



# Police Aviation News

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## MILIPOL





**F**rom time to time PAN visits new exhibitions—some of them in areas that might be considered off-beam for the main news coverage thrust of this airborne emergency services newsletter. A number of these forays into the ‘unknown’ relate to military and security industry specific exhibitions and a fair number fail to fit into even the pretty loose PAN mould. In November the Editor went to Paris to sample the bi-annual Milipol exhibition there this first experience was not entirely promising.

Not expecting too much of what appeared to be an event primarily aimed at the ground based police and a whole host of gun users with the only likely aeronautical interest being delivery of SWAT teams probably helped. It was almost a surprise to find the aeronautical items that were unearthed. Whether they are important enough to make it worthwhile for others to visit Paris and its other attractions I leave the reader to decide!

This then is a review of Milipol Paris 2005...Le Salon Mondial de la Securite Interieure des Etats - *The Worldwide Exhibition of Internal State Security* ... held within some of the exhibition halls at le Bourget airport where five months earlier the Paris Air Show was being held.

Days earlier the region looked likely to be a venue under siege. Civil unrest in Paris that spread to the rest of France was ‘put down’ by the CRS the very type of force that visits an event such as Milipol and it might be expected that even after the event the type of ‘peace group’ picketing that dogs similar events in the UK would be well underway. But it was not so. The only outside forces that spoiled the event were a rail strike that preceded my visit and a dearth of the special buses connecting the display area with the local railhead. Quite a Gallic touch but an annoying one.



Milipol has experienced constant growth since it was first set up in 1984. This year is some 13% larger than the previous event in 2003 at total of more than 800 exhibitors, 60% of whom were from 40 countries outside France. A handful of countries were appearing for the first time. Viewing the gathered exhibitors were people from some 118 countries. In 2003 there were a total of nearly 21,500 visitors

of whom 6,124 were from outside France. Truly an International event then.

## **POLICE AIR SUPPORT IN FRANCE**

France is poorly served by air support. The Police National rely upon the military Gendarmerie and the civil Securite Civile to provide air cover but, although the Gendarmerie has been flying over 50 years, neither is a strong exponent of the craft of airborne law enforcement.

Although there are clear signs of increased funding for law enforcement particularly for the air element of Customs and coastal patrol aircraft the French police continue to lag behind in the use of airborne role equipment. Although they can do rope work and rappelling they have a poor record for airborne law enforcement performed at night. With its military background the Gendarmerie exhibited the traits of most modern peacetime armies in being Monday to Friday operators. For too long police operations were confined to daylight and the move towards limited night operations has failed to inspire. In the new area of operations the only night role equipment has been a limited number of SX-16 searchlights and they are primarily assigned to recently upgraded examples of the elderly AS350 fleet.

In the wake of the recent riots across Paris I was hoping to find that the French police had finally and quickly embraced the use of airborne sensor pods with colour cameras and FLIR night vision.

Both the Gendarmerie and the Securite Civile have high quality new helicopters in service now and it stands to reason that they should be accompanied by the equipment to enhance their role. It was not to be. No vendor has yet announced the conclusion of a contract ending the long drawn out tender process that dates from the ordering of the new EC145 fleet.

Ominously one senior French contractor said that the French police authorities were disinclined to use helicopters over the recent riots at night for fear that their noise would incite a worsening of the situation.

It appears this perception was based upon an assumption that the helicopters would be visible and audible. Based on US experience it was considered that the helicopters would need to be flying low even if they had a modern camera system.

Presumably they discounted the British system that uses larger more capable cameras with a greater range allowing them to stand off at a distance at which they become inaudible at ambient noise levels as it does not fit what appears to be a 'preferred' perception.

The French Authorities were offered a well equipped Zeppelin airship but the time lag for them making a positive decision was such that the problem had dissipated by the time a decision was near and it was never put into service.



With the French emergency services market continuing to provide a void into which the major sensor producers will one day sell their products the Milipol show understandably drew manufacturers presenting their products.

Illustrated here are sensor turrets from FLIR Systems, L3 Wescam and Polytech. The Thales Agile sensor pod appears on page 8.





## AIRSHIPS AGAIN

The Zeppelin airship may be familiar from its appearance at the Paris Air show earlier this year. The Paris based Sofema Groupe were promoting the airship alongside the Reims Aviation 406 at the show but neither was present.

Sofema claim that the Zeppelin offers the security services a type of craft that vastly outperforms all that have gone before. Although the airship industry itself would never admit



to the problem before it was remedied by the new Zeppelin craft it seems that there was a general problem with airships when they tried to operate in wind velocities greater than about 18 knots.

The new Zeppelin airships provide a resurgence in the design of the originals after over 60 years. Built in the same Friedrichshafen area of Germany that the originals were from the Zeppelin NT embodies the latest knowledge in aviation engineering and utilises the most up-to-date materials and technology. New techniques and power modules allow the Zeppelin craft to operate in far higher wind speeds [35 knots] and—it is claimed—turn at a rate that challenges helicopters thanks to the installation of three engines on the upper part and the tail.

Although the Zeppelin NT can operate from a mobile mast that requires a ground crew stripped down to just two Sofema see that the way forward is leasing agreements to end users wanting to cover specific events and associated security requirements rather than sales.

## F406 RESURGENT

Sofema also market the Reims Aviation 406 a type that first flew in 1983. Not that long ago it appeared that the 406—originally based on the Cessna 406 twin—would quietly disappear from view as its manufacturer entered insolvency. Now the story is turned around somewhat



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Reims was reborn as two firms Reims Aviation Industrie and Reims Aerospace—two new and completely separate companies and there is a resurgence in interest in the aircraft as a surveillance platform based upon the success of the existing aircraft. Although many of the former sales remain clouded in secrecy there are enough existing customers who feel able to talk about their machines and how good they are to further promote new sales.

With the market sector being quite specialist in nature large numbers are not the name of the game. With other unannounced sales the continued repeat sales of improved aircraft into the French Customs and the British fisheries patrol market will be sufficient for supporting the refinanced Reims into the foreseeable future.

On the Soferma stand the company were exhibiting a model of the F406 alongside an L3 Wescam sensor turret. The association suggests that it is intended to upgrade the sensor capability of future aircraft.

## MORE FLOATING OBJECTS

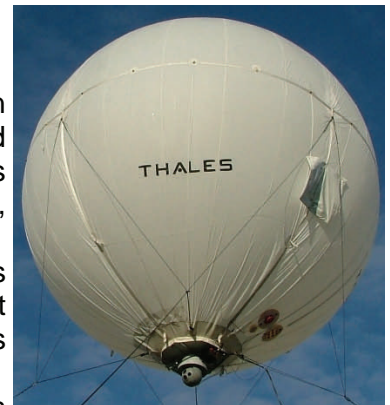
The main entrance to the event looked promising from an aeronautical sense in that it was guarded by a large tethered Aerostat pronouncing that it was from the Thales stable. Thales Land and Joint Systems Division is based in Colombes cedex, France.

The company were presenting its global security and safety Thales SHIELD TM, made up of a range of secure solutions aimed at protecting borders, people, information and critical infrastructures against terrorism, organised crime and natural disasters.

At Milipol 2005, a state-of-the-art Safety & Security Operations Centre (SSOC) showcased each of Thales diverse security solutions. The monitoring of a typical event was illustrated on the stand by the demonstration of surveillance capacities and integrated intelligence in a static aerial platform, (the balloon) situated at a height of 20 metres above the zone being monitored. The static aerial platform delivered video and radio surveillance information, fed them into the adjacent SSOC where they were analysed in real time.

Thales also demonstrated an electronic passport control solution enabling the viewing of the latest security regulations in biometrics. The high-performance reading solution is designed to alleviate congestion at passport control posts. Thales has recently been selected to supply Morocco with the world's first national-scale secure ID solution based on contact less smart cards.

Large to the beholder it may be but Thales market their balloon as an Compact Aerostat System! The description may be a surprise but the uses are predicable in primarily encompassing events security, high value asset surveillance, counter-terrorism and border




**Reims F406 Land & Sea Surveillance**



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Four small inset photographs are arranged horizontally at the bottom of the AeroExpo 2006 section. From left to right: a small propeller plane on a tarmac; a helicopter on a landing pad; a person standing next to a small aircraft; and a person standing next to a small aircraft.



surveillance. Demonstrated on-site at typical heights of 20 metres [33 feet], the system can also lift up to 100m [330 feet] and is operable by a two person crew.

### SENSOR PAYLOAD

Such aerostat systems are only as good as their payload and this leads to the introduction of the Thales Agile sensor pod. Agile is an compact Airborne Gyrostabilised multi mission and multi sensor system found across the military spectrum.

Offering low weight [20kg—44 pounds] into the fixed, rotary and UAV market—with a maritime version on offer. The platform offers 3 axis active gyrostabilisation with full 360° rotations and an elevation capability of + 30° to - 100°







The IR camera operates in the 3-5 $\mu$ m spectral band giving a x12.5 continuous optical zoom, wide FOV: 27° x 20° and narrow FOV: 2.2° x 1.6° The colour camera offers a x 25 continuous optical zoom a wide FOV of 50° x 38° and a narrow FOV: 2.2° x 1.6°. Laser range finder and pointers are an option.

## UAV PRESENCE

The Paris Air Show promoted the likelihood of many Unmanned aircraft filling the sky in the near future so it stood to reason that this return to le Bourget might have a similar message. There were plenty of UAV's to be seen, but not that many. Whether that is a reflection of recent talk of a cooling of acceptance of UAV's in the non-military sector remains to be seen.

EADS were present with their well known event security product. They have now added a twin-engine conventional UAV to their regularly exhibited rotary machine [below].

French exhibitor Tecknisolar Semi were displaying a number of crude UAV craft of uncertain capability and included one clearly representing a covert birdlike finish. It was unclear whether this craft was a serious proposal.

The IT 180-5 Drone, designed by Infotron, a company specialising in wireless communications applications, is a helicopter drone with counter-rotating rotors able to document everything it detects, collect and store data through an integrated video camera and a GPS positioning system.

It is suited to observation, surveillance and location, as part of military, industrial, environmental and information-gathering missions. Three pilot modes, a highly portable command and control device requiring only a single operator, the IT 180-5 Drone exists in a diesel fuel-powered version for optimised range and a battery powered version for silent operation.



# UAV selection



## CLOTH AND CLOTHING

A large number of the exhibitors were displaying work-place clothing—flight suits and badging being the most associated with the PAN market but these were a mere adjunct to the riot gear, bomb-disposal armour and even the occasional diving suit.

A quirky and unexpected presence in the halls was fabric manufacturers John Heathcoat and Company from Tiverton, Devon. Having known of them through the extended family for decades there was no clear instant answer as to why I had encountered them in a Paris showground.

Whilst they were not alone in offering a range of uniforms and clothing to the emergency services at Milipol, Heathcoat's it seems has an entirely unexpected international reputation for innovation and quality, supplying a range of apparel and high technology technical textiles to diverse markets around the world and among other items they were in Paris to promote flameproof flying and security services suits and a range of fabrics for composite manufacture. They illustrate the latter with a REGA EC145 and the Eurofighter Typhoon. It just goes to show where innovation can lead a 200 year old company in surviving in the modern world. They are not the fabric weavers I knew of old, they now style themselves as 'Fabric Engineers'!



*West Country based John Heathcoat and Company illustrate the BK117C2 when promoting their aerospace structures business sector. [ECD]*

A banner for the Dubai Helishow 2006 exhibition. The banner is divided into three sections. The left section shows a city skyline at night with the text 'Helishow DUBAI 2006' and 'International Helicopter Technology &amp; Operations Exhibition'. The middle section features the title 'DUBAI HELISHOW 2006' in large yellow and white letters, with the dates '5th - 7th December 2006' and the location 'East Hall, Dubai Airport Expo, Dubai, United Arab Emirates' below it. The right section is red and contains contact information for 'MEDIA COMMUNICATIONS AND EXHIBITIONS L.L.C.', including their P.O. Box, telephone and fax numbers, email address, and website. It also lists 'SUPPORTED BY' logos for the Ministry of Civil Aviation and the Dubai International Airport, and mentions it is a 'Member of' the Dubai International Airport group.

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## COMMUNICATIONS

A large number of companies at the show were exhibiting communications systems for a range of applications including control rooms, overt and covert use. Even with many of the major police forces having selected National solutions to a widespread interoperability problem there remain countries ripe for approach and indeed many niche operators—especially in the covert field. But it is unlikely that any one supplier will grow fat on the likely market.

The police started the idea of every operative having a truly personal radio decades ago and this has now spread to the concept of some type of radio in the hands of every member of the emergency services to one where every soldier in every army has direct communication. The tactics of the latter are outside the scope of this report but it has the effect of vastly increasing the likely financial gains to be derived from the market.

It may take a mind-shift to accept a 'push-to-talk' [PTT] button on the gun barrel rather than the shirt lapel but only a small one. SELEX Communications of York are offering PTT buttons in all sorts of places these days. It seems there is as much money to be made from PTT and other accessories as there is in the original radio.



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A few days after Milipol SELEX Communications were undertaking a demonstration to London Underground. Months after the terror attacks of 7/7 a communications problem faced on the day has still not been solved. The projected answer to the underground communication system was seen by SELEX as reacting to an attack scenario by putting in place a number of repeater stations at various levels within the effected stations. A similar system is already in place for a different, engineering related, communications task and it is said that it works very successfully.



Part of the current problem is that the chosen system is to be seen as only a stop-gap pending a solution centred around the completion of the Airwave digital radio system. Airwave should already be in place and working but it is not and industry sources suggest that it might be another 2-3 years before it is working as intended.

As described the repeater system might be a little clumsy in that ensuring continuity of signal relies upon an individual progressing downward until the signal breaks up and then inserting a mobile repeater before moving downward until the signal again breaks up. Such a system might have a number of individual repeaters—each with its own power supply and potential serviceability issues—that might be difficult to maintain over an extended emergency.

Meanwhile it seems that one system that might show promise is still not being embraced. Coded Orthogonal Frequency Division Multiplexing (COFDM) technology has been offered but no-one seems to have an interest. Indeed although all the likely suppliers have been contacted by PAN it seems they have not been called forth to demonstrate any system whilst all the agencies likely to call them [Home Office, Transport for London etc] have been deathly quiet when asked what their plans are.

Trialling the use of COFDM was suggested more than a year ago but still does not appear to have been investigated on Underground railway in London. One of the potential beauties of COFDM is that [if a trial were to prove the theory] it would be one transmitter and one receiver. Neither would be a large unit—a few pounds— and easily portable. Theoretically the single source signal from such a system might be capable of being received widely within the Underground system and offer the opportunity to receive images as well.

We are all aware of the signal fade experienced by normal car radios entering tunnels. The same applies to many emergency services radios used within the concrete confines of modern city centres and to air support confined by the topography of valleys. In air support COFDM allows a helicopter to send encrypted video a long distance [say 50-60 miles] when low down in a valley but on the ground it allows a covert operation to speak or send pictures ‘through’ walls as an encrypted signal by reflecting the signals around the building structure. Because of the power requirement to enable the ground based transmission the resultant distance is relatively short – but still a mile or so. Probably far enough to get to the top and bottom of the deepest London Underground. [Bank station] - or beyond.

Importantly this system is in service and working in both arenas as well as with public broadcast companies. DAB digital radio is the same technology. Perhaps more importantly and relevant to the Underground problem is that one leading company undertook successful trials in the Channel Tunnel a few years ago. They have not been called back to trial in this new requirement.

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Back with the growth of the personal radio Tadiran Communications introduced a new personal tactical radio [PTR] at the show. Tadiran can be seen as the Israeli Defences Forces comes to market, elements of the tried and tested systems have been released for general release into selected areas of the World market—but only if your face fits.



The combat proven PTR offers improved mission coordination between land, sea and air forces, and can be applied in a wide range of operational scenarios including homeland security. There was once a requirement for such radios to be

'policeman proof' and industry found that a hard standard to match. Now that requirement had been ramped up a number of stages to be soldier and combat proof. There has been lots of talk about 'ruggedised' equipment in recent years but now it seems they are meaning it. Although Tadiran decided not to actually demonstrate the capability on the day, their radios and PDR's can survive after being thrown across the room to land on hard surfaces. A far cry from the first personal radios that exhibited temperamental transmission performance if you were not trying to use them whilst standing still.

In addition to its extensive range of radios for all uses the company offered its Crisis Management System [CMS] a unifying homeland-security, public-safety and military communications system put together in the light of 9-11. The one integrated system employs Secure Encryption Solutions provided by Snapshield™ Company [a company recently acquired by Tadiran]. Primarily aimed at the US market—via its US offshoot Talla-Com Industries in Tallahassee, Florida—it is seen as an integrator for all those disparate Public Safety elements currently with their own incompatible systems.

Snapshield Ltd., announced that its Snapfone product has received the Federal Information Processing Standard (FIPS) 140-2, Level 2 validation from the National Institute of Standards and Technology (NIST).

Snapfone is capable of securing voice and fax communications across public and private communication networks. Deploying cutting-edge technology to ensure the highest levels of security and minimal voice latency, Snapfone is a completely transparent end user.

Snapfone works with commercial off-the-shelf (COTS) telephone and fax equipment.

Snapfone can also be configured to work in conjunction with the corporate PBX.

FIPS 140-2, Security Requirements for Cryptographic Modules, is a US government standard that validates security claims for products using cryptography through the National Institute of Standards and Technology. FIPS 140-2 validation is trusted by enterprises, government agencies and emergency services as a measure of the safety of products used to convey sensitive information.

Shephard  
**HELI**  
Pacific



**31 May - 1 June 2006, Royal Pines Resort, Queensland, Australia**



There was a wide range of specialist and armoured vehicles on display in the hall and an Tadiran associate company Plasan Sasa displayed for the first time in Europe - the CARACAL armoured patrol vehicle, marketed as a more cost-effective, flexible solutions for the urban battlefield and homeland security arena. The new composite-armoured patrol vehicle is built on a Ford commercial chassis cab.

Vaguely a more familiar shape was their armoured Toyota Land Cruiser. And if you cannot stretch to a mobile armoured 'solution' they also offered a range of personal armour including the unique Portable Shelter designed to provide an instant 'Screen of Protection' for a variety of tactical situations.



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So did Milipol live up to its promise as a suitable place for airborne law enforcers? I fear the answer must be an emphatic 'No.' There are a number of areas of interest and maybe staying more than a single day might increase the number of interesting subjects unearthed. Finding enough relevant text to cover the images in this short report was at best difficult and that fact alone was perhaps damning. PAN will try again in November 2007, but I fear that the story may well be much the same.