

ISR in Afghanistan: SR Easier than I



A Canadian CU-170 Heron ready to take-off from Kandahar airport

Intelligence: «The ability to learn or understand or to deal with new or trying situations» or «information concerning an enemy, or possible enemy, or an area», which of those two definitions better applies to the Afghan situation? The 'I' of the ISR is certainly the more difficult part of the business, as Surveillance and Reconnaissance are mostly a matter of assets.

Paolo Valpolini

Intelligence goes well beyond this. According to a report by MG Michael T. Flynn (US Army), Captain Matt Pottinger (US Marine Corps) and Paul D. Batchelor (DIA), published in January 2010 by the Center for a New American Security, things in Afghanistan are far from being satisfactory. MG Flynn, an expert in the 'I' branch, having been Director of Intelligence at the US Joint Staff and since June 2009 Deputy Chief of Staff Intelligence at the Isaf headquarters in Kabul, and his co-writers, recommend a sweeping change in intelligence, shifting from a focus on the enemy to a focus on the people. Focusing most of the US intelligence collection efforts and analytical brainpower on insurgent groups did not manage to answer the fundamental questions about the environment in which Isaf troops operate and about the people they are trying to protect and persuade. Humint (human intelligence) assets on the field and analysts in the background are having difficulty coping with the Afghan situation – although intelligence is like logistics and communications: we notice them only when they fail. Moreover most assets are purely national and therefore refer to their respective commands, the Isaf headquarters getting the picture through the five regional commands, which does not make things any easier.

This was also true for image intelligence in the past: in 2005, when the International Security Assistance Force (Isaf) area of operation was limited to the capital (at that time the responsibility of the Kabul Multinational Brigade) and the northern and western regions, the move towards the west having just begun, all what Isaf could get was non real-time imagery provided by some air assets, as Nato force generation failed to provide a robust information-gathering capability to the Isaf. Requests for ISR assets from Operation Enduring Freedom through the Coalition Forces Command-Afghanistan were normally turned down due to lack of assets. The same applied to sigint (signals intelligence), where assets were strictly national. Although things improved in the next few years, in early 2008 the Isaf could have only 40% of the 3500 hours per month it deemed necessary.

Surveillance: Drone Dominance

In a counter-insurgency operation, which is definitely what the mission in Afghanistan has become notwithstanding the 'security' definition contained in the Isaf acronym, reconnaissance is not an easy task, as the opponent, normally referred to as insurgent which includes the Taliban as well as other local organisations which see Isaf troops as a nuisance to their businesses, is difficult to locate. The difference between a peaceful farmer and a Taliban operator often lays in the fact that one has a hoe while the other has an AK, but the seemingly peaceful farmer can have an assault rifle in the ditch next to him. Persistency is therefore the word, as only long-term observation of the areas of interest can bring some results – and persistency means drone. Indeed this is the only system (apart from satellites) that can provide such a capability.

Although numerous countries deployed mini drones in the early period, the systems required to provide the required real-time data to the Isaf are male drones. These were deployed in the



One of the most widely seen ISR assets in the Afghan skies is the MQ-1 Predator, different versions of which are in service with the American, British and Italian forces. (US Air Force)



The French Air Force started to operate the Harfang in Afghanistan in February 2009. This system is based on the IAI Heron TP air vehicle with integration performed by EADS. (Armada/PV)

solution to the Bundeswehr. The German contingent already deploys the KZO and some smaller drones (see Drone Update, Armada 1/2010, page 26). The training of the first German Air Force crews was finalised in late January 2010. The first system, including three air vehicles, was to be deployed in March while the second will reach Afghanistan in May.

The Netherlands also turned to Israel for procuring a new drone capability to replace its Sperwer. However it rented the Aeronautics Aerostar, a much smaller air vehicle in the tactical drone category. Poland, also seeking a drone capability, launched a tender in December 2009 with the aim of deploying two interim aircraft by April 2010. Spain should have deployed IAI Searcher II Js in summer 2008, but according to rumours, an accident during the first flights led to the system not being seen operating in the area.

In order to increase its intelligence-gathering capacity whilst awaiting the delivery of its Watchkeeper system, Britain acquired an undisclosed number of Elbit Hermes 450s in 2007 that were

form of MQ-1 Predators by the United States since the beginning of Enduring Freedom, but as mentioned were not available to the Isaf, whose operating area was however initially limited to Kabul. The first nation to deploy such systems was Italy in May 2007 with three MQ-1As, followed in October of the same year by three Royal Air Force MQ-9 Reapers.

Since the end of the Isaf operational area having been enlarged to encompass the whole of Afghanistan, the United States added considerable ISR flying assets to Nato's capabilities, while in the meantime other nations acquired male systems and deployed them downrange. Besides General Atomics systems, the other male drone that is acquiring a considerable importance in the Afghan theatre is the Heron, developed and produced by Israel Aerospace Industries (IAI). EADS and IAI won a contract to provide the French Air Force with the Sidm (Système de Drone Male Intérimaire), later christened Harfang, with a first system deployed to Afghanistan in February 2009. The French system is based on the Heron TP and includes three aircraft, two ground control stations and

\$ 80 million and was awarded to MacDonal, Dettwiler and Associates (MDA) in August 2008, with the first CU-170 system, as it is known to the Canadian Air Force, being delivered in December 2008 before reaching initial operational capability in late February 2009.

In August 2009 Australian Army and Air Force personnel undertook training in Canada, and in September Australia signed an agreement with Canada under which those trained would be absorbed



The first Australian leased Herons began operations in support of Australian troops in Afghanistan in December 2009. (US Air Force)



The ground control station of the Italian Predators at the Herat airport. MQ-1 unmanned air vehicles are used to provide image intelligence to various levels of command. (US Air Force)

line-of-sight and satellite links. A fourth aircraft was ordered in January 2010. However, the first nation deployed in Afghanistan to obtain a drone system from IAI was Canada, who replaced the tactical Sagem Sperwers used in the initial phases of the deployment with the Heron 1; the two-year lease contract, including an option for a third, was worth

within the Canadian drone detachment at Kandahar. A lease contract was then signed with MDA, leading to the delivery of the first of ten Australian Herons in December 2009. Australia and Canada also operate the Boeing/Insitu Scaneagle, which, due to its dimensions and payload, cannot be considered a male system although its endurance and ceiling are quite equivalent.

In October 2009 the German BWB signed a service provider contract with Rheinmetall, which had teamed with IAI to offer the Heron as an interim male

first deployed to Afghanistan in August the same year – a few months before the British MQ-9 Reapers flew their first missions (in October 2007). The latter were initially unarmed, thus mostly dedicated to recce missions, but they now fly with Hellfire P missiles and 226-kg GBU-12 laser guided bombs, thereby doubling as strike support assets. In October 2009 Britain fielded for the second time its highly autonomous BAE Systems Herti under an operational concept demonstration programme, possibly equipped with 'change detection' software.



An RC-135 Rivet Joint aircraft ready for a mission. This electronic surveillance aircraft has seen extensive use in Afghanistan. (US Air Force)



The U-2 'Dragon Lady' is part of the numerous aircraft deployed to the Persian Gulf to support American and Allied operations in Afghanistan. (US Air Force)

By far, however, the major drone operator in Afghanistan remains the United States. The US Air Force alone increased its drone capacity by 300% in the past two years and is still deploying additional Predators and Reapers, reaching a total of 39 continual combat air patrols with one using an RQ-4 Global Hawk, and there is more to come. In April 2010 some Reapers should start flying with the new Gorgon Stare pod developed by Sierra Nevada, which includes twelve cameras, offering as many different views from a single aircraft – a num-

ber which may be increased to over 60 in future similar systems. The system weight – 500 kg – limits its use to the Reaper, which will retain its current sensors. In addition, in December 2009 the US Air Force confirmed that a 'black' drone is flying in Afghanistan. Developed by Lockheed Martin Advanced Development Programs, it is known as the RQ-170. Then of course there is the US Army Sky Warrior, a derivative of the Predator with similar capabilities, and which has been deployed to Afghanistan since October 2007 together with the service's RQ-5 Hunters and RQ-7B Shadow 200s. The latter is used also by the US Marines, who also deploy the Scaneagle.

over Afghanistan. From bases close to Afghanistan, such as Al Dhafra in the United Arab Emirates, the US Air Force deploys intelligence air assets such as E-3 Sentry Awacs, E-8 Jstars, RC-135 and U-2s. In early January 2010 the 4th Expeditionary Reconnaissance Squadron in Bagram received the first MC-12W, which is based on the Hawker Beechcraft Super King Air 350 twin turboprop. The aircraft is equipped with a sensor suite that includes an L-3 Wescam MX-15Di gimballed system that houses one monochrome narrow field-of-view and

sensors and change detection systems are also deployed, including the C-12 High-lighter (Air Force), Angel Fire (Marine Corps) and Constant Hawk (Army).

Britain also takes part in the effort, as it deploys not only its Nimrod MR2s (though one of them was lost on 2 September 2006), but also its new Sentinel R1 Astor, the first such aircraft having been deployed downrange in Fall 2008. Equipped with Raytheon's Asars-2 radar, it is Britain's Jstars alter ego. Finally, all combat aircraft equipped with reconnaissance/targeting pods act as non-traditional intelligence assets.

When constant surveillance is required, tethered aerostats turn out to be one of the optimal solutions. Developed by Lockheed Martin, the Persistent Threat Detection System has been



The Northrop Grumman E-8C Jstars is specialised in ISR missions and is deployed both in Afghanistan and Iraq. (US Air Force)



The first MC-12 Liberty aircraft in-theater taxis out of an aircraft hangar for its first combat sortie on 10 June 2009 at Joint Base Balad, Iraq. (US Air Force)

three colour wide field-of-view CCD daylight cameras, a combined laser designator and rangefinder and a laser illuminator with auto-tracking capability. The service is acquiring 37 such aircraft as part of Project Liberty. Other aircraft equipped with

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deployed in Iraq and Afghanistan since 2004 and one of the eight systems acquired could be seen over Kabul during the 2009 election period, moored in the fortress of Bala Hissar. Equipped with high-resolution cameras, video feeds and audio sensors, it provides considerable information on the town underneath, while it can also be employed as a force protection measure when deployed over a military camp. The Raytheon Raid suite deployed by the Army and the Marines consists of a 17-metre-long aerostat carrying electro-optical sensors with a GPS receiver, a deployment tower, a helium trailer and a ground station that locates a target onto a map thanks to overlay software. An expeditionary version with the tower installed on a Humvee is also available.

Others Aloft

Imagery and intelligence gathering from the sky is not a drone prerogative, as numerous intelligence aircraft fly daily



An Italian AMX equipped with a Reccelite pod. Fighter aircraft with reconnaissance capabilities complete the airborne imaging intelligence paraphernalia that operates in Afghanistan. (Armada/PV)



One of Lockheed Martin Persistent Threat Detection System (PTDS) blimps is constantly peering over the Afghan capital, monitoring all events with, inter alia, a belly-mounted L-3 Wescam MX-20 turret. (US Air Force)

Ground Assets

Any ground asset can be considered an intelligence-gathering platform – even the single soldier. However, vehicles such as the Canadian Army Coyote equipped with its full suite of sensors (including a radar), the German and Dutch Fenek, the Humvee equipped with Raytheon's Lras3, and many others, were specifically conceived for recce/surveillance roles. Complementing these, however, is ground electronic warfare equipment for the monitoring of insurgent communica-



The mast-mounted radar of a Coyote armoured reconnaissance vehicle watches the perimeter of the Kandahar airfield. Those vehicles have proven to be valuable surveillance assets. (Canadian Armed Forces)

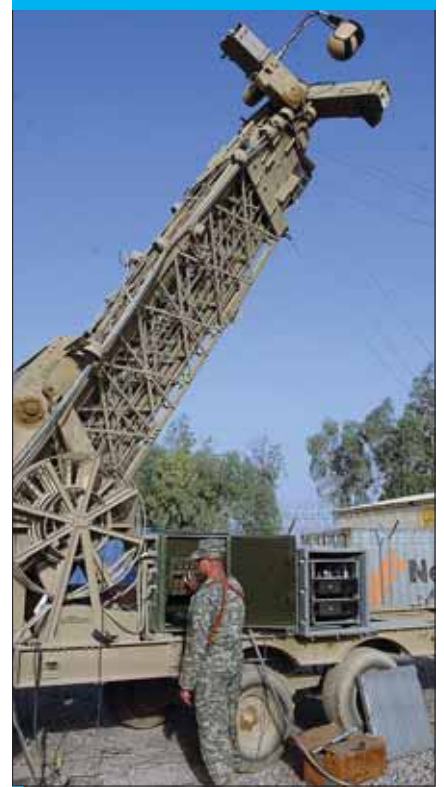
tions (even if only to assess a traffic surge that might signal possible action), which are of paramount importance, and when a linguist is available even more valuable info can be gathered. Most contingents deploy electronic warfare cells, although these mostly operate at a national level. Long-range recce, special recce missions by Special Forces and targeted electronic warfare operations are often sparked off by intelligence obtained from the third dimension. This does not mean that ground assets have a lesser importance, as they often are those that can confirm the cues obtained from aloft.

Conclusions

One cannot expect a quantum leap in usable information by the sole virtue of an increase of equipment, particularly as far as imint (imagery intelligence) is concerned. The human brain cannot be dispensed with; it is the neuralgic centre around which the entire system spins. The US Air Force is planning to considerably increase the number of uniformed intelligence analysts in charge of exploiting those capabilities: currently the service has a force of 1900 analysts and the plan is to increase that number by 2500 units and up to 4400 in the next three years. Satcom capacities will also have to be improved to support the increasing fleet of drones that are mostly controlled via satcom to either overcome line-of-sight datalink limitations resulting from Afghanistan's cataclysmic relief or to reduce the deployment of specialists operating in remote-split mode by which mission controllers operate from their home bases, deploying downrange a limited number of crews for take/off and landing operations and maintenance specialists. Most air force missions are run from America. Italy began to operate in a similar manner in November 2009, but the French Harfang, as many others now, use satcoms, although the availability of channels on commercial satellite platforms is drying up. Worse still, security issues have recently emerged when it was found that some insurgents managed to tap into the Predator video feeds with home-made equipment worth a few dollars.

As mentioned at the beginning of this article, assets are not the only important factor in getting the right picture, as the

attitude of the military on the ground can change the situation instantly, like having to shut down an information channel that took so long to set up, or a pattern of reciprocal trust with locals so painstakingly obtained being smashed to smithereens by so-called collateral damage are painful experiences. Intelligence in a counter-insurgency scenario of this type is much more complex than in a symmetric conflict, and the basic soldier can be the best ally or the greatest enemy of his own intelligence community. A major attrition factor in the overall coalition intelligence process results from the lack



An American soldier raises the Jlews tower during a maintenance operation at Kandahar. The system is used to provide security for the Kandahar airfield. (US Army)

of intelligence sharing within the community. Granted, some information is put together, such as the improvised explosive devices database created at Isaf level, but many other intelligence pieces are provided only to a limited number of contingents. As Nato moves towards a coalition ISR structure with the Multi-sensor Aerospace-ground Joint ISR Interoperability Coalition project aiming at sharing full motion videos among the nine participating nations (Britain, Canada, France, Germany, Italy, the Netherlands, Norway, Spain, and the United States). Initially aimed at the Isaf, it should evolve towards a Nato network-enabled capability service-oriented architecture. Other Nato programmes are in the pipeline, but it is clear that their effectiveness will only be maximised if intelligence sharing opens up gradually, although a 100% level of sharing will probably never become a reality. □