PAKISTAN DUPLICITY REINFORCED : A VIEWPOINT PAGE 6

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AEROSPACE
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IAF Rapid Action Medical Team has baptism in Odisha

A 37-member Indian Air Force (IAF) Rapid Action Medical Team (RAMT) comprising three doctors including a surgeon, anaesthetist and a lady medical officer accompanied by two nursing officers and other paramedics from Jorhat, Assam, was among the first IAF element to be positioned in Odisha, to deal with medical emergencies post-arrival of cyclone Phailin.

The team was stationed in Behrampur University campus, which bore the brunt of the cyclone onslaught. For the members of the RAMT, the surreal experience of being in the middle of a storm was also their baptism with emergency situations that will remain their hallmark for operations in future.

"We had braced ourselves for the worst," Squadron Leader Lovneet Kaur, the lady doctor who heads the No. 2 RAMT, reveals. "Thankfully, the stormy night did not rip our roof away although the doors and windows gave away flooding our rooms," she bravely recalls.

The IAF's latest strategic transport aircraft, the C-17 Globemaster, loaded with relief materials including specialist army vehicles and ambulance from bases in central India to Bhubaneswar

PHOTOGRAPH: PIB

"We treated about 30 patients mostly children and women who were injured as a result of either a fall or hit by the flying debris during the storm," surgical specialist, Wing Commander S.V. Kulkarni, attached from an Air Force Hospital for the mission, said.

The IAF had raised three RAMT units at Bengaluru, Jorhat and Hindon in 1999, to provide immediate and organised medical and surgical aid in the event of a disaster within their respective zones of responsibility. The RAMT aids the central or state administration in the event of any occurrence of disaster.

Keeping in view the serious medical needs of cyclone affected people of Puri and Cuttack districts, the Air Force RAMT team has since been moved from Behrampur to Bhubaneswar. SP

Cover:
Over two years after the $2.9-billion deal was signed, the Indian Air Force's first upgraded Mirage 2000 multi-role fighter made its debut flight in its new avatar on October 5 at the Istres Air Base in France.

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IAF's glorious past and a challenging future

The journey of Indian the Air Force (IAF), which celebrated its 81st birthday on October 8, has been marked by many milestones. The youngest armed forces outfit has been growing at a scorching pace, keeping abreast of national security needs and it is now on the threshold of massive modernisation which will catapult India's air power to a different league altogether.

It was on October 8, 1932, the Indian Air Force was officially established as an auxiliary air force of the British Empire. Subsequent to independence, the IAF has made enormous strides in its capabilities. It was involved in four major wars, two of which included the wars with Pakistan and China. The Chief of the Air Staff, Air Chief Marshal N.A.K. Browne has said the year gone by has been "quite challenging, yet extremely rewarding."

SP's M.A.I. congratulates the Indian Air Force on its 81st anniversary and looks forward to its astounding growth, a matter of significant pride to the nation.

Modernisation of the armed forces continues and we have good news that the Mirage 2000 has been upgraded to put it in the fourth-generation category. There are many other programmes which are likely to see fruition in the coming months that is indeed going to transform IAF into a modern air power. While we are awaiting finalisation of the medium multi-role combat aircraft (MMRCA) deal, we hear of the Defence Acquisition Council giving its stamp of approval for purchase of six additional C-130J aircraft for specialised missions.

In his frank and forthright column, Lt General (Retd) P.C. Katoch has opined that considering the volatile neighbourhood we have, India needs to beef up its security of military establishments, in the light of the surge in attacks on military bases. He has also underlined the need to develop a coherent deterrent against unconventional threats, mere diplomacy having failed miserably and threats having magnified.

SP's M.A.I. brings to you a gamut of information from across the world and we would like to have your feedback as to improve our news coverage and analysis.

Happy reading !

SP Guide Publications has proudly published a coffee table book – Transformation of the IAF. The book was released by Air Chief Marshal N.A.K. Browne, Chief of the Air Staff on October 7, eve of the Air Force day.

Jayant Baranwal
Publisher & Editor-in-Chief

DAC approves six more C-130Js for Indian Air Force

The Defence Acquisition Council (DAC) headed by Defence Minister A.K. Antony has finally approved the purchase of six additional C-130J Super Hercules special mission transport aircraft for the Indian Air Force (IAF). The deal will need to go through the Cabinet Committee on Security (CCS) before the contract is signed between the Indian and the US governments.

The additional C-130Js will join 77 Squadron 'Veiled Vipers', which have seen much action this year, including humanitarian relief operations in Uttarakhand as well as the record-breaking landing last month in Ladakh's Daulat Beg Oldie (DBO) sector. The first lot of C-130Js in service were delivered before time, making the IAF extremely optimistic about the platform, which has gone on to prove itself well from the Hindon Air Force Station.

The IAF had also revealed in 2011 that cost savings from speedy deliveries would be transmitted to the second deal as a discount, which could work out to as much as ₹300 crore. IAF Chief Air Chief Marshal N.A.K. Browne has been a strong proponent of the deal, given the efficiency of execution and early deliveries of a platform desperately needed by the IAF for the entire gamut of operations. The next batch of C-130Js will have minor technical modifications as required by the IAF. SP

PHOTOGRAPHS: Indian Air Force, SPSC, DPR Defence

IAF's first upgraded Mirage 2000 takes off

Over two years after the $2.9-billion deal was signed, the Indian Air Force's (IAF) first upgraded Mirage 2000 multi-role fighter made its debut flight in its new avatar on October 5 at the Istres Air Base in France. In July 2011, the Indian Ministry of Defence (MoD) signed a deal with Dassault Aviation, Thales and the Hindustan Aeronautics Ltd (HAL) to upgrade 51 Mirage 2000 H/TH fighters from three IAF squadrons in Gwalior with new avionics, the Thales RDY-2 multi-mode radar and MBDA Mica air-to-air missiles.

Dassault sources said the flight was successful and that all systems were checked out perfectly. The flight was piloted by a Dassault test pilot who reported that the upgrade made the aircraft in line with the 'Dash-5' configuration, pushing the Mirage 2000 to the upper strata of fourth-generation capabilities, with a rudimentary swing-role capability as well.

Most of the Mirages will be upgraded by HAL under licence in Bengaluru. SP

DRDO hunts for retractable landing gear for UAVs

In an effort to make its future unmanned aerial vehicles (UAVs) more stealthy, the Defence Research and Development Organisation (DRDO) is looking for a development partner for a retractable landing gear that could be fitted on the Rustom-H and stealth USAV.

According to DRDO, the main function of the landing gear is safe take-off and landing of UAV under various environmental and operational scenarios with the support of an external pilot. A tricycle type retractable landing gear system with a steerable nose wheel consists of major subsystems, viz., hydrogas shock absorber strut, hydraulic actuation system with sensors, wheel and brake and nose wheel steering system and mechanical linkages. Interested development partners need to have expertise and wide experience in the area of high precision manufacturing of systems and components for aerospace application and operate full-fledged manufacturing facilities from medium to high precision to cater for manufacture of landing gear systems and components. In addition to this, the firm must have experience to carry out assembly and limited testing. SP

TRANSFORMATION OF THE IAF

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LT GENERAL (RETD)
P.C. KATOCH

Pakistan duplicity reinforced

The terrorist attacks on September 26 at the Hira Nagar Police Station in Samba and at an army camp simultaneous to massive infiltration attacks in Karen Sector yet again exposes the duplicity of Pakistan's peace facade – set pattern of the Pakistani military-Inter-Services Intelligence (ISI) inflicting casualties on the Indian state but portraying these actions are by 'out of control' non-state actors wanting to 'derail peace talks.'

In the instant case, Pakistani veterans participating in TV debates arrogantly termed these terrorists as "freedom fighters" absolving Pakistan of any involvement. The fact that Indian Army officials are repeatedly pointing out to heavy concentration of terrorists along the border and in terrorist camps somehow gets lost in this mumbo-jumbo of Pakistan's duplicity. The fact remains that the above terrorist attacks could not have happened without the active concurrence and support of the Pakistani Army. There is every possibility that regular Pakistani personnel participated in these attacks with detailed planning by the Pakistani military.

As per one report, these were not fidayeen but SSG (Special Forces) personnel of the Pakistani Army. Their target was the Army School but the captive driver said he didn't know where it was — so they got down where they saw some habitation. Can you imagine the massacre of children of army personnel if this scum would have reached the school?

Were the 26/11 Mumbai terrorist strikes not planned, prepared and executed with active support of the Pakistani Navy and ISI under the 'Karachi Project'? Terrorist camps in Pakistan and the Pakistan occupied Kashmir (PoK) had been merged with the military posts/establishments even prior to Operation 'Parakram' to obviate possible airstrikes by India, like what Israelis do. Pakistani Army is actively involved in pushing terrorists across the border – a fact well known. But this has been supplemented by serious cross border raids in recent months.

The fact is that Pakistan's foreign policy with its attenuated strategy of terror is evolved and controlled by the Pakistani military over which the toothless democracy has no lien as the powerful military-ISI combine has a stranglehold over the country. Therefore, the ever ready response of the Pakistani establishment is that Pakistan too is a victim of terrorism.

The bottom line appears to be that this Catch-22 cycle can only be broken if democracy in Pakistan can heel its military and bring the ISI under control of the Ministry of Interior – as former President Asif Ali Zardari had tried once. Without this, there appears to be no cohesive prospects of India-Pakistan rapprochement. In case of India, we need to take note of the fresh guidelines that were issued by Ayman al-Zawahiri, Al-Qaeda leader for jihad on the anniversary of 9/11 this year, which explicitly included J&K as one of the areas for spreading terror. He also reportedly gave instructions to his followers not to attack innocents including Christians, Hindus and Sikhs 'living in Muslim lands' but then India doesn't come into the ambit of 'Muslim lands.' Besides, we just witnessed some 75 Christians butchered in Pakistan – Muslim land and that too nuclear.

The war in Afghanistan has firmed the nexus between Al-Qaeda and Lashkar-e-Taiba (LeT) with the latter opting for global jihad that does not exclude India. Large number of LeT cadres have been joining Al-Qaeda and even filling up voids in Al-Qaeda hierarchy that occurred because of US Predator attacks – as acknowledged by US intelligence. There is no reason why Jaish-e-Mohammed (JeM) and Hizbul Mujahideen will not join them with all the political links in J&K including Hurriyat hardliners trooping to Pakistan to meet Hafiz Saeed.

Isn't terrorism classified as one of the top industries, what with all the power and big money besides jihad? Add to this the extended terror factories of Pakistan post-US withdrawal from Afghanistan and the hoards of Taliban that the Pakistani military will likely divert to India. These could perhaps be more of Punjabi Taliban. It may be remembered that of the 9,000 Pakistani Taliban personnel fighting in Afghanistan along with Pakistani military disguised as Taliban at the time of the US invasion, 6,000 were from Pakistan's Punjab and the US facilitated their air evacuation from areas like Kunduz and Khost.

India will need to gear up for all this. The security of military establishments and garrisons must be beefed up with the army going proactive. We must develop a coherent deterrent against unconventional threats, mere diplomacy having failed miserably and threats having magnified. Our Special Forces potential must be optimised and be made central in responding to asymmetric threats. We need to develop publicised overt capabilities and deniable covert capabilities to protect our fault lines and control the fault lines of our adversaries. SP

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

The security of military establishments and garrisons must be beefed up with the army going proactive. We must develop a coherent deterrent against unconventional threats, mere diplomacy having failed miserably and threats having magnified.

ILLUSTRATION: Anoop Kamath

Successful launch of Prithvi-II missile

A missile unit of the elite Strategic Forces Command (SFC) successfully launched the indigenously developed surface-to-surface nuclear capable Prithvi-II missile with a strike range of 350 km from the test range at Chandipur, off the Odisha coast recently.

The launch was flawless and the missile splashed down at its pre-designated target with precision. The launch clearly establishes the well-honed drills and skills of SFC units in undertaking independent unit launches.

The Defence Research and Development Organisation (DRDO) produced indigenous missile was randomly selected from the stock held with SFC units for this regular training exercise. Equipped with improved high accuracy navigation and manoeuvring system, the missile achieved all its targeting and technical parameters set out for this training exercise.

Prithvi missiles are indigenously produced and are equipped with improved high accuracy navigation and manoeuvring system. Inducted into India's Strategic Forces Command in 2003, the Prithvi-II missile, the first missile to be developed under India's prestigious IGMDP strengthens India's nuclear deterrence. SP

C-IED manual neutralisation techniques courses and exercises

Austria, Belgium, Germany, Ireland, Italy and Sweden have signed a letter of intent expressing their interest in pooling resources and expertise for the setting up of a shared C-IED manual neutralisation techniques (MNT) courses and exercises capacity.

Improvised explosive devices continue to pose significant threat to military and civilian personnel. In some cases complex explosive devices have to be neutralised manually.

Member States earlier this year expressed their wish to increase efforts on MNT due to an urgent but limited requirement which does not justify separate, national training programmes in this cost-intensive area.

Austria as a lead nation proposed and developed a four-year MNT project under the umbrella of the pooling and sharing countering IED training initiative with the intention to conduct one MNT course and an exercise annually. The training of manual neutralisers is highly cost-intensive due to equipment and specialist's advisory role. The role of manual neutralisers is life saving and is a priority for participating member states. SP

Raytheon awarded US Navy next-gen air and missile defence radar contract

Raytheon Company has been awarded a $38,57,42,176 cost-plus-incentive-fee contract for the engineering and modeling development phase design, development, integration, test and delivery of air and missile defence S-band radar (AMDR-S) and radar suite controller (RSC).

AMDR is the US Navy's next-generation integrated air and missile defence radar and is being designed for Flight III Arleigh Burke (DDG 51) class destroyers beginning in 2016.

AMDR consists of an S-band radar, an X-band radar and a RCS. AMDR-S is a new development integrated air and missile defence radar designed for long range detection and engagement of advanced threats. The X-band radar is an existing horizon-search radar. The RSC provides S- and X-band radar resource management, coordination and interface to the Aegis combat system.

Under the contract, Raytheon will build, integrate and test the AMDR-S and RSC engineering development models (EDMs). SP

Al Shamikh arrives in Oman

The Royal Navy of Oman organised a reception at Said bin Sultan Naval Base to welcome Al Shamikh, the first of the three Khareef class warships built by BAE Systems under the sultanate's Project Khareef. Sayyid Badr bin Saud al Busaidi, Minister of Defence Affairs, greeted the vessel upon its arrival to join the fleet of Royal Navy of Oman and thanked the commanders, personnel and crew who were on Al Shamikh during her maiden voyage from the UK where she was built.

The Khareef class corvettes are capable of undertaking a range of operations including coastal patrols, disaster relief, search and rescue, and deterrence operations. SP

PHOTOGRAPHS: PIB, BAE Systems, eda.europa.eu

Harris gets $65-million network maintenance contract

Harris Corporation (HRS), an international communications and information technology company, has been awarded a $65-million contract modification to provide worldwide satellite data and communications support to the US Air Force's Satellite Control Network (AFSCN) and Global Positioning System antenna sites.

Harris received the modification to its current Network and Space Operations and Maintenance contract, which supports the US Air Force Space Command's 50th Space Wing.

Under the contract, a team led by Harris will continue to support both inbound and outbound data and communications for more than 150 Department of defence satellites, operating and maintaining the AFSCN's antenna and ground system infrastructure at ten locations worldwide.

Located at Schriever Air Force Base, Colorado, the 50th Space Wing is responsible for the operation and support of Department of Defence satellites, as well as the worldwide AFSCN. The AFSCN provides readiness, launch, early orbit/on-orbit support, and anomaly resolution for a variety of satellite constellations.

"The 50th Space Wing plays a vital role in our nation's defence by managing a complex system of satellites. This requires extraordinary technological knowledge and management skill," said Wayne Lucernoni, President, Harris IT Services. "Harris helps ensure that communications and critical data are properly managed. This contract modification expands our support at a reduced cost to the Air Force and US taxpayers." SP

PHOTOGRAPHS: Wikipedia, Harris

UK MoD places new order for Thales's Starstreak missiles

Thales UK has signed a contract with the Ministry of Defence (MoD) for a further 200 Starstreak short-range surface-to-air missiles, a key component of the UK's ground based air defence (GBAD) capability. The multimillion-pound contract was announced by the Prime Minister David Cameron in a speech to the Northern Ireland Investment Conference in Belfast.

The Minister for Defence Equipment, Support and Technology, Philip Dunne said, "We saw during the Olympics last year how important our air defence capability is. This contract for 200 extra Starstreak missiles will not only provide our armed forces with a highly capable weapon, but it also secures hundreds of highly skilled defence jobs in Northern Ireland and should provide confidence to the export markets of the Starstreak system."

The order has been placed to increase Starstreak stocks as part of the Government's transformation agenda for the armed forces, Force 2020, to equip both the regular and reserve forces with the Starstreak systems.

David Beatty, Managing Director of Thales in Belfast, said, "Not only will this contract sustain jobs at our facilities in Northern Ireland, but it also demonstrates very clearly to our export customers the ongoing importance and trust that the UK MOD places in the Starstreak system and our design, manufacturing and support capabilities".

The Starstreak missile systems, and its, were deployed in the UK by the British Army during London Olympics in 2012. SP

TCS wins radio order from US Army WIN-T

Ultra Electronics, TCS has received a multimillion award from US Army Warfighter Information Network-Tactical (WIN-T) for Ultra Orion GRC-245C radio systems. These will address terrestrial transmission requirements of the tactical network modernisation for Army Expeditionary Signal Battalions (ESB) to allow soldiers to seamlessly communicate between WIN-T increments and across echelons.

The GRC-245C radio is a high capacity, multi-channel, multi-band, point-to-point, and point-to-multipoint radio system with on-the-move capabilities. It is able to effectively link the various WIN-T increments while simultaneously provide sufficiently high-capacity throughput to support the Army's transport convergence objectives.

Part of the Ultra Electronics Group, TCS provides advanced C4ISR and EW systems for ground, airborne and naval applications around the globe. Ultra Electronics, TCS is headquartered in Montreal, Canada with facilities in Ottawa and the United States. SP

Raytheon demonstrates new seeker technology for Tomahawk Block IV missile

Raytheon Company completed a successful field test of an advanced electronic support measure (ESM) seeker installed in a Block IV Tomahawk missile as part of the company's new product improvement programme.

The ESM seeker incorporates a state-of-the-art processor and antenna to locate and track moving and fixed emitting targets. The seeker's capability was validated in a realistic high-density environment after seven months of testing in anechoic chambers.

"This new moving target capability would enhance Tomahawk's already exceptional land attack mode capability by allowing it to engage moving targets on land," said Roy Donelson, Tomahawk Program Director for Raytheon Missile Systems. "We believe this evolution would align with the Department of Defense's vision of increasing capability while maintaining development costs."

The new multi-mode seeker technology would allow the Navy's Surface Action Group to fire Tomahawks from sanctuary and defeat mobile threats at long range.

With a range of approximately 1,000 statute miles, the Tomahawk Block IV missile is a surface- and submarine-launched precision strike stand-off weapon. Tomahawk is designed for long-range precision strike missions against high-value and heavily defended targets. More than 2,000 Tomahawks have been employed in combat. Tomahawk is integrated on all major US surface combatants, as well as US and UK subsurface platforms, including the Los Angeles, Virginia, Ohio, Astute and Trafalgar class submarines. SP

Saab bags order for combat management and radar systems from Royal Thai Navy

Defence and security company Saab has signed a contract with Daewoo Shipbuilding and Marine Engineering Korea, for development and integration of combat management and radar systems on a new frigate for the Royal Thai Navy. The order amounts to MSEK 850. The contract comprises of combat management system and radar system.

Saab is the combat system integrator. In addition to the supply of its own systems, Saab is also responsible for procurement and integrations of third party systems. Deliveries of ship equipment are scheduled to commence in 2016 and production will take place in Sweden, Denmark, Thailand and Australia. SP

PHOTOGRAPHS: Raytheon, HII / Chris Oxley

30-tonne propellers on aircraft carrier Gerald R. Ford

Huntington Ingalls Industries (HII) announced that the nuclear-powered aircraft carrier Gerald R. Ford (CVN 78) has put on significant weight in the dry dock at its Newport News Shipbuilding division with the installation of four 30-tonne bronze propellers. At 21 feet in diameter, each propeller spins to push the aircraft carrier through the water.

"Installation of the propellers culminates more than 10 months of focused work by numerous trades in support of installing the underwater shafting," said Rolf Bartschi, NNS' Vice President, CVN 78 carrier construction. "The configuration of the blades, the weight of the propellers and the extremely tight tolerances required make this a challenging installation. I commend the rigging and machinery installation mechanics for a job well done."

Gerald R. Ford's primary hull structure reached 100 per cent structural completion in May, bringing more than three years of structural erection work to a close. Work continues on the ship, including the piping and electrical systems and the habitability areas such as the galley and mess spaces. The ship's christening is scheduled for November 9. SP

Indian Air Force growing from strength to strength

Chief of the Air Staff Air Chief Marshal N.A.K. Browne arrives for the parade

On October 8, 1932, the Indian Air Force (IAF) was officially established as an auxiliary air force of the British Empire. The IAF has grown from strength to strength over the years, particularly in independent India. After 1947, the IAF has been involved in four major wars, two of which included the wars with Pakistan and China. The major operations of IAF include Operation Poomalai, Operation Cactus, Operation Meghdoot and Operation Vijay.

Celebrating its 81st birth anniversary, the Indian Air Force has reiterated its commitment to serving the nation. On October 8, IAF units across the country celebrated by a host of programmes, including parades, cultural programmes, reminding the 'men in blue' of IAF's glorious past and a challenging and bright future.

The main celebration was held at the IAF base at Hindon where the Chief of the Air Staff Air Chief Marshal N.A.K. Browne exhorted the IAF personnel to keep the flag of India flying high. The IAF, he said, was conscious of the threat to national assets from terrorists and necessary steps have been taken for their protection.

"It is a very valid concern. These kinds of things have happened in our neighbourhood and in last two years, there have been three such incidents there. We are very conscious of those things and all necessary steps have been taken to protect our assets. We are extremely vigilant," the Air Chief stated. "While ensuring their physical security, there is also an increasing need to ensure security of our communication and information networks."

Air Chief Marshal Browne looked back at the year gone by as "quite challenging, yet extremely rewarding."

The parade saw a riot of colours in the skyline as paratroopers dotted the sky flaunting the Indian Air Force flag and the tricolour. Different fighter and carrier aircraft of the IAF were seen across the skyline, shooting flares and leaving a trail of smoke as enthusiastic crowd cheered. The show was stolen by vintage Tiger Moth, an aircraft inducted into the then Royal Indian Air Force before Independence. The small bright yellow aircraft that bears the number HU-512 had served in the IAF from 1940 to 1963, and made a flight after 50 years. Vayu Seva Medals for gallantry were given to four personnel, Vayu Sena Medals for service to 14, while 28 got Vishisht Seva Medal for distinguished service. SP

PHOTOGRAPHS: Anoop Kamath

(Clockwise from top)
Skydiver of the Akash Ganga team descending with ease and precision

Three C-130J's in VIC formation

The latest induction of the IAF C-17 Globemaster III escorted by two Su-30MKIs

Sarang display team in action

Vintage Tiger Moth in flight

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Dhruv clocks 1,00,000 flying hours, boosts India's indigenous development programme

The first indigenous chopper of India, Dhruv, the advanced light helicopter (ALH), designed, developed, produced and maintained by the Hindustan Aeronautics Ltd. (HAL) to meet the requirement of military and civil operators, achieved a new milestone of flying one lakh hours recently. The landmark was achieved with the flying of helicopter IA 3104 of 301 Army Aviation squadron.

"It is a proud moment for us that Dhruv has proved its mettle over the years. India is the sixth nation in the world to have the capability to develop helicopters of this class. Dhruv has been exported to Ecuador, Mauritius, Nepal and Maldives", said Dr R.K. Tyagi, Chairman, HAL. He also thanked the Indian armed forces, Border Security Force (BSF) personnel and other important customers for their continued support to this product.

"One lakh hours flown by the machine is an awesome feat to achieve. It is a dream machine for any pilot", said Lt Colonel Kapil Agarwal who completed the landmark flying hours.

ALH is being operated by the Indian Air Force, Indian Army, Indian Navy, Coast Guard, BSF and state governments since 2002. Currently, more than 132 Dhruv helicopters are serving the Indian defence forces. HAL has also built 12 civil variant Dhruv helicopters and they are being used by its customers. The Ecuador Air Force (FAE) operates six Dhruv helicopters with their President choosing to fly in them.

Dhruv is extremely useful to the Indian defence forces in meeting the arduous tasks in difficult terrains of Himalayas like Siachen Glacier and Kashmir. It played a key role in rescue operations during tsunami (2004), flash floods at Leh (2010), earthquake at Sikkim (2011) and the biggest ever helicopter based rescue operation undertaken by Indian defence forces in flood and rain-hit areas of Uttarakhand recently.

ALH Dhruv is an all-weather helicopter which can carry 10-16 people at heights of 10,000 feet. It is a multi-role, multi-mission new generation helicopter in the 5.5-tonne weight class and meets Federal Aviation Regulations (FAR) specifications. It has demonstrated its capability in long distance flights, vertical climb and in manoeuvring.

The advanced technology features incorporated in the design of Dhruv include hinge-less main rotor and bearing-less tail rotor, integrated dynamic system encompassing main gear box and upper controls in a single housing, higher powered Shakti engines, integrated architecture display system (glass cockpit), duplex automatic flight control system, redundancy with twin-engine, dual hydraulics and controls, 30-minute dry-run capability of gear boxes, crashworthy bottom structure, landing gear, crew seat and fuel tanks with self-sealing capability, extensive use of composite material on fuselage and rotor system, integration of role and optional equipment such as rescue hoist, stretchers and cargo-hook.

Dhruv also has advanced avionics (communication, navigation and surveillance) and mission systems. All this makes Dhruv, a versatile multi-mission, multi-role helicopter capable of operating in all-weather and extreme climatic conditions with high degree of reliability and survivability. SP

Boeing delivers 5th Canadian CH-147F Chinook helicopter

Boeing has delivered the Royal Canadian Air Force's (RCAF) fifth CH-147F Chinook helicopter one month ahead of schedule and only three months after the arrival of the first in June, expanding Canada's military cargo capability while continuing the Chinook programme's history of excellence.

"The Canadian Chinook is one of the most advanced military cargo helicopters ever delivered to the global market, and Boeing has executed the programme on or ahead of schedule for every major milestone since contract award," said Steve Parker, Boeing Director of International Chinook Programmes and Canada CH-147F programme manager. "These early deliveries are another example of the H-47 team's dedication to providing this important capability to the RCAF."

Boeing is scheduled to deliver two more CH-147Fs this year and another eight by June 2014 to provide Canada with its full complement of 15 rotorcraft. Boeing is also providing in-service support to the CH-147F fleet for the next 20 years under a performance-based logistics contract, with Canadian industry playing a key role.

The CH-147F Chinook is an advanced, multi-mission helicopter that features a modernised airframe with a long-range fuel system allowing it to fly twice as far as standard range models. An upgraded electrical system provides additional power and redundancy, while a fully integrated common avionics architecture system cockpit and digital automatic flight control system reduce pilot workload and provide greater situational awareness. The aircraft also has an advanced aircraft survivability equipment suite that includes a directional infrared countermeasures system that increases crew safety while allowing operations to be conducted in a wider range of threat environments. SP

PHOTOGRAPHS: HAL, Boeing

US Navy stands up F-35C Squadron at Eglin

Recently the US Navy and the 33rd Fighter Wing at Eglin AFB, Florida, officially reconstituted the highly decorated VFA-101 Grim Reapers Squadron during ceremonies held on the Emerald Coast.

VFA-101 will fly the Navy's newest aircraft, the Lockheed Martin F-35C Lightning II carrier variant, to perform the mission of training pilots and sailors to fly and service the aircraft fleet. The speakers challenged the Grim Reapers to prepare sailors to fly and maintain the F-35C safely at sea, where its stealth, sensors and communication systems will make the entire carrier strike group more effective. The US Navy's F-35C initial operating capability is scheduled for 2019.

"The F-35C brings a broad range of force packages to the Navy fleet—capitalising on the integration of advanced mission systems, stealth technology and supersonic capabilities," said Lorraine Martin, Executive Vice President and General Manager of the F-35 Program "The F-35C will enhance the flexibility, power projection, and rapid response of carrier air wings and joint task forces for decades to come." SP

Ceremonial handover of Gripen to Thailand

September 11, 2013, was an eventful day for the countries cooperating on Gripen, not only for Switzerland and the Czech Republic. A traditional ceremony took place in Surat Thani in Thailand when the Royal Thai Air Force received the last six Gripen aircraft of the 12 ordered.

At what was named the Gripen Integrated Air Defence System Commissioning Ceremony at the Surat Thani airbase in Thailand, the Defence Materiel Administration handed over the last Gripen aircraft on behalf of the Swedish Defence and Security Export Agency.

The guest of honour was the Chief of the Defence Forces for the Royal Thai Armed Forces and Air Chief Marshal Prajin Juntong, Commander-in-Chief Royal Thai Air Force was the recipient of the aircraft.

Sweden has previously delivered two Gripen Cs, four Gripen Ds, two Saab 340 AEWs (airborne early warning) and one Saab 340 B (transport aircraft) to the Royal Thai Air Force.

The Swedish delegation was led by Ambassador Klas Molin, and other participants included Brigadier Arne Hedén from the Ministry of Defence, Brigadier Johan Svensson from the Swedish Air Force and Dan Averstad from the Defence Materiel Administration. SP

MC-12W Liberty passes 3,00,000 flying hours

Beale MC-12W Liberty aircraft surpassed 3,00,000 combat flying hours at a forward operating base in Afghanistan in September.

The aircraft was developed in response to urgent requests from ground combat commanders for tactical ISR. The result was the fastest military acquisition since the P-51 Mustang in World War II.

The milestone translates to approximately 34 years of flying that the Liberty team achieved in less than four. Project Liberty was also credited with flying 73 per cent of all Air Force intelligence surveillance and reconnaissance (ISR) sorties and 24 per cent of all Air Force combat sorties in Afghanistan for 2012.

The MC-12W is a medium altitude, twin-engine, turboprop aircraft loaded with state-of-the-art optical and sensor equipment. The aircraft's primary mission is to provide ISR support directly to ground forces.

Liberty crews consist of two pilots, a sensor operator and a tactical systems operator who build the tactical picture and shape combat operations. SP

F-35 Lightning II programme surpasses 10,000 flight hours

The Lockheed Martin F-35 Lightning II programme continues its operational maturation, surpassing 10,000 flight hours in September. More than half of the total hours were accumulated in just the past 11 months. Through September, F-35s flew 6,492 times for a total of 10,077 flight hours. The new milestone effectively doubles the safe flight operations of the F-35 in a year, compared to reaching 5,000 flight hours in six years.

This milestone was achieved by operational production aircraft operating at Eglin Air Force Base, Florida, and Marine Corps Air Station Yuma, Arizona, where F-35 pilots and aircraft maintainers conduct training and the combined F-35 system development and demonstration (SDD) and operational test (OT) aircraft operating at Edwards AFB, California, Naval Air Station Patuxent River, Maryland, and Nellis AFB, Nevada. All three variants: the F-35A conventional takeoff and landing (CTOL), the F-35B short takeoff/vertical landing (STOVL), and the F-35C carrier variant (CV) participated in the programme milestone.

The F-35 Lightning II is a fifth generation fighter, combining advanced stealth with fighter speed and agility, fully fused sensor

information, network-enabled operations and advanced sustainment. Three distinct variants of the F-35 will replace the A-10 and F-16 for the US Air Force, the F/A-18 for the US Navy, the F/A-18 and AV-8B Harrier for the US Marine Corps, and a variety of fighters for at least 10 other countries. SP

PHOTOGRAPHS: Lockheed Martin

Two new Rafales delivered to "Cote d'Argent" Squadron

After being handed over to the Directorate General of Armaments (DGA) on September 12, 2013, the two-seat Rafale registered B 339—the first production 4th tranche production aircraft—arrived on September 17 at Air Base 118 in Mount de-Marsan. A week later, it was the turn of the second aircraft, registered B 340, to join the ranks of Squadron 5/330 "Silver Coast," the Rafale flight trials unit.

The 60 Rafale fighters of the 4th production lot (or tranche) are all fitted, as standard, with next-generation sensors, namely the RBE2 EASA radar with active antenna, the DDM NG new generation missile launch detector, and the frontal sector optronics for target identification and range-finding.

The Rafale is the first European combat aircraft in service to benefit from AESA technology (active electronically scanned array radar/active antenna), which can significantly improve the detection range. It is the culmination of over 10 years of research and development efforts on active antennas.

To date, 180 production aircraft have been ordered by the DGA and 122 aircraft delivered in three versions: 38 Rafale M single-seat carrier fighters for the Navy, 40 Rafale B two-seaters and 44 Rafale C single-seaters for the air force. SP

Rockwell Collins CAAS cockpit onboard first Boeing Chinook delivery to Canada

The Rockwell Collins common avionics architecture system (CAAS) cockpit is featured on the first CH-147 Chinook helicopter that was delivered to Canada's Department of National Defence (DND) during a ceremony in Ottawa.

"The CAAS cockpit will provide Canada's military pilots with enhanced situational awareness and safety of flight while significantly reducing their workload," said Troy Brunk, Vice President and General Manager of Airborne Solutions for Rockwell Collins. "We also continue to deliver on our commitments providing updates to the CAAS system for this customer on budget and on schedule."

Brunk added that the Canadian CAAS cockpit configuration includes an enhanced system architecture and tailored pilot-vehicle interface that fully meets the rigorous Canadian DND certification process.

The highly flexible CAAS displays are optimised to provide superior tactical and flight situational awareness through embedded cognitive decision aids that reduce crew workload and improve flight safety and survivability with a highly fault tolerant design. The system's embedded mission computing resources and mission systems software provide enhanced war-fighting capabilities for the aviator. SP

Bell to demo V-280 tiltrotor for JMR-TD programme

Bell Helicopter announced that the US Army has awarded a technology investment agreement (TIA) for the joint multi-role (JMR) technology demonstrator (TD) programme to Bell Helicopter based on its Bell V-280 Valor. Bell Helicopter's third generation tiltrotor design is on track to achieve first flight in 2017.

"Team Valor is excited about Bell Helicopter's selection and TIA award for the JMR-TD. We look forward to working with the Army to demonstrate the superior capability of the next-generation tiltrotor aircraft," said Keith Flail, Director of Bell Helicopter's JMR-TD programme. "The unprecedented speed and range of the Bell V-280's tiltrotor technology maximises operational effectiveness for future military operations, and the Bell V-280 offers the best solution for the US Army. Bell Helicopter's clean-sheet design and fly-by-wire expertise promise the Bell V-280 Valor will be a transformational aircraft on the battlefield."

The Bell V-280 Valor presents the US Army with the highest levels of maturity and technical readiness, with reduced complexity compared to previous generation tiltrotors. The Bell V-280 provides the best value in procurement, operations and support, and force structure, while delivering desired leap-ahead performance capabilities with increased maintainability, reliability and affordability to the Department of Defense.

With twice the speed and range of conventional helicopters, the Bell V-280 Valor will offer manoeuvre commanders unmatched operational agility to self-deploy and perform a multitude of vertical lift missions currently unachievable in one aircraft. The Bell V-280 is a combat force multiplier with superior performance, payload, survivability, and reliability to give the warfighter the decisive advantage. SP

PHOTOGRAPHS: French Air Force, Bell Helicopter, Rockwell Collins

Watchkeeper receives STDA from UK Military Aviation Authority

Thales UK announced that its Watchkeeper unmanned air system (UAS) has received a statement of type design assurance (STDA) from the UK's Military Aviation Authority (MAA).

The MAA's STDA provides assurance that the Watchkeeper air vehicle and software has reached an acceptable level for design safety and integrity to meet the current stage of the system's development. It is a key component of the process that allows the UK's Ministry of Defence (MoD) to continue towards the initial release to service.

Watchkeeper is the first UAS to receive such an STDA from the MAA, and represents a major step forward for the acceptance of UASs in the airspace environment. This underpins military flying globally in appropriate airspace.

"The issue of a STDA from the MAA is a major milestone for the Watchkeeper programme, and a first for a UAS programme in the UK," said Eddie Awang, Vice President of Intelligence, Surveillance and Reconnaissance at Thales UK. "It is the result of close collaboration between the MOD and Thales UK, and the culmination of a significant amount of work to build a comprehensive safety case."

The MAA is the independent regulatory authority responsible for all aspects of military air safety, and was formed in 2010 following the recommendations of the Haddon-Cave report. SP

Northrop Grumman maturing key Triton unmanned aircraft sensor

Northrop Grumman Corporation (NOC) has completed more than 25 flight tests of the US Navy Triton unmanned aircraft system's (UAS) primary maritime surveillance sensor in preparation for its installation on the aircraft.

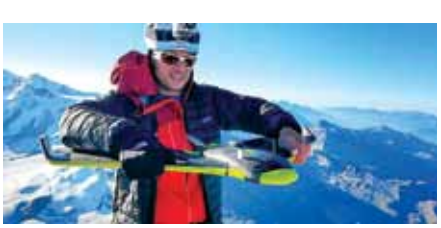
The company is conducting risk-reduction tests of the multi-function active sensor (MFAS) using a Gulfstream II surrogate aircraft off the California coast. The radar will provide the Triton UAS with a 360-degree view of ocean and coastal regions.

"Surrogate flights have allowed us to mature the MFAS radar's capabilities and merge the data with information received from other sensors and equipment that will also be used on Triton," said Mike Mackey, Triton UAS Program Director with Northrop Grumman. "By gathering this information in real and simulated environments, we can refine how an operator sees data while tasking the system in flight."

The MFAS, an active, electronically and mechanically scanned array radar, is designed for maritime surveillance missions. It uses a combination of electronic scanning with a mechanical rotation, allowing the radar to spotlight a geographic area of interest for longer periods—increasing detection capabilities for smaller targets, particularly in sea clutter. Triton's full sensor suite will allow areas up to 2,000 nautical miles to be monitored at a time. SP

SenseFly map the Matterhorn

A team of senseFly engineers marked a new milestone in surveying techniques' history by demonstrating that mini-drone mapping technology is capable of producing a 20-cm resolution 3D model of the epic Matterhorn, known as "the most beautiful mountain" worldwide.



For the first time a team of engineers from senseFly was able to create a digital model of the Matterhorn with a 20-cm resolution in three dimensions.

The data was aquired during a total of 11 flights by several eBee mini-drones flying concurrently and collecting over 2,200 images within just a few hours. In cooperation with our partner Pix4D and through eBee's image processing software Postflight Terra 3D-EB a high-definition 3D point-cloud was created made of 300 million points and covering an area of over 2,800 hectares with an average resolution of 20 cm. 3D mission planning based on elevation data and multi-drone operation, two features recently released in senseFly's ground control software eMotion 2, were instrumental in the success of this mission and the unprecedented quality of the dataset.

The project was realised in cooperation with Drone Adventures (planning and logistics), Pix4D (data post-processing) and Mapbox (online visualisation).

The small weight and transportability of these ultralight drones enabled the team to carry and launch them from three different remote location and altitudes, thus fullfill Swiss requirements of in-line-of-sight operations.

One drone was carried by Team 1 in a backpack up to the summit of the Matterhorn. The challenge was to test take-off behaviour at high altitude and in mountain typical turbulances. The ebee was launched at the summit of the Matterhorn (4,478 metres), climbing up to an maximum altitude of 4,707 metres, flying over the top of this epic mountain and mapping the west face. SP

PHOTOGRAPHS: MoD UK, SenseFly, US Navy

Left-wing extremism declining: Home Minister

The Home Minister Sushil Kumar Shinde recently reviewed left-wing extremism (LWE) with the Chief Secretaries, the Directors General of Police of the nine LWE-affected states and the representatives of the CAPFs. He said the LWE-violence level has been declining since 2010. The number of incidents has declined from 2,213 (with 1,005 resultant deaths) in 2010 to 1,415 incidents (with 415 resultant deaths) in 2012. In the current year (up to August 30, 2013), there has been a 27.48 per cent reduction in number of incidents (with 14.10 per cent reduction in resultant deaths) in comparison to the corresponding period of 2012.

In Manipur, 155 underground cadres {Kuki Revolutionary Front (KRF)-53, Kuki National Liberation Front (KNLF)-50, Kangleipak Communist Party (KCP/Nongdrenkhomba)-44 and Kanglei Yawol Kanna Lup (KYKL)-08} alongwith 134 weapons and ammunition surrendered at the First Manipur Rifles in the district Imphal West on September 9, 2013.

Tripartite meetings involving the representatives of the Government of India, Government of Assam, Joint Action Committee for Autonomous State (JACAS) and the Koch Rajbongshi and Bodo Group were held from September 2-5, 2013, to discuss their demands.

A tripartite meeting was held on September 12 with the representatives of the National Democratic Front of Bodoland (Progressive), the Government of Assam and the Ministry of Home Affairs. The functioning of suspension of operation (SoO) arrangement and observance of agreed ground rules were reviewed in the meeting and it was agreed to extend the SoO agreement for a further period of three months up to December 31, 2013.

A notification, declaring Tirap, Changlang and Longding Districts of Arunachal Pradesh as 'Disturbed Area" under the Armed Forces (Special Powers) Act, 1958 for a further period of six months with effect from October 1, 2013, was issued on September 27, 2013.

Modernisation of police forces

The Minister said that as against the total allocation of ₹1,847 crore under the scheme for modernisation of state police forces for 2013-14, an amount of ₹794.59 crore was released to 18 states during the month of September 2013. Under the scheme for "construction/strengthening of fortified police stations" an amount of ₹14.30 crore was released to the state governments of Madhya Pradesh (₹4.70 crore) and Odisha (₹9.60 crore). During the month, ₹7.09 crore were sanctioned to the CAPFs (BSF, CRPF, SSB and IB) for acquisition of 381.04 acres of land and ₹0.54 crore to CRPF for construction of office/residential buildings.

On September 23, 2013, an amount of ₹36.96 crore was sanctioned to Bureau of Police Research and Development (BPR&D) for implementation of plan scheme named 'training intervention.' ₹101.29 crore was released to the Coastal States/UTs for construction work of Coastal Police Stations/Jetties etc. during the month of September 2013.

Under the Crime and Criminal Tracking Network Systems (CCTNS), up to September 2013, contracts for System Integrated (SIs) have been signed in 32 States/UTs. Nearly 12,463 out of a total of 16,735 CCTNS sites have been completed and 9,035 CCTNS sites have been commissioned by BSNL with regard to network connectivity. As part of capacity building under CCTNS, 7.8 lakh training courses have been conducted. Funds to the tune of ₹289.78 crore has been utilised out of total released amount of ₹493.91 crore. SP

US, Canada, Australia and Europe easing airport security liquid restrictions

Air travellers in Canada, the US, Australia and Europe may soon be able to bring larger bottles of water and other liquids through airport security again, thanks to high-tech screening methods that will be able to chemically identify liquid explosives. Since 2006, passengers have not been allowed to bring containers of liquids, gels or aerosols larger than 100 millilitres through security at airports in Canada and around the world.

But as of January 31, 2014, Canada, the US, Australia, and the European Union will be implementing new high-tech screening methods "with a view to progressively relax" restrictions on liquids carried by air passengers. The countries outlined their plan to the International Civil Aviation Organisation, the United Nations agency that regulates aviation safety, security and efficiency, in a working paper presented this past August 19.

In a statement Transport Canada confirmed that "Canada, the US, Australia and the European Union are working with screening authorities, airlines and airports to screen a limited amount of liquids to determine to what extent the restrictions can be lifted."

Canada's Federal Transport Minister Lisa Raitt said banning all liquids from carry-on bags was always a temporary measure in response to the threat of terrorism. Technology has now caught up and airports can better screen liquid items to see if they pose a threat, she said.

Initially, the only liquids to be screened and allowed will be:

- Those packed in special security tamper-evident bags purchased from airport duty-free shops anywhere in the world. Currently, only tamper-evident bags from Europe are screened and accepted.
- Products such as baby food that are used to meet "special dietary requirements" or medical needs. Baby food, formula and milk are already exempted from the 100-millilitre limit.

Among the companies providing such a technological solution is Quebec City-based Optosecurity Inc. It makes a system that attaches to existing X-ray machines and uses software to automatically detect and flag liquid explosives and other liquid threats. SP

Cabin baggage security tags

Air travellers who lose security tags on their luggage or whose cabin baggage is inadvertently not stamped will no longer have to trudge to the security check from boarding gates under revamped scrutiny procedures at Indian airports.

The Central Industrial Security Force (CISF), which handles security at all major airports, has now made provisions for the baggage of such passengers to be checked at the boarding gate itself as is the practice in many countries.

The provision has been made following various airports suggesting that checking just ahead of boarding is a preferable procedure in terms of passenger convenience and did not compromise on security imperatives. Passengers who had to go back to security check areas face a serious disadvantage as the distance between boarding gates and security counters is considerable and takes a long time to cover, raising the risk of missed flights. SP

India should have jurisdiction to prosecute cyber attackers: Minister

The Information Technology Minister Kapil Sibal suggested that India should have the jurisdiction to prosecute cyber attackers regardless of where they come from.

Addressing a conference on cyber security and cyber governance organised by the Observer Research Foundation in New Delhi, Sibal said, "If there is a cyber space violation and the subject matter is India because it impacts India, then India should have jurisdiction. For example, if I have an embassy in New York, then anything that happens in that embassy is Indian territory and there applies Indian law. If the impact of such a violation is on India, then Indian courts must have the jurisdiction. That should apply across the world."

Delivering the keynote address, the National Security Advisor Shivshankar Menon said, government would set up an information sharing and analysis Centre and testing and certification labs in the private sector by industry associations. They would also protect critical information infrastructures (CIIs) which have seen phenomenal increase in attacks. He said the government is in the process of notifying CIIs under

the IT Act and National Political Information Protection Centre is being set up.

Warning, that we are secure only until we are attacked, Sibal said, "Governance of Internet is an oxymoron....There is an asymmetry in the laws on the Internet. And as long as there is asymmetry there cannot be equality." The key issue here is of "identity". But India, he said was committed to complete freedom of the Internet, though there should be a greater awareness of the threat out there in cyberspace. SP

E-commerce software vulnerable to hackers

Online transactions rely on a trusted third party, or "cashier," who bridges the gap between vendors and their customers. The use of a third party cashier, however, also complicates the payment logic and introduces a new class of vulnerabilities that can result in significant financial losses to merchants. Computer scientists found flaws in e-commerce software that allowed them to purchase stationery, candy, and toys online at below their correct cost.

A popular open-source software for e-commerce is vulnerable to being cheated, computer security researchers at the Univesity of California, Davis, have found. By exploiting vulnerabilities in the widely used osCommerce software, the researchers were able to purchase items from online stores for free or substantially less than their correct prices.

"The majority of the payment modules in osCommerce are vulnerable to logic attacks that allow you to pay less or even pay nothing at all," said Fangqi Sun, a graduate student working with Professor Zhendong Su in the University of California (UC) Davis Department of Computer Science. A UC Davis release reports that the researchers have been attempting to notify osCommerce of the discovered vulnerabilities and to help the developers patch the software. They have also refunded the vendors for items they purchased at below cost during their research. SP

PHOTOGRAPHS: PIB, US Army

US Army announces cyber security collaborative research alliance

Cyber-security is critical to protecting Army systems from sophisticated attacks on military networks in the face of ever increasing importance of cyber systems.

The US Army Research Laboratory (ARL) has established a Collaborative Research Alliance (CRA), which will include an alliance of ARL, US Army Communications-Electronics Research, Development and Engineering Centre, academia and industry researchers to explore the basic foundations of cyber science issues in the context of Army networks.

A cooperative agreement was awarded to the Consortium on September 20, led by Pennsylvania State University, and including Carnegie Mellon University, Indiana University, the University of California at Davis, and the University of California Riverside. The Army will fund the alliance for five years with an optional five-year renewal at $3.3 million to $5.2 million annually.

"The CRA gives us an opportunity to jointly advance the theoretical foundations of a science of cyber-security in the context of Army networks. Such a science will eventually lead to network defence strategies and empirically validated tools. Substantial interactions and staff rotations between domain experts and scientists across the consortium and ARL will be vital to enable the joint research that will ensure the success of the programme," said Dr Ananthram Swami, who was recently announced as the Collaborative Alliance Manager, ARL, for the cyber-security CRA. SP

Strategic alliance to boost defence science

The Defence Science and Technology Organisation (DSTO) and BAE Systems Australia have entered into a new strategic alliance to enhance collaboration on defence technologies. The alliance will see the two organisations potentially work together on strategically significant areas such as submarines, cyber-security, land vehicles, space, electronic warfare and passive radar, hypersonics and autonomous systems.

The signing of the new alliance extends a working relationship DSTO and BAE Systems have had for many years, according to BAE Systems Australia Chief Executive Officer David Allott. With 1,500 engineers working on some of the most advanced defence systems and a 60-year history of supporting the Australian Defence Force, our people offer a wealth of innovation and experience," Allott said. SP

PHOTOGRAPH: dsto.defence.gov.au

Agreement cements DSTO and Saab

Collaboration on maritime combat systems is the focus of a new strategic alliance signed by the Defence Science and Technology Organisation (DSTO) and Saab Systems. The new bilateral alliance involves research associated with Saab's 9LV Mk3 combat management system fitted to the Royal Australian Navy's ANZAC ships.

"Saab's particular skills in maritime combat systems is a perfect fit with the requirements of DSTO's development of these systems," Chief Defence Scientist Dr Alex Zelinsky said.

Saab Systems Managing Director in Australia Dean Rosenfield said partnerships based on shared knowledge helped to reduce risk and improve productivity. "Saab has had a long relationship with DSTO and the new alliance continues to provide great opportunities for our staff to collaborate on research developing the next generation of maritime and land C4I systems," Rosenfield added. SP

Thales and Schneider Electric team up on cyber security

Under a new cooperation agreement, Thales and Schneider Electric will jointly propose cyber security solutions to essential operators and industry and defence customers to protect their automation and command-and-control systems from attacks.

As a result of this cooperation, essential operators, industry and defence customers will benefit from state-of-the-art solutions to protect them from new and emerging threats such as computer attacks launched from their management systems, unauthorised access across wireless networks and malware introduced via USB memory sticks. These solutions will also assure compliance with new national and international regulations in the area of security for digital command-and-control systems.

Solutions will include risk management, vulnerability analysis, definition of security architectures, implementation of protection and surveillance measures, security maintenance and incident response management, and will be tailored to the automation and command-and-control systems in service with Schneider Electric and Thales's customers and their specific environments.

Vincent Marfaing, Thales Vice President Information Technology Security/Cybersecurity, said: "Digital security of critical infrastructures is a top priority for the authorities in France and other countries. Through our cooperation with Schneider Electric, we will offer a range of world-class technical solutions to meet this requirement." SP

Lockheed Martin opens cyber security intelligence centre in Australia

Lockheed Martin has opened its fourth Security Intelligence Centre (SIC) in Canberra, continuing the company's international extension of its cyber defence network. The Centre was opened by Sondra Barbour, Executive Vice President of Lockheed Martin's Information Systems and Global Solutions.

"This new Centre is an investment in technology, expertise and talent for increased innovation throughout our Lockheed Martin team," explained Barbour. "As cyber threats become increasingly sophisticated and persistent, our cyber intelligence analysts continuously adapt and improve their methods in collaboration with government and industry partners, implementing new mitigations to keep ahead of the threats."

The SIC builds on over A$10 million of investment in consolidating Lockheed Martin business operations into a single facility —Lockheed Martin Centennial House—and the establishment of a NexGen Cyber Information and Technology Centre (NCITE) in Canberra in 2012.

Raydon Gates, Chief Executive of Lockheed Martin Australia, explains that "Lockheed Martin intends to lead the way in finding cyber-tech solutions that make our country safer, and to create cyber-professional jobs that meet Australia's national security challenges today – and tomorrow. The establishment of this newest Centre is just the next phase in our commitment to Australia's cyber security technological and economic evolution." SP

Army lab finding efficient ways to convert JP-8 to hydrogen for fuel cells for portable electric power in the field

What if soldiers could convert JP-8 to clean hydrogen fuel for fuel cell applications anywhere and anytime they need it?

A small team of scientists at the US Army Research Laboratory (ARL) are collaborating with counterparts at the Communications-Electronics and the Tank Automotive Research, Development and Engineering Centers to develop technology for lightweight, portable prototype systems that would convert JP-8 to Hydrogen on the spot.

"There is a growing demand for portable electrical power for both commercial and military applications," said Dr. Deryn Chu, fuel cell team leader. "Our challenge is 'How can we remove the many impurities in JP-8 so it can be effective in a fuel cell?"

JP-8 is widely used by the US Army as a fuel for powering aircraft, engines of tactical ground vehicles and electrical generators. It comes with a set of problems like the logistics resupply chain it requires, and the high cost associated with force protection of convoys, he said.

The Pentagon's most-used jet fuel costs roughly $15 per gallon, but "the cost multiplies to hundreds of dollars by the time you move it to and around operational locations," Chu said.

For the Army "the smallest gain in efficiency is important. But fuel cells when the concept is fully developed may yield huge gains, potentially doubling the efficiency of diesel generators," he said.

The chance for a game-changing technology is why fuel reformation is one of three high-risk, high-reward projects that the laboratory is pushing toward in search of operational energy solutions for the battlefield. Smart Battlefield Energy on-Demand and Long-Lived Power were also highlighted in this four-part series.

Researchers already knew the value of fuel cells for increasing efficiency, as that kind of approach has been explored since the 1960s. They also knew of ways to convert the high-energy density of hydrocarbons into hydrogen for fuel cells like the process that Bloom Energy and others use on the commercial market, said Dr. Zachary Dunbar, a team member who is exploring palladium membrane technology, using a rare metallic element as part of a purification system.

The challenge is developing a practical fuel reformation process for better energy conversion that would have to be portable, quick and easy to use, he said.

Last year, ARL's research reached a milestone when they figured out a way to reduce the production costs associated with fuel reformation by using palladium membranes to purify hydrogen rich reformate, Dunbar said.

In their work, scientists developed a new supported palladium membrane composite structure for purification technology to produce high-purity hydrogen from a feedstock of hydrocarbon fuel. Before this discovery, designing affordable, leak free, and high-flux membranes was much more difficult, he said.

"While it is a significant milestone, the research is in its early stages. Fuel reforming is a complex problem that we don't expect to solve quickly," Dunbar said.

"JP-8 is a complicated and dirty fuel. The sulfur is a huge problem because it can hurt the fuel cells," Tran said. "Sulfur has many different compounds that behave differently. The compounds in sulfur make it hard to find an agreeable material."

JP-8 is a logictical fuel for the Department of Defense under its one-fuel policy. It is a unique problem for the Army. Industry is focused on natural gas, Chu said.

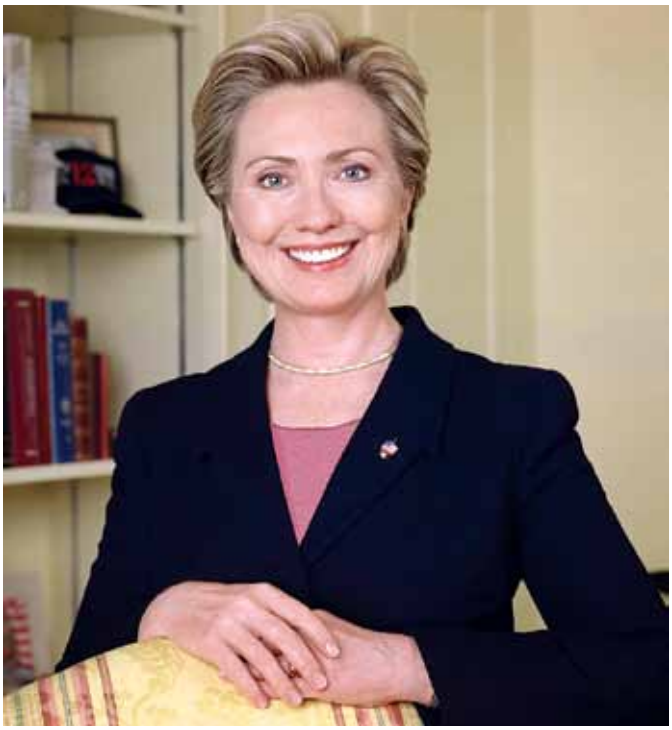
The US Army Research, Development and Engineering Command's Communications-Electronics Center (CERDEC), Command, Power and Integration (CP&I) experts are integral to the research because they transition mobile power systems from the lab to the field, said Dr. Terry Dubois, fuel reforming and combustion engineer at CERDEC.

PHOTOGRAPH: www.army.mil

Everything from man-worn to multikilowatt systems comes through CERDEC, he said. CERDEC CP&I enables the quick transition of optimum capabilities to the Warfighter in support of ongoing operations.

Army units often wind up in places overseas with no infrastructure and limited supplies. We need to explore and develop high-efficient fuel cell systems to reduce logistical supply. Scientists continue to grapple with the question of the best way to rid JP-8 of its organic sulfur compounds after it is in theatre, Chu said.

Fuel reforming for better energy conversion on the battlefield is the fourth and last article in a series of four stories about the US Army Research Laboratory's far-reaching concepts for Army operational energy. Scientists and engineers at the US Army Research Laboratory forecast energy solutions into the future with a portfolio of basic and applied science. SP



PHOTOGRAPH: clinton.senate.gov

Hillary Clinton's security erases photo taken by 'fan' on his smartphone

At a convention in Miami where former US Secretary of State Hillary Clinton was delivering a speech, a member of the audience clicked her picture using a smartphone. The 'capture the moment' was shortlived as Clinton's security team swooped on him and confiscated the smartphone and deleted the picture.

"It's crazy," said Andrew Rothberg, who was caught red-handed, to the *Miami Herald* of his experience at Clinton's American Society of Travel Agents address.

Rothberg said he used his Galaxy Note II to take a picture of Clinton on stage, but the act was observed by the surveillance team and they just grabbed the phone and deleted the image. SP

Woman refused McNuggets, attacks attendant, captured on security camera

Security camera footage of a Toledo woman attacking a drive-thru attendant after being refused Chicken McNuggets has gone viral on YouTube.

According to a police report, Melodi Dushane became outraged and punched the drive-thru assistant when she found out that they were not serving McNuggets at 6.30 a.m. on New Year's Day. The security camera captured the altercation, which included the woman punching the window and attempting to climb in the window, shouting "I am going to end you!"

The video, originally posted in April, was reposted to YouTube recently and has amassed over three million views. SP

Kid hops on to flight without credentials

A nine-year-old boy who recently hopped a flight to Las Vegas from Minnesota had carefully planned the jaunt and practised sneaking through security at the Minneapolis International Airport, according to new details about his trip.

The boy also has a history of daring infractions, having been stopped for stealing a car and repeatedly slipping into a water park, according to a leaked health department memo.

The kid first did a "reconnaissance trip" at the airport by taking a piece of luggage from the bag claim area, eating at an airport restaurant, and then leaving the bag at the restaurant without paying, according to the *Minneapolis Star Tribune*.

The following day, the boy returned to the airport, where his mother is an employee, and waited until a large family was going through a TSA security checkpoint. He then pretended to be part of the family as they went through security, according to the report.

The boy was then seen on surveillance video talking to a gate agent, waiting until the agent was distracted, and then walking down the ramp to the plane by himself. He boarded the Vegas-bound flight without anyone knowing, officials said.

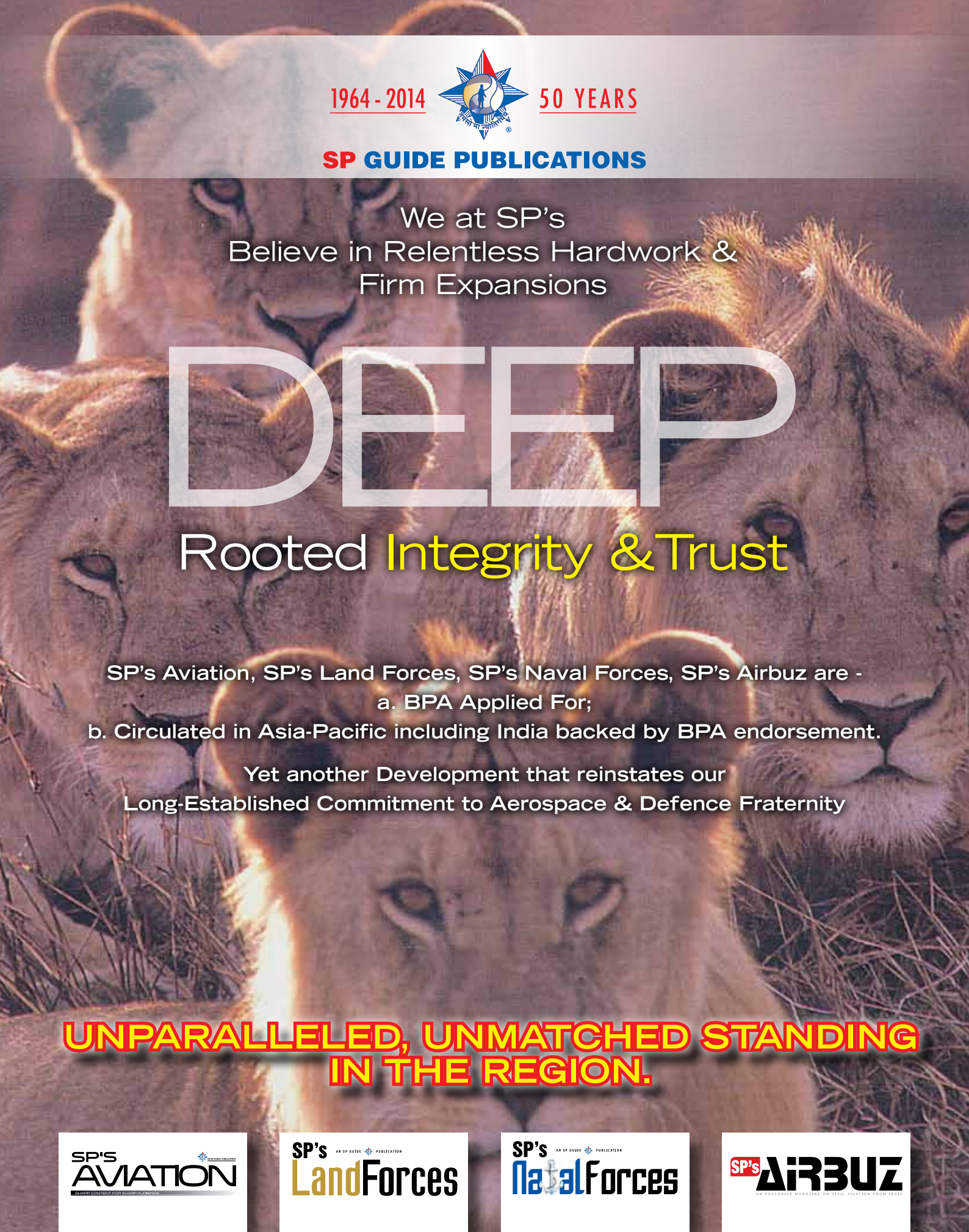
Once the plane took off, airline staff realised that the boy's name was not on a list of unaccompanied minors for the flight. Police met the plane in Las Vegas and took the boy into custody, at which point he became "violent" and was hospitalised. SP

2.9 million Adobe customers hit in data breach

Hackers have recently breached the servers of Adobe, stealing data on 2.9 million customers and the source code from at least three of its products, the software company stated recently.

The company said that the "sophisticated" attacks accessed an unspecified number of customer IDs and encrypted passwords and stole information related to 2.9 million customers including names, credit or debit card numbers. Separately, hackers also stole source code of various Adobe products, including Acrobat, ColdFusion and ColdFusion Builder. The company believes these two breaches are connected.

"We deeply regret that this incident occurred. We're working diligently internally, as well as with external partners and law enforcement, to address the incident," said Brad Arkin, Adobe's Chief Security Officer. "Based on our findings to date, we are not aware of any specific increased risk to customers as a result of this incident." SP



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