

# Police Aviation News

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Special Edition Paris Air Show 2007

IPAR



## PARIS AIRSHOW REPORT





Finmeccanica static

## 18-24 June 2007

47<sup>th</sup> International Paris Air Show, Le Bourget Airport, Paris. Organised by PLBPE, a subsidiary of GIFAS. 8 rue Galilee, 75 116 Paris, France +33 153 2333 33 fax +33 147 20 00 86 [exposants@salon-du-bourget.fr](mailto:exposants@salon-du-bourget.fr)

The 47<sup>th</sup> International Paris Air Show held at the Le Bourget Airport, Paris was as ever a giant affair and it was no surprise that the core of airborne emergency services exhibits were relatively difficult to winkle out. Only spending a day and a half in town did reduce the chances to seek the stories but I hope you will find them an interesting selection.

And if anyone finds my very empty and discarded wallet in and around the Paris Metro please drop me a line!

*Bryn Elliott*

## FINMECCANICA

One of the larger displays was Finmeccanica which now covers a vast array of product lines from widgets to some of the largest aircraft around. A review of their show offering could rightly spread to numerous pages of this issue. It was perhaps the absences that were most noticeable. An instance was that a year ago at Farnborough the Selex sensors and airborne systems division were pushing what was being suggested was their alternative sensor for law enforcement use. This is what I would term the former British Marconi product rather than the Italian Galileo. Readers may recall that Selex operate an BN2 Defender aircraft for its development. It maybe just taking a back seat for this show, in favour of such as the ATOS surveillance system, but the lack of immediate promotion in this area was noticeable. Perhaps the forthcoming Helitech show will prove differently.

**AgustaWestland** were able to announce the delivery of the 100<sup>th</sup> AW139 medium-twin helicopter during a ceremony at the Paris Air Show today. The aircraft was handed over to Synergy Aerospace, a division of Synergy Group. The aircraft will be delivered to Brazil after the Air Show to commence offshore operations with Senior Táxi Aéreo, one of the largest helicopter opera-



Finmeccanica static

tors in the country.

## EUROCOPTER

Even from its lofty position at the top of the helicopter production pile, In the past Eurocopter has tended to downplay its part in giant shows like Farnborough and Paris because of the large non-helicopter military content these venues have. More recently the group has tended to be brought along by its membership of the giant EADS, but Paris is effectively home so the presence tends to be more upbeat than at other large venues.

The helicopter static park was bulging with the fruits of many notable success stories, including the high cabin military NH-90 for Sweden [only partly an EC product] and the first SAR EC225 for the China Rescue & Salvage organisation. As yet the craft is not carrying its future in-service identity, but was carrying the show markings H196. They started off operating Sikorsky – not unlike the Hong Kong GFS – but have migrated up the capability ladder to take on the Super Puma derivative, again a move undertaken by the GFS. As the state sponsored SAR operation China Rescue & Salvage has a massive area of responsibility and a fleet of boats and aircraft based on the best practice across the World. Theirs is a growth industry though and as such they are effectively restricted to the busier sections of the coastline of mainland China by limited resources in equipment and trained personnel. Expansion will take place at a measured pace.

We will have to wait until next year for the substantive SAR Conference [again in Bournemouth UK] but meanwhile China is upping its own profile by inviting the world to its own



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small event at which I would assume the new Eurocopter will be handed over officially. English speaking Captain Jiahui Song the Director General of the Rescue & Salvage Bureau is promoting the China International Rescue & Salvage 4<sup>th</sup> Conference and exhibition to be held in Hainan, China at the end of next month. I suspect that much in the same way as most aviation on the mainland PR of China much of the dialogue will be in Mandarin rather than English. +[www.cirs2007.com](http://www.cirs2007.com)

One hundred years of the helicopter was a flavour of the Eurocopter presentation and as such there was a replica of the original 1907 Paul Cornu machine in front of the magnificent Breitling watches stand fronting the museum. The replica pays homage to French inventor who in November 1907 flew the first rotary wing aircraft at Lisieux, Calvados, France. The machine, which had two counter-rotating rotors driven by a 24-hp Antoinette engine, lifted him about five feet in the air for one minute.

The full scale mock-up was built by a team of 25 engineers of the ESTACA school (a French aeronautical engineering school) with the support of Eurocopter. The students had no drawings of the helicopter – they were all destroyed during air raids – so based the reconstruction on photographs from the period and a 1/10 mock-up. The helicopter was firstly modelled using CATIA software to produce construction drawings. The students then carried out research into construction techniques of the period, assisted by historian Philippe Boulay. The structure consists of steel tubes reinforced with cables.

After this years commemorations the replica will find a permanent home in the Le Bourget museum.

The Sécurité Civile - French civil security service - which operates 31 EC145s, has now exceeded 50,000 flying hours with these helicopters since taking delivery of the first in April 2002. The Sécurité Civile provides a 24/7 response capability for a range of emergency situations including assistance, rescue, fighting and emergency medical evacuation. The pilots of the Sécurité Civile are military personnel, and are the ones authorized to fly over



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Paris and land there. The helicopters are all equipped with loud hailer, emergency floatation gear and a hoist for lifting up to 270 Kg, and some are equipped with a search light.

**PARIS TO OSHKOSH**

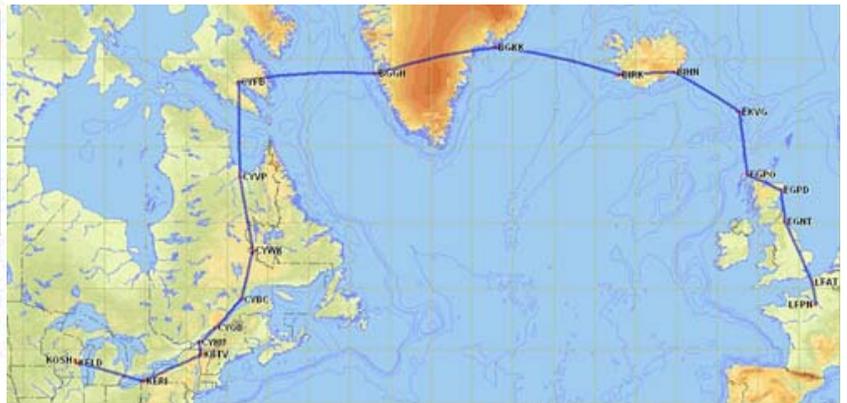


The Breitling stand was the centre of attention in mid-week for the promotion of Heliventure 2007 the intended flight of a dozen light helicopters to the AirVenture light aircraft show in Oshkosh, Wisconsin on July 23-29. Nominally a light aircraft event Dassault intends to send its Falcon 7X ultra-long range business jet to Oshkosh and the long distance helicopter flight will further broaden the event into a wider aerospace event.

Several helicopter enthusiasts from the Union Française de l'Hélicoptère (the French helicopter association) will commemorate Cornu's 100<sup>th</sup> anniversary with a group flight commencing on July 14 and covering more than 4,600 nautical miles to Oshkosh with a planned arrival on opening day, July 23. Before flying into Oshkosh on opening day the group is expected to arrive in Fond du Lac on July 21.

Their planned flight path will include stops in the United Kingdom, the Faroe Islands, Iceland, Greenland, Canada, and the US -about 50 hours of flight time each way. Among the confirmed aircraft are two Eurocopter AS350 and single examples of the AS355, Robinson R44, and Agusta 109. Two fixed-wing aircraft, a Beech King Air and a Socata TBM 850, will also accompany the flight.

Virtually all the 12-15 helicopters expected to actually take part in the flight will be single-engine and will include machines down to the size of the R44. The purpose is partly political – a show of force by a new 'fresh and newsworthy' event highlighting various issues in the





industry including the proposed user fees and the fact of single-engine operations.

On the Breitling stand Helicopter Association International [HAI] President Matt Zuccaro was feted – but in French. It appeared quite clear that he is unfamiliar with the language, but he duly had his turn in English and addressed an audience that included a fair representation of the French helicopter industry.

Zuccaro was followed on to the dais by a group of what appeared to my now ageing eyes mere schoolchildren. It was a few minutes before realization set in through the language barrier that these youngsters were actually the trained and proficient pilots undertaking the flying!

As you read these words the final preparations for the flight should be underway. It will entail twelve stops and six stopovers and is open to pilots with a minimum of 500 flight hours and a SPIFR rating. [www.airventure.org](http://www.airventure.org)

## TEXTRON GROUP

Bell Helicopter were at the show and had an impressive corporate chalet but as has been noted in the recent past their actual hardware offering remain somewhat mooted until the 429 comes on line.

Bell state the new 429 continues to make excellent progress towards certification in September 2008. Flight tests should see the type meet or exceed all performance goals for the helicopter. To date the testing has taken the 429 to 20,000 feet; explored high gross weight configuration in both forward and aft CG configuration is complete; achieved flight speeds of about 200 mph; strength and stability of the Modular Affordable Product Line (MAPL) landing gear demonstrated and certified; landing and take-off on slopes achieved and autorotation testing is under way.

Bell were promoting the creation of the First Responder Helicopter Safety Program to be offered by the Bell Helicopter Training Academy. The course is designed to provide Firefighters, Law Enforcement, and Emergency Medical Services information about the dangers, hazards and safety precautions of the helicopter environment and the skills necessary to protect themselves and others.

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First responders will be given in-depth instruction in the following topics:

Basic knowledge of the helicopter's capabilities as an emergency air vehicle, aircraft configuration design, and aircraft operating systems.

Hazards involved in operating around helicopters and the safety precautions to enhance safety.

Immediate actions required by the first responder when first on the scene, Helispot (landing zone) selection and procedures, operational hazards and situational awareness.

Actions and procedures necessary to affect a safe recovery of pilot, crew and passengers.

The training program will be offered on a DVD and can be viewed on a personal computer or DVD player. The easily exportable and user-friendly training program will allow any agency to benefit from the training no matter their size, location or training budget.

The Cessna Aircraft Company marked its return to the Paris Air Show with seven aircraft on static display and a full-scale cabin mock-up of the company's newest large-cabin, long-range business jet concept.

The aircraft on static display included the Citation CJ2+, Citation Encore+, Citation XLS, and Citation Sovereign business jets, a Grand Caravan, a 206 Stationair, and a 172 Skyhawk.

Based on unit sales, Cessna Aircraft Company is the world's largest manufacturer of general aviation airplanes. In 2006, Cessna delivered 1,239 aircraft, including 307 Citation business jets, and reported revenues of about \$4.2 billion and a backlog of \$8.5 billion. Since the company was originally established in 1927, more than 189,000 Cessna airplanes have been delivered to nearly every country in the world. The global fleet of almost 5,000 Citations is the largest fleet of business jets in the world. [www.cessna.com](http://www.cessna.com).

## REIMS

Twenty years ago Cessna parted company with their 406 design and left it to a small French company to develop. That company, Reims Aviation, was already producing Cessna singles under licence and it was therefore a natural move to pass on the part-developed aircraft that was surplus to their then marketing strategy. Even today that leaves a significant hole in Cessna's line-up in that they have no real answer to such as the Beech [Raytheon] King



Air in the relatively small but potentially cash-rich surveillance market.

Reims has been through some bad times and it is a new dynamic company under new ownership that is marketing the 406 into the 21<sup>st</sup> Century. The Cessna past of the aircraft is now behind them and marketing is now primarily aimed at the surveillance sector. Of nearly 100 aircraft delivered 43 are already active in the surveillance role. The type has now become the established logical choice for terrestrial and territorial water surveillance across the



world. Long established operators include the Australian Coast-watch programme, French coastal patrol and UK fisheries. Additional new aircraft orders in both the latter markets underscore a very real customer interest in the type.

There were two 406 airframes in the static park at Le Bourget both set for work immediately after the show. One is already lined up as a trials platform for Thales and the other as a new Fisheries Patrol craft for export.

The newer of the two, one c/n 0093 F-WWNP now marked V5-FMR 'Sea Eagle II' is destined to enter service with Namibian Fisheries shortly as the latest delivery. This will join another similar aircraft already in service. Coming behind this example on the production line are two examples for Scottish Fisheries that will replace an existing pair.

For the high visibility role nose mounting of the sensor remains favoured, for operators requiring a covert aircraft a hatch situated towards the rear – otherwise used to eject such as liferafts in flight - is converted to allow a retractable sensor fit. The image right shows the hatch in its original configuration [foreground] and the simple circular 'bung' used to close it. Even with the sensor package retracted the height of the fuselage above the ground means that it is not visible to persons standing nearby—a necessary feature for covert aircraft regularly using facilities with little or no security.



High wing aircraft types are often promoted for their excellent observation capabilities, but turbine-powered aircraft of this configuration have a tendency to find that surveillance is marred by the intrusion of the engine exhaust plume into the line-of-sight of the primary observation position at the rear. Although there is the bulk of the engine and wing to contend with experience has proved that flown tactically the observing positions along the length of the Reims 406 aircraft suffer little or no visual intrusion from the wing or exhaust plume.

The airframe is large enough to provide ample working environment for two pilots and a rear observer complete with the crew comforts for an extended maritime mission.

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## UNMANNED

Two years ago there was a strong commitment to flying UAV's as part of the Paris Air Show. Many thought it impossible, and indeed their caution held sway. That said a UAV future was underlined by the sheer number of systems, illustrations, mock-ups and hardware being presented at the event.

All nationalities were represented at the show and it may be that the various models on the booths in the halls, mock-ups and static park occupants amounted to numbers that made UAV' the majority class in the show. The range of manufacturers added up to a veritable roll-call of the unmanned machine industry: Alenia of Italy, CybAero of Stamford Connecticut, EADS in Europe, General Atomics of San Diego, California and IAI of Israel to mention but a few. Some names are familiar but the emergence of this class of aircraft is putting forward a whole new set of names.



Finmeccanica sent a heavy presence of UAV's to the show and announced a first flight of its Sky-y craft from Vidsel in Sweden.



Perhaps second only to the Israeli's Alenia are one of the leaders in civil suitable technology and their civil certified Falco [flown at last years Parc Aborporth Unmanned Systems event] was in the static park. Sky-Y, the operational demonstrator for a new-generation unmanned aircraft was being displayed for the first time to the public during the Le Bourget Show. The one-tonne Sky-Y is the first unmanned surveillance vehicle, in the Medium Altitude Long Endurance class and was conceived, designed and produced in less than a year by Alenia Aeronautica. The Sky-Y made its first flight at Vidsel Base in Sweden, successfully completing a series of three take-off runs and then, in flight, tests for stability, manoeuvrability, acceleration, automotive derived diesel engine and propeller performance, reaching a maximum altitude of 3'000 feet and a speed of 110 kts. During the flight, no faults were registered and the performances were better than expected.



BAE Systems announced that its Taranis UAV technology demonstrator has passed a major milestone with the design of the autonomous systems now finalised. Taranis will be the largest UAV built in the UK to date and is a joint project with QinetiQ, Rolls-Royce and Smiths Aerospace.

In a very crowded European airspace much is being made of Parc Aborporth in the remoter parts of western Wales but the North European Aerospace Test Range Vidsel Base in northern Sweden is far remoter and larger and much favoured by Alenia and others associated



with Parc Aborpoth. If you lose control of a system at Parc Aborpoth it quickly becomes a problem. At Vidsel there is an area the size of all Wales set aside in a low population region as the range, so it is large enough to give plenty of time for the range owners to remedy the problem. With Flight International recently reporting that the British Army had 'lost' hundreds of their unmanned systems in combat areas these are not yet necessarily systems to trust. Imagine the furore if that many manned airframes had been lost [regardless whether they were systems failures or shoot-downs]. And yet some are still boldly [and blindly?] promoting unfettered use of tiny machines in built up areas. Hit someone with a 2kg [4.4 pounds] machine whizzing along at 30mph and they will surely bleed.

In the USA there are lesser problems and of course this is the home of the only real successful near civil UAV system in CBP104 the Predator of the US Customs and Border Protection. A success it may be, but the loss of its predecessor represented a one of one lost, 100% attrition at the time and even now 50% of delivered fleet. Fortunately the lost machine was flying over an area the size of Vidsel and no-one got hurt.

Another negative aspect of the smaller UAV's is the quality of the images they can provide the watcher. Exhibitors were showing machines that are incapable of carrying high quality sensors – and indeed they were never intended to carry such bulky loads – but will the customer accept that loss in quality? 'Of course' is usual retort, but we have to remember that what we have now on airframes – and with HD looming – is of a quality that is second to none and very acceptable in the courts. Ten years ago a blurred shaking image was fairly acceptable but I know of one instance more recently where a manufacturer tried to sell downmarket in the UK and duly demonstrated the product in flight to a range of UK air support personnel. They were not impressed and as a direct result the product and the manufacturer left the UK market very quickly afterwards.

The industry as a whole appears to be content to await the technology that promises to return wayward unmanned systems safely to the ground and indeed to avoid other craft and each other. The technology is out there and a



range of manufacturers are experimenting with its capabilities. Companies like UK based MDL Laser Systems [www.mdl.co.uk](http://www.mdl.co.uk) are offering laser rangefinders that promise to provide lightweight systems that might fit into an intergrated system that will slowly reduce the level of risk. MDL report they are selling units in ones and twoes to a whole range of manufacturers but they like all such suppliers are awaiting the opportunity to sell in quantity.



## FLIR SYSTEMS

Manned systems currently prevail. Although it is primarily a system created on an US STC rather than a full International certification, FLIR Systems, Inc. brought to Paris its surveillance Pilatus PC-12 Spectre N325FS. The PC-12 exhibited carried the Star SAFIRE HD Technology sensor turret, currently the only multi-channel, all-digital HD commercial off-the-shelf system. Although it will not be long before other manufacturers enter the market this sensor turret has captured the world market for this class of sensor with 115 ordered or delivered.

## SPECTROLAB

Spectrolab were exhibiting the latest version of their latest generation searchlight on their stand. The company were faced with a massive loss of customer satisfaction do to poor performance of the original specification. The majority of the problems were caused by wa-

An advertisement for Microwave Radio Communications. The background is a dark blue gradient with a silhouette of a helicopter and two people on a ladder. The text is in white and orange. The headline is 'THE NEXT GENERATION OF SECURITY ...'. Below it is a list of services: Airborne Video Downlinks, Central Command, Disaster Recovery, GPS Tracking, Ground Surveillance, Port &amp; Border Patrol, and SATCOM. The company logo 'MICROWAVE RADIO COMMUNICATIONS' is in the bottom right. At the bottom, it says 'Visit our new web site at ... www.mrcsecurity.com'.

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- Central Command
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ter ingress. The use of an off-the-shelf solution for their gimbal mount on the searchlight proved very damaging. Customers were turning their backs on the new light and reverting to the SX-16. They have finally overcome the water ingress problems emanating from their original selection by developing their own design gimbal. It looks likely that almost six years of development for the new searchlight is coming to an end. Where the original gimbal offered a 360 rotation option the new standard removes full rotation in seeking water integrity. The new equipment has now been flying on the Lancashire Constabulary Eurocopter EC135T2 for some weeks with no reports of problems.



## DIAMOND

Except for the multi-aircraft formation teams it seems that the most numerous single manufacturer aircraft type to be seen at Paris was the Diamond DA42. Although there were only two nominally different specifications present [the DA42 Twin Star and the DA42 MPP] the fact that each of them was being presented wearing a different set of sensors led to the ef-



fect of there being six entirely different airframes on view. The sheer scale and variety of the offerings from Diamond suggest that the company has happened upon a previously unsuspected public need.

The Riegl LMS-S560 airborne laser scanner system is but one of many arrays that encompass sensor nose mounts from Denel, Wescam, FSI and IAI [the POP]. At one time it seemed that laser equipment only worked on helicopters able to travel at walking pace over



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terrain, now it seems that the technology has moved on and the scanning and image processing capability can take place at far higher speeds more suited to the cheaper fixed wing aircraft.

*Along the flightlines the serried ranks of aircraft are as ever the main draw for any major aerospace event.*

*In the sidelines, the chalets and the halls the main business of the show is undertaken out of the public view.*





## VULCANAIR

The small Italian company continues to promote its P68 Observer and newer AP68TP – 601 A-Viator/Marlin light twin aircraft into the surveillance market. Both types were parked in the static and fitted with sensors suggesting the interest of Vulcanair in this market sector. The Observer was on the company stand with attentive sales staff to hand, but strange to report the less familiar A-Viator was parked in the middle of the Finmeccanica area and was unlikely to attract a great deal of attention. Getting into that area was extremely difficult and you might expect that anyone wanting to go through all the hoops to get to inspect a Partenavia machine crowded in by Finmeccanica products would have already decided to buy it before attending the show! I have noted a lack-lustre interest in sensible marketing by Vulcanair before and this example just serves to underline my puzzlement.

The Observer has sold in reasonable numbers by offering a sensible cost-effective alternative to running a costly helicopter on straight observation duties. It has been around a long time now and it has effectively seen off the potential foreign sourced competition from such as the Optica and [so far at least] the Seeker. There are over 430 examples of the various P68 family sold, but the numbers of aircraft in the Observer class in the market suggest that this is a more limited requirement than the various manufacturers would have us believe. The Observer certainly seems to have taken the lions share and besides a widespread ac-



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ceptance within the Italian law enforcement industry there are twelve police forces in the USA reported to be operating them.

Nominally a 6-seat aircraft the Observers somewhat cramped interior in the utility surveillance role does allow a typical basic crew of three the opportunity to operate with a high quality sensor turret and the example at the Paris show was using a Wescam MX-15 fitted in a retractable ventral position that promises few ground clearance or CG issues. For the future Vulcanair are promising a glass cockpit to suit marketing the type into the 21<sup>st</sup> Century.

In contrast the 10/11 seat AP68TP-601 A-Viator a newer slightly larger airframe offering additional options in surveillance fit and crew numbers and stations over the Observer was sidelined at the show. The A-Viator it carries the same P68 type number. Vulcanair have been quiet about the level of its sales success and this was in many ways underlined by the

parking of the display craft I-TLRN in an area very much lost to public view in the centre of the very restricted access Finmeccanica static [see page 2]. Although it was fitted with a Leo 2 turret hinting at a surveillance market on closer inspection the internal work station was in a dismantled state and will not have represented a satisfactory promotional tool for



**P68 Observer the inside story**