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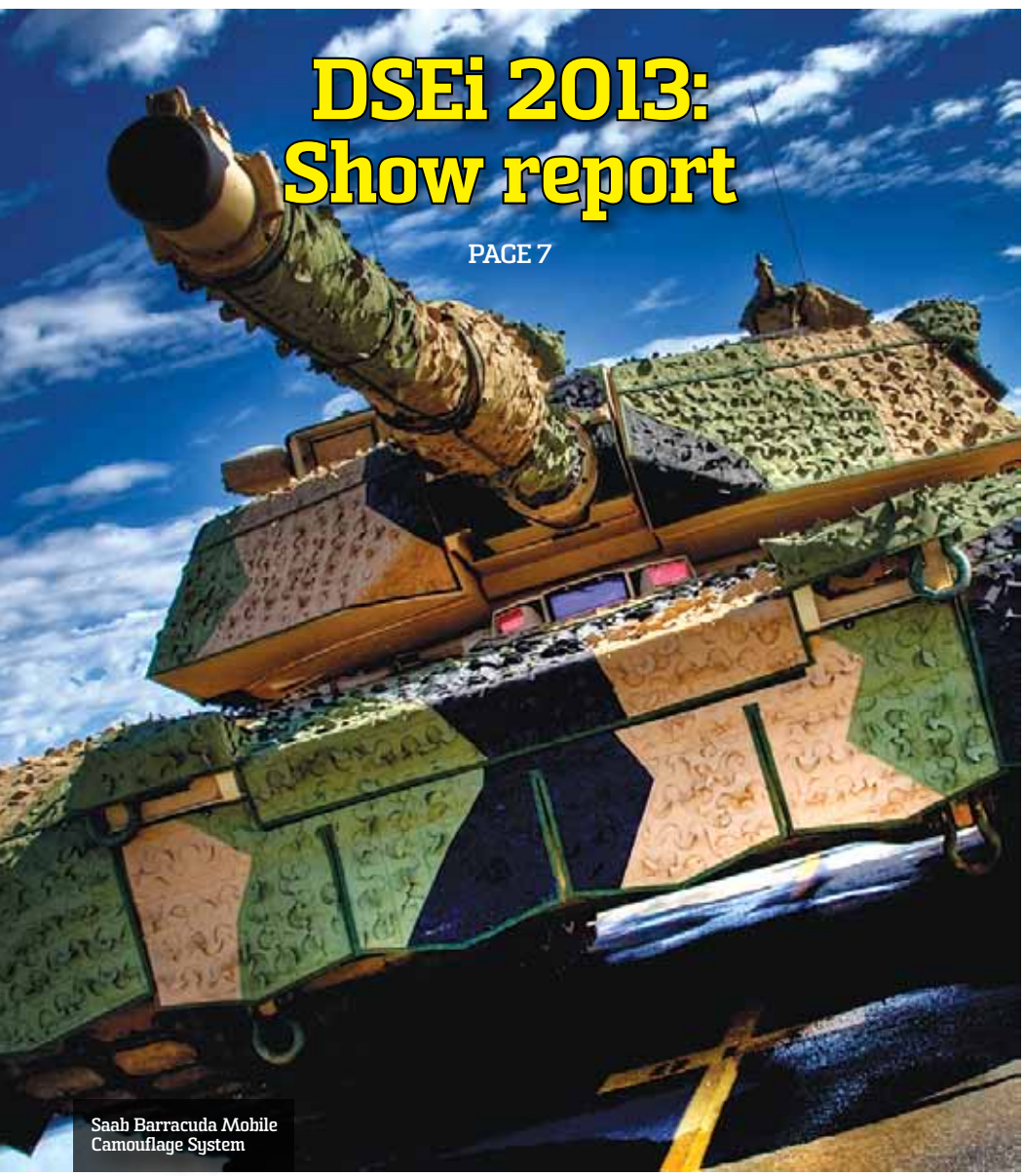

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India's intercontinental surface-to-surface ballistic missile Agni-V launched once again

India's intercontinental surface-to-surface ballistic missile Agni-V, capable of delivering nuclear warhead with high precision, was successfully launched on September 15, 2013, in a repeat of spectacular maiden launch last year.

A symbol of the Defence Research and Development Organisation's (DRDO) technological excellence and India's strength, the missile took off majestically at 0850 hours from DRDO's launch complex at Wheeler Island, off the coast of Odisha, flew on a predefined path and reached its destination with expected precision.

The missile, powered by three-stage solid rocket motors, had a flawless, spectacular launch in auto mode and followed its entire trajectory in textbook manner, dropping the three motors at predefined stages into the ocean. The ships located in mid-range and at the target point tracked the vehicle and witnessed the final event. All the radars and electro-optical systems, ship-based and those based on ground stations along the path monitored the performance parameters of the missile and displayed information in real time.

All the systems and subsystems of the missile, such as the launch system, navigation system, control systems, rocket motors, the re-entry package, etc. performed well. The navigation systems, very high accuracy ring laser gyro-based inertial navigation system (RINS) and the most modern and accurate micro navigation system (MINS) ensured the missile reached the target point within a few metres of accuracy. The high speed onboard computer and fault tolerant software along with robust and reliable bus guided the missile flawlessly.

A major milestone, this second successful test of Agni-V has demonstrated the maturity, repeatability and robustness of the system, paving the way for initiation of productionisation and subsequent induction. The launch also clears the way for its canisterisation. The Agni-V missile, in its operational form, is designed to be stored and launched from the canister, enhancing its storage, operational readiness, transportability, response time and shelf life.

The Strategic Force Command team along with its top brass was present during all the operations to get acquainted with the system and trained.

Defence Minister A.K. Antony congratulated all the scientists of DRDO and said that "DRDO scientists have made the country proud".

National Security Advisor (NSA) Shivshankar Menon congratulated DRDO scientists and said that the event is a milestone in the long-range missile era of India. SP

Cover:
At DSEi 2013, the Barracuda MCS was displayed on the CBRN-vehicle in Saab's vehicle stand. It was also seen in a number of partner stands, such as BAE Hägglunds, General Dynamics UK and GDLS Force Protection.

Cover images:
Saab, CII, US Army

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Spectre of chemical weapons looms large

The spectre of chemical and biological weapons is real and it is not a recent phenomenon. We have seen the large-scale use of chemical and biological weapons in Iraq and now it is threatening to disturb peace, yet again, in the Middle East with Syria being the errant state. Annihilation of people, because of ethnic differences, has been carried out by many regimes, using different methods and chemical and biological weapons have been on the top. The Halabja chemical attack, also known as Halabja massacre or Bloody Friday, was a genocidal massacre against the Kurdish people that took place in 1988. The attack reportedly killed about 5,000 people, most of them civilians.

Now Syria is in the eye of the storm having used chemical weapons, which according to the United States has killed nearly 1,500 people. Even before the United Nations confirmed the use of chemical weapons, the US was all set to strike militarily Syria which would have had widespread economic and geopolitical ramifications. However, that has been put on hold as efforts are on to 'disarm' Syria of its chemical weapons.

What all this indicates is how warfare has changed, taking on dangerous proportions. The battlefield is no longer confined to geography. It is beyond. Lt General (Retd) P.C. Katoch in his fortnightly column discusses how chemical weapons have come into play and how the US is keen on global policing. Any military strike, he avers, is going to have adverse economic consequences for India besides affecting the Indian diaspora in the region.

Also in this issue, the General has acclaimed the recent launch of GSAT-7, India's first military satellite. He opines that though many foreign satellites on L Band have footprints over India, use of a foreign satellite for operational military communications raises legitimate apprehensions of security. The General avers that we need to examine whether total military satellite communications should be based on exclusive military communications satellites or a mix of military and commercial communication satellites with adequate security keeping in mind China's anti-satellite capability that will likely target exclusive military satellites more in times of war.

In SP's Exclusives, we have a couple of reports on the developments happening in the Defence Research and Development Organisation (DRDO), including the sea trials of the autonomous underwater vehicle, besides the tenders floated by the Indian Coast Guard and the Indian Army order for anti-tank guided missiles.

We have report on DSEi (Defence Security and Equipment International) held in London, which to date brought together over 30,000 of the global defence and security industry to source the latest equipment and systems, develop international relationships, and generate new business opportunities. DSEi is increasingly being seen as the place to do business in the global defence and security market. With an unrivalled range of suppliers from 56 countries, DSEi has become a truly global event for defence equipment procurement. Indian companies too showcased their ware at the India pavilion.

We look forward to your feedback as it will help us sharpen our coverage of news and analysis.

Happy Reading !

Jayant Baranwal
Publisher & Editor-in-Chief

DRDO announces tender for Indian Coast Guard

Given the small number of aviation assets at the Indian Coast Guard's disposal, there's finally some movement towards fleet accretion over and above the 35+ Dornier Do-228 tactical reconnaissance aircraft in service. Now, to service a requirement of 19 maritime reconnaissance and multi-mission high performance aircraft for the Indian Coast Guard, the Defence Research and Development Organisation (DRDO) lab, the Centre for Airborne Systems (CABS), has issued a request for information to identify an aircraft platform for the proposed multi-mission maritime aircraft (MMMA) that it proposes to integrate in Bengaluru. CABS has said that it will be

looking immediately for six modified airframes, followed by three as an options clause, and finally an additional 10 aircraft, for a total fleet of 19 planes dedicated to the Indian Coast Guard.

Apart from maritime reconnaissance, the proposed platform will also be used for SAR, cargo and personnel transportation, air ambulance and pollution surveillance. While CABS will be developing many of the sensors in conjunction with other laboratories, the Defence Avionics Research Establishment (DARE), its sister laboratory in Bengaluru, will be looking to import the maritime patrol radar, EO/IR systems and pollution control suite. CABS has not stipulated the configuration of the aircraft it is looking for—whether jet or turboprop, long- or medium-endurance—but is likely to clarify on these qualitative requirements shortly. SP

PHOTOGRAPHS: Indian Navy, Anoop Kamath, SP Guide Pubns

DAC approves six more C-130Js for IAF

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 two 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

Army orders more INVAR for T-90s

In a big relief coming in for the Mechanised Forces, the Indian Army has finally managed to conclude a long-awaited ₹3,000-crore deal for additional INVAR anti-tank guided missiles licence built by the Bharat Dynamics Limited with Russian technology. According to the Ministry of Defence, "The deliveries are expected to be completed over the next five years. INVAR is a laser beam rider anti-tank guided missile capable of being fired from T-90 tank. It has a range of five km. The missile can neutralise adversaries tanks fitted with explosive reactive armour protection."

The missile has a semi-automatic control system, tele-orienting in a laser beam. The INVAR is a high velocity, jamming-immune missile with tandem warhead designed to defeat explosive reactive armour and intended to destroy stationary and moving targets with speed up to 70 kmph. The deal was cleared by the Cabinet Committee on Security (CCS) in October last year, and remains the most significant recent step to shore up ammunition reserves, severely depleted in the tank formations as highlighted by the former Chief of Army Staff, General V.K. Singh. SP

IAF keen on six more Boeing C-17s

With a successful induction of three Boeing C-17 Globemaster III heavy-lift transports into Hindon's 81 Squadron 'Skylords' last week, the Indian Air Force (IAF) is now hoping for an early conclusion of a follow-on deal for six aircraft. Top sources indicate that the process, which was begun under former IAF Chief Air Chief Marshal P.V. Naik, is now being pushed through, with the IAF conveying to the Ministry of Defence (MoD) that unless the process is begun with the United States' Defence Security Cooperation Agency (DSCA), India will lose the opportunity to place orders for additional aircraft, since the deadline for fresh orders from Boeing's Long Beach facility expires by early next year.

While the IAF had ideally wanted 10 more aircraft, an assessment of squadron requirements, asset deployments, etc has brought the number down to six. With a total of 16 aircraft, the IAF will split eight aircraft between two squadrons, the second to be raised under the Eastern Air Command. The C-17 platform will also be used soon for airdropping and landing at the Daulat Beg Oldie airfield, after an assessment is conducted of the feasibility and possibility, given that it will be the largest aircraft ever to land at such a high altitude. SP

Navy floats tender for Sindhurakshak salvage

The Indian Navy has called for professional help to salvage the INS Sindhurakshak submarine, which sank in its berth at the Mumbai dockyard on the intervening night of August 13 and 14. Professional salvers including Titan Salvage, Smit, Ocean Centre Diving, Arihant Divers, Graph Tech Marine and Duke Offshore have responded to the Navy's call, and submitted proposals on how to salvage the submarine.

According to assessments conducted by the Navy over the last three weeks, the Sindhurakshak is almost definitely a write-off, with major structural damage, ruptures to the outer hull, complete destruction of all systems, and the sheer lack of economy

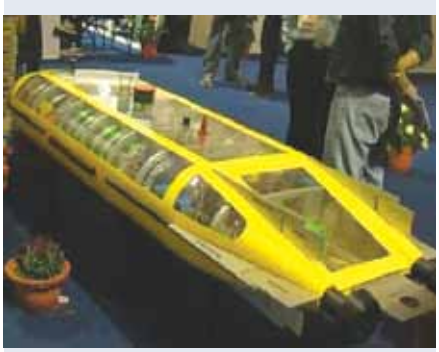
that repairing such extensive damage would entail. While Navy Chief Admiral D.K. Joshi had initially said that it was perhaps possible to restore the Sindhurakshak to its earlier state, underwater assessments by navy divers and assessment teams have ruled out that possibility. SP

PHOTOGRAPHS: Anoop Kamath, DRDO, DPR Defence

DRDO's autonomous underwater vehicle in sea trials

The indigenous autonomous underwater vehicle (AUV) under development by the Defence Research and Development Organisation (DRDO) is currently in sea trials, where it is reported to be functioning close to 100 metres below the surface in the Bay of Bengal. The AUV is being built to function at depths close to 300-metres. The platform is being developed in close coordination with IIT Madras, which supplies much of the software and command algorithm matrices that guide the AUV under water.

With the Electronics Corporation India Ltd (ECIL) as an engineering partner, DRDO's Naval Science and Technology Laboratory (NSTL) in Visakhapatnam is also trying to develop a variant of the AUV that can conduct more frontline activity like mine-laying. The AUV will



have passive sonar and electro-optical sensors. The DRDO AUV will be deployable and controllable from shore and ship, depending on the mission. In July 2010, the Navy announced its interest in acquiring 10 AUVs developed and built fully in India. It is keen on flexibility for variable payloads like high definition sonars and underwater cameras for surveillance reconnaissance activities of the sea bed, including oceanographic survey and specialised mapping. With preliminary testing near completion, the DRDO may ask the government to consider the AUV a major project, with attendant funding and budgetary support. SP

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GSAT-7
Another milestone

The recent launch of GSAT-7, India's first military satellite from Kourou spaceport in French Guiana on August 30, is another feather in our military capacity building particularly in terms of surveillance capabilities. The satellite is expected to be fully operational by end September.

Armed with multiple defence applications, the satellite will boost our maritime surveillance capabilities, giving a major push in ensuring national security at sea. Primarily a naval satellite, the Indian Navy would be the primary user of this multi-band indigenous communication satellite. Communication transponders of GSAT-7 are planned to be switched on by mid- September after the Indian Space Research Organisation (ISRO) places the satellite in its orbital slot of 74 degrees into geostationary orbit at an altitude of 36,000 km above the equator. Frequency bands of GSAT-7 will help space-based marine communications in India and the surrounding seas replacing existing Inmarsat base global satellite communications from the Indian Navy's ships.

GSAT-7 is an advanced communication satellite that is carrying payloads in UHF, S, C and Ku Bands providing a wide range of service spectrum from low bit rate voice to high bit rate data communication capabilities to users.

Globally, communication satellites are functioning on C, Ku, Ka, S and L Bands. C Band is widely used and proven, has large bandwidth and has no rain attenuation. Ku Band has similar advantages plus Communication on the Move (COTM) is possible. However, in both C and Ku Band, the equipment is not easily portable and is prone to mechanical failure due to size, weight and movement. The subassemblies are large and so the installation time is considerable. In the Ka Band, broadband communication is possible, power consumption is low, use of solar panels is possible and feasibility of COTM exists.

However, this system gets adversely affected by snow, rain and heavy clouds. Space segment in Ka Band is presently limited in India. The S Band is meant only for radar communications. L Band is by far more reliable especially under NLOS conditions as accurate pointing is not required between satellite and user terminals. The system is highly portable and man-portable option is available, which is suited to the Army. It is light weight with no moving parts, quick to deploy with rapid connectivity, not affected by weather conditions and has low power requirements, lower attenuation and better range.

However, L Band has less bandwidth availability compared to C, Ku, Ka Bands and has interference with terrestrial communications. L Band services include Standard IP, flexible bandwidth based on usage, user control and spot beams. A dispassionate analysis of the various types of satellites would indicate that L Band is most suited for non-terrestrial communications in the tactical battle area (TBA). Moreover, L Band terminals are plug and play, reliable on account of integrated design, communications for land, sea and air applications, flexible and have low initial investments.

For some inexplicable reason none of the indigenous satellites are L Band. Though many foreign satellites on L Band have footprints over India, use of a foreign satellite for operational military communications raises legitimate apprehensions of security. Yet, due to high costs of development and operations of satellite systems, outsourcing of services is considered by many nations.

There is a need to examine implications of hiring a foreign L Band satellite for military communications (till all the requirements of the Army are met through ISRO satellites). Such an exercise should include feasibility of ensuring foolproof security with the Security Gateway positioned within India and with superimposed security solutions developed by CAIR. Obviously, such an arrangement would require firm commitment regarding availability of space segment at all times and under all conditions, aside from security issues being suitably addressed. Need for such examination is necessary in order to leap-frog into net-centricity, which is presently too distant. However, this requires thorough analysis.

We also need to examine whether total military satellite communications should be based on exclusive military communication satellites or a mix of military and commercial communication satellites with adequate security keeping in mind China's anti-satellite capability that will likely target exclusive military satellites more in times of war. SP

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

PHOTOGRAPH: mea.gov.in

Though many foreign satellites on L Band have footprints over India, use of a foreign satellite for operational military communications raises legitimate apprehensions of security

DSEi: Definitive sourcing event for military equipment

Rolls-Royce's new design of maritime patrol craft


Nexter's new unmanned ground vehicle

[By **R. Chandrakanth]**

The Defence Systems and Equipment International (DSEi), held biannually in London has become the most definitive global military equipment show. The recently concluded DSEi 2013 brought together over 30,000 of the global defence and security industry to source the latest equipment and systems, develop international relations, and generate new business opportunities.

There were nearly 1,500 international exhibitions from over 50 countries, showcasing specialised equipment in air, naval, land, security, medical and unmanned zones. Notwithstanding the continuing dull economic climate, companies were aggressive in their marketing of their products, some of them being launched only at DSEi.

Nexter launches low-cost UGV

Nexter Robotics, a subsidiary of the French Nexter Group, launched NERVA®S unmanned ground vehicle (UGV), small, low-cost, four-wheeled UGV optimised for use in the reconnaissance role and in confined spaces. It is essentially a smaller version of the NERVA LG UGV, which was first revealed in mid-2012 for military applications. The development of the NERVA S UGV now enables Nexter Robotics to offer a wider range of products to meet different user requirements.

Rolls-Royce unveils maritime patrol craft design

Rolls-Royce unveiled a new design of maritime patrol craft. The first of a 'protection vessel family' of designs, the new 55-metre craft features a range of equipment from Rolls-Royce (stabilisers, thrusters, steering gear, fixed-pitch propellers) and MTU (diesels, diesel generators, Callosum IPMS), offering a cost-effective capability that can be tailored to mission requirements. The initial 55-metre variant is aimed at patrol, search and rescue and interception duties. A 90-metre version will be on offer by the end of the year, with a 75-metre design following in 2014.

FLIR Systems showcases security solutions

FLIR Systems Inc showcased 360° maritime security solutions to detect, identify and track threats to critical coastal infrastructure and maritime assets such as ships and yachts, as well as coastal borders. Already deployed around the world, this capability, powered by CommandSpace adaptive C2 software for maritime solutions, integrates FLIR Systems' imaging and radar technologies with underwater sonar and other sensors to create a full, 3D maritime situational awareness shield around an asset.

The company's SeaFLIR 280-HD is specifically designed for naval forces whose equipment necessarily has size constraints, yet requires range and high definition (HD) imagery performance. The SeaFLIR 280-HD is the world's first compact, maritime HD EO/IR imaging sensor.

Airbus Military pitches C295 as multi-role airlifter

Airbus Military made a pitch of its C295 as multi-role airlifter as the platform for a possible UK maritime patrol aircraft requirement. Airbus Military's C295 offers an affordable and versatile platform for the MPA/ASW mission and is already operating in these duties with Chile. Its fully integrated tactical system offers a truly open architecture system that can integrate many systems and sensor types. The aircraft has already demonstrated its ability to carry weapons in the form of torpedoes and anti-ship missiles.

Lockheed Martin presents Fury UAV

Lockheed Martin showcased Fury UAV in the UK for the first time. The company is proposing the air vehicle as a multi-intelligence platform, with low visual and acoustic signatures but high range and endurance performance. It is classed as a Group 3 UAV, for tactical and expeditionary applications. Lockheed Martin claims it has the biggest payload capacity and volume of any runway-independent UAVs.

Fury is launched from a rail and recovered to a net. It can operate

PHOTOGRAPHS: Rolls-Royce, Nexter

Atlas Remote Combined Influence Minesweeping System

Rafael's Spike NLOS on a vehicle

at up to 15,000 feet and has an endurance of more than 15 hours. It is powered by a heavy fuel engine to provide commonality with ground vehicles and offers a large available power surplus for onboard systems. The payload bay can be reconfigured for a variety of sensors. Shielded avionics are installed to protect against strong RF signals such as jamming.

Atlas Elektronik reveals unmanned minesweeper

Atlas Elektronik UK unveiled its new ARCIMS (Atlas Remote Combined Influence Minesweeping System) suite. The company has also disclosed that it will shortly deliver an initial two ARCIMS to meet the needs of an undisclosed customer. Designed to address requirements for a next-generation of networked offboard unmanned mine countermeasures (MCM) systems, ARCIMS has built upon Atlas Elektronik UK's long pedigree in MCM. This includes the rapid development and delivery of the Royal Navy's Shallow Water Influence Minesweeping System for operations in the northern Arabian Gulf in 2003.

Cassidian launches X-band naval radar

Cassidian, the defence division of EADS, launched an X-band naval surface surveillance radar optimised for the detection of extremely small objects and countering asymmetric threats. Based upon the latest active electronically scanning array (AESA) radar technology, the company's tactical radar for surface surveillance (TRSS) system is claimed to "substantially increase the detection capabilities, and thus the protection level, of navy ships and coast guard vessels".

Rafael presents Typhoon

Rafael showcased the Typhoon MLS NLOS for the first time, having unveiled this new iteration of its popular stabilised marine weapon station earlier this year. This version mounts eight launchers for the company's Spike-NLOS missile, the longest-range member of a popular family of guided missiles. Typhoon MLS NLOS also carries a Toplite observation and targeting sensor turret. Related systems developed by Rafael are the Typhoon 30 with a 30mm ATK Mk 44 Bushmaster cannon, and Typhoon MLS-ER with machine gun and Spike-ER missile launchers.

Cassidian's high-grade encryption device

Cassidian, the security and defence arm of EADS, launched its latest high-grade encryption device. The Ectocryp Blue v2 solution – the core product in the Ectocryp family – can transfer information classified up to top secret across public networks, allowing organisations to minimise the risk of cyber attack. Blue is Europe's fastest, HAIPE-certified (High Assurance Internet Protocol Encryptor) remotely operated cryptographic device. Ectocryp solutions have already found application in the UK and USA. Ectocryp Yellow, the next stage in sovereign UK cryptographic development, is a portable, low-cost, interoperable basis for highly secure strategic and tactical networks.

BAE System air-to-air refuelling for tanker missions

BAE Systems Regional Aircraft revealed its proposal for an air-to-air refuelling (A2R) version of the BAe 146/Avro RJ regional airliner. With its high wing and T-tail configuration, the 146 is considered an ideal platform for the tanker mission, and could be well suited to refuelling tilt-rotor aircraft. BAE Systems has carried out proximity trials with a Hawk trainer and other 146 aircraft to confirm that the aerodynamic environment behind the 146 is sufficiently benign for tanker operations. With a large number of pre-owned 146s and RJs available for refurbishment and conversion, the types could represent a cost-efficient means of providing a tanker capability, either for frontline operations or for training receivers without using larger, more expensive tankers.

CTruk presents THOR

Making its first public appearance, the twin hulled offshore raider (THOR) high-speed vessel developed by CTruk starred in the twice-daily waterborne demonstrations. Designed to meet requirements for a fast, stable multi-role force protection craft, THOR has been developed by CTruk in partnership with a number of allied companies under the banner of the CTruk CAP (Collaborative Amphibious Project) consortium. This industry group has been established with the intention of competing in a market traditionally dominated by larger companies.

THOR has been conceived as an affordable multi-role craft that can be used in a variety of applications, ranging from force protection and riverine patrol, to disaster relief and casualty evacuation. Built from lightweight composite material, and with a speed in excess of 40 kts, the twin-hull THOR craft is able to operate for sustained periods at long ranges.

As the complexity of war increases, so does the equipment and companies have showed the technological prowess as witnessed at the show. SP

PHOTOGRAPHS: Atlas Elektronik, Rafael

Curtain-raiser

The first Naval and Maritime Exposition 2013 NAMEXPO has elicited enthusiastic response from all the stakeholders which in turn has encouraged active support from the Ministry of Shipping, Ministry of MSME, Ministry of Earth Sciences and the Government of Kerala

PHOTOGRAPH: CII

[By **Rear Admiral (Retd) Sushil Ramsay**]

A Naval and Maritime Exposition (NAMEXPO) and Conference is being organised by the Confederation of Indian Industry (CII) in association with the Indian Navy, Ministry of Micro Small and Medium Enterprises (MSME), Ministry of Shipping, Ministry of Earth Sciences and the Government of Kerala from September 23-27, 2013, in the precinct of the Cochin Port Trust in Kochi. At the curtain raiser ceremony of the pioneering initiative on September 16, 2013, Vice Admiral R.K. Dhowan, Vice Chief of Naval Staff, said that over the decades, our efforts in indigenisation have helped us achieve global shipbuilding standards, resulting today in 46 of the 47 warships and submarines on order for the Indian Navy being constructed in Indian shipyards.

Vice Admiral Dhowan also said that the Indian Navy is poised to grow and modernise and in the coming decade we plan to induct four to five platforms every year. "This provides an ideal opportunity to the Indian shipyards and the industry to adopt a collaborative approach and joint venture partnership to induct state-of-the-art weapons, sensors and combat management systems into the Indian Navy to meet the dynamic challenges which lie in the maritime domain."

NAMEXPO 2013 is a pioneering venture being laid on firm foundation to hold bright prospects for the Indian industry. The unique concepts enshrined into NAMEXPO 2013 have elicited enthusiastic response from all the stakeholders which in turn has encouraged active support from the Ministry of Shipping, Ministry of MSME, Ministry of Earth Sciences and the Government of Kerala. Despite being the first exposition of its kind, all the stakeholders have offered an overwhelming response to the Confederation of Indian Industry (CII). Over months of preparatory works CII have ensured to provide a common platform to end-users and manufacturers to know and understand each other's capabilities and requirements.

Satish K. Kaura, Co-Chairman, CII National Committee on Defence and Aerospace & Chairman, Samtel Group, heralding the forthcoming event said that NAMEXPO 2013 was aimed at projecting Indian Industry's technological and manufacturing prowess. "There is no denying the fact that Indian industry will further flourish if the required ecosystem is put in the place. One needs to understand and appreciate the fact that collaborative approach can yield the desired results. Collaboration is the key to success. Indian industry is keen to collaborate with the Indian Navy and various other government entities as well as foreign original equipment manufacturers (OEMs) for the long-term sustainable projects. Indian industry is very keen to support government's efforts to realise the goals of self-reliance and indigenisation."

Gurpal Singh, Principal Advisor of CII, said that CII has been committed to create a robust domestic manufacturing base across the spectrum. "There have been several success stories especially in the pharmaceuticals, IT and automobile sectors. However, manufacturing in defence sector is far below the mark. There is a need to encourage private sector to promote indigenisation and achieve self-reliance. Government of India should promote indigenous production, give incentives like tax exemption to defence manufacturers and encourage exports." SP

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Creat game Syria

PHOTOGRAPH: Wikipedia

So can the West really absolve itself completely of complicity in the over 1,00,000 civil casualties in Syria? The game is not only about the Shia-Sunni strife but multiple factions fighting and above all control of oil, and the next likely target of the US being Iran.

The much anticipated punitive strikes by the United States against Syria have been put on hold for the time being. This comes after the recent US-Israel joint missile test in the Mediterranean and the Secretary of State John Kerry putting forth his arguments to the US Senate Foreign Relations Committee that not striking Syria will undermine US credibility, endanger Israel and that US aim is not war but degrading military potential of Syria.

On the vital question of who released sarin gas on the hapless Syrian public, John Kerry responded establishing this is outside the UN mandate but US had proof that the Syrian regime was responsible. US efforts to obtain UN sanction for intervention have been unsuccessful with Russia and China opposing it. Also, the British Parliament has voted against British participation in any strike. President Barack Obama is to seek sanction of the US Congress next week, the US Senate Foreign Relations Committee having agreed on a draft resolution of a 60-day limit on military action with a possible 30-day extension but without using ground troops.

The resolution may easily sail through the Senate but Democrats will likely challenge it in the House. Meanwhile, UN General Secretary, Ban Ki-moon has said that US must seek UN Security Council approval and concurrently Russian President Vladimir Putin has warned against unilateral US action in Syria calling US charge against President Bashar Assad of Syria having used chemical weapons "utterly absurd".

According to a report circulating on the Internet, Prince Bandar bin Sultan of Saudi Arabia, during his recent visit to Russia, pledged to safeguard Russia's naval base in Syria if the Assad regime is toppled, but he also hinted at Chechen terrorist attacks on Russia's Winter Olympics in Sochi if there is no accord. Concurrently, London's Telegraph News Service reported that Saudi Arabia has secretly offered Russia a sweeping deal to control the global oil market and safeguard Russia's gas contracts, if Kremlin backs away from the Assad regime in Syria, an offer Putin turned down.

More significant is a report by the Federal Security Service of the Russian Federation (FSB) that Britain Defence, one of the largest private mercenary forces in the world, was the target of a "massive hack" of its computer files by an "unknown state-sponsored entity" this past January who then released a number of critical e-mails between its top two executives, founder Philip Doughty and his Business Development Director David Goulding disclosing that the Obama regime has approved a "false flag" attack in Syria using chemical weapons, and that Britain has been approved to participate in the West's war on Iran. One e-mail from Goulding reads, "Phil, we've got a new offer. It's about Syria again. Qataris propose an attractive deal and swear that the idea is approved by Washington. We'll have to deliver a CW (chemical weapon) to Homs (Syria), a Soviet origin g-shell from Libya similar to those that Assad should have. They want us to deploy our Ukrainian personnel that should speak Russian and make a video record. Frankly, I don't think it's a good idea but the sums proposed are enormous."

There is much in the news about Syrian rebel al-Nusra being in possession of sarin gas and Russia seeking explanation from Turkey but who supplied the sarin may be difficult to establish without an international commission with all the prevailing subterfuge. Besides, apprehensions are natural after US presented false evidence of nuclear weapons as excuse to invade Iraq. Then are many reports in US media that US has been using Al-Qaeda to assist the rebels in Syria.

Paul Joseph Watson in his article "Whether America Shares its Values with Terrorists" wrote more than an year back that just as Al-Qaeda terrorists were used to oust Gaddafi, hundreds of Libyan rebels with Al-Qaeda willing members were being airlifted into Syria to aid opposition in carrying out attacks against government forces. So can the West really absolve itself completely of complicity in the over 1,00,000 civil casualties in Syria? The game is not only about the Shia-Sunni strife but multiple factions fighting and above all control of oil, and the next likely target of the US being Iran.

As far back as March 2007, General Wesley Clark, former Supreme Allied Commander, NATO, had disclosed that while bombing of Afghanistan had commenced in preparation of US invasion, US had already decided to take out seven countries starting with Iraq, and then Syria, Lebanon, Libya, Somalia, Sudan and, finishing off, Iran." Hopefully better sense will prevail but US cruise missile strikes (in conjunction with France) may still take place, which will have adverse economic consequences for India besides affecting the Indian diaspora in the region. SP

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

Fincantieri lays keel of frigate Luigi Rizzo

On September 6, at the Riva Trigoso shipyard, near Genoa, Fincantieri held a ceremony marking the laying of the keel of the frigate Luigi Rizzo, the sixth ship of the FREMM programme.

This event continues the construction of the European multi-mission frigates, which remains to date the most important joint initiative between European industries in the field of naval defence. The vessel, which will be delivered in early 2017, will be about 144 meters long, 19.7 metres wide, and will have a full load displacement of about 6,700 tonnes. She will be able to reach a top speed of over 27 knots, and will accommodate up to 200 people.

The ship will be characterised by a high operational flexibility, and will have the ability to operate in multiple scenarios, particularly to maintain the security of the Mediterranean basin.

The ships of the FREMM programme will represent the authority of the Italian state and of the European Union in the Mediterranean, and will replace the Italian Navy's Lupo and Maestrale class frigates, built by

PHOTOGRAPH: Fincantieri

Fincantieri in the 1970s.

The initiative involves the participation as prime contractor for Italy of Horizon Sistemi Navali (51 per cent Fincantieri, Finmeccanica 49 per cent) and for France of Armaris (DCNS + Thales).

This cooperative programme has built on the positive experience of the previous French-Italian programme "Horizon" that led to the creation of two destroyers for the Italian Navy, the Andrea Doria and Caio Duilio. SP

JLTV testing begins, programme on schedule

Full-pace, full-scope testing of the joint light tactical vehicle (JLTV) prototypes began on September 3 and will last for 14 months. Each of the three vendors – Oshkosh Defense, Lockheed Martin and AM General – delivered 22 vehicles and six trailers for testing to three sites – Aberdeen Proving Ground, Maryland; Yuma, Arizona; and Redstone Arsenal, Alabama.

Rigorous reliability testing over various terrains and in different weather conditions and protection-related testing is being conducted, said Colonel John Cavedo, the Joint Program Office Manager.

The programme is still on track despite this year's sequestration and the continuation of continuing resolutions, but if budget issues are not resolved by next year, Cavedo said he could not rule out a slip in the schedule.

"We're doing everything we can to keep the programme on track," he said, emphasising the importance of the programme to meeting asymmetrical threats like those experienced in Iraq and Afghanistan. SP

1964

Our Journey Starts as Guide Publications was founded by its Founder Publisher & Founder Editor Shri S P Baranwal...

Apart from many publications written, edited and published by the Founder, Military Yearbook is introduced in 1965...

1974

Military Yearbook continues relentlessly with collective support from dignitaries including the Prime Ministers and Presidents of India...

1984

50

JUST 1 STEP SHORT OF

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SP's Airbuz, SP's M.A.I. follows the intensity of magazines introduction...

2004

SP's Aviation, SP's Land Forces, SP's Naval Forces are launched starting from '98 and within a span of a few years...

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Military Yearbook is rechristened as SP's Military Yearbook conveying gratitude to Founder Publisher...

50 YEARS

1964 - 2014 50 YEARS

SP GUIDE PUBLICATIONS

'India has got by far the fastest growth in Asia'

At the backdrop of the world's largest defence and security event, DSEi in London, ***SP's Editor-in-Chief Jayant Baranwal*** *had an exclusive tête-à-tête with* ***Mark Kronenberg****, Vice President, International Business Development, Boeing Defense Space & Security. Excerpts:*

Jayant Baranwal (SP's): Which are the key markets Boeing is currently engaged with?
Mark Kronenberg (Kronenberg): Primarily Asia-Pacific, Middle East and actually here in Europe we engage with the UK. So these are our growth markets. Approximately 26 per cent of our revenues are coming in from international customers and we have a goal to get it 30 per cent and we are on track at this point.

SP's: Can you elaborate on some of the top programmes you are active with in these markets?
Kronenberg: Primarily, on the platforms side, it would be fighters with the F-15, the F-18s, C-17s of course. The new market entry would be the P-8, India being the first P-8 international customer. India also has the largest fleet of C-17s outside the US, 10 in their fleet. But there is also another area that is primarily to sustain. When you look at Boeing platforms we look to sustain those that is going to stay here for the next 25-30 years. It is the training and maintenance market of our existing platforms. There are markets like in India, Korea, and quite likely in UK where we see a lot of projects sustain on our existing platforms.

SP's: Which top five countries in Asia are the most promising markets for Boeing and why?
Kronenberg: If you look at Asia, India has probably got by far the fastest growth. Korea, Singapore, Japan and Australia would also be in our list of Asia-Pacific countries which are 45 per cent of the market in Asia. Middle East is primarily driven by Saudi Arabia and Emirates, and in Europe it's primarily the UK.

SP's: When you speak of Korea and some of the Middle East countries, which specific programmes are you referring to?
Kronenberg: Specifically in South Arabia, we had a large government-to-government sales, about $23 billion three years ago. There was sale of F-15s, 84 new builds F-15s, 72 basically upgrades of existing aeroplanes, 36 Apaches, 36 AH6s. So that constitutes the largest. But if you look at UAE, for example, it also has C-17s and Apaches.

SP's: What are the core technologies currently being developed by Boeing?
Kronenberg: If you look at the commercial development of airplanes, one thing that we have been able to combine is take a look at what we do at the defence side, for example, in multi-mission maritime airplanes as well as in next generation tanker and we combine it with what we know on the commercial side because we are using commercial platforms, the programmes where we tackle multi-mission aircraft programmes for our international customers and our US service customers.

SP's: Is Boeing looking at all the three forces requirements in a balanced manner or there is a serious bias, for example, more towards the air forces and then navies. If so why?
Kronenberg: No there is no bias. It's all on customer's preference. If we look at the revenues that we get from the customers, it is pretty evenly distributed, though air force customers are a bit larger then army and navy. But the percentage is balanced. So it is quite customer balanced.

SP's: Any specific programme can you refer to in the context of armies potential requirements, other than Chinooks and Apaches?
Kronenberg: Well Chinooks and Apaches are our mainstay in our army requirements. However, one in the US that has come up is the EMARRS programme, which is a kind of tactical intelligence surveillance reconnaissance (ISR) platform and we are working through that. But really our bread and butter is through our rotorcraft platforms, the Apache and CH-47s. That is what we are here in UK with our Apache programme, and t is clearly the case in India too.

SP's: Is Boeing working on brand new concepts on stealth technology based programmes addressing futuristic warfare involving air forces, navies and armies?
Kronenberg: Probably it's more in the electronic warfare area. So if we look at fighter platforms, multi-mission maritime airplanes, systems and subsystems, electronic warfare surveillance—those are the kinds of technologies we are developing for future contingencies and threats.

SP's: Any specific development towards the unmanned combat vehicles?
Kronenberg: If we take a look at nuclear aspects, we are going to compete with an autonomous UAV. It's for a navy programme and probably in the 2023-25 time frames.

SP's: With regard to unmanned vs manned systems, how does Boeing perceive that market? What is the thought process and what is likely in the future?
Kronenberg: Probably the combination of both. I think you are never going to get a system where it is going to be completely unmanned. It would be a combination of system where men are in the platform. For example it's still the case with Apaches offered as UAVs that is probably where there is a combination of both manned and unmanned systems which we are going see in the future. I do not foresee a future where it will be completely unmanned.

SP's: What are the key unmanned programmes that are currently on with Boeing?
Kronenberg: Our mainstay is Scan Eagle. It's a small, tactical ISR programme, which is our main UAV programme. SP

Eurofighter Typhoon achieves 2,00,000 flying hours

Eurofighter Typhoon has now achieved more than 2,00,000 flying hours since the entry-into-service of its worldwide fleet. Eurofighter Jagdflugzeug GmbH confirmed the milestone, adding that, with 719 aircraft on contract, 571 aircraft ordered and 378 aircraft delivered, the programme has "never looked stronger".

Alberto Gutierrez, Chief Executive Officer of Eurofighter Jagdflugzeug GmbH, said: "This impressive milestone underlines the outstanding track record of the Eurofighter Typhoon. Today, our congratulations go to all the air forces who have achieved this target, to more than 1,00,000 employees in Europe who are involved in the development manufacturing and supply chain as well as to all the 400 companies who support us on a daily basis with their know-how and competences. This is indeed a proud day for all of them and a landmark day for Europe's largest defence programme."

The CEO added: "Every day our aircraft are protecting the skies in Europe, the Middle East and even in the Southern hemisphere. They are on quick reaction alert (QRA) duty 24 hours a day, 7 days a week. Eurofighter Typhoon is combat proven since the Libya operations and is now gaining considerable momentum – indeed

the programme has never looked stronger. It has become the backbone of the Air Forces in the UK, Germany, Italy, Spain and Austria. When the chips are down, air chiefs want an aircraft that is versatile, reliable, resilient and cost-effective. Eurofighter Typhoon fulfills all of these requirements and the operational experiences gained during these flying hours have proven it. SP

BAE offers BAe-146 air tanker variant

Building on the success of the BAe 146/Avro RJ regional jetliner in a variety of military and special role applications, BAE Systems has unveiled its proposal for a cost-effective air-to-air refuelling (A2R) variant of the aircraft

Speaking at the Defence Services Equipment International (DSEi) exhibition in London, Mark Taylor, Business Director Engineering for BAE Systems Regional Aircraft, stated: "We believe that the A2R version of the BAe 146/Avro RJ is a sound business proposition for military planners and air forces that need this capability but who are having to face the financial realities of defence budget cutbacks.

"Whether to provide A2R tactical tanker capability or, in particular, to provide realistic A2R training instead of using expensive existing assets, the acquisition of a fleet of these aircraft can be accomplished at a fraction of the cost of current refuelling aircraft, whilst delivering excellent performance."

The design of the aircraft with its high wing and T-tail configuration is ideal for A2R operations. BAE Systems Regional Aircraft has already carried out proximity flight trials using a BAe 146-200, Avro RJ85 and Hawk jet trainer. This was successfully completed and confirmed that the aerodynamic environment behind the quad jet is benign and the aircraft therefore has considerable potential as an A2R aircraft for refuelling a range of aircraft types and sizes.

It is considered the BAe 146/Avro RJ might be particularly suitable as a tanker for tilt-rotor aircraft which can experience additional challenges when in the slipstream of some other tanker aircraft.

The business has carried out design concepts for a hose and drogue unit (HDU)-based system and these included the option for additional fuel tanks within the cabin. The standard tankage on the BAe 146/Avro RJ gives up to approximately 7,000 kg of fuel available for transfer – sufficient for A2R training at the lowest capital cost. Additional auxiliary fuel tanks in the cabin would provide up to about 18,000 kg of fuel available for transfer, making the aircraft a useful tactical refuelling airtanker.

The wide airspeed range of the aircraft gives flexibility in refuelling the variety of fixed and rotary wing aircraft currently in service. In this role the aircraft can fly up to 300 knots indicated air speed/M.072 at 31,000 ft (BAe 146) or 35,000 ft (Avro RJ). SP

PHOTOGRAPHS: Eurofighter, BAE Systems

First flight of the Navy NH90 Caiman with MU90 torpedo

A new milestone has been reached in the framework of the operational introduction of the NH90 Cayman Step B into the French Navy: the first flight-test with an MU90 training torpedo.

This flight was carried out on September 5 by the NH90 detachment CEPA/10S, and marks the beginning of the technical and operational evaluation of this new capability, from land bases and from frigates at sea. Full system qualification by the manufacturer is scheduled for mid-November, allowing the CEPA/10S to finalise this assessment by firing a real torpedo by the end of the year.

The MU90 is a lightweight torpedo [1] for engaging the most powerful nuclear and conventional submarines, whether in deep water or near the coast. It can also be launched by F70 anti-submarine frigates, multi-mission frigates (FREMM), Horizon frigates, Atlantic 2 (ATL2) maritime patrol aircraft, Lynx helicopters and now the NH90 Cayman Marine.

The Cayman is a shipboard naval helicopter whose primary mission is to conduct anti-submarine and anti-surface warfare missions from the Aquitaine class frigates (FREMM) and Forbin (FDA). It can also conduct maritime missions against terrorism, and support of a naval and maritime rescue. SP

Embraer Defense & Security delivers the first modernised A-1 fighter to Brazil

Embraer Defense & Security has delivered the first modernised A-1 (A-1M) fighter jet to the Brazilian Air Force (FAB) at its industrial plant in Gavião Peixoto, in outstate São Paulo. The event was attended by the Aeronautics Commander, Air Force General Juniti Saito, and officers from the FAB's High Command. The A-1M programme provides for refurbishing and modernising 43 subsonic AMX jets, 16 of which are already at the company's facilities.

The A-1M jet has the capability of performing air-to-ground attack, bombing, tactical air support and reconnaissance missions. The modernised FAB airplanes will receive new systems for navigation, weaponry, oxygen generation, multimode radar, and electronic countermeasures. This equipment, along with structural refurbishment, will allow these jets to continue operating until 2025.

According to the Embraer modernisation programme, the A-1Ms will receive systems that are similar to those that are also found on the F-5Ms and the A-29 Super Tucanos belonging to the FAB. This will assist with the adaptation period of the pilots and provides standardisation with numerous operational advantages, such as improved fleet management policy, better output in terms of flight hours, and reduced maintenance and operating costs.

"The delivery of the first A-1M marks another special moment in the long and successful history of relations between the FAB and Embraer," said Luiz Carlos Aguiar, President of Embraer Defense & Security. "This aircraft will be very useful for maintaining the operational capability of the Brazilian Air Force." SP

B-2 communications upgrade

After a 20-year wait, the B-2 Spirit will receive a significant new communications upgrade. The first increment of the common very low frequency receiver, or CVR, programme was designed to be a successor to the very low frequency communication system originally slated to be included with the B-2's communication package. The original system was deferred in 1992 because of budget constraints.

"CVR Increment 1 will provide the B-2 aircrew another, more reliable means to receive presidential force direction via emergency action messages," said Gary Doolittle, Air Force Global Strike Command B-2 requirements.

Currently, the B-2 uses an ultra-high frequency communications system to fill that role. However, the Military Strategic Tactical and Relay, MILSTAR, satellites that facilitate that form of communication are approaching the end of their operational life, Doolittle said.

The upgraded communication system would allow the B-2 to receive very low frequency signals bounced off of lower levels of the atmosphere, bypassing the satellite relay. This would ensure the B-2 remains a viable nuclear platform until such time as a replacement for current satellite communications can be deployed.

Though CVR Increment 1 is designed purely for use on the B-2 Spirit, a proposed second increment would expand the system into other platforms such as the B-52 Stratofortress and the E-4B Advanced Airborne Command Post, Doolittle said.

"Increment 2 would provide a broader set of longer-term capability upgrades across the entire airborne nuclear command, control and communications fleet," he said, adding that Increment 2 requirements and acquisition strategies are currently in development.

With CVR Increment 1 now reaching milestone B, the programme is on track to begin fielding in 2017. The capabilities it brings will help ensure the B-2 will continue to be a premier weapon system far into the foreseeable future. SP

Boeing delivers 223rd C-17 Globemaster to US Air Force

Boeing delivered the 223rd and last US Air Force C-17 Globemaster III airlifter today, fulfilling the production contract more than 20 years after the first delivery. The aircraft left Boeing's Long Beach facility to fly to its assignment at Joint Base Charleston, South Carolina, where a ceremony will mark its arrival.

The US Air Force was the C-17's launch customer. Since the aircraft's first flight September 15, 1991, it has been the world's only strategic airlifter with tactical capabilities that allow it to fly between continents, land on short, austere runways, and airdrop supplies precisely where they are needed.

Boeing continues to produce C-17s for other customers around the world, and maintain and sustain the aircraft through the C-17 Globemaster Integrated Sustainment Programme.

C-17s have been involved in contingency operations of all types, including flying troops and equipment to Operation Enduring Freedom in Afghanistan and to Operation Iraqi Freedom. The airlifter also has been used in humanitarian missions around the world, including the Japanese and the Indian Ocean tsunamis of 2011 and 2004, respectively; Hurricane Katrina in 2005; and the Haitian earthquake of 2010.

"C-17s are the workhorse for the US Air Force in wartime and in peace," said Chris Chadwick, Boeing Military Aircraft President. "So while this is the last new C-17 to be added to the Air Force fleet, the mission does not stop here. The C-17 delivers hope and saves lives, and with the Air Force in the pilot's seat, it will continue to do so well into the future."

The C-17 holds 33 world records – more than any other airlifter in history – including payload to altitude, time to climb and short take-off and landing marks. It has exceeded 2.6 million flight hours, playing an integral role in global strategic airlift. SP

PHOTOGRAPHS: Embraer, Boeing

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Workshop
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- B2B Meetings
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Session 3— Modern Trends in Weapons/Sensors/C4ISR
Sept 24—Naval Aviation
Session 4—Creation of Repair Support in Key Areas
Session 5— Key Areas for Joint Ventures
Session 6— Avenues for Indian Industry in providing enhanced support for Naval and Maritime Aviation
Sept 25
Workshop— Opportunities for Indian MSMEs
Workshop—Weather Forecast and IMD Services
Sept 26
Interactions with Maritime Institutes and Training Commands of Indian Navy and Indian Coast Guards

NAMEXPO at Glance	
Expected Exhibitors	150+
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Domestic	100
International Official Delegation	15+
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Expected Official Delegates	1,000
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Selex ES unmanned aerial system to UN peacekeeping force

Selex ES, a Finmeccanica company, was awarded, a service agreement by the United Nations for the provision of unmanned aerial system (UAS) for three years with two optional years, in support of the UN peacekeeping mission (MONUSCO) in Congo through the use of the UAS and associated enablers for information gathering and surveillance operations.

It is the first time that the UN has contracted with a civilian operator to provide unmanned aerial vehicle (UAV) technology to aid in executing its unique humanitarian mandate. Selex ES will be utilising its proprietary Falco UAV system composed of multiple remotely-piloted aircraft ground control stations, support equipment and logistics.

The Falco is an unarmed, mission-proven medium altitude, medium endurance UAV able to operate from semi-prepared airstrips with fully automated take-off, landing and mission execution capability. Selex ES will deploy a highly experienced team of pilots, maintenance engineers and information analysts using the most sophisticated sensors and data exploitation tools available.

Selex ES has also signed a contract worth over €40 million to deliver the system to a Middle East country. It will also provide operational and maintenance support to the customer for 12 months of the contract performance.

Currently operated by a range of international customers in diverse and extreme climate and geographical conditions, the Falco system is a field-proven asset that can be easily integrated within existing air management infrastructures and is delivered to its customers with a comprehensive set of operational and logistic support services including pilots, sensors and mechanical operators training, advanced logistic support, battlelab simulators for CONOPS development.

A comprehensive suite of payloads, including AESA radar and electro-optic turrets, equip Falco to perform a 24x7 all-weather wide range of missions. It features ramp take-off, fully automatic short take-off and landing capabilities and day/night flight and navigation, plus a NATO-compliant ground control station enabling mission planning, re-tasking and data exploitation.

"We welcome this new contract for our field proven Falco UAS that confirms the operational reliability and performance of the system, from the sensors to the mission system, delivering outstanding 24x7 all-weather, day and night surveillance," said Fabrizio Giulianini, CEO of Selex ES, adding: "This year has been an exciting year for our UAS capability, thanks to follow-on contracts for our unmanned surveillance service business, flight campaigns of our top of the range Falco EVO and the acquisition of a launch customer for our platform agnostic SkyISTAR mission system." SP

US Army awards AeroVironment orders for Switchblade tactical missile systems

AeroVironment, Inc. has received orders valued at $3,67,46,304 under a contract for Switchblade tactical missile systems, ancillary equipment and support. The United States Army Close Combat Weapons Systems Program Executive Office Missiles and Space (PEO MS) awarded these contract modifications. AeroVironment and its strategic teammate for advanced warheads, ATK, will work together to produce and deliver the systems.

"Even in tight defence budget environments, there is a need for innovative new weapon systems that allow our customers to achieve decisive force while reducing total mission costs," said Tim Conver, AeroVironment Chairman and Chief Executive Officer. "This surge of demand for Switchblade

represents a breakthrough in its transition from development, testing and evaluation to adoption."

"Switchblade helps protect our forces from harm in very dangerous situations," said Roy Minson, AeroVironment Senior Vice President and General Manager of the company's unmanned aircraft systems business segment. Switchblade provides a high-precision, direct fire capability at beyond-line-of-sight ranges in a rapidly deployable, backpackable package weighing six pounds. SP

French Harfang UAV logs 2,000 flight hours in Mali

The French Air Force has announced that the Harfang unmanned aerial vehicle (UAV) has logged 2,000 flight hours in support of French operations in Mali since its deployment in January 2013. The Harfang UAV is operated by the French Air Force's 1/33 Belfort UAV squadron in Mali, where it conducts in-theatre intelligence gathering for combat operations. This includes assisting air force and naval aviation attack aircraft to acquire enemy targets on the ground.

The Harfang medium altitude long endurance UAV, manufactured by EADS Cassidian, can fulfil a wide range of missions, from surveillance to sensitive peacekeeping. SP

PHOTOGRAPHS: Selex ES, AeroVironment

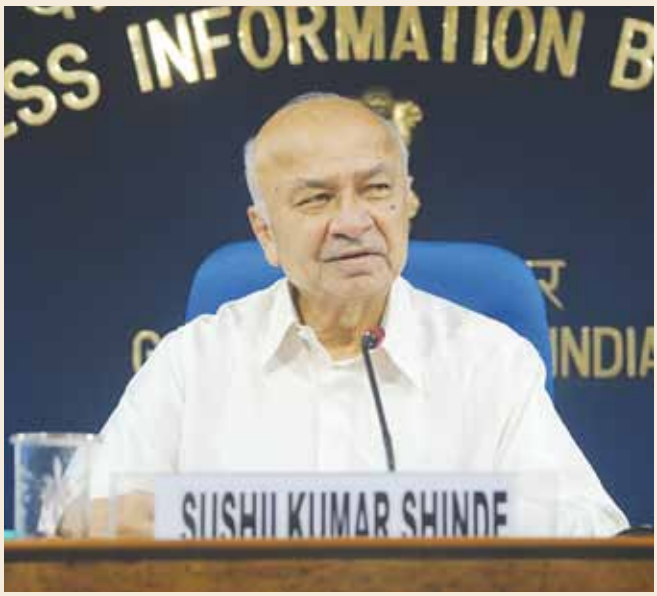
Home Minister lists out achievements

The Union Home Minister, Sushil Kumar Shinde has listed out achievements in a recent press conference and this includes how the security forces neutralised 10 militants in Jammu and Kashmir on August 30-31, 2013.

He also mentioned how the National Investigation Agency (NIA) apprehended two top terrorists of Indian Mujahideen (IM) viz. Md. Ahmed Siddibappa alias Yasin Bhatkal (self-styled operational commander of IM) and Asadullah Akhtar alias Haddi on August 28/29, 2013. They were planning to meet in East Champaran area in Bihar to plan and execute some terrorist acts.

Earlier, on August 16, 2013, Abdul Karim alias Tunda, a well known Lashkar-e-Toiba explosive expert, wanted for his role in the 1993 Mumbai serial train blast, Delhi bomb blast of 1997-98 and serial bombings in Uttar Pradesh, Haryana, Punjab, Andhra Pradesh, etc., was arrested by the Delhi Police from Banwasa-Mehendranagar border with Nepal.

The Minister also mentioned the arrest of Willy Naruenartwanicha, popularly known as Willy, by Thailand Police on the extradition request sent by Government of India on August 30, 2013, in Bangkok. He was involved in a criminal conspiracy for procuring arms and ammunition in huge quantity from a foreign country to wage war against India. Earlier in the same case, one accused, named as Anthony Shimray was arrested in India by NIA and the trial of the case is going on before NIA Special Court, New Delhi. This is a significant breakthrough as far as investigation of terror crime is concerned, as for the first time extradition request sent to Thailand against a Thai National was executed by the Thai Government. SP



PHOTOGRAPH: PIB

Report highlights unfulfilled recommendations by 9/11 Commission

A recent report says that failure to enact one of the key recommendations of the 9/11 Commission – consolidated congressional oversight of the Department of Homeland Security (DHS) – poses a risk to US national security.

In its report the Annenberg Retreat at Sunnylands and the Aspen Institute's Justice and Society Program said: "While the failure to reform DHS oversight may be invisible to the public, it is not without consequence or risk. Fragmented jurisdiction impedes DHS' ability to deal with three major vulnerabilities: the threats posed by small aircraft and boats; cyberattacks; and biological weapons."

Specific recommendations of the Sunnylands-Aspen Institute task force include:

- DHS should have an oversight structure similar to other critical departments, such as Defense and Justice.
- Congressional committees with jurisdiction over DHS should have overlapping membership.
- DHS should have an authorisation bill giving the department clear direction from Congress. SP

Gun ownership leads to homicides: A study

A study by the *American Journals of Public Health* has indicated that US states with higher estimated rates of gun ownership experience a higher number of firearms-related homicides. The study, covering 30 years (1981-2010) in all 50 states, found a "robust correlation" between estimated levels of gun ownership and actual gun homicides at the state level, even when controlling for factors typically associated with homicides. For each 1 percentage point increase in the prevalence of gun ownership, the state firearm homicide rate increases by 0.9 per cent, the authors found.

The study, led by a Boston University School of Public Health researcher, examines the National Rifle Association's (NRA) claim that increased gun ownership does not lead to increased gun violence. A Boston University School of Public Health release reports that it is the largest study conducted to date into the correlation between gun ownership and firearms violence, and the first comprehensively to examine the issue since the tragic shooting last December of 20 children and seven adults at Sandy Hook Elementary School in Newtown, Connecticut.

Researchers led by Dr Michael Siegel, professor of community health sciences at the Boston University School of Public Health, examined data for the years 1981-2010 on state firearm homicide rates from the Center for Disease Control and Prevention's Web-based Injury Statistics Query and Reporting System (WISQUARS) database.

The release notes that all other factors being equal, for example, the model predicts that if the gun ownership estimate for Mississippi were 58 per cent (the average for all states), instead of 77 per cent (the highest of all states), its firearm homicide rate would be 17 per cent lower.

The study found that over the three decades, the mean estimated percentage of gun ownership ranged from a low of 25.8 per cent in Hawaii to a high of 76.8 per cent in Mississippi, with an average over all states of 57.7 per cent.

The mean age-adjusted firearm homicide rate ranged from a low of 0.9 per 1,00,000 population in New Hampshire to a high of 10.8 per 1,00,000 in Louisiana over the three decades, with an average for all states of 4 per 1,00,000. For all states, the average firearm homicide rate decreased from 5.2 per 1,00,000 in 1981 to 3.5 per 1,00,000 in 2010. SP

BAE Systems and Terma to explore collaboration

BAE Systems and Terma A/S announced at DSEi, the signing of a memorandum of understanding (MoU) to explore potential collaborations within the field of aircraft survivability equipment including 3D-audio and active noise reduction, electronics manufacturing, naval radars and radar antenna design and aircraft composite structures.

Jens Maaløe, President and CEO, Terma, said: "We see potentially strong synergies between our companies. Terma's aerospace experience within composites structures technology, and electronic warfare equipment including 3D-audio and active noise reduction high-end technology provide promising opportunities for collaboration. Based on the actual MoU, we look forward to combining BAE and our core capabilities and to investigating a shared number of exciting business opportunities in the international market."

"We have a strong track record of working with Danish industry, so I am delighted that our partnership with Terma is being expanded," said Paul Hitchcock, Vice President for Western Europe at BAE Systems. "BAE Systems is already working closely with Terma in the air sector. This agreement broadens the scope of potential cooperation across other areas of our global defence and security business."

If BAE Systems is successful in Denmark's current Armoured Personnel Carrier (APC) programme, then Danish industry will play an integral role in our CV90 Armadillo offering to the Danish Army. SP

Thales, ST Kinetics in joint venture

Australian Munitions and Singapore Technologies Kinetics Ltd (ST Kinetics) have signed an agreement to cooperate in Australia and New Zealand for the development, manufacturing and marketing of ST Kinetics' world-leading 40mm low velocity, extended range, and air bursting ammunition.

The two companies will focus on making new 40mm capabilities available to the Australian Department of Defence and establishing supply from within Australia. They will also look to introduce an innovative supply chain approach which includes reciprocation of supply.

ST Kinetics designs and manufactures a comprehensive range of 40mm weapons and ammunition, Fire Control Units and ammunition as systems, and has an unrivalled pedigree in this essential battlefield capability. Its innovative 40mm ammunition solutions also include air bursting, camera surveillance and even self-destruct rounds. The company's 40mm ammunition is currently in service with a number of ABCA (American, British, Canadian, Australian) countries. SP

Polish Defense Holding and Finmeccanica cooperation

Polish Defense Holding and Finmeccanica signed a memorandum of understanding (MoU) with the intention to strengthen their collaboration in aerospace, defence and security sectors both on Polish and International markets during MSPO (International Defense Industry Exhibition) that just ended in Kielce, Poland.

The two industrial groups, respectively through Bumar Labedy and PCO and Oto Melara and Selex ES, have already established a cooperation on the programme Rosomak for armoured vehicles.

The MoU paves the way to long-term industrial cooperation with important opportunities in sectors as helicopters, with the state-of-the-art multipurpose military helicopter AW149, offered by AgustaWestland's subsidiary PZL Swidnik SA within the tender for the supply for the Polish armed forces; Defence systems sector with Oto Melara latest solutions for military land vehicle applications; and space, satellite services of Telespazio for Earth observation telecommunication.

Giovanni De Gennaro, Chairman of Finmeccanica, declared: "The MoU is a key milestone for Finmeccanica's commitment to further strengthening the group's position in Poland, which we consider – alike Italy and the UK – one of the group's domestic countries". SP

QinetiQ to support Korean submarine development programme

QinetiQ Maritime has secured a contract from Daewoo Shipbuilding & Marine Engineering Co. Ltd (DSME), to support the development of the Republic of Korea submarine programme. QinetiQ will be conducting submarine free-running model tests, which will include building the submarine model and testing it in its Ocean Basin in Gosport, UK. QinetiQ will also be running deep water tests at a separate location.

Daewoo Shipbuilding & Marine Engineering Co. Ltd (DSME) was selected to build two 3,000-tonne class conventional submarines by the Korean Defense Acquisition Program Administration. The project, called Jangbogo-III, will have Korean shipyards build these next-generation submarines for the Korean Navy. SP

AgustaWestland and Russian Helicopters sign for a new helicopter

Russian Helicopters and AgustaWestland have signed a Heads of Agreement at the MAKS 2013 air show defining the the joint design and development programme for a new 2.5-tonne class single-engine helicopter. The agreement was signed by Daniele Romiti, CEO of AgustaWestland, and Russian Helicopters CEO Dmitry Petrov.

The preliminary assessment of the helicopter's technical design and commercial opportunities is expected to be completed in the next few months. The programme, first announced by the partners in summer 2012, is intended to be shared on a 50/50 basis, with the new helicopter being designed for the worldwide market and a wide range of applications.

Dmitry Petrov, CEO of Russian Helicopters, said: "This agreement is a new step in the mutually beneficial cooperation between our companies. Russian Helicopters as a global rotorcraft market player is actively involved in international projects on manufacturing localisation and the development of new helicopter models. Our cooperation with AgustaWestland is moving forward successfully and has become one of our key priorities."

Daniele Romiti, AgustaWestland CEO said: "This agreement with Russian Helicopters expands our successful partnership which started with the establishment of the joint venture HeliVert, for the local assembly of the best-selling AW139 model. We are delighted to be progressing to the next stage of this programme covering the design and development stages." SP

Anti-ship missile prototype first successful solo test flight

Adversaries' sophisticated air defence systems can make it difficult for current air- and surface-launched anti-ship missiles to hit their targets at long range. To engage specific enemy warships from beyond the reach of counter-fire systems, warfighters may require launching multiple missiles or employing overhead targeting assets such as radar-equipped planes or global positioning system (GPS) satellites—resources that may not always be available.

To help address these challenges, the Defense Advanced Research Projects Agency (DARPA) and the Office of Naval Research (ONR) are collaborating on the long range anti-ship missile (LRASM) programme which successfully launched its first prototype on August 27.

Designed for both surface and air launch, LRASM seeks to develop an autonomous, precision-guided anti-ship standoff missile based on the successful joint air-to-surface standoff missile extended range (JASSM-ER) system.

LRASM aims to incorporate sensors and systems to create a stealthy and survivable subsonic cruise missile with reduced dependence on intelligence, surveillance and reconnaissance (ISR) platforms, network links and GPS navigation in electronic warfare environments. The programme also focuses on precision lethality in the face of advanced countermeasures.

"This fully functional test is a significant step in providing the US Navy and US Air Force with a next-generation anti-ship missile capability," said Artie Mabbett, DARPA Program Manager for LRASM. "This test is the culmination of the five-year development and integration of advanced sensors in an all-up-round (AUR) missile. It also represents the first time we've integrated advanced sensors and demonstrated the entire system, resulting in performance that substantially exceeds our current capabilities."

DARPA designed the free-flight transition test (FFTT) demonstration to verify the missile's flight characteristics and assess sub-

system and sensor performance. Beyond the primary objectives of the free-flight transition, the test vehicle also detected, engaged and hit an unmanned 260-foot mobile ship target (MST) with an inert warhead.

A B-1 bomber from the 337th Test and Evaluation Squadron conducted the mission from Dyess AFB, Texas, to the Point Mugu Sea Test Range off the coast of southern California. Once in position, the B-1 released the LRASM, which followed a pre-planned route towards the target. Approximately halfway to its destination, the weapon switched to autonomous guidance, in which it autonomously detected the moving MST and guided itself to hit the desired location on the target. A F/A-18 fighter from the Air Test and Evaluation Squadron (VX) 31 in China Lake, California, followed the weapon during the flight.

Lockheed Martin Missiles and Fire Control (LMMFC) is the prime contractor for the demonstration of the LRASM weapon. BAE Systems' Information and Electronic Systems Integration division is the prime contractor for the design and delivery of LRASM's onboard sensor systems. SP

Unified Military Intelligence picture helps dispel the fog of war

Military operations depend upon the unimpeded flow of accurate and relevant information to support timely decisions related to battle planning and execution. To address these needs, numerous intelligence systems and technologies have been developed over the past 20 years, but each of these typically provides only a partial picture of the battlefield, and integrating the information has proven to be burdensome and inefficient.

DARPA's Insight programme aims to take defence intelligence, surveillance and reconnaissance (ISR) to the next level by creating the capability to meaningfully integrate disparate "stovepiped" source information into a unified picture of the battlefield. As DARPA's capstone ISR processing programme, Insight seeks to enable analysts to make sense of the huge volumes of intelligence-rich information available to them from existing sensors and data sources.

"We're addressing the tyranny of stovepipes," said Ben Cutler, DARPA programme manager leading the Insight programme. "Intelligence analysts currently use different systems for nearly every different data feed, and intelligence derived from these systems is not always readily understandable and accessible. Insight aims to create an adaptable, integrated system that augments human analysts' capabilities to collect information from all available sources, learn from it, and share important insights with the people who need it most—all in real time."

Improving real-time information sharing is a priority at the highest levels of the US military. "Defence intelligence must be able to provide timely and actionable intelligence across the entire threat spectrum," US Army Lt General Michael T. Flynn, Director of the Defense Intelligence Agency, testified before the US Senate Armed Services Committee in April 2013.

Insight would enable analysts to collaborate on the fly via an intuitive user interface that speeds comprehension of complex information through state-of-the-art data visualisation techniques. Under the hood, advanced automation and data fusion technologies would handle low-level analytical tasks and correlate incoming live data streams and forensic data. Insight's scalable, modular architecture promises to reduce cost and accelerate delivery of tailored capabilities readily adapted to meet evolving mission needs in any theatre of operation.

"Imagine PCs or smartphones without plug and play, without the rich, interactive environment we take for granted, without applications that share data and interact with each other," Cutler said. "That's how computers were until strong standards took hold. Our goal with Insight is to bring similar levels of capability and interoperability to ISR, with all the associated benefits to the defence mission." SP

PHOTOGRAPH: DARPA

Gunman goes on a killing rampage at Washington Naval Yard

At least 12 people were killed and nearly a dozen injured in a mass shooting at a secure military facility – Washington Navy Yard, recently. The US federal authorities said they believed the shooting was the act of a lone gunman, identified as Aaron Alexis, 34, who was working for a military subcontractor.

Civilian employees described a scene of confusion as shots erupted through the hallways of the Naval Sea Systems Command headquarters, on the banks of the Anacostia River a few kilometres from the White House and about a kilometre from the Capitol.

Officials said Alexis drove a rental car to the base and entered using his access as a contractor and shot an officer and one other person outside Building 197, the Sea Systems Command headquarters. Later he started aiming at employees having breakfast in an atrium.

The names of seven of the victims were released on September 16: Michael Arnold, 59; Sylvia Frasier, 53; Kathy Gaarde, 62; John Roger Johnson, 73; Frank Kohler, 50; Kenneth Bernard Proctor, 46; and Vishnu Pandit, 61. Officials said names of the other victims would be released after their families had been contacted. All of the victims were believed to be civilians or contractors. No active duty military personnel were killed, said Chief Cathy L. Lanier of Washington.

Three weapons were found on Alexis: an AR-15 assault rifle, a shotgun and a semi-automatic pistol. The navy yard is protected by a high wall, but someone with official access could have driven a car into the parking lot without having the trunk inspected. SP

Major security breach at Buckingham Palace, two arrested

Two men have been arrested after a trespassing and burglary incident at Buckingham Palace – the official residence of the British monarch – the most serious security breaches at the building in decades.

British authorities said the shocking break-in incident took place on Monday night in which at least one man climbed a wall and kicked open a door to gain entry to the high-security palace. The man evaded at least three layers of security to make his way into the palace in what appears to be the worst breach of its security since 1982 when Michael Fagan was arrested in the Queen's bedroom after she raised the alarm.

The palace is filled with magnificent paintings, sculpture and antique furniture. It is also the administrative centre for the British royal household. Police said the man was found "in an area currently open to the public during the day" and arrested for burglary, trespass and criminal damage.

They said a second man was arrested outside the palace for conspiracy to commit burglary following the incident. A spokesman for the Metropolitan Police said both men have now been bailed. SP

Intruder upstages Tony Abbott's victory speech in security breach

The man who identifies himself as Twiggy Palmrock was tackled from the stage after Tony Abbott's victory speech is a serial pest who has twice before gatecrashed private political events.

The 25-year-old University of Melbourne playwright Fregmonto Stokes, last November wandered on stage with another coal protester as Abbott addressed a Securing the Future conference. Stokes and Dominic O'Dwyer wandered on to stage in song as mining magnate character Twiggy and made-up young Liberal Michael Higgins-Beaumont at the November event at Melbourne University.

Abbott was unfazed and told the crowd it appeared university humour had not changed since he was a student. The duo also walked, unchallenged, into an invite-only Committee of Economic Development of Australia event at Melbourne's Hilton Hotel to disrupt an address by former Energy Minister Martin Ferguson.

And they were part of a group of 13 anti-coal activists who locked themselves onto the pillars of the Victorian parliament building last year. SP

PHOTOGRAPHS: Boston Herald, Wikipedia

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