CRITICAL TECHNOLOGY FOCUS NEEDED : A VIEWPOINT

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Boeing C-17 aircraft

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Rise of the drones

In 1982, the Israeli Air Force first used the Pioneer, a weaponised drone, against Lebanon. It is only in the last few years that weaponised drones have been deployed in larger numbers in several theatres of war and insurgency across the world.

Cassidian and Northrop Grumman Euro Hawk for German armed forces

Euro Hawk, the premier signals intelligence (SIGINT) unmanned aircraft system (UAS) for the German armed forces, was presented to government officials and media during a rollout ceremony held in Manching, Germany.

The UAS arrived on July 12, 2011, following a non-stop ferry flight from the Edwards Air Force Base in California to Manching. After its landing, it was successfully fitted with the integrated signal intelligence system (ISIS) developed by Cassidian and will undergo flight testing in 2012. Euro Hawk is the first international configuration of the RQ-4 Global Hawk high altitude long endurance (HALE) UAS.

Delivery of the first Euro Hawk system to the German Air Force and Strategic Intelligence Command (KSA) is scheduled for 2012, with delivery of the following four systems foreseen between 2015 and 2016.

PHOTOGRAPH: Northrop Grumman

The German Ministry of Defence (MoD) awarded a contract in January 2007 to EuroHawk GmbH for the development, test and support of the Full-Scale Demonstrator Euro Hawk system. Under this contract, EuroHawk GmbH will provide the SIGINT air vehicles, the complete aircraft and ISIS Mission Ground Segments as well as the aircraft modifications requested for the German needs, flight test and logistics support.

With a wingspan larger than a commercial airliner, endurance of 30 hours and a maximum altitude of more than 60,000 feet, Euro Hawk is an interoperable, modular and cost-effective replacement to the aging fleet of manned Breguet Atlantic aircraft which was in service since 1972 and officially retired in 2010. EuroHawk GmbH, a 50-50 joint venture of Northrop Grumman and Cassidian, is responsible for the development and manufacturing of Euro Hawk systems and acts as the national prime contractor for the German MoD through the system's entire life cycle. SP

Cover:
The MQ-9 Reaper (previously Predator B) is a medium-to-high altitude, long endurance remotely piloted aircraft system. The MQ-9's primary mission is as a persistent hunter-killer against emerging targets in support of joint force commander objectives.

Cover image: nailgun.ilconte.ru

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The drone wars

According to history, the use of a remotely controlled aerial vehicle as a weapon first emerged during World War II. The first remotely piloted drone used as a weapon was the German FX-1400 or "Fritz", which consisted of a 2,300 pound bomb, dropped from an airplane and steered by a pilot in the "mothership." After the war, little development occurred in drone technology and most remotely piloted vehicles were used for target practice.

However, in the past decade the rise of the drone has been dramatic. It is not just a intelligence gathering or surveillance system, but now a major weapon.

The US military's first major expenditures on unmanned aerial vehicles (UAVs) began after the Vietnam War, when the Air Force used small, long range, experimental drones called Fireflies in conducting reconnaissance over Southeast Asia. The Israeli Air Force's use of their weaponised drone, the Pioneer, in the 1982 war in Lebanon reinvigorated American interest in armed UAVs.

James Corbett in an article, which appears in this issue, has indicated how UAVs have been used over the years. From 2004 to the end of his presidency in January 2009, the George Bush administration launched 46 drone strikes in Pakistan. Since taking over the White House, Nobel peace prize recipient Barack Obama has launched 213 such strikes.

In India, the need to deploy more UAVs not just in the armed forces but also in the internal security machinery has been underscored many a time, in the light of naxalites going on the rampage in some parts of the country. Some sources have pointed that India requires easily about 30 drones initially to start both surveillance and strikes in the naxal infested areas, but the government has not come out openly on use of weaponised drones.

Moving from drones to the theatre, in this issue, we have a report from the Institute of Near East & Gulf Military Analysis (INEGMA) and the authors talk about the dangers of empowerment of the warlords, power-brokers and privatised security in Afghanistan, even as the US Government is withdrawing troops. The analysis gives an insight into the dilemma of managing a war which is asymmetric in nature.

In his fortnightly column, Lt General (Retd) P.C. Katoch is concerned about the growth and sustainable factor of Indian defence technologies. Calling for an urgent need to upgrade Indian defence production and on par with international standards, the retired general is forthright in stating how the research and development units have been languishing.

Indian universities are nowhere when it comes to research and development, a sad state of affairs indeed. Most of the US universities have strong research base and one of them is Georgia Tech University which has done some pioneering work in the area of robotics, etc. We are carrying a report from Georgia Tech on how the threat of cyber warfare is increasing.

If one looks at the kind of instabilities that are created, there no doubt has to be a multi-pronged approach to dealing with different kinds of threats and we at *SP's M.A.I.* bring to the table the problems and solutions. SP

Jayant Baranwal
Publisher and Editor-in-Chief

US Army fears further slashes in defence budget

The US Defense Department plans to cut further defence spending beyond $450 billion for the next years would be 'catastrophic', Army Secretary John M. McHugh recently said at the 2011 Association of the US Army's annual meeting and exposition.

McHugh said the potential for the department to face additional budget cuts of $500 billion to $600 billion in the next decade keeps him up at night. Those additional cuts could happen if a congressional "super committee" looking at ways to reduce the federal debt by $1.2 trillion can't come to agreement by Thanksgiving. If that happens, the debt reduction law passed over the summer forces a "sequestration," by which as much as half that amount must come from national security spending.

"I think we're in a positive position to accommodate at least the $450 billion or so in cuts that have been scheduled against the DOD to this point." McHugh said and added that a sequestration would be catastrophic to the US's defence posture.

Army Chief of Staff General Raymond T. Odierno also echoed similar concerns and mentioned that the potential for a "hollow force" would not come to fruition. Instead, he said, a ready and capable force would exist, though its size might be affected. SP

BAE Systems receives contract for Bradley upgrade materials

BAE Systems will purchase material items in preparation for the conversion of 245 Bradley Operation Desert Storm Situational Awareness (ODS-SA) vehicles through a $270 million contract from US Army Contracting Command – Warren. The company will use the acquired items to upgrade the vehicles to have improved situational awareness ability, which highlights BAE Systems' robust support and technical services capabilities in supporting customers' requirements.

"As one of the most survivable vehicles in theatre, the Bradley has remained a vital asset to our armed forces for several decades," said Joe McCarthy, Vice President and General Manager of Combat Vehicles at BAE Systems. "The items purchased through this contract will help ensure that our soldiers are operating a vehicle that has updated technological enhancements and capabilities."

PHOTOGRAPHS: US Army, BAE Systems

The Bradley ODS-SA vehicle features the latest digitised electronics for optimum situational awareness, network connectivity and communication within the Heavy Brigade Combat Team. Bradley ODS-SA's proven durability and commonality of design reduces the logistics burden, while enhancing battlefield performance to meet a variety of mission requirements.

The contract for material procurement has been awarded in advance of the Bradley ODS-SA vehicle conversions effort, anticipated to take place at the beginning of 2012. SP

ITT incorporates advanced laser into its infrared countermeasures system

As part of its next generation Common Infrared Countermeasures (CIRCM) solution, ITT Corporation, in partnership with Daylight Defense, LLC (Daylight) has fully integrated a quantum cascade laser-based system. ITT's CIRCM, when fielded, will provide protection from heat-seeking missiles for US and allied helicopters.

"As promised in our proposal response to the Army, we are integrating a quantum cascade laser — the cutting-edge of laser technology — into our system," said Robert Ferrante, Vice President of ITT Electronic Systems' Airborne Electronic Attack business. "Daylight's approach has resulted in an excellent solution for ITT's CIRCM system, offering a dependable, modular technology for our customers and, ultimately, the warfighter."

ITT's solution for the US Army's CIRCM programme exemplifies a modular open systems approach design philosophy that enables its system to take full advantage of the best components from the defence and commercial sectors. This approach provides the ability to leverage technology advancements and continually add new capabilities to address future threats and environments.

While ITT and Daylight have worked together for several years, the delivery of this fully functional laser system represents the latest in quantum cascade laser (QCL) systems provided by Daylight to ITT. ITT had previously integrated an earlier version

of Daylight's fibre-coupled QCL-based JammIR laser system into its IRCM (infrared countermeasures) system and has conducted several successful flight tests aboard US military UH-60 Blackhawk helicopters.

For the CIRCM programme, ITT will complement its 50-plus years' experience in electronic warfare system integration with industry-leading technology partners. Employing a best-of-breed approach, ITT has selected the best solutions from the commercial and defence sectors and integrated these with specially developed components such as its pointer-tracker unit, which tracks incoming threats and directs the daylight laser to disorient them.

"Daylight is honoured to have been selected by ITT for this critical piece of its system," commented Dr. Timothy Day, CEO of Daylight Solutions. "Our team has worked closely with ITT to optimise the performance of our laser system for the company's CIRCM offering. We are committed to building a world-class manufacturing organisation that will scale with our customers such as ITT." SP

General Dynamics to produce 115 more double-V hull Stryker vehicles

The US Army TACOM Lifecycle Management Command has awarded General Dynamics Land Systems, a business unit of General Dynamics, $243 million to produce and deliver an additional 115 Stryker combat vehicles equipped with double-V hulls (DVHs).

The double-V hull was developed on an accelerated timeline to provide Stryker-borne soldiers increased protection from the effects of roadside mines and improvised explosive devices. Recent Army reports indicate that deployed vehicles with the new double-V-hull design are providing significantly increased protection and survivability to soldiers.

About 300 double-V hulled Stryker vehicles have been delivered so far, under a contract awarded in July 2010 for the production of 450 double-V hull vehicles. Engineers and production workers at General Dynamics Land Systems conceived, engineered, manufactured and delivered the first operational vehicles to the Army in about 14 months. Initial deliveries were made in May 2011.

Under the new contract, General Dynamics will also provide production sustainment support and obsolescence management services. SP

DRS Technologies bags contract from US Army for force protection

DRS Technologies, Inc., a Finmeccanica Company, announced that its C3 and Aviation Group in Gaithersburg, MD was selected by the US Army to participate on the Integrated Base Defense System (IBDS) force protection omnibus contract.

With a ceiling of $997 million, the IBDS force protection omnibus is a multiple award IDIQ contract to provide inside-the-wire and outside-the-wire force protection and early warning systems. IBDS force protection omnibus will provide warfighters with modular systems, equipment, and components that can be used as stand-alone or integrated systems to protect a range of installations – from small units to large base-wide areas.

This competitive award was made by the US Army Contracting Command. Terms allow for firm-fixed-price (FFP) task orders for a period of three years, with options for additional years. IBDS force protection omnibus establishes a long-term IDIQ contract vehicle with a select group of highly qualified contractors.

"This contract complements DRS' legacy in delivering force protection and perimeter security systems to DoD, Department of Homeland Security and Allied Forces," said Alan Dietrich, President of DRS C3 & Aviation Group. "We are proud to be selected as it illustrates our expertise in providing Perimeter Security Systems and look forward to helping protect the US Army at home and abroad." SP

PHOTOGRAPH: ReconRobotics

ReconRobotics wins orders for 315 Recon Scout XT robots

ReconRobotics has been awarded a $4.8 million contract from the US Army Rapid Equipping Force for 315 Recon Scout XT micro-robot kits and an equal number of SearchStick devices.

The SearchStick enables warfighters to convert any Recon Scout Throwbot into a pole camera, which warfighters can use to see over compound walls, onto rooftops and into culverts. ReconRobotics plans to complete deliveries of these micro-robot systems by October 31, 2011.

"The era of the personal robot has arrived for US troops and, like the ballistic vest and night vision goggles, our Recon Scout XTs will save many lives," said Ernest Langdon, Director of Military Programmes for ReconRobotics. "We are extremely proud that the US military has chosen ReconRobotics to help protect our warfighters as they conduct dismounted operations in theatre."

Recon Scout XT micro-robots are deployed at the fire-team level – i.e., one robot for each four- to six-man fire team – to maximise situational awareness and standoff distance during route- and compound-clearing operations. More than 2,000 of the company's Recon Scout systems have been deployed by the US military and international friendly forces, and by hundreds of law enforcement agencies worldwide. Warfighters use the Recon Scout system to determine the layout of the enclosed spaces, identify potential IEDs and to fix the location of friendly, indigenous or enemy personnel.

Recon Scout XT weighs just 1.2 lbs (540 gram), and yet it can be deployed in five seconds and thrown up to 120 feet (36 metres). Known for its simplicity and durability, the XT can be controlled with a single button and can be recharged in the field using standard 5590 or 2590 batteries. SP

Oshkosh Defense introduces TAK-4i

Oshkosh Defense has launched its next-generation Oshkosh TAK-4i intelligent independent suspension system to redefine ride quality, mobility and manoeuvrability standards for off-road military vehicles. The system's design leverages 10 years of operational experience in Iraq and Afghanistan, as well as the proven success of the Oshkosh TAK-4 independent suspension system, which has been used on more than 20,000 military vehicles to date.

"The Oshkosh TAK-4 system has brought unparalleled mobility to the battlefield on medium, heavy and MRAP vehicles," said Rob Messina, Vice President of Defense Engineering for Oshkosh Defense.

Oshkosh developed the TAK-4i intelligent independent suspension system after studying

military vehicles in action and calculating requirements for optimal speed, mobility and reliability on the battlefield. The TAK-4i system, which has completed more than 50,000 test miles with exceptional reliability, is scalable for use on light, medium and heavy tactical wheeled vehicles. With TAK-4i, a vehicle's height can be adjusted to maximise transportability and reduce the time and effort it takes to field vehicles.

The TAK-4i system delivers 20 inches of independent wheel travel, which is 25 per cent more than other vehicles fielded with the US military, for new levels of off-road mobility. Improved shock absorption results in increased speed and significantly better ride quality for warfighters who often travel off-road for hours at a time. The TAK-4i system is used on the Oshkosh light combat tactical all-terrain vehicle (L-ATV) and the Oshkosh light combat tactical vehicle (LCTV), which are designed to deliver the protected mobility needed on remote, rugged and hostile landscapes. SP

PHOTOGRAPHS: Lockheed Martin, Oshkosh Defense

Lockheed Martin's IED-protected vehicles are light

Recent government blast tests demonstrated that Lockheed Martin's joint light tactical vehicle (JLTV) meets protection standards for IED-protected vehicles, while weighing approximately 40 per cent less than other all-terrain models deployed in theatre.

Lockheed Martin's JLTV succeeded in its blast tests, which used explosions commonly tested against many existing mine-resistant fleet vehicles.

"Our improved V-hull design is demonstrating its merit, having now surpassed technology development protection targets set by our customer," said Scott Greene, Vice President of ground vehicles in Lockheed Martin's Missiles and Fire Control business. "Our team has produced a remarkable family of vehicles that strikes the right balance between weight and force protection."

The results verified Lockheed Martin's JLTV can protect soldiers from powerful blasts and still be transported by vertical lift, a new mobility option for the army and marines at this protection level. Previous US Army and Marine Corps tests showed JLTV can be transported by CH-47 and CH-53 helicopters.

"In addition to being helo-transportable and mine-resistant, our JLTV design also brings another important advantage to the battlefield: improved mobility. Its lightweight, agile design will help soldiers to evade enemies and avoid threats," Greene said.

The government results mirrored Lockheed Martin's company-funded blast tests on its improved vehicle design. SP

Navy orders eight amphibious assault vessels

The Indian Navy has signed a contract with Garden Reach Shipbuilders and Engineers (GRSE), Kolkata for construction of eight landing craft utility (LCU) at a cost of ₹2,100 crore. The first ship is to be delivered in 35 months. The 800-tonne LCU is propelled by two diesel engines and can carry main battle tanks, BMPs, and personnel in various combinations. SP

Elbit Systems debuts Engager

Elbit Systems recently launched Engager, a new advanced remote reconnaissance gathering system. Designed for day and night operations, the Engager is highly suited for missions such as intelligence gathering and tracking of long-range targets and laser guided weapon designation. The system has high camouflage capabilities and is remotely operated, enabling intelligence gathering while avoiding contact with enemy forces operating in the area. Developed especially for the modern battlefields' demands of "SWAP" (Size, Weight and Power), this unique system excells in low energy consumption, compact size and low weight, meeting the requirements of Infantry and Special Forces' mission profiles. SP

PHOTOGRAPH: US Navy

Rolls-Royce awarded $99.9 million contract for US Navy T-45 trainer engine support

Rolls-Royce, the global power systems company, has been awarded a $99.9 million MissionCare contract by the US Department of Defense Naval Air Systems Command at Patuxent River to provide support for the F405 (Adour) engines that power the US Navy's T-45 training aircraft.

This exercises the third year of the contract to provide guaranteed engine availability, which includes support ranging from on-wing through intermediate and depot level maintenance, under the base contract signed in 2008. MissionCare is used within the Rolls-Royce Defence sector to apply commercial power by the hour principles to the unique requirements of the defence industry.

Total value of the contract is $476.91 million over the five-year term.

Patricia O'Connell, Rolls-Royce, President, Customer Business Defence, stated: "We are proud of our continued partnership with the US Navy and its mission to prepare student aviators for jet carrier aviation and tactical strike missions. We look forward to another successful year of providing the best engine readiness and availability."

Under the terms of the agreement, which is administered by the Naval Air Systems Command (NAVAIR), Rolls-Royce will provide all maintenance, support, troubleshooting, parts supply and logistics for both the F405 engine and the aircraft gas turbine starting system. SP

Korea unveils vehicle-mounted 105mm self-propelled artillery

The first truck mounted 105-millimetre howitzer was revealed to the media for the first time on September 22 at the Ministry of National Defense in Yongsan, Seoul.

The new weapon, developed by Samsung Techwin, the Samsung Group's defence and precision machinery unit, was displayed at a weapon exhibition that was opened inside the ministry compound.

After being assigned as a project under advanced concept technology demonstration in 2009, Samsung Techwin started making the new wheeled howitzer from 2010 in an effort to enhance combat capabilities with other widely used artilleries.

"Since the 105-millimetre self-propelled artillery is being loaded on a five-tonne truck, the cost of the weapon is relatively cheap and it shows more outstanding performance than existing towed artillery," said an executive at Samsung Techwin. "Shells have to be loaded manually. But firing control is operated automatically and radiation of heat can be selected either in automatic, manual and half automatic. The number of operating personnel can be reduced by three compared to existing towed artilleries." SP

Israel's arms exports reach $7 billion

In the decade since the September 11th terrorist attacks in the United States, global awareness about terrorism has significantly increased. According to the Israel Defense Ministry's defence export and defence cooperation branch (SIBAT), the value of Israel's security exports was about $2 billion per year before the September 11th attacks whereas today the total stands at about $7 billion.

Many countries began using security systems that were developed in Israel. "The United States woke up to a new reality and today one can see Israeli security companies working worldwide checking passengers and luggage at airports, because we have already been there and we have the knowledge," said Itamar Graff, deputy director of SIBAT.

Another reason for the increase in defence exports was the fighting conducted by the US and other NATO countries in Iraq and Afghanistan.

"When the world became aware of the matter of fighting terrorism, we already had decades of experience on the matter, with many existing technologies," Graff said. "We are in a small area and constantly cope with terrorist threats that arrive via foot, in tunnels, at day and night, by land and through the air, so we knew to offer the world existing products that have already been tested in operations in Lebanon, Judea and Samaria and the Gaza Strip."

During fighting in Iraq and Afghanistan, the US needed to protect its soldiers and vehicles and it had to cope with improvised roadside explosive devices and the use of electronic warfare. Israel had already developed means to cope with such threats, and the US began to purchase these Israeli products.

Israeli companies have developed systems (using radar and lasers) to defend civilian aircraft from missiles. Israeli counter-terrorism experts are in high demand worldwide. For instance, ahead of the World Cup in Brazil in 2014, SIBAT is in touch with authorities in that country, to provide consultation on security matters.

"Business is continuing and growing, because the threats aren't getting smaller," Graff said. "The world is moving in the direction of dealing with terrorist threats. On issues such as home-front protection, shore security and missile defense, people from around the world come to learn from us. We are dealing with a variety of possible threats and we will continue to be a dominant and significant factor in the world." SP

Empowered warlords, power-brokers, and tribal elites: privatised security in Afghanistan

[By **Justin D. Wallestad** and **Dr. Theodore Karasik**]

As fighting in Afghanistan escalated in 2010 with civilian casualties at record highs, achieving a peaceful resolution between the Government of the Islamic Republic of Afghanistan (GIRoA) and the Taliban rose as a top priority of the political agenda. Even with the addition of 30,000 United States Armed Forces increasing international forces to more than 1,50,000, it has become clear that as a weak state, the GIRoA has failed to fulfill certain fundamental functions associated with a sovereign nation, chiefly that of maintaining a monopoly over its use of armed force and affording its citizens with apt security from physical violence.

While the gradual withdrawal of US Armed Forces was originally scheduled to begin July 2011, efforts to fill the gap with private militias and security companies in order to offset the Taliban resurgence are presently underway. The North Atlantic Treaty Organisation (NATO) has adopted a strategy of addressing the nation's growing security concerns through the establishment of decentralised forms of security at the district and provincial levels through the empowerment of warlords, power-brokers and tribal elites.

Aside from the outpouring of contracting firms such as Xe, formerly known as Blackwater, or DynCorp increasingly replacing those in uniform, as of January 2011, there were over 50 licensed private security companies (PSC) operating in Afghanistan, many of which are signatories of the 2010 International code of conduct for private security service providers aimed at mitigating human rights violations. The special operations Task group (SOTG) in Afghanistan has also advanced district-level security measures through the facilitation of village stability operations (VSO) and local police forces (LPF); shifting the burden of the GIRoA from providing security, development, and governance to a more supportive and advisory role. Nevertheless, these commandos, militias, and 'community watch' teams at first glance stand in direct contradiction to the function of a state as frequently falling outside the jurisdiction of existing nationalised forces, namely the Afghan National Army and police, however, they may still provide the key to unlocking an exit strategy for NATO forces from Afghanistan.

Importance of Security: The Drawback of a Centralised Afghan Government

Theoretically, there are three major insurgent groups operating within Afghanistan—the Taliban, Hib-e-Islami, and the Haqqani Network—however, in reality, there remains a plethora of militant groups engaging in criminal activities, rivalry quarrels, and providing security for anyone willing to pay. While logically these outlaw groups are to blame for the rampant insecurity throughout Afghanistan, the populace and international community continue to demand for political resolution at the expense of an already short-handed government. The absence of national political order, however, does not also suggest an absence of all political order. In Afghanistan, authority still exists, fragmented and segmented, attained and employed by local leaders, elites and power-brokers that have monopolised force in specific areas lacking a strong presence from the GIRoA. Understandably, without security, all other worthwhile programmes—development, social welfare and capacity—lose all meaning in the pursuit of successfully building Afghan trust and loyalty to their government.

Any reasonable prospect for achieving a strong centralised government in Afghanistan should reflect its present limited legitimacy and capacity that fails to effectively extend beyond the capital in Kabul. In order for a robust Afghan Government to emerge it will require a more inclusive, flexible, and decentralised political arrangement that shares equal representation among the main ethnic and sectarian groups as well as aspects that draw support among Afghans over the insurgent agenda where elites outside of state bureaucracy retain significant power and independence. The current process of presidential appointments from provincial governors down to mid-level officials that stand in direct opposition to the will of the provincial majority not only undermines the socio-political sensitivities apparent throughout Afghanistan's landscape but underscores the existence of suitable political alternatives.

Kabul may hold all policy, budgetary and revenue generating authority, but it still lacks the capacity to enforce the rule of law in places which need it most. Nevertheless, warlords and power-brokers are increasingly being indoctrinated into the government structure in hopes of consolidating their influence, yet much of their reach extends far beyond the official structures of the state through the deliverance of parallel entities, such as security and social welfare services, provided for segments of the population otherwise neglected by the government.

Upon appointment as governor of Balkh province in 2004, Atta Mohammed Noor placed many of his militia commanders from his time as a Tajik militia commander in government positions and police ranks, effectively displacing potential rivals and safeguarding his allies in a capacity that maintains relative security in Balkh. Gul Agha Sherzai, the governor of Nangarhar since 2005, co-opted tribal leaders during the most recent opium cultivation in order to gain political capital and legitimacy, enabling him to supply tribal elders with food, construction and discretionary funding otherwise absent from the GIRoA. Recent Oruzgan Provincial Police Chief appointee and prominent warlord,

PHOTOGRAPH: USAF

More than 1,800 perspective cadets rise for the playing of the Afghan national anthem at the Afghan National Army Academy, Kabul, Afghanistan

Matiullah Khan, has funded the construction of more than 70 mosques and schools all the while maintaining control over the Kandak Amniante Uruzgan (KAU), a private security organisation responsible for contracted security in Southern Afghanistan.

The complexity of patrimonial structures—informal use of kin, tribal and political networks—in which warlords and power-brokers operate in the sustainment of the status quo is frequently overlooked as international emphasis continues to rest on how governance ought to function rather than accepting how it actually operates in weak and fragmented states.

Private Security Companies: Issues with Decentralised Security

Host Nation Trucking (HNT) drivers describe these primary private security subcontractors as "strongmen, commanders, and militia leaders who compete with the Afghan central government for power and authority." US supply chains depend on HNT contracts for convoy protection at the expense of millions annually; however, some rightfully suspect that payments only work to empower warlords with money and de facto legitimacy for their private armies, a risk between ensuring security and dissolving the legitimacy of the GIRoA.

It is difficult to ignore NATO/GIRoA support for men responsible for violent killings in the mid-90s who have returned to power in Afghanistan: Parliamentary member, Abdul Rasul Sayyaf; Chief of Staff and special envoy for northern Afghanistan, Abdul Rashid Dostum; former President and United National Front opposition leader, Burhanuddin Rabbani; and Defence Minister Muhammad Fahim. Yet, the growing concerns over the legality of PSCs that regularly fall outside the structural command of the Ministry of Defence and Interior are equally alarming.

Aside from the abundant failure to register weapons or document names of employees, little is done to prevent the spread of private militias, proliferation of weapons or the shifting of loyalties among government forces, insurgent networks and warlords. These PSCs largely remain unaccountable for their actions as independent actors of the state. Although warlords, like Matiullah Khan, nominally operate under licensed PSCs, they prosper from within the vacuum of political authority and are said to resist attempts made by the state to transition toward a more consolidated government dependent on a transparent electoral process out of fear that a strong centralised democracy would threaten their status, authority, and ability to profit from Afghan insecurities.

A Double-Edged Sword: Security at the Expense of Control

The strategy of hiring private security firms in Afghanistan, to include arming small district militias to resist Taliban resurgence, is undoubtedly a double-edged sword. Although Afghanistan's severely fragmented population along ethnic, tribal and communal lines, accentuated and exaggerated by a 30-year war reduce the likelihood of ever achieving a strong centralised government capable of sustaining a monopoly over the use of armed force, a decentralised government in Afghanistan, on the other hand, even if under the heavy-hand of warlords and power-brokers, often times provides social welfare and security otherwise absent under the present Afghan Government. Additionally, these tribal elites are better positioned to navigate the ethnic sensitivities of their regions and offer an attractive alternative to foreign appointed officials and persuasive Taliban. By bringing their influence into the political process through personal reform and investment in Afghanistan's political and economic future, NATO could successfully aim not at constructing a flawless Afghan state, but refurbishing the existing patrimonial order to its advantage. These men would still govern the country through a series of regional fiefdoms in the short-term, but their authority would eventually be absorbed into the accountability and stability of a functional-modernised Afghan state, especially as international forces gradually withdraw in support of the 2014 Afghan security handoff. SP

(Justin D. Wallestad was a fall intern at the Institute of Near East & Gulf Military Analysis - INEGMA and Dr. Theodore Karasik is Director of Research and Consultancy, INEGMA)

Air Chief calls for 'people first mission'

At the inauguration of a three-day Air Force Commanders' Conference here in New Delhi, the Chief of the Air Staff, Air Chief Marshal N.A.K. Browne exhorted the Commanders to uphold the 'people first mission' always which is the vision of the IAF. The conference was attended by the Air Force Commanders of all the Operational Commands as well as the Training and Maintenance Commands besides the Principal Staff Officers at the Air Headquarters.

He complimented them for their excellent professionalism and responsiveness during the recent humanitarian and disaster relief operations in Sikkim and Orissa.

The Air Chief said: "The IAF is witnessing an unprecedented phase of modernisation and capability enhancement and can effectively respond to any attempts at undermining India's national security. The transformational change can be witnessed in all facets of capability building that include not only combat platforms, but also induction of force multipliers and air mobility platforms to provide strategic reach and operational flexibility."

The Commanders discussed key issues relating to operations, maintenance and infrastructure development and most importantly human resource issues relating to the training of the air warriors.

The key focus was on strategising various aspects related to training and development of air warriors with special emphasis on consolidating flying training and development of air warriors to cope with the depletion in trainer aircraft resources. Emphasis was placed on infrastructural development in the North and North Eastern areas to improve response time through forward basing of armed forces' assets and supporting the Indian Army in challenging conditions.

Amongst other issues, the discussions ranged from pace of progress in platform and weapon inductions and various processes to the effective integration of modern air defence radars and weapon systems to maintain requisite combat potential. Various maintenance issues like the life cycle philosophies and modernisation of maintenance practices to enable a more inclusive role for the base repair depots in maintaining legacy systems were also deliberated upon. Based on the valuable insight gained during the successful induction of C-130J aircraft, Commanders would also review the processes of the foreign military sales (FMS) to ensure smooth induction of the C-17 aircraft. SP

LCA project delayed: IAF Chief

The development of the indigenous light combat aircraft (LCA) has suffered a setback as the initial operational clearance (IOC) for the aircraft was delayed by another year.

"As far as LCA is concerned, there was an initial IOC in January this year. We were supposed to get the IOC (final) by the end of this year. As we see it, there is a delay of almost an year in that," IAF Chief Air Chief Marshal N.A.K. Browne told a press conference.

The delay in IOC is expected to further affect the final operational clearance (FOC) of the aircraft, which was expected by 2012. Sources said the delay in IOC has taken place as the Defence Research and Development Organisation (DRDO) has not been able to complete certain trials of the aircraft.

On upgradation of the fleet of Mirage 2000 fighter aircraft, Browne said the Finance Ministry was going through the plan and the green signal is expected soon.

"As far as simulators are concerned, let me assure you that for all our new acquisitions, the simulator package is the part of the process itself, including MMRCA," he said. While the simulators for Su-30 MKI fighter jets have become operational at three centres (Pune, Bareilly and Tezpur), the same for C-130J transport aircraft are expected to be delivered by next month.

"For each new induction which we will have in IAF, we will have a dedicated simulator. Same goes for the helicopters and the basic trainer aircraft Pilatus. For Hawk, simulator flying is part of the training stage," he said.

Replying to a query on MMRCA as whether IAF will get more funds from the government in view of the high costs of both the shortlisted aircraft, Browne said "money is not an issue." SP

Boeing lands $11.7 billion C-17 support deal

The US Department of Defense (DOD) as awarded a contract worth up to $11.7 billion to Boeing for support and maintenance of its C-17 aircraft to the US military and global allies. The award comes less than a week after the Chicago-based company won a contract modification worth up to half a billion for similar services.

Boeing will have the opportunity to bid on task orders issued from DOD under the C-17 Globemaster II Integrated Sustainment Program, which was established as a way to roll support and maintenance for the global fleet of C-17 aircraft — including those acquired by international allies — under a single contract. About 10 per cent of this contract will support foreign military sales to United Kingdom, Australia, Canada, United Arab Emir-

PHOTOGRAPH: PIB

ates, Qatar and an alliance of NATO members known as the NATO strategic airlift capability. DOD noted that at this time, no dollars have been obligated.

On September 28, DOD announced a $469 million contract modification to Boeing, to provide similar support services for its C-17 aircraft to the Indian Air Force. SP

Hispano-Suiza selected by Embraer for the KC-390 programme

Brazilian aircraft manufacturer Embraer has selected Hispano-Suiza (Safran group) to supply the Emergency Electric Power Generator System (EEPGS) for its upcoming KC-390 military transport and aerial refuelling jet.

Hispano-Suiza will supply the complete system, composed of the following – ram air turbine (RAT); RAT electric generator and generator control unit; and RAT actuation system (deployment and restow mechanism).

The ram air turbine system will convert air stream in electric power for the loads that are essential for continued safe flight and landing in case of emergency. With this programme, Safran increases its leadership in the supply of more electrical systems.

"This mission-critical system has been entrusted to Hispano-Suiza, based on its long history of providing solutions for aviation," said Eduardo Bonini Santos Pinto, Vice President Operations and COO, Embraer Defense and Security. "Whether for military or humanitarian airlift or refuelling situations, the KC-390 will be ensured safe continued flight or landing capabilities under emergency conditions." SP

Saab wins extension of Thai air-defense net

Defence and security company Saab has received an order from the Royal Thai Air Force regarding extension of an Air Command and Control System. Saab will extend the Royal Thai Air Force ACCS (Air Command and Control System), which was delivered by Saab in 2010. The system is a part of the air defence system consisting of the Gripen fighter and the airborne early warning system Saab 340 Erieye AEW.

The order concerns the security and defence solutions business area. The contract will run between 2011-13.

"We are delivering an advanced air command and control system, which forms a vital part of the Thai air defence system. The order is a yet another milestone in the cooperation betweenThailand and Saab, in a market that is very important for us," says Gunilla Fransson, Head of Saab business area Security and Defence Solutions. SP

PHOTOGRAPHS: US Air Force, US Navy

F-35B's successful initial shipboard vertical landing aboard USS WASP

The Navy and Marine Corps team made more remarkable naval aviation history recently as the F-35B joint strike fighter (JSF) test aircraft BF-2 landed safely on USS Wasp's (LHD-1) flight deck, the first at sea vertical landing for the Marine Corps' F-35 JSF version.

The landing is part of the initial ship trials for the F-35B. The tests are scheduled to collect data on the aircraft's ability to perform short take-offs and vertical landings on a ship at sea and determine how the aircraft integrates with the ship's landing systems, and deck and hangar operations.

This test period, the first of three scheduled at-sea test periods over the course of the development programme, will also collect environmental data on the deck through added instrumentation to measure the F-35B's impact to flight deck operations.

"The first at sea vertical landing is a huge milestone," said Marine Corps Colonel Roger Cordell, military site director for F-35 test and evaluation at Naval Air Station Patuxent River. "We're still early in this test period, and we expect to learn a lot more, but this is a great step toward delivering the capability to the fleet."

The F-35B is the variant of the joint strike fighter for the US Marine Corps, capable of short take-offs and vertical landings for use on amphibious ships or expeditionary airfields to provide air power to the Marine Air-Ground Task Force. The F-35B will replace Marine AV-8B Harriers and F-18 Hornets and is undergoing test and evaluation at NAS Patuxent River prior to delivery to the fleet. SP

Egypt selects sniper advanced targeting pod for F-16

Egypt is now the 13th international customer for Lockheed Martin's sniper advanced targeting pod (ATP), which provides precision targeting and non-traditional intelligence, surveillance and reconnaissance (NTISR) in a single lightweight system.

The Egyptian Air Force (EAF) has selected Sniper to equip its F-16 aircraft purchased under the Peace Vector programme.

"The Egyptian Air Force is a well-established customer of Lockheed Martin targeting systems, having flown LANTIRN targeting pods since the early 1990s," said Hugh Woods, International Program Manager in Lockheed Martin's Missiles and Fire Control business. "We are eager to ensure that EAF pilots have access to advanced targeting and NTISR capabilities by outfitting Peace Vector aircraft with Sniper."

With this order, the EAF joins the US Air Force, Air National Guard and 12 international allies in fielding Sniper ATP's exceptional stability and superior imagery, which allow aircrew to positively identify targets of interest from extended standoff ranges.

Sniper ATP provides critical long-range, positive target identification, enhancing an aircrew's ability to detect and analyse ground targets while dramatically decreasing the risks posed by enemy air defences. The system's stable, automatic tracking and laser designation of targets, along with a video datalink with metadata, ensure pilots can visually identify threats in day/night conditions and share imagery with ground troops. SP

PHOTOGRAPHS: EADS, Lockheed Martin

EADS prepares for first flight of the initial technical demonstration aircraft

EADS North America recently announced that its Armed Aerial Scout 72X (AAS-72X) industry team is preparing for the first flight of one of three company funded technical demonstration aircraft (TDA).

The EADS North America-led industry team, comprised of Lockheed Martin, Eurocopter and American Eurocopter, is developing three AAS-72X aircraft to demonstrate the total capability of the aircraft with a fully integrated mission equipment package (MEP). The initial flight of the first demonstrator aircraft is scheduled to occur in December.

"First flight is a key milestone that moves us down the technical path to demonstrating the capabilities of the aircraft and reflects our commitment to our Army customer and this important warfighting requirement," said Sean O'Keefe, CEO of EADS North America.

The AAS-72X combines twin-engine safety, high and hot operating performance and a large cabin for true multi-role capability. The AAS-72X is derived from the same family of aircraft as the UH-72A Lakota light utility helicopter, offering a low-risk evolution of the US Army's newest rotary-wing aircraft. SP

Tornados fly 7,000 hours over Libya

RAF officials announced on October 6 that the Tornado GR4s deployed on Operation Ellamy have now completed over 7,000 flight hours on missions over Libya.

RAF Tornados have been operating at such a pace in support of NATO's Operation Unified Protector, aimed at protecting the civilian population of Libya from attack, they had clocked up over 7,000 flying hours by October 6. That is the equivalent of approximately two years worth of training sorties back in the UK, at a much increased flying rate. Operating from Gioia del Colle air base in southern Italy, the tempo of operations has been relentless and 9 Squadron has been at the forefront of the mission. SP

Irkut building Yak-130s

The Irkut Corporation's plant at Irkutsk recently began final assembly of the 35th example of the Yakovlev Yak-130 combat trainer. Of this total, approximately ten have been completed and test flown, while about another eight Yak-130 fuselages are being assembled.

Some of the aircraft in Irkut's assembly hall already have Russian Air Force insignia, as the company is producing them in anticipation of a further order from the service.

Russia's National Armament Programme outlines the purchase by 2020 of 62 Yak-130s above the current batch of 12 aircraft ordered. SP

Marine Corps to deploy K-Max UAV to Afghanistan

The Navy and Marine Corps announced its plan to deploy the service's first cargo unmanned aircraft system to Afghanistan next month. Adm. Bill Shannon, Program Executive Officer for Unmanned Aviation and Strike Weapons, approved Lockheed Martin/Kaman's K-Max unmanned helicopter for a six-month deployment to augment Marine Corps ground and air logistics operations.

"I am very excited to deploy a system that will keep our marines and sailors out of harm's way and ultimately save lives," said Shannon.

Prior to Shannon's decision, commander operational test and evaluation force released a report documenting the system's favourable performance during a quick reaction assessment in Yuma, Arizona, in August. Marine unmanned aerial vehicle squadron (VMU) 1, cargo resupply unmanned aircraft system (CRUAS) Det. conducted the QRA, which replicated a week in the life of operations in Afghanistan with temperatures, flight profile and terrain almost identical to those planned for deployment. SP

Fire Scout is first UAV to fly on biofuel

The US Navy reached a milestone in its quest to gain energy independence today, when an MQ-8B Fire Scout successfully flew the first unmanned biofueled flight at Webster Field in St. Inigoes, Maryland.

The Unmanned Aircraft Systems Test Directorate piloted the helicopter fuelled with a combination of JP-5 aviation fuel and plant-based camelina. The biofuel blend reduces carbon dioxide output by 75 per cent when compared to conventional aviation fuel.

The MQ-8B Fire Scout Vertical Take-Off and Landing Tactical Unmanned Aerial Vehicle provides critical situational awareness, intelligence, surveillance, reconnaissance (ISR), and targeting data to the forward deployed warfighter. Fire Scout is designed to operate from all air capable ships and is currently providing ISR support during its first-land based deployment in US Central Command area of responsibility.

Fire Scout is the seventh aircraft to demonstrate the versatility of biofuel through its use in all facets of naval aviation. SP

Raytheon radar improves picture for UAV operators

Raytheon has developed and patented a low-cost radar technology that will, for the first time, provide both military and civil air traffic controllers with the capability to avoid airborne hazards around unmanned aircraft systems (UAS), which costs the Pentagon millions in damaged aircraft.

Under the ground based sense and avoid (GBSAA) initiatives with the US Air Force to repurpose existing National Airspace System (NAS)-certified radars, UAS operators and controllers will have more information to help them make safer decisions. Since current ATC radars can only see airspace in two dimensions – latitude and longitude – UAS operators and controllers must assume that any hazard detected also resides on the same altitude.

"Traditional air traffic control radars have only been able to see in two dimensions since the 1950s," said Mike Prout, Vice President for Raytheon Network Centric Systems' Security and Transportation Systems.

Currently UAS operators have to avoid any potential hazard in the airspace, even those that may be far from the UAS in altitude. With the ATC radars repurposed through a software enhancement to detect altitude, the install-base of ATC radars will be able to detect all hazards in the NAS and provide the altitude resolution information needed by controllers and UAS operators to safely and efficiently direct the UAS. SP

PHOTOGRAPHS: Lockheed Martin, US Navy

Fury 1500 UAS achieves 14-hour duration flight

AME Unmanned Air Systems (AME UAS) announced another successful flight of the Fury 1500 special mission unmanned aerial system. This new version of the Fury was developed at AME's UAS facility in San Luis Obispo, California. The Fury is operated and controlled by AME's UAS mission management software, SharkFin.

The 14.2-hour flight solidifies the Fury's position as the longest-endurance and largest payload tactical and runway-independent UAS flying today. With the largest payload capacity (weight and volume), heavy-fuel propulsion system, highest power-to-payload, and "special mission" capable avionics, Fury 1500 will provide best-in-class capabilities to the warfighter over a variety

of mission scenarios. The Fury 1500's first flight was in November 2010. AME recently moved to a more powerful launcher to eliminate wind and altitude launch constraints when flying above 300 lbs at takeoff.

Fury 1500 testing addresses multiple warfighter requirements. Designed for a broad range of missions and long endurance, Fury 1500's large payload volume and power capacity can support several payloads simultaneously and provide for a flexible, multi-mission capability not currently available with other UAS platforms.

"Fury 1500, and its mission planning and control system, Sharkfin, are progressing nicely toward a fully deployable capability for our Army, Navy, and special mission customers," added Jay McConville, AME UAS' Chairman. SP

PHOTOGRAPHS: Rheinmetall AG, AME UAS

Israel Air Force marks 40 years of UAV operational use

The Israel Air Force (IAF) on October 2 marked 40 years since the establishment of its first unmanned aerial systems (UAS) Squadron 200, located at the IAF base in Palmachim.

A ceremony was held in the presence of current squadron members and veterans, including IAF Commanding Officer, Major General Ido Nehushtan, senior officials from the Israel Ministry of Defence (IMoD), the IMoD R&D branch, and representatives of the Israeli defence companies whose engineering talent and innovative skills have collectively pioneered to where Israeli UAVs are today.

Israel Aerospace Industries (IAI) has led the IAF's UAS development over the past 30 years, since fielding the IAF's first ever operational UAS, the "Scout" and through today's "Heron Turbo Prop" (Heron TP) UAS. The Scout UAV entered IAF operational service in 1981,and excelled in the 1982 Operation Peace for Galilee (First Lebanon War) being retired only in 2004.

IAI's Searcher UAV became operational in 1992 and underwent an upgrade in 1998 with entry of the "Searcher II" that included better engine performance, and advanced navigation and communication systems. In addition to the IAF, Searcher is in service with 10 different customers worldwide, including the Spanish Air Force that operates it in Afghanistan.

In 2005, the IAI Heron UAS, named "Shoval", was inducted into the squadron. IAI maintenance teams support the Shoval UAS and its high operating tempo all year round.

The Heron UAS is operated by 15 different customers worldwide and functions as the central ISR aerial asset of the German, Australian, Canadian and French forces.

The latest addition to the IAF is its largest and most sophisticated UAS: the Heron Turbo Prop (TP) that was inducted to Squadron 210 in February 2010 under the name "Eitan".

The IAI-designed Heron TP can perform long range missions of over 1,000 km, and can remain airborne for over 24 hours. The UAV has a powerful turbo-prop engine (1,200 horsepower), allowing it to reach altitudes of over 41,000 feet – higher than normal commercial aircraft flight operations.

The Eitan has a wingspan of approximately 26 metres (similar to the wingspan of a Boeing 737 aircraft) and is designed to meet the demanding civil aviation authorities' certification requirements created in recent years in Israel and abroad.

Itzhak Nissan, President and CEO of IAI, said:" Throughout the years, IAI delivered innovative UAS which have always been considered impressive technological achievements and have made both IAI and the State of Israel very proud. The UAVs are providing a crucial contribution to the IAF's operational capabilities. SP

Northrop Grumman X-47B demonstrator in cruise mode

The US Navy/Northrop Grumman Corporation X-47B unmanned combat air system demonstration aircraft reached a major milestone on September 30 when it retracted its landing gear and flew in its cruise configuration for the first time.

The flight, conducted at Edwards Air Force Base, also helped validate precision navigation hardware and software that will allow the X-47B to land with precision on the moving deck of an aircraft carrier.

"Last week's flight gave us our first clean look at the aerodynamic cruise performance of the X-47B air system…and it is proving out all of our predictions," said Janis Pamiljans, Vice President and Navy UCAS Program Manager for Northrop Grumman's Aerospace Systems sector. "Reaching this critical test point demonstrates the growing maturity of the air system, and its readiness to move to the next phase of flight testing."

The recent flight was part of an ongoing "envelope expansion" programme for the first of two X-47B aircraft produced by Northrop Grumman for the Navy's Unmanned Combat Air System Carrier Demonstration (UCAS-D) programme. Envelope expansion flights are used to demonstrate aircraft performance under a variety of altitude, speed and fuel load conditions.

The UCAS-D programme plans to begin transitioning aircraft to Naval Air Station, Patuxent River, Maryland, in late 2011 to begin shore-based carrier suitability testing in 2012. The focal point of the programme is to demonstrate in 2013 the first aircraft carrier launches and recoveries by a tailless, low-observable-relevant unmanned system. SP

IAI unveils new lightweight SAR for UAVs, aerostats

Israel Aerospace Industries (IAI) has unveiled a new lightweight airborne SAR/GMTI payload at the 2011 Annual Association of the United States Army (AUSA) Meeting & Exposition in Washington, DC.

The new ELM-2054 radar system, developed by ELTA Systems Ltd., an IAI group and subsidiary, provides a cutting-edge solution for all-weather, air-to-surface intelligence, surveillance, target acquisition and reconnaissance (ISTAR) applications. It features modular, open architecture and can be easily configured into small tactical unmanned aerial vehicles (UAVs), light reconnaissance aircraft, tactical aerostats and more.

ELM-2054 employs the latest advanced technologies to achieve high performance combined with a very low weight, small volume packaging and low power consumption. SP

ScanEagle streams live video of operations in Arctic

Insitu Inc. announced that its ScanEagle unmanned aircraft system (UAS) delivered real-time video to Canadian Forces during the largest military exercise to date in the Far North.

Operation Nanook brought together Canadian Forces, its security partners and numerous federal, territorial and municipal governments to conduct sovereignty operations and security exercises in Canada's Northwest Passage. The exercise focused around a major air disaster (MAJAID) simulation, during which ScanEagle provided overwatch to Canadian Forces.

The runway-independent ScanEagle UAS was deployed by Insitu and its partner ING Engineering to identify traversable ground routes, to watch for polar bear threats and to monitor day-to-day iceberg movements. Commanders in tactical operations centres (TOC) and troops on the ground received real-time, stable video.

During the exercise, Insitu and ING UAS operators launched and retrieved the aircraft. Handing control over to the Canadian Forces, the operators stood by to provide technical assistance as needed.

"Adverse weather conditions are typical of ScanEagle operations," said Insitu Senior Vice President of Business Development Ryan Hartman. "Freezing temperatures, wind, whatever challenge our environment presents, we just work through it. Our standard is 99 per cent mission-readiness with 30-minute notice." SP

PHOTOGRAPHS: Northrop Grumman, Boeing

US ramping up unmanned air strikes and domestic surveillance

[By **James Corbett**]

Unmanned aerial vehicles are once again grabbing headlines as the UK Government was forced to admit recently that an RAF drone killed four Afghan civilians and injured two others in an air strike in Helmsland earlier this year.

Expressing "deep regret" over the incident, a Defence Ministry spokesman said: "An International Security Assistance Force (ISAF) investigation was conducted to establish if any lessons could be learnt from the incident or if errors in operational procedures could be identified; the report noted that the UK Reaper's crews actions had been in accordance with procedures and UK Rules of Engagement."

The incident is likely to renew debate about the RAF's drone programme, operated from the US Air Force's Creech Air Force Base in Nevada. Just this March, the Ministry of Defence released a study of the issue that looked at some of the troubling questions that the use of unmanned aerial vehicles in warfare raise.

"It is essential that, before unmanned systems become ubiquitous (if it is not already too late) that we consider this issue and ensure that, by removing some of the horror, or at least keeping it at a distance, that we do not risk losing our controlling humanity and make war more likely."

The report then goes on to ask if the US drone strikes in Pakistan and Yemen in fact herald a new era of warfare, an era in which military intervention will be used simply because it can be done without any risk whatsoever to the attacker.

The US military and CIA under the leadership of Nobel peace laureate Barack Obama is currently using aerial drones to carry out attacks in six different countries: Pakistan, Afghanistan, Yemen, Iraq, Libya, and now Somalia. Washington has admitted using drones to commit assassinations of Somalis who it claims have ties to Anwar al-Awlaki, himself an American citizen who the Obama Administration has attempted to assassinate without a trial. It is uncertain who else is on the President's list of American citizens whom he has unilaterally declared the right to kill, but his Department of Justice has successfully blocked any judicial oversight of the decision in the courts.

The use of drones are becoming more frequent in every theatre, and have begun to cause great consternation with erstwhile allies such as Pakistan, where the citizens and the government are increasingly protesting the drone strikes. From 2004 to the end of his presidency in January 2009, the Bush administration launched 46 drone strikes in Pakistan. Since taking over the White House, peace prize recipient Obama has launched 213 such strikes.

Now, reports are surfacing that the CIA is building a secret base at an undisclosed location that will be used for carrying out assassinations in Yemen. In justifying the move, an anonymous US official was quoted by the *Los Angeles Times* as saying that Yemen "is now the most capable, most imminent threat to the US."

It is uncertain how a small nation of 23 million people in the Arabian Peninsula with a defence budget 1/300th the size of America's could possibly pose any type of threat to the largest, most well-funded military in the history of the world, but the justification for the drone strikes have been made numerous times by various government officials.

In March of last year, Harold Koh, a legal advisor to the State Department, made the case that the use of unmanned aerial vehicles against any nation it deems to be a threat is legally justified.

An MQ-9 Reaper goes through an engine check on a ramp in Afghanistan

PHOTOGRAPH: USAF

In April of this year, the White House approved the use of missile-equipped drones in NATO's Libyan campaign. Since then, 42 drone attacks have been launched on Libya.

According to Global Research associate Mahdi Nazemroaya, who is in Libya on a fact-finding mission, the NATO bombing campaigns have struck mainly civilian targets and constitute more proof that the so-called humanitarian nature of the campaign is in fact a cover for a brazen war of aggression that is being enabled by a complicit lapdog establishment media. SP

(Sourced from James Corbett of the Corbett Report with updates from the Center for Research on Globalization at Global Research, California.)

Conference on effect of terrorism on Indian economy

The Challenge of Terrorism to India's Infrastructure and Economy", a two-day expo-cum-conference was organised by Security Watch India (SWI) at New Delhi on October 11 and 12, 2011. The seminar was attended by senior officials of the Home Ministry, industry representatives' and security experts from India and abroad.

Experts threw light on the security preparedness and the solutions to combat possible security threats to critical infrastructure and commercial establishments such as oil and gas pipelines, refineries, ports, airports, railways, power plants, hotels, shopping malls, banks, corporate organisations and VIP security. U.K. Bansal, Secretary (Internal Security), Ministry of Home Affairs, gave the inaugural address which was followed by a panel discussion on "Revamping Indian Security Infrastructure to Transform Counter Terror Preparedness". "It is legitimate to anticipate that countries and entities hostile to the Indian interest will try to extract maximum advantage by attacking our economic and high-value targets," said Bansal.

Arun Choudhury, Special Director General, Central Industrial Security Force (CISF) said that security personnel in charge should have the independence to take the last call. Former Commissioner of Delhi Police and former Governor of Manipur and Jharkhand Ved Marwah highlighted the need for a terrorism prevention centre, which would be manned by experts who would advise the central and state security agencies.

In the session on "Securing Cities in India", Brian Seagrave, Vice President, Raytheon Homeland Security, gave out details about the missing surveillance elements in an urban environment—heterogenous threat sensors, sensor correlation and tracking. Tabetha Chandler, Founder, Director, Security Consultant; Facility Technology Services, spoke about the interoperability between police and emergency responders and the lessons to be learnt from the US system.

Tarique Ghaffur, former Assistant Commissioner, Metropolitan Police, London spoke about the community policing system in UK and said that a similar system can be initiated in Delhi as well.

The two-day event also had sessions on "Critical Infrastructure Security", "Operating in the Cyber Apt Era", "Asset Protection and Corporate Security for India", and "Protecting Air and Maritime Assets". SP

US Secretary announces 'Stop.Think.Connect' campaign with YWCA

The US Department of Homeland Security's (DHS) 'Stop. Think. Connect.' campaign announced a new partnership with the YWCA, which serves nearly 2.6 million women and girls across the country, to expand its effort to promote the importance of cybersecurity and online safety. The campaign will provide tools and resources to educate teens, young adults and parents about how they can protect themselves from the risk of theft, fraud and abuse online.

"Cybersecurity is a shared responsibility, and everyone has a role to play," said Secretary Janet Napolitano. "Through partnerships with the YWCA and organisations and communities throughout the country, the department is reaching audiences of all ages about the importance of building a safe and secure cyberspace."

"The YWCA is pleased to join the Department of Homeland Security and its efforts to raise awareness of cybersecurity and online safety," says Gloria Lau, YWCA USA CEO. "In communities all around the country, the YWCA is taking action to combat cyber bullying and cyber predators, key parts of the Stop.Think.Connect.™ Campaign. The YWCA looks forward to partnering with DHS in areas that impact so many of our young people and their families," stated Lau.

Stop.Think.Connect. is a national public awareness effort to guide the nation to a higher level of Internet safety and security by educating and empowering the American public to be vigilant about practising safe online habits. The campaign encourages Americans to view Internet safety and security as a shared responsibility at home, in the workplace, and in our communities.

This new partnership continues the Stop.Think.Connect. campaign's ongoing outreach to the Nation's youth and organisations that serve them. Recently, DHS announced partnerships with Drug Abuse Resistance Education (DARE) America and Boys & Girls Clubs of America. SP

PHOTOGRAPH: Wikipedia

Gatwick airport's new security zone

London's second airport Gatwick has opened an advanced new security zone that promises to have each passenger through the departures in under five minutes. There are 19 new security lanes that will enable 5,000 passengers to pass through every hour.

Two of the lanes are dedicated to families with young children and passengers with reduced mobility, while another two have been earmarked for 'premium' passengers.

It was inaugurated by the Minister for Transport, Theresa Villiers who underlined the importance of low-stress but high-security checkpoints. "For many people, going through airport security can be their least favourite part of flying. The government is committed to reforming the way these necessary checks are regulated, enabling airports to come up with more passenger-friendly processes while maintaining the same high levels of security.' SP

Virus hits US drone fleet

A computer virus has infected the cockpits of America's Predator and Reaper drones, logging pilots' every keystroke as they remotely fly missions over Afghanistan and other war zones.

The virus, first detected nearly two weeks ago by the military's Host-Based Security System, has not prevented pilots at Creech Air Force Base in Nevada from flying their missions overseas. Nor have there been any confirmed incidents of classified information being lost or sent to an outside source. But the virus has resisted multiple efforts to remove it from Creech's computers, network security specialists say. And the infection underscores the ongoing security risks in what has become the US military's most important weapons system.

Military network security specialists aren't sure whether the virus and its so-called "keylogger" payload were introduced intentionally or by accident; it may be a common piece of malware that just happened to make its way into these sensitive networks. The specialists don't know exactly how far the virus has spread. But they're sure that the infection has hit both classified and unclassified machines at Creech. That raises the possibility, at least, that secret data may have been captured by the keylogger, and then transmitted over the public Internet to someone outside the military chain of command.

Drones have become America's tool of choice in both its conventional and shadow wars, allowing US forces to attack targets and spy on its foes without risking American lives. Since President Obama assumed office, a fleet of approximately 30 CIA-directed drones have hit targets in Pakistan more than 230 times; all told, these drones have killed more than 2,000 suspected militants and civilians, according to the *Washington Post*.

More than 150 additional Predator and Reaper drones, under US Air Force control, watch over the fighting in Afghanistan and Iraq. American military drones struck 92 times in Libya between mid-April and late August. And late last month, an American drone killed top terrorist Anwar al-Awlaki — part of an escalating unmanned air assault in the Horn of Africa and southern Arabian peninsula.

But despite their widespread use, the drone systems are known to have security flaws. Many Reapers and Predators don't encrypt the video they transmit to American troops on the ground. In the summer of 2009, US forces discovered "days and days and hours and hours" of the drone footage on the laptops of Iraqi insurgents. A $26 piece of software allowed the militants to capture the video. SP

Georgia Tech releases cyber threats forecast for 2012

The year ahead will feature new and increasingly sophisticated means to capture and exploit user data, as well as escalating battles over the control of online information that threatens to compromise content and erode public trust and privacy. Those were the findings announced by the Georgia Tech Information Security Center (GTISC) and the Georgia Tech Research Institute (GTRI).

According to GTISC, GTRI and the experts cited in the report, specific threats to follow over the coming year include, among others:

- **Search poisoning:** Attackers will increasingly use SEO techniques to optimize malicious links among search results, so that users are more likely to click on a URL because it ranks highly on Google or other search engines.
- **Mobile web-based attacks:** Expect increased attacks aimed specifically against mobile web browsers as the tension between usability and security, along with device constraints (including small screen size), make it difficult to solve mobile web browser security flaws.
- **Stolen cyber data use for marketing:** The market for stolen cyber data will continue to evolve as botnets capture private user information shared by social media platforms and sell it directly to legitimate business channels such as lead-generation and marketing.

"We continue to witness cyber attacks of unprecedented sophistication and reach, demonstrating that malicious actors have the ability to compromise and control millions of computers that belong to governments, private enterprises and ordinary citizens," said Mustaque Ahamad, Director of GTISC. "If we are going to prevent motivated adversaries from attacking our systems, stealing our data and harming our critical infrastructure, the broader community of security researchers—including academia, the private sector and government—must work together to understand emerging threats and to develop proactive security solutions to safeguard the Internet and physical infrastructure that relies on it."

Georgia Tech Cyber Security Summit is one forum where the IT security ecosystem gathers together to discuss and debate the evolving nature of cyber threats, and to chart the course for creating solutions through collaborations among industry, government and academia. The Summit was keynoted by Admiral William J. Fallon, US Navy (Retd) and included a panel of security experts from Equifax, The financial services roundtable, mobile active defence, reputation.com and GTRI.

"Our adversaries, whether motivated by monetary gain, political/social ideology, or otherwise are becoming increasingly sophisticated and better funded," said Bo Rotoloni, Director of GTRI's Cyber Technology and Information Security Laboratory (CTISL). "Acting as individuals or groups, these entities know no boundaries, making cybersecurity a global problem. We can no longer assume our data is safe sitting behind perimeter-protected networks. Attacks penetrate our systems through ubiquitous protocols, mobile devices and social engineering, circumventing the network perimeter. Our best defence on the growing cyber warfront is found in cooperative education and awareness, best-of-breed tools and robust policy developed collaboratively by industry, academia and government."

The Georgia Institute of Technology is one of the nation's leading public research universities and the home of groundbreaking cyber security research and academic initiatives through GTISC, GTRI and other facilities across campus. These efforts are focused on producing technology and innovation that will help drive economic growth, while improving human life on a global scale. SP

LT GENERAL (RETD)
P.C. KATOCH

Critical technology focus needed

During the Defence Technology Seminar this August, a DRDO stalwart took umbrage to someone highlighting the 'indigenous' LCA produced after decades had 40 per cent imported parts including engine and every DRDO project suffered prolonged delays resulting in manifold costs. He retorted there was no need to develop every nut and bolt, not clarifying whether he considered engine of a fighter aircraft a 'nut' or 'bolt.' He read out a communication by the erstwhile foreign secretary stating all R&D projects on average have 80 per cent time and cost overruns. The communication obviously referred to DRDO norms, not global.

In Japan, where defence industry is privatised, it takes 5-10 years to develop and field a major weapon system. We took 15 years to produce the INSAS Rifle (after importing 17 assault rifles from 11 countries), which is not the best; faults of which are still being rectified. The Chairman of the session, also from DRDO, sweetened discomfort by saying DRDO had received demands for two more 'Akash' systems. The audience didn't know that Akash was to replace the ageing mobile air defence system supporting fast moving mechanised manoeuvres but prototypes produced after excruciating delays failed miserably in mobility and target acquisition during trials and were rejected outright by Army. Because of enormous investments it was eventually 'given' to Air Force for area protection in static role as part of layered system of air defence.

Despite periodic statements to gear up DRDO, accountability remains at premium. Annual South Block meetings reviewing DRDO projects have the same story – time and cost overruns plus quality. UAV Nishant (sanctioned October 1991) with contracted completion by April 1995 (42 months) suffered numerous revisions, failed/crashed flights, riddled with problems of unstable video imagery, poor picture quality, inaccurate target acquisition, weak payload stabilisation and poor recovery system, all adding to inordinate delays till media reported a 'successful' flight in recent months (over 234 months since October 1991). Final production can be anyone's guess. Nishant has a life of 20 flights so training will remain problematic.

Army is without carbine training ammunition for years now because DRDO has failed to provide a replacement for the 9mm carbine. How do you train people authorised carbines? The 5.56 LMG of DRDO is a fiasco. Indigenous bullet proof jackets are poor quality and in inadequate quantity. Indigenous night vision devices (IR tubes still imported) are bulkier, crude and less effective compared to imports but see the DRDO fanfare for developing mosquito repellent and wasting lakhs on newspaper advertisement of the "great breakthrough" in developing skin ointment for Leucoderma. 'Cyber' and 'electromagnetic,' the two new domains of warfare, require specific focus. Added to this is the need to provide wherewithal at the cutting-edge to fight sub conventional.

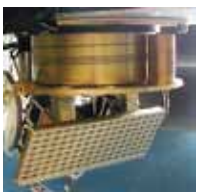
A senior DRDO official recently expressed views that directed energy weapons were being thought of abroad but not tried out, disclosing ignorance as UAVs have already been successfully shot down through land, air, sea-based laser systems, manpack laser version and plasma weapons developed. DRDO should also learn tricks from China who reverse engineered a dud US cruise missile in 1998, is apparently engaged with the MH-60 Black Hawk that crashed at Abbottabad and hope Pakistan will get the latest US drone that crashed in North Waziristan. Future forms of combat will include cyber space combat, radiation combat, robotic combat, nano technology combat, etc. DRDO has to go far beyond the laser dazzler for riot control and the Aditya (technology demonstrator) that may yet take a few years. We desperately need to upgrade capacity for self-reliance in defence production. It is a matter of survival for us. SP

The views expressed herein are the personal views of the author.

'Cyber' and 'electro-magnetic', the two new domains of warfare, require specific focus. Added to this is the need to provide wherewithal at the cutting-edge to fight sub conventional.

ILLUSTRATION: Anoop Kamath

Northrop Grumman 24/7 protection system



Northrop Grumman has announced the first deployment of the company's STARLite radar on a US Army persistent threat detection system (PTDS), an aerostat surveillance platform uniquely positioned to aid in the defence of ground troops.

"STARLite is protecting our warfighters and allies 24 hours a day, seven days a week," said John Jadik, Vice President of weapons and sensors for Northrop Grumman's Land and Self Protection Systems Division.

Northrop Grumman's STARLite is a small, lightweight, fully qualified synthetic aperture radar/moving target indicator (SAR/MTI) sensor system used for supporting tactical operations.

By providing precise battlefield intelligence in all types of weather and through battlefield obscurants, day and night, STARLite significantly improves battlefield situational awareness and optimises force manoeuvre and engagement for mission success.

Each STARLite radar comes equipped with a complete software package that enables easy operator control of all radar functions. SP

IMPAS advanced armour protection

Armour plate processor MTL Group (UK) showcased their new add on armour branded IMPAS Lite and IMPAS Advance at AUSA 2011 in Washington DC recently.

IMPAS which stands for interchangeable modular perforated armour system is a cost-effective alternative light weight solution to composite and ceramic add on armour with greater flexibility and better multi-hit capabilities.

Defence Sales Manager Simon Hurst said: "IMPAS is an innovative state of the art product which is suitable for both RHA and aluminium hulls. One of the key benefits is that the solution is a low-cost lightweight armour that can be rapidly fitted to any vehicle platform".

"We have identified the USA as a key market in which MTL Group can provide a high quality vehicle protection system at affordable prices."

IMPAS Lite and IMPAS Advance offer an effective alternative lightweight solution to composites ceramics for Stanag Level 1, 2 and 3 protections. IMPAS has been used for many international military upgrade programmes including the M577 and Ridgeback.

MTL Group also showcased its Design for Manufacture (DFM) service. An example of this was displayed on a blast floor at AUSA and has been manufactured in one piece using the world's largest robotic press. SP

DARPA's revolutionising prosthetics programme

Improvements in training, body, armour and medical evacuation and care have saved lives in combat, but many of the wounds received during operations in Afghanistan and Iraq have resulted in amputations. Begun in 2006, DARPA's revolutionising prosthetics programme set out to expand prosthetic arm options for today's wounded warriors.

The programme funded two teams to create advanced anthropomorphic mechanical arms and control systems; one to get an arm control system to market quickly, the other to determine the viability of direct brain control. In September, one of the DARPA-funded advanced mechanical arms was controlled by a volunteer with tetraplegia via his brain signals recorded by electrocorticography (ECoG); the first-ever accomplishment of prosthetic arm control with this modality by an individual with a disability.

The neuroprosthetic effort, funded by the National Institute for Neurological Disorders and Stroke at the National Institutes of Health (NIH/NINDS), the University of Pittsburgh Medical Center (UPMC) and the Univeristy of Pittsburgh School of Medicine (Pitt), used the modular prosthetic limb (MPL) built by a team managed by John Hopkins University Applied Physics Laboratory in Laurel for DARPA.

The UPMC/Pitt effort sets the stage for the next two years, when DARPA-funded researchers at UPMC and Caltech will conduct pre-clinical trials seeking to achieve brain control of advanced mechanical limbs by five spinal cord-injured volunteers in DARPA's revolutionising prosthetics programme.

The FDA has created an innovation pathway initiative for priority review of breakthrough medical devices and designated their pilot programme to be the direct brain-control effect, managed by APL. SP

RFI/RFP/TENDERS

Indian Army

RFI: **Tracked Excavator 8 Tonne**
E-in-C br
Publication date: September 22
Last date: October 20

Tender: **Electrooptical tracking system**
Army AD college
Publication date:September 26
Last date: November 1

Indian Navy

RFI: **For Air Cushion Vessel**
Naval Headquarters
Publication date: October 12
Last date: October 25

Indian Air Force

Tender: **Halon gas H-1211 with container Dot 4BW260**
Air hqrs
Publication date: August 29
Last date: October 19

Tender: **Supply of MiG-29 spares**
Air Hqrs
Publication date: August 4
Last date: October 27

Ministry of Home Affairs

Tender: **X-ray baggage simulator**
CISF
Publication date: October 3
Last date: October 21

PHOTOGRAPHS: Northrop Grumman, DARPA

Oshkosh names Urias president of defence segment

Oshkosh Corporation has announced that John M. Urias has joined the company as executive vice president and president, Oshkosh Defense. Urias will lead all aspects of the company's global defence segment, including all tactical wheeled vehicle programmes, new product development, vehicle life-cycle sustainment and aftermarket services.

"We are pleased to welcome John to Oshkosh Corporation to lead our defence segment," said Charlie Szews, Oshkosh Corporation President and CEO.

Prior to joining Oshkosh, Urias worked for Raytheon Company, where he most recently served as vice president of programmes for Raytheon Integrated Defence Systems. In this role, he served as an advisor with senior international and domestic government officials. SP

Mistral to partner with CNL Software

Mistral Solutions, a leading technology design and systems engineering company, announced its partnership with CNL Software, to offer physical security information Management (PSIM) solutions from CNL Software. These solutions allow organisations to integrate their existing security applications and technologies through its software platforms, thus creating a customised command and control suite.

Mistral will add CNL Software's highly scalable PSIM solution – IPSecurityCenter – to its existing portfolio of homeland security solutions. Mistral's homeland security group currently offers ready to deploy, proven, high-technology security solutions for strategic and tactical operations for mass transit security, critical infrastructure protection and citizen security.

Mr. Sanjay Virnave, CEO, Mistral Solutions, said, "We are very happy to partner with CNL Software for offering their PSIM solutions in India. The demand in India is currently for integrated management platforms that can seamlessly integrate with the existing security system components and allow for smooth transition to newer technologies for vigilant security management. We are confident that our partnership with CNL Software will help us address our customer requirements in an efficient and faster manner."

Adlan Hussain, Marketing Manager at CNL Software, added, "We are pleased to partner with Mistral in deploying our PSIM solutions in the Indian homeland defence market. CNL Software will address three critical security needs - major cities looking to initiate or build on their existing public safety programmes, corporations working to centralize security and critical infrastructure protection including transportations hubs, oil & gas plants and utilities & communications facilities." SP

IDSA invites nominations for prestigious K. Subrahmanyam award 2011

The Institute for Defence Studies and Analyses (IDSA) has invited nominations for the prestigious K. Subrahmanyam Award, to be given away on IDSA's Foundation Day. Instituted in recognition of the services of K. Subrahmanyam, one of India's foremost strategic experts and a former IDSA director, the award felicitates excellence in Research on Strategic and Security Issues.

The award that was instituted in 2007 carries a citation and cash prize of ₹50,000, along with other research facilities in IDSA. The awardee will be selected from among the invited nominations and preference will be given to the nomination of those younger than 50 years of age. The nominations will be evaluated by an independent jury comprising eminent experts from diverse fields.

K. Subrahmanyam was the founding director of IDSA and was considered the doyen of the Indian strategic community. He was consulted by subsequent governments on issues of foreign policy and international security. He also headed the Kargil Review Committee and submitted a voluminous report on security lapses and remedies. SP

SECURITY EVENTS

Armoured Vehicles Asia 2011
19-21 October
Swissotel, Singapore
www.armouredvehicleasia.com

Engineering Simulation for Military Technology
21-26 October
Vienna, Virginia, USA
http://www.simulationengineeringsummit.com/Event.aspx?id=532540

8th Annual Military Aviation Repair and Maintenance 2011
26-27 October
America Square,
Greater London
http://www.militaryaviationrepair.com

Maritime and Coastal Security, Africa
26-28 October
Cape Town, Western Cape, South Africa
http://www.maritimesecurityafrica.com

ICAO Regional Seminar on MRTDs, Biometrics and Border Security
31 October- 2 November
Doha, Qatar
http://www.icao.int/icao/en/atb/mrtdsymposium/seminars/2011/qatar/index.html

Future Artillery Middle East
21-23 November
The Four Seasons Hotel
Amman, Jordan
http://www.futureartilleryme.com

Airborne Early Warning and Control
28-29 November
The Prince Hotel
Kuala Lumpur
http://www.tangentlink.com/airborne-early-warning-malaysia-28th-29th-november-2011/

Defence Logistics 2011
29 November to 2 December
Marriott Crystal,
Arlington, USA
http://www.wbresearch.com/defenselogisticsusa/home.aspx

Heidi Klum 'dangerous celebrity' in cyberspace

German supermodel Heidi Klum has looks that could kill – literally, in the case of smartphones and computers. Internet security firm McAfee had named her 'the most dangerous celebrity in cyberspace' with malicious malware trailing the leggy model.

McAfee found that people searching for videos or pictures of Klum were more likely to end up with a malware-ridden computer than any other celebrity. In their tests, searches for Heidi Klum yielded nearly a one-in-ten chance of landing on a malicious site designed to infect computers with viruses and malware.

"While slightly safer than last year, searching for top celebrities continues to generate risky results," said Paula Greve, director of Web security research at McAfee."Consumers should be particularly aware of malicious content hiding in 'tiny' places like shortened URLs that can spread virally in social networking sites, or through e-mails and text messages from friends." Dangerous search phrases highlighted by the security firm include "Heidi Klum and downloads," "Heidi Klum and 'free' downloads," "Heidi Klum and screensavers," and "Heidi Klum and hot pictures". SP

Amerithrax or anthrax investigation

Soon after the terrorist attacks of 9/11, letters laced with anthrax began appearing in the US mail. Five Americans were killed and 17 were sickened in what became the worst biological attacks in US history. The ensuing investigation by the Federal Bureau of Investigation (FBI) and its partners—code-named "Amerithrax"—has been one of the largest and most complex in the history of law enforcement.

In August 2008, Department of Justice and FBI officials announced a breakthrough in the case and released documents and information showing that charges were about to be brought against Dr. Bruce Ivins, who took his own life before those charges could be filed.

Ivins was an American microbiologist, vaccinologist, senior bio-defence researcher at the United States Army Medical Research Institute in Fort Detrick, Maryland. SP

Rich and famous remain 'insecure'

They are filthy rich and famous and they live in huge mansions in Los Angeles. Their mansions have high walls, fierce dogs, security cameras and high-tech alarms, but a small team of burglars have got past all of them. In 2010, these burglars reportedly hit about 50 such mansions and escaped with an estimated $7 million of loot.

Police were clueless how the team comprising two or three members left no significant clues, no fingerprints, no DNA, no alarms triggered and only fuzzy camera shots. However, one thing the police was sure was that the team sported ski-masks and black clothing.

While these professionals have got away with their crime, there are others who are involved in what police describe as 'opportunistic crime' by drug addicts and other delinquents. According to a media report, such a break-in in Los Angeles happens very regularly. SP

'Bling ring' leader in celebrity break-ins

A 19-year-old woman, Rachel J. Lee, described by detectives as a leader of the 'bling ring' that brazenly burglarised the homes of the Hollywood young and famous of millions of dollars in cash, jewellery and art has been charged with five felonies.

Authorities alleged that Rachel driven by her love of celebrity fashion and style, masterminded the ring's series of break-ins at the homes of Paris Hilton, Lindsay Lohan and other young celebrities. According to court documents, Lee spearheaded the ring that included many of her former schoolmates at an Agoura Hills high school and is accused of stealing more than $3 million in merchandise.

Lee was charged with three burglaries involving the homes of Lohan, Hilton and reality star Audrina Patridge and two counts of receiving stolen goods. Lee was originally arrested last fall at a Las Vegas home she shares with her father and was released on bail. While several other members of the ring were charged, the investigation into Lee continued. SP

PHOTOGRAPHS: www.celebs101.com, Wikipedia

TREASURE
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visit: www.spsmilitaryyearbook.com

Photo: United States Air Force/Staff Sgt. Quinton Russ

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