the core and around that is airline spending with smaller elements cascading down into insignificance beneath them. At the big European shows many smaller players simply cannot compete or afford to compete and that leads to the springing up of numerous smaller specialist events in the General Aviation sector. Where Avalon remains different is that its relative backwater status has obliged it to pander to the needs of the smaller parts of aviation. Here you can see little and large side by side in numbers. As a result you get a truly International Air Show business end side by side with an enthusiasts show. Something of the order of the Berlin Air Show rather than an AeroExpo but still an attempt to be all things to all men.

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The strong military flavour of the event resulted in the military having its own ‘temporary’ Media Centre located next door to the Airshow 2015 Media Centre for the duration of the Exposition and the Airshow itself – having blundered in there by accident I found that it was significantly bigger and better staffed than its civilian counterpart – clearly there is a well thought through and planned desire to control the public perception of the Australian military throughout the full duration of the show!

The military may have displayed a strong case for sticking at their posts throughout but very few of the commercial exhibitors had any intention of following their lead – most had clear plans to vacate their booths on Friday when then the show evolved into being a weekend aviation extravaganza with Mustang and Spitfire fighters taking to the air alongside the modern military hot rods. The space would simply be protected by a rope as the staff set off home or to the next show. My own short foray at Avalon had similar thoughts, Heli-Expo in Orlando beckoned and it was a long drive and an even longer flight after leaving.

Unlike other apparently similar events I have witnessed Avalon was not ready to go on Day 1. It was clear that the full show was still building up even as I wandered around and it certainly was a considerable distance from completion as I left so I could only report on the heavy metal and the aerospace exhibitors [and a couple of them were also absent] – my primary purpose anyway. Some exhibitors struggled to get their stalls up in the teeth of a brisk wind and largely gave up the task in the hope that day two might be less troublesome. Not for me to see a Spitfire but there were a few Great War replica’s tucked away waiting their turn at the weekend.



Airbus Defence and Space had a high profile at the show with an impressive display of products.

The participation of one of the six French air force A400Ms and one of the five operating RAAF A330 MRTT (KC-30A) on static display allowed easy access for close-up inspection. It will be the first time that an A400M and an A330 MRTT have appeared together at an air show in the region and the first visit by an A400M to the South Pacific. As well as the presence of the A400M and KC-30A, Airbus exhibited a comprehensive range of capabilities on the Airbus Group Stand but on that first day the helicopters were still dispersed. And intentions of a cohesive display clearly put on hold.



Embraer Executive Jets had their heavy metal display in place from the start and were ready to display its latest aircraft to have entered into service – the Legacy 500 along with the Phenom 100, the Phenom 300 (the industry’s most delivered business jet in 2013 and 2014) and the Legacy 650.

Embraer has been present in Australia since the EMB-110 Bandeirante went into service in the country in 1978. Today, the Company is extensively represented in the country by a

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fleet of executive jets and commercial aircraft (E-Jets and the regional turboprops EMB-110 and EMB-120).

The **United States Air Force's** most potent stealth jet fighter, the F-22 Raptor, was to fly at the show but that plan was dropped when one of the display pilots was called away on 'other duties' and two of the type were to be found in the static ringed by a secure fence and plenty of minders. With each airframe having a ticket price of \$400M there was perhaps an understandable need to protect them. The pair of aircraft and support team had travelled from their home base in Langley, Virginia.



Nonetheless there was plenty of military heavy metal to be found in the skies over Avalon, in addition to the local RAAF aircraft the **Singapore Air Force** flew their F-16 mounted display team and brought along examples of airframes drawn from their Australian based training aircraft the Pilatus PC-21 [shown left] and Eurocopter Super Puma. The airspace over Singapore is so hemmed in by other nations that the Singaporeans are obliged to rent airspace from other nations to undertake some sensible manoeuvres – as a result none of the PC-21 fleet is even based on the island.

Exhibitors selling aircraft and aircraft parts are fairly easy to identify but the growing band selling support and system packages, the integrators and 'solution' providers are less obvious. The really big names in aviation, the Lockheed Martins of this world, have less trouble putting themselves forward simply because they also sell airframes but that still leaves a large number of other companies who are perhaps collectively undertaking the greater part of the work in the market.

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Exelis Inc., based in Herndon, Virginia USA were in Australia to highlight an expanding presence in the global aviation marketplace. The company was promoting the establishment of its Asia-Pacific regional headquarters in Melbourne, Australia and its expansion of its aviation solutions business. Only a month ago it was announced that the communications company Harris Corp is taking over Exelis in a \$4.75 billion deal. Harris are based in Melbourne, Florida and this deal will give them another subsidiary in Melbourne, Australia but no word yet on whether the Exelis name will go.

Still operating independently for now though Exelis Inc. is close to unveiling a low-altitude surveillance system for drones. The system, whose existence has not been previously reported, shows how Exelis and other companies are racing to create technology that enables drones to safely fly over long distances to do everything from inspections of remote pipelines to surveys of crops or delivery of packages in association with the National Aeronautics and Space Administration (NASA). They still have to persuade the FAA that the tracking system is robust enough to allow flights beyond the line of sight and meets other requirements including 'Sense and avoid.' The products, called Symphony UAS-Vue and RangeVue, are said to be significant because Exelis has the exclusive right to use a data feed it already supplies the FAA to track manned aircraft, using 650 ground stations. It will augment the feed with lower-altitude data that pinpoint drone locations. It expects to make RangeVue available this summer at some of the six sites the FAA has set up to test drones. Wherever you look there is little sign that commercial unmanned is really set to burst upon us in and significant way. The certification authorities have set the bar of acceptance very high.

Of greater potential interest to the readership of PAN is that the company has recently sold a radio despatch system to the City of Grand Rapids, Michigan through its Melbourne, Australia Exelis C4i business unit. The system provides covers the Grand Rapids and Kent County emergency 911 call centres.

EXELIS

The Exelis radio dispatch console system, called SwitchplusIP®, will enable both call centres to support emergency calls even if one of the centres requires an evacuation. The system will use a fibre link between them enabling communications access to each agency's radio systems. Establishing this critical network provides additional disaster recovery options for both agencies in the event of a necessary evacuation of either facility. Together, the Grand Rapids and Kent County call centres receive and process 911 emergency calls and dispatch police and fire services for a population of more than 600,000.

SwitchplusIP is used in 911 emergency call centres, other command and control applications, and mobile command centres. The system uses VoIP (Voice-over Internet Protocol)



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technology to integrate legacy and modern communications equipment. The system allows an operator to access multiple radio assets, telephone calls, and other inter-site communications from a single headset and user interface. Thus delivering advanced conferencing capabilities when system reliability, rapid response time and comprehensive interoperability are critically needed. C4i Pty. Ltd. was acquired by Exelis in January 2013.



Churchill Navigation based in Boulder Colorado were one of the few exhibitors to manage to exhibit in both Avalon and Orlando and to also use the same staff in both locations. A very tight and sapping schedule indeed for both Erin Murphy and her boss Tom Churchill!

Different teams from the Australian company **Avlite Systems** operated at Avalon and Orlando. The Avalon exhibit clearly illustrated the international flavour of their marketing successes although in this instance the product was sold to light the way into one of the police air units in the UK that is on the closure list.



Five years ago the East Midlands Air Support Unit at Husbands Bosworth required a radio-controlled helipad lighting system suitable for both day and night operations to enhance operational effectiveness and importantly, to increase flight safety at the isolated country location. Working closely with the Air Support Unit, Avlite's UK distributor – Systems Interface Ltd, delivered a suitable solution that complemented the Unit's newly acquired in-flight NVG technology late in 2010.



The isolated former East Midlands ASU Husbands Bosworth ©PAR1998

The solution was to supply the customer with a solar-powered, remote controlled illuminated helipad for day and night operations in both visible and infrared/NVG configurations that clearly identified the helipad on approach or from above during hovering or in low visibility weather. Avlite's AV425-RF radio controlled (NVG) solar helipad lighting system.

Avlite has supplied lighting systems to larger international airports including LaGuardia in New York, Zurich Airport and on a somewhat smaller scale Polacca Airport, Arizona that was suffering from an unreliable lighting system. At the latter Avlite met a need for a robust, reliable and cost effective airfield lighting system that would provide temporary runway edge lighting until a new runway and hard-wired lighting system could be installed. The 4,200 ft. runway was supplied with a solar-powered airport lighting solution.

Canadian company **Field Aviation** pops up now and again as an important law enforcement aircraft provider. Their current prime purpose for being in Avalon was to mark their part in role converting a number of Bombardier jet patrol aircraft for Australia having largely finished the work on new-build surveillance versions of the Bombardier Dash 200 twin turbo-prop.

Cobham SAR Services won a 12-year, \$640M contract to supply and operate SAR aircraft for the Australian Maritime Safety Authority (AMSA). The new deal will see Cobham operate four Bombardier Challenger 604 special missions jets modified for search and rescue to be based at three locations around Australia – Perth, Melbourne and Cairns – from 2016. One aircraft will be based at each location, with a fourth serving as an operational spare.



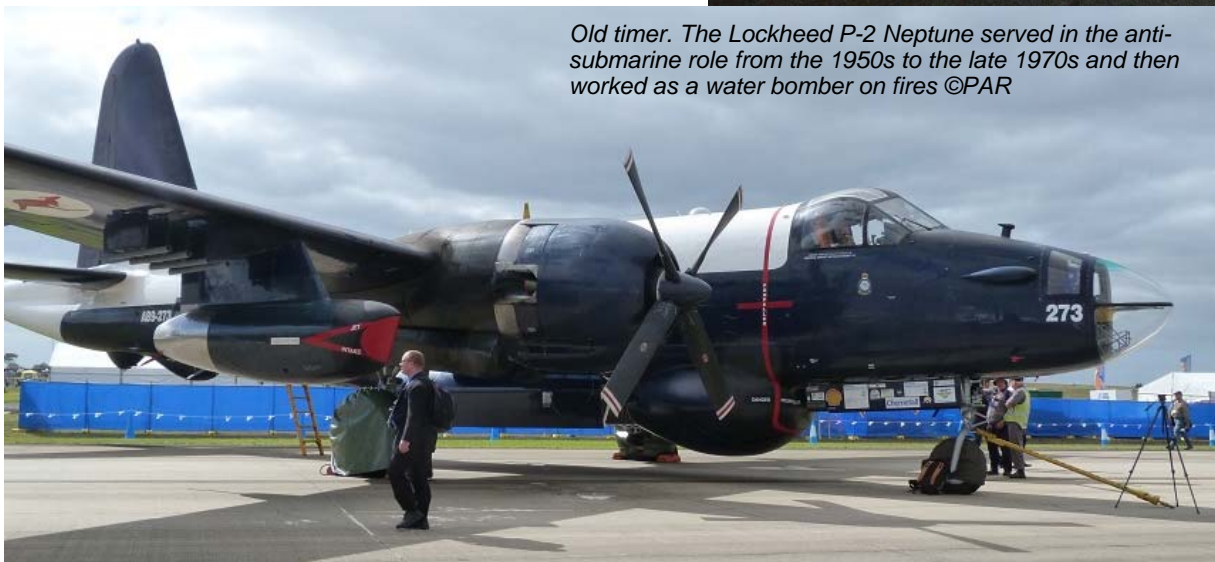
AMSA's current fixed-wing aircraft SAR capability is provided by Paspaley Pearl Group subsidiary AeroRescue, which operates five Dornier 328 turboprops based in Brisbane and Darwin as well as Perth, Melbourne and Cairns. AeroRescue will continue to provide SAR services until Cobham takes over the service, with operations due to begin from Perth in August 2016 and from Melbourne and Cairns later next year.

Field are still offering conversions based upon pre-owned versions of the commuter type but it is now out of production and there are as yet no customers interested in the Dash 400. They are fine for a commuter transport but in offering a really long fuselage and vastly different engines they do not lend themselves too well to the surveillance sector.

Powervamp Pacific is the local representative of the Weston-super-Mare UK based ground power manufacturer. Tony Marsters the General Manager and CEO is based in Coromandel, New Zealand.



Avalon may be relatively small and even rustic when compared with some of its world market rivals but it did see some significant business deals worth more than \$1.25 Billion including the signing of the multi-million dollar OneSKY contract between Airservices Australia and the Australian arm of the French-based aerospace technology giant Thales.



Old timer. The Lockheed P-2 Neptune served in the anti-submarine role from the 1950s to the late 1970s and then worked as a water bomber on fires ©PAR

HELI-EXPO

It was back to the attractions of Disney and International Drive, Orlando again this year. A long standing US event ploy designed to attract the family to the theme parks allows the married aviation professionals to combine the trip with family duty. That is why the Heli-Expo tends to be cheek by jowl with the attractions of Las Vegas and the other Disney in Anaheim. It does however mean that the floor of the hall can be host to the occasional stroller or a runaway child. It is quite easy to miss a collision with even a totally subject engrossed adult but child carriers and little people tend to be well under the radar. More of that at the end of this report – things they are a changing.



The AgustaWestland AW609 with the Orange County Convention Center in the background ©Ian Turner

I guess we all know you cannot please all the people all the time but it seems that some of the exhibitors are rebelling and it is not necessarily to do with the Orlando experience alone. If you have ever been to one to any large US convention centre based event you will already have experienced the sort of thing that has got exhibitors up in arms. Most of these events employ union labour that has pretty well got the place stitched up. The booth may cost a few thousand dollars but it's the ancillaries that sting the bank balance. Take a deep breath and take in the cost of the obligatory \$150 carpet, the \$120 underlay and the equally obligatory cleaning contract, the tiny \$17 cardboard box that acts as a rubbish bin, table hire that costs twice the value of the table etc. etc. The basics are another \$700 or so for even the smallest booth, but they are as nothing compared with the actual cost of setting up the booth. Simply getting your own display material from the delivery point to the booth on the floor can cost you at least another \$1,500 and it can only be undertaken by union labour then you have to pay the same again to get them moved from the booth to the delivery point. And on top of that you have to pay for people to build the booth and for the freight to and from the venue. It is an expensive business. It's not as if all this unplanned cost is associated with efficiency it seems that on this occasion at least there was a massive queue of far from happy exhibitors trying to get what they had paid for done at all – let alone on time. Tempers are fraying it seems and it may only take a tiny push to ensure that some exhibitors do not appear at the next Heli-Expo.

Aerometals announced last month that they had completed the purchase of all shares of FDC/aerofilters. Previously they held a majority of them. The move means that they can be rebranded and the FDC/aerofilters name has now gone, branded Aerometals. The two companies have appeared together at industry tradeshows and events for the past few years and the transition was promised to be seamless; the filter part numbers remaining the same and the manufacturing of the filters still in El Dorado Hills, California just outside Sacramento.

Wysong Enterprises, Inc., has received a FAA Supplemental Type Certificate (STC) for multiple EMS interior accessories on the Bell 407 and 407GX airframe.

The EMS kits for the passenger cabin consist of a quick-release mount with adaptors for various popular monitors, a centre console mounted adjacent to the aft-facing seat designed to incorporate medical and communication equipment, overhead mounts for aircraft audio interface and other patient systems, and an over-litter mounted patient shelf, just to name a few. There are various other mounts and accessories for Bell 407 EMS operators. The STC also covers the structural mounting of a single or dual external shore plug kit. Cold climate operators appreciate the convenience of a shore power system to provide AC electrical power to cabin, engine, and component heaters while the aircraft is parked. The kits are designed to be used in conjunction with and complimentary to other popular third party Bell 407 EMS interior kits.



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On the booth at the show though Wysong [above] were exhibiting an aerial firefighting role equipped Airbus Helicopters AS350B3e they completed for Helicopter Express, their fifth. Some of the new avionics include a Technisonic TDFM 136 digital radio, remote mounted programming ports, Wysong SW-301 drop chords, GPS interface provisions, turn and slip indicators, a flight following system, and a tail boom antennae mount. In addition, other airframe additions include new wire strike protections systems, a cargo swing system, hoist, Bambi Bucket belly connector, filters, and mirrors.

FRASCA International, Inc. of Urbana, Illinois displayed two newly developed helicopter flight simulators at this year's event. Both were available for pilots to fly and experience at the show.

FRASCA's new TruFlite™ R44 FTD (Flight Training Device) is a high fidelity simulator for the Robinson R44 helicopter. "Last year during the HAI convention we heard a number of customers mention that the fidelity of existing light helicopter simulators was inadequate and limited transfer of learning," stated John Frasca, President of Frasca International. "We listened and determined that a high fidelity device with FTD Level 5 approval was needed. Our engineers were able to incorporate the fidelity and quality of our Full Flight Simulators into an entry level FTD."

The cockpit of Frasca's TruFlite™ R44 is a replica of the aircraft and includes panels, controls and instrumentation. Control pressures are realistically simulated by Frasca's TruFeel™ control loading system. The TruFlite™ R44 includes Frasca's TruVision™ visual system providing highly realistic visual training environments to produce an accurate R44 FTD for use by helicopter flight schools, commercial operators, and parapublic organisations. It can also be converted into a S300 by removing the T style cyclic and adding two S300 style cyclic and future plans for the TruFlite™ product line are to add an R66 configuration and add Electronic Flight Instrumentation.

The TruFlite™ CPT on display at HAI represents a Sikorsky S92 and includes all aircraft systems and avionics. It utilizes touch-screen monitors which are spatially oriented to rep-

resent the aircrafts main instrument panel, centre console and overhead panels. Frasca's design includes multi-touch capability allowing two pilots to activate multiple switches at the same time. A real FMS key pad is provide to allow for full tactile simulation of the FMS system which is a benefit when entering FMS data.

The mention of the S300 control option in the Frasca item again raises the spectre of the demise of the type on the market. Readers may recall various attempts by the media to draw **Sikorsky** on the fate of the Schweizer line of products at past Heli-Expo events. The result of those was that Sikorsky had not made a decision and that they, a giant manufacturer, were trying to find a way to economically produce the types they inherited a decade ago. Well you can still just about get an S300 but it looks as if the manufacturer has ceded what everyone else already knew - the line is going unless some small organization wants to take it over. The 434 the latest version of the turbine being built for the Saudi Arabian Border Guard [SABG] was delivered to them but it seems that the customer returned them as wearing out too quickly in the harsh environment. If the SABG, an organization that was having massive difficulties in even finding citizens in the country who wanted to be pilots, wore them out it must have been serious. Anyway the 434 can be assumed a non-starter. Since the event United Technologies Corp. has announced that its Board of Directors has authorised a review of strategic alternatives for the corporation's Sikorsky Aircraft business, including a potential tax-free spinoff.

Better news on the floor of the Heli-Expo related to the success of the S-92 and in this instance its display of a **Bristow** example that will be in-service later this year with the new SAR operations in the UK.

Externally the gleaming Coastguard S-92 exhibited the especially finished white Trakka searchlight mentioned in a recent issue and internally an unrepresentative interior layout consisting of foldup seats but the forward located workstation from **Curtiss Wright** was the final product



Although Bristow seemed to be all pervading with their appearance on the Sikorsky booth and also emblazoned on the side of the AgustaWestland 609 tilt-rotor it was perhaps **Airbus Helicopters** show because they launched the only real big game player new helicopter. Unfortunately Airbus Helicopters sort of threw another spanner in the works by announcing widespread and confusing name changes even as it launched its new X-4 helicopter. In previous experience as Eurocopter all the old designations were retained and until now the AS350 sat alongside the EC145 regardless of the company name. But that is to change and the 350 is now the H125. But only in the company promotional material, for the AS350 based on the even older Aerospatiale name remains the type designation lodged with the certification authorities and they will not be allowing changes to appear in their paperwork any day soon!

For what it is worth the new type announced at the show, the former X-4 is now the H160. It looks a bit like the AS365 Dauphin it replaces but, as mentioned last month, is pushed up market to meet the AW139 head on. Most, but not all of the marketing designations are all now preceded by the H so that the former EC145 is now an H145 [but still technically very much a pre-JAR standard BK117]. The fact that the world lived easily with calling the BK117 an EC145 shows that the changes will not worry many on a day to day basis and the AS350 can still be an AStar or Ecureuil even though it is marketed as the H125. But as the list overleaf shows not everything fits the bill!



EC120	now the	H120
AS350	now the	H125
AS355	still the	AS355
EC130	now the	H130
EC135	now the	H135
EC145	now the	H145
EC155	now the	H155
AS365	still the	AS365
EC175	now the	H175
AS332	still the	AS332
EC225	now the	H225



And because of the timing of the H announcement many of the older type announcements at the show stuck to the old script and designations so as not to immediately confuse the readers!

Several California law enforcement agencies have recently purchased or taken delivery of new AS350 B3e AStars, continuing the ongoing permeation of the Airbus Helicopter brand into law enforcement helicopter sales. It seems that until the new Bell JetRanger is certified the smaller airframe market remains pretty much with them. Recent AS350 B3e customers include the California Highway Patrol (CHP), Los Angeles Police Department (LAPD) and the Riverside County Sheriff's Office.

The CHP has taken delivery of the first of three AS350B3e's ordered as part of a five year contract to upgrade their entire helicopter fleet. CHP has been flying AS350s for 30 years. AS350 B3e performance improvements will allow the CHP to operate at higher maximum gross weights than their existing AS350 B3's, which will enhance the capability to conduct search and rescue operations. Completion services were performed by Hangar One Avionics of Carlsbad, Calif.

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LAPD has ordered one AS350 B3e as part of a plan to upgrade its entire fleet of 12 AS350 B2 helicopters. Completion of the new helicopter will be performed by the City of Los Angeles Department of General Services.

The LAPD Air Support Division, customers of Airbus Helicopters for 25 years, operates its AStar's 17,000 to 18,000 hours per year. "Nobody flies as many hours as we do and our AStar's perform the brunt of our missions," said LAPD Lt. Phil Smith, one of the unit's 49 pilots. "It was time to make the change to the AS350 B3e for the upgraded performance and safety features. The added capability and safety enhancements of the AS350 B3e will reduce the workload of our pilots."

The Riverside County Sheriff's Office recently took delivery of two AS350 B3e helicopters to expand its current level of operations. The Riverside County is home to over two million residents and covers more than 7,000 square miles, with altitudes exceeding 10,000 feet. The Sheriff's fleet performs law enforcement patrol and search and rescue missions across the entire county.

Airbus Helicopters Inc. has delivered a fourth AS350 B2 AStar helicopter equipped for law enforcement missions to the Hillsborough County Sheriff's Office (HCSO) in Tampa, Fla. The aircraft replaces an EC120B to give Hillsborough an all-AStar fleet.

The Hillsborough Sheriff's Aviation Unit performs a wide variety of missions including law enforcement, light firefighting and search & rescue. The AS350 B2 was completed at by Airbus Helicopters Inc. in Grand Prairie, Texas. The ship is equipped with a FLIR 230HD thermal imager, Spectrolab SX-5 searchlight, AeroComputers moving map system, along with NVG cockpit modifications by AeroDynamix. A cargo hook completes the mission equipment on the AS350 B2.

Hillsborough County's newest AS350 B2 bears the tail number N188FS, which is a tribute to Freddie Solomon. Solomon was a star receiver for the San Francisco 49ers who wore number "88" on his jersey. Later, as an employee of the HCSO, Solomon worked with disadvantaged youth and was known as "coach" by the kids. Solomon died of cancer in 2012. A football with the word "coach" follows the tail number on the newest HCSO aircraft. The Hillsborough helicopter was on display at the Pall Aerospace booth. [See front cover]

Airbus Helicopters' AS350-series [or the H125 as we might start calling it eventually] remains the helicopter-of-choice for U.S. law enforcement agencies with more than 220 in use across the USA. Built and certified by Airbus Helicopters Inc. in Columbus it is now becoming [almost] a home grown product.

Meanwhile another Hillsboro, this time Oregon based Hillsborough Aviation Inc., a provider of helicopter and airplane services and charter operations in the Pacific Northwest, has purchased its first new Airbus Helicopters aircraft and has signed an option agreement with Airbus Helicopters Inc. enabling it to purchase up to five more. Hillsborough has taken delivery of its first Airbus Helicopters aircraft, an AStar.

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Dare County MedFlight, the air medical service provider for much of the Outer Banks region of North Carolina and the site of the Wright Brothers first flight, is the U.S. launch customer for the Airbus Helicopters EC145T2 [aka H145T2] and was on display at the Airbus Helicopters Booth.

A long time operator of the legacy BK117 Dare County made the decision to order the new aircraft after a mid-2014 trip to the Airbus Helicopters plant in Donauwoerth, Germany to inspect and fly the helicopter. Dare County selected Metro Aviation, of Shreveport, La. to do the completion.

The EC145 T2 provides significant performance upgrades. Turbomeca Arriel 2E engines, with dual channel FADEC, generate 951 shaft horsepower for take-off and allow for substantially improved hover and one-engine inoperative performance, as well as increased max gross weight capability.

The EC145 T2 is equipped with the Airbus Helicopters developed Helionix avionics system, including a standard 4-axis digital Automatic Flight Control System (AFCS), for reduced pilot workload and improved situational awareness. A Fenestron enclosed tail rotor, new to the EC145 T2, dramatically reduces noise levels. The helicopter's tail boom is constructed of composite materials. Airbus Helicopters has received orders for more than 100 H145 T2s, plus 15 versions for the German Army [H145M].

Papillon ordered the specially painted and equipped Airbus Helicopters H130 T2, the world's leading aerial tour helicopter, to mark its 50th anniversary as the largest and longest running helicopter tour company in the world.

The other type displayed was the EC175/H175 a type that suffered a somewhat difficult birth, having been held back by the same Helionix avionics glitches as the EC145T2, but now there are signs that the difficulties may have receded somewhat as orders, previously stilted move upward.

Two Pratt & Whitney Canada PT6C-67E-powered H175 helicopters have been recently delivered to Belgian operator NHV (Noordzee Helicopters Vlaanderen). NHV, one of the launch customers for Airbus Helicopter's new model, has started commercial operation with its first two H175 helicopters in the North Sea in December 2014 which have already accumulated more than 300 hrs of flight.



And no end in sight
for the old BK117 tail

A fast growing international helicopter operator delivering offshore crew change services in Africa and selected locations world-wide, NHV also operates in the market segments of Search and Rescue (“SAR”), Maritime Services, Helicopter Emergency Medical Services (“HEMS”) and onshore aerial work. NHV has been flying a variety of Airbus rotorcrafts since 1997 and has ordered a total of 16 EC175s.

It was announced that the Bristow Group is to more than triple its H175 orders and secure a comprehensive support services agreement with Airbus Helicopters. The Bristow order is now 17 H175 helicopters. This is the largest major endorsement for Airbus Helicopters’ new super medium-sized rotorcraft but reports from Bristow suggest that it is very much based on a hard headed business case where support of the product is the major element. It suggests that Bristow may have played ‘hard ball’ to extract a very good deal from a manufacturer not a little worried about the market penetration of its new product.

Based in Houston, Texas, Bristow is a leading provider of helicopter services to the worldwide offshore energy industry. Its current inventory of Airbus Helicopters-built rotorcraft includes the lightweight H125 (formerly the AS350), H135 (EC135) and BK117, along with the medium H155 (EC155) and heavy AS332 and H225 (EC225) Super Puma versions. Deliveries of the H175s will be from October 2016, with these helicopters to be deployed by Bristow on oil and gas airlift duties.

Airbus Helicopters say that customer service is rapidly improving and that they will hold six regional Customer Service Symposiums in 2015, expanding the popular option this year to include two additional locations. The events provide an opportunity for operators of Airbus Helicopters to get the latest aircraft safety and technical updates and meet with key company’s customer support personnel. The one-day symposiums begin in San Diego in May, with events also scheduled in New York City, Seattle, Maui and Nashville and Houston.

There is a new breed of light helicopter entering service that might make the demise of such as the Schweizer S300 unimportant. The French Cabri is already in service and challenging the pre-eminence of the Robinson R22 in the training market but whether the Cabri or the newcomers will ever make significant inroads into the law enforcement markets remains to be seen.

Marengo Swiss Helicopter (MSH) has been at Heli-Expo with their SKYe SH-09 helicopter for a few years now and now that the type has flown it is being viewed in a new light. MSH has selected the Sagem (Safran) ICDS -8A Glass Cockpit suite as part of the standard avionics/instrument package for the SH-09 helicopter. Developed and produced by Sagem, the ICDS 8A Primary Flight Display & Engine Monitoring System increases situational awareness through customizable engine displays with intuitive LED interfaces. It incorporates many features including a fully configurable user defined checklist, display of primary flight and navigational information, engine management data, pop-up engines with display in split map/engine screen mode, display of external mount camera &



Cabri ©Manufacturer

Marengo SKYe SH-09 ©FAA

VGA inputs, and custom user databases (operators can supply data points for moving map). The ICDS 8A will also record all displayed data for later review and analysis.

Another new player is New Zealand based Composite Helicopters International Ltd. [right] The company was displaying two helicopters manufactured using their patented EvoStrength™ technology, the first KC630 with a RR300 engine in an executive five seat configuration, and KC650 with a LTS101 engine in a utility six seat configuration.

Rolls-Royce and the emerging New Zealand helicopter manufacturer, have signed a memorandum of understanding (MOU) to place the RR300 engine into Composite Helicopter's new KC630 composite helicopter. The companies will be working toward placing Rolls-Royce M250 engine variants into future Composite Helicopter platforms. The RR300 turboshaft engine is an optimal engine choice for the power requirements of the KC630 helicopter, and other Rolls-Royce M250 engines will meet Composite Helicopters' overall strategy for helicopter growth variants.



Each of these newcomers must put the long term viability of the continued production of heritage types like the S300 and the Bell 47 on notice and may even seriously encroach on much younger types.

Most aircraft and engine manufacturers in the general aviation sector saw a major decline in production last year. That the downturn affected them was confirmed by **Turbomeca (Safran)** figures given at their Press Conference on the opening morning of the show.

In 2014 Turbomeca produced some 832 engines, representing an 11% fall on 2013. However thanks to there being some 18,200 engines in service the group reported that they undertook some 1,750 repairs and overhauls which is 17% more than the previous year.

That is not the only positive aspect, if you are selective in the figures you quote you can say that one in three engines come from the group and 50% of all engines in India and China originate from the Turbomeca/SAFRAN stable.

As reported last month the Arrano is the sole engine on the Airbus Helicopter X-4, now called the H160 and launched at the show. Turbomeca were fortunate with the H160 in that when Airbus Helicopters decided to move the airframe up in its weight class the new Arrano had the ability to be developed to provide more power in the 1100 – 1300shp range where the previously selected PWC engine was already at the top of its power range. Deliveries to the airframe manufacturer are due before year end.



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For the future Turbomeca has already delivered engines for the **Bell Helicopter 505 JetRanger** development programme and have the prospect of supplying around 200 each year on current plans, and DRF Luftrettung announce the signature of a 10-year Support By the Hour (SBH) contract for their 40 Arriel 2E engines. With the Turbomeca-powered H145T2 fleet DRF Luftrettung perform HEMS missions in Germany. The Turbomeca SBH contract allows customers to tailor agreements based on their operational needs. Hamburg-based Turbomeca Germany GmbH will provide support and maintenance to DRF Luftrettung. DRF Luftrettung operates 30 HEMS bases with over 50 helicopters for emergency rescue and intensive care transport between hospitals, at eight bases even around

The Bell 429 might well be the new type in delivery but the future of the narrow bodied Bell helicopter continues as Air Methods Corporation, the global leader in air medical transportation, signed an agreement with Bell for the sale of 200 of the latest model of the 407, the Bell 407GXP. This order marks one of the largest commercial sales in Bell Helicopter's history and one of the largest orders in the industry's history. Deliveries are scheduled to begin in 2016 with a 10 year contract term, which is subject to an early termination right by Air Methods. Although not stated this might relate to the tiny danger that in the next decade the FAA require air ambulances to have a specification that the 407 cannot meet.

The single-engine Bell 407GXP enhances customer value with improvements in mission capability. Derived from the Bell 407GX platform, the Bell 407GXP has an additional 50 lbs (22.5 kg) of payload capability, coupled with the new M250 Rolls-Royce engine that improves performance and fuel efficiency. The aircraft is also equipped with new avionics features such as a hover performance calculator improvement, as well as a transmission TBO extension of +500 hours that will lower maintenance costs.

LORD Corporation a leader in the management of vibration, noise and motion control has extended the warranty on all the Bell 407 Main Rotor hub elastomeric components to 2,500 hours or three-years (whichever comes first). Parts covered by the extended warranty include the lead lag bearing (407-310-102-101 & -103), shear bearing (407-310-101-101 & -105) and damper (407-310-100-105 & -107).

Overall Bell secured nearly 300 new Bell helicopter sales prospects at the Heli-Expo. In addition to that commitment to 200 407GXPs to Air Methods Corporation, a major part of the 220 examples of the type sold there was a letter of intent for twenty 525s with options for additional aircraft to Waypoint Leasing and other signings for another 9 examples of the type.

Twelve new orders for the twin-engine Bell 429 included four sales the Trinidad and Tobago [they also ordered a Bell 412Epi], five orders for the 206L-4 and twenty-four letters of intent for the Bell 505 Jet Ranger X

Enstrom Helicopter Corporation is improving sales overall but not to breath-taking levels. The company was able to announce that the final four Enstrom 480B turbine training helicopters were accepted by the Japanese Ground Self Defence Force. The aircraft were delivered by Aero Facility Co Ltd, Enstrom's authorized sales representative in Japan.

The 480B was originally selected by the JGSDF in 2010 to replace their fleet of legacy training helicopters. As part of the phased delivery program, a total of 30 helicopters were delivered over 5 years on time and on budget. The 480B's are used for ab-initio training of all future JGSDF pilots.

Vector Aerospace Helicopter Services will provide the San Bernardino County Sheriff's Department with modification, repair and overhaul services for their Bell 212 helicopter, including installation of STC# SR01142LA, a new Pratt and Whitney PT6T-3DF Twin-Pac,

and all required BHT Technical Bulletins, to provide increased OEI performance and limits. Vector Aerospace will also provide airframe, tail boom, cowling, components and instrumentation MRO for SBCSD's Bell 212 including a 10,000hr LH Main Beam Cap replacement, LH/RH and Centre Engine Deck replacement, interior and exterior paint touch up and all post installation ground and flight testing.

AgustaWestland has signed a contract with AAR Airlift Group to provide two new generation AW189 helicopters to perform search and rescue in the Falkland Islands.

AAR Airlift Group has been awarded a contract by the UK Ministry of Defence to deliver search and rescue services in the Falkland Islands, and will use a mix of two AW189s and two S-61s. The MOD's existing fleet is comprised of Sea Kings and commercial S-61s. The AW189s will be delivered by the end of 2015 to support crew and personnel familiarization and will achieve operational readiness in spring 2016. AgustaWestland will also supply a comprehensive 10 year package of support and training services.

The event marks a further significant success for the new generation AW189 helicopter for search and rescue requirements, following the contract for 11 aircraft of the same type to meet the UK SAR requirement replacing the iconic Sea King helicopters. An established US Department of Defense service provider, AAR is now awarded its first contract by a European defence ministry. The AW189s will be operated out of Mount Pleasant Airfield on the South Atlantic islands with flight operations support from subcontractor **British International Helicopters** (BIH), performing missions in harsh environmental conditions where modern design and enhanced capabilities, extended range/endurance, and latest safety standards are key to demanding SAR mission accomplishment.

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AgustaWestland announced that the AW189 medium twin engine helicopter achieved FAA validation of its EASA certification, allowing deliveries and operations to begin shortly with customers in the United States.

AgustaWestland announced that CHC Helicopter's AW139 fleet leader has set a major operational milestone by reaching 10,000 flight hours. This significant milestone was achieved by the aircraft in less than nine years, making it the global fleet leading AW139. The helicopter is operating from CHC's Den Helder base in The Netherlands, performing its missions in the North Sea with almost 29,000 landings to date.

Specialist Aviation Services (SAS) of the UK will be appointed as an Authorised Service Centre for the new generation AW169 light intermediate helicopter in UK. The company will ensure a range of support and maintenance services are supplied for the new model, following the selection of SAS by prime HEMS customers of the type in UK who will start introducing the new helicopter into service at the end of 2015. SAS signed a contract for a total of six AW169 helicopters in 2012 and has been selected by two UK HEMS customers to operate their emergency medical service-configured AW169s with more allocations pending.



SAS long associated with the MD902 Explorer chose the AW169 as it offers the best capabilities and performance in its class with potential to greatly enhance the operations of SAS' customers. Outstanding performance, inherent safety features, payload, cabin size and design, and its many advanced features are among the characteristics recognized by operators who have already selected the AW169 in UK. Initial orders logged in this market so far will be used for EMS and executive/private transport missions.

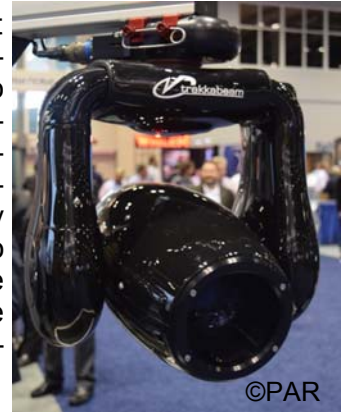
A versatile, new generation twin engine light intermediate category helicopter, the 4.5 tonne AW169 has been designed in response to the growing market demand for an aircraft that delivers high performance, meets all the latest safety standards and has multi-role capabilities. The AW169 incorporates several new technology features in the rotor system, engines, avionics, transmission and electric power generation and distribution systems.

Almost 150 AW169 helicopters have now been ordered by customers around the world for a wide range of applications including air ambulance, law enforcement, corporate & VIP transport, offshore transport and utility roles.

There are a great many searchlight companies seeking a slice of what is a fairly small market. Modern airborne law enforcement tactics do tend to leave illuminating the scene of crime low in priorities and with ever more capable multi-sensor cameras available alongside a significant number of relatively cheap used **Spectrolab** models times can be difficult for the new product sales teams as well as the original manufacturer.

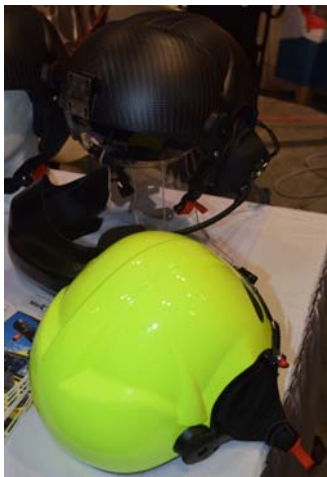


Trakka Corp has added a new variant of their popular searchlight to their range. The Trakkabeam TLX is not a replacement for the existing searchlight it is a premium option that for a price point expected to be some 10% higher offers some additional features including 25% enhanced light output performance and easier maintainability. The standard light is fitted within a single piece casing that requires optics dismantling from the front where the TLX will, when available, have the ability to have its casing removed to access the internal parts. The lamp also offers an enhanced light output. The visible differences between the two models is that the TLX has a visibly larger bore to the light and the usually smooth and unbroken casing now includes bolt heads and casing break lines.



Revue Thommen, based in Switzerland and a long term producer of avionics and [Swiss] watches is another newcomer in this difficult searchlight market. Like Trakka they chose the certification route to market and success has been elusive. In recent month there has been news of limited success through single unit sales but the news on the event floor was that coming up is confirmation of a multi-unit sale into the Swedish Police to accompany their purchase of the Bell 429.

Selecting the searchlight is not as new as it appears. Some years ago it was tied into the negotiations between Sweden and Switzerland when the former was seeking offset contracts when trying to sell the SAAB Gripen into Switzerland during 2012.



North Wall srl based in Langhirano in Italy has registered some significant success in selling specialist helmets to European airborne emergency services along with a range of ancillary equipment including stretchers.

Their face guard is a particularly attractive feature [see right] for airborne crews.



There was a one hour long discussion session on unmanned craft during the show, The **Federal Aviation Administration** has proposed a framework of regulations that would allow routine use of certain small unmanned aircraft systems (UAS) in today's aviation system while maintaining flexibility to accommodate future technological innovations. The proposal offers safety rules for UAS weighing less than 55 pounds and conducting non-recreational operations. The rule would limit flights to daylight and visual-line-of-sight operations. It also addresses height restrictions, operator certification, optional use of a visual observer, aircraft registration and marking, and operational limits.

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The session did not seem to gain much ground on the subject but at least it was aired. There were verbal and visual presentations from the top table but the feedback from the floor was more inclined towards putting forward worries about the dangers of collision with the intruders than anything positive or constructively new.

Although unlikely to see a great deal of interest in the law enforcement or HEMS roles a Swiss company was promoting a major modification of the AS350/355 airframe that greatly enhances pilot visibility. Pilot visibility is a key factor during demanding helicopter operations. They quote sling operation, law enforcement, military and others but there we enter the question of whether the pilot should be actively taking part in law enforcement work rather than concentrating on ensuring the safety of the mission. Sufficient to state that the standard field of view in the AS 350 is insufficient for some operations.

In their preamble to the modification they laud the AS 350 as being to date the most successful single engine multi-purpose helicopter [some might have arguments with that], offering the best performance in its class but then state that probably its greatest assets pilot visibility is insufficient; and pilot head space is limited when compared with narrower types such as the Lama. In the past downward vision has been improved by fitted full depth glazing in the doors but the very roominess of the cabin compared with say the Bell 206/407 works against pilot vision.

The new 'maximum pilot view' kit the company is now offering seeks to economically improve the pilot's vertical view to 350 % and the overall view to 135 %. The modification offers a 'Lama-like' view in the AS350 enhancing safer operation in bad weather conditions and giving the pilot greater comfort. It is claimed that the investment in the modification will be recouped within 500 flight hours (assuming 10 % efficiency increase) and will retain its value upon resale of the helicopter



To date the usual visibility improvement solutions in the type have ranged from deeper and bulged windows or door removal or fitting external mirrors but these have major disadvantages including having no permanent view to the load at sling operation, leading to a consequent loss of efficiency through increased cycle time, safety issues in bad weather operations and over dependence on a ground crew radio contact at critical times.

The modification provides unrestricted pilot view to the most important mission sectors (right side up, vertical down) by enlarging the cabin floor up to 15 cm (6in), enlarging cabin floor window to 350 % of existing floor window, adds a new bubble door providing more space for the pilot's head and uninterrupted view by a huge, single piece window. In addition moving the pilot's seat 10 cm (4 in) to the rear provides more head (helmet) freedom at the front.

SRT Helicopters, a leading provider of Helicopter Search and Rescue services and training, was recently selected by National Helicopter Services LTD to provide Search and Rescue Operational training and support in various countries in South America to include Trinidad and Tobago.

Specialized Response and Training (SRT), a division of SRT Helicopters was chosen after an extensive competitive selection process to provide training for National Helicopters pilots

and maintenance personnel. SRT will also be providing hoist operators and rescue personnel to staff National's S76 rescue helicopter. The contract includes both over water and inland search and rescue.

According to Joshey Mahabir, CEO and General Manager of National Helicopter Services LTD., "Because of SRT's reputation and operational experience in Helicopter Search and Rescue and Hoist Operations, it was clear that SRT was best qualified to meet our extensive requirements and ever-changing time lines."

SRT Helicopters, based in Bakersfield, California, is a full service helicopter company that specialises in providing high risk operational services and training for private business; military, and local, state, and federal agencies. SRT's training staff is comprised of working professionals who regularly respond to real-world missions, which ensures that the company's training methods and curriculum are current, relevant, and designed to address real-life operational scenarios. SRT training is customized to meet each customer's specific mission requirements, which may include initial and recurrent pilot training; CRM/human factors for aircrew and management personnel; technical rescue training, including helicopter hoist operations and maintenance; incident management and incident command training; special operations, including airborne use of force; and operations in austere environments.



©MDH

There has been little movement in Mesa, Arizona where **MDHI** have been pretty focussed on the only product line that is making them money – the 500 line. Although there have been limited civil sales the major successes have been military market armed machines.

The prime marketing on the booth was a celebration of a decade of rebirth, revival and renewal under the leadership of Owner and Chief Executive Officer Lynn Tilton. Under Ms. Tilton's leadership MD Helicopters believes it has experi-

enced nothing short of a dust to diamonds revival. Ten years ago the company was on its knees but, the company statement says, 'today MD Helicopters boasts an array of accomplishments that many thought impossible to achieve.' Not everyone will agree with that rose tinted assessment.

The exclusions have included the imminent delivery of a new, custom-configured MD 530F to the local Mesa Police Department and a new 520N to Volusia County Mosquito Control in Florida where it will join two existing MD 500E helicopters to expand the department's ability to inspect and treat the region's wet and dry lands not serviceable by trucks or other ground methods.

The Mesa Police Department's MD 530F will feature a 650shp Rolls-Royce 250-C30 engine, extended tail boom and longer main-rotor blades, and will be equipped with a complete Garmin suite, including the latest 500H glass cockpit, GTS800 Traffic Avoidance System and GTN 650 to support navigation, communications and safe flight operations. The new aircraft retains the characteristics of speed, agility and manoeuvrability of all MD 500-series helicopters, and pairs well with the unit's existing fleet; delivering the added benefits of common tooling, parts and familiar engine OEM.

The acknowledgement of the 'familiar engine OEM' in that release was somewhat devalued by a later verbal statement by Ms Tilton on the show floor when she appeared to be lambasting that same supplier [Rolls Royce] for being less than understanding when supplying their engines to MD.

The news on the MD902 Explorer coming out of last month's HAI Heli-Expo was not exactly promising. The MDHI CEO Lynn Tilton again went through a lot of jingoistic rhetoric on production but that was almost wholly related to the MD 500/530/540 series of airframes, all still based upon the Vietnam War OH-6 Loach even if greatly improved.

The significantly updated 500 airframe manufactured in Mexico is the only product making money for MD at the moment but it is nonetheless 1960s technology that she is concentrating on.

It was only towards the end of her presentation and in a subsequent interview that she made mention of the modern company product the 1990s MD902. New examples of that product is not to be seen coming to a sales room near anyone soon. What is happening is very much on the back burner. For the last couple of years I have reported that they are bringing the production of the product in-house and that it will be fitted with a new avionics suite as if that move was imminent. Well ditto to that and there is simply nothing significant happening there in the USA. In the wider world where jingoistic American marketing rhetoric has little or no sway the market is looking for a good new HEMS airframe.

The world fleet concentration remains in Europe and in the UK in particular and it is fair to say that most if not all of the current 902 operators are looking for new aircraft soon; most current operators are enthusiastic users and they still class it as nominally the best overall fit airframe for HEMS despite the maintenance issues. But they are not being offered the 902. They may have to consider a refurbished airframe drawn from a diminishing fleet of 902s or go elsewhere. Enter the battle between Airbus Helicopters, AgustaWestland and Bell for a new generation of air ambulances.

In the background there are stories suggesting that the most precious commodity in the market at the moment is the MD900 transmission [gearbox]. They are wearing out but apparently not being repaired, replaced or refurbished at a rate consistent with keeping all the existing fleet in the air. There is talk of ten or so worn boxes awaiting repair at Mesa at a cost of something like \$250,000 each but that the manufacturer [Kawasaki in Japan] is not undertaking to accept more than two for repair each month.



Becker Avionics has one of the premier airborne law enforcement agencies in the USA, the California Highway Patrol (CHP) Office of Air Operations, has chosen the Becker DVCS6100 Digital Audio system and Polycon wireless communication system, for integration into their recent purchase of new fleet replacement helicopters and fixed wing aircraft. Initial aircraft deliveries of CHP's new AS350 B3 helicopters started late last year, and their first GippsAero GA8 Airvan delivery took place recently. Both new aircraft fleets are expected to be delivered within three years.

Recognised for its unparalleled scalability, reliability and rugged design, the DVCS6100 Digital Audio System reduces engineering, certification and integration effort, saving both time and money. Designed for fixed-wing and rotary-wing applications, Becker's digital audio system offers crystal-clear voice communication quality and a proven Human-Machine-Interface (HMI). Since market introduction, over 1500 DVCS systems have been delivered to commercial and military customers worldwide.



UTC may be wishing to divest themselves of founder member Sikorsky but the company continues to play the 'Heritage' card to good effect. The book signing sessions by HAI Heli-Expo regular Sergei Sikorsky were a popular feature of the Sikorsky booth.

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ON THE FLOOR

There were far too many exhibits to allow the luxury of an image for each one but these are some of the 'also ran' appearances. Top: The Elytron concept may fly this year if it can raise the finance for development.

Left: Axnes were promoting their communications pack.

There were few gyrocopters at the show this year. Right: Owners will be glad to know that the Sud Alouette II also escapes the designation to an Airbus Helicopters H type! Below: An L3 take on the ultimate simulator suite—just not too mobile in this form.

NEXT YEAR PROMOTION PACK!



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Bell brought the well equipped Delaware State Police Bell 429 on to their booth [above]

DART left behind its usual decommissioned AS350 airframe this year and instead turned to a complete AW139 aircraft to feature its cutting-edge Emergency Float System with Integrated Life rafts as well as its AW139 Lightweight Interior Ceiling Panels, Maintenance Steps, Door Accessories, Engine Wash System, Protector Kits and more.



In addition to the AW139 family of products, DART displayed its familiar Landing Gear products, Maintenance Tools and Ground Handling Equipment, the first R66 Primary Cargo Hook certified on the market and the latest in engine protection systems that completely re-defined engine filtration: the *PUREair* Filter Systems, co-developed with Pall Aerospace and the new Pall *PUREair* PB Series Dry Barrier Filters.

And that returns me to the starting paragraph of this report. The mention of 'family duties' and locations with attractions. Next year the event is treading new ground and the move is creating much controversy. For years there have been voices asking why the event is always held in the southern US states, typically California, Nevada, Texas and Florida but they tended to be over-ruled by those that adhered to the family values angle. Next year it is planned to take Heli-Expo to Louisville, Kentucky which might be accepted as a refreshing change but for the weather there this very week.

Already the doom predictors had been saying that it was difficult to get to in nice weather – no direct flights from anywhere truly international go into the 'International' airport, so Europeans will be faced with flight changes at some locations that have a history of being snow hit in February, Chicago, Detroit and New York or into a potentially slightly warmer Atlanta.

On the day that the HAI event drew to a close under slightly leaden but otherwise warm skies Louisville KY was hit by a rather unfortunately timed snow storm that dumped another 12 inches of the white stuff on the city! And just to add to the endorsement a Delta MD80 trying to operate out of New York [albeit not to Kentucky] ended up sliding in snowbound conditions and on the verge of being submerged in the river.



Add that bit of information to the previously mentioned disquiet over union activity and there may well be interesting times ahead.

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