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Vol: 2 Issue 2 ■ January 16-31 • 2012

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India's depleting submarine arm



Indian Navy has only 14 hunter-killer submarines. With delays in fresh induction, Indian Navy stands at the lowest capability when it comes to submarines. PAGE 5



Raytheon wins \$213 million for evolved SeaSparrow missile

Raytheon Company was awarded two contracts totalling \$212.8 million for the production of the evolved SeaSparrow Missile (ESSM), with an option for \$33 million in additional work.

The first contract from the US Navy NATO SeaSparrow Project Office (NSPO), as previously announced by the Department of Defense, is for the production of ESSMs through fiscal year 2014 and contains the option for further production. The agreement also provides NSPO consortium-member navies with miscellaneous spare parts, containers and test equipment.

The second contract is a two-year direct commercial sale. Raytheon will provide Mitsubishi Electric Corporation of Japan the components and assemblies necessary to manufacture and deliver ESSM weapons to the Japanese Ministry of Defense. Licensed production will take place at MELCO's facility in Japan.



"ESSM is the foundation of our allies' anti-ship missile defence," said Ed Roesly, ESSM Programme Director for Raytheon Missile Systems. "Raytheon, along with our international team of 18 partner companies, has advanced this world-class system to a point of prominence in ship self-defence. We continue to make missile improvements to outpace the threat."

ESSM defends the battlespace by delivering ship self-defence firepower against high-G manoeuvring anti-ship cruise missiles as well as surface and low-velocity air threats. ESSM consortium countries include Australia, Canada, Denmark, Germany, Greece, the Netherlands, Norway, Spain, Turkey and the United States. Japan and UAE are also ESSM customer nations.

As a tail-controlled missile, ESSM uses enhancements to its guidance system to take advantage of improved seeker sensitivity, increased propulsion and greater weapon accuracy. These features enable ESSM to arrive at the intercept point with more end-game speed and agility to counter the threat. **SP**



Cover:

Indian Navy has only 14 hunter-killer submarines. With delays in fresh induction, Indian Navy stands at the lowest capability when it comes to submarines.

INS Sindhuvijay, a Sindhughosh class submarine, in the picture.

Cover image: Wikipedia

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ANNUAL SUBSCRIPTION

Inland: ₹1,150 • Foreign: US\$ 325

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Army Chief is symbol of military: Need to respect that

The Indian Army, unlike the one in neighbouring Pakistan, is a highly disciplined and dedicated force. When such is the case, isn't it high time the political/bureaucratic leadership not belittle the Indian Army in the controversy surrounding the age of the Army Chief, General V.K. Singh.

The case is crystal clear. The Adjutant General Branch, which is the official record keeper of age of officers, has on record May 1951 as the Army Chief's date of birth, while the Military Secretary's Branch has May 1950. Despite the Army Chief's plea that the MS Branch should reconcile the age to that of Adjutant General records, the government has come up with specious arguments. Whether the Army Chief should go to the courts or not is a different matter altogether. But the manner in which the matter has been dealt with smacks of government authoritarianism and showing scant respect to the Military.

As Lt General (Retd) P.C. Katoch in his fortnightly column rightly mentions that the Service Chief is the symbol of military and the way the issue has been dragged on to the streets, so to say, is trying to 'politicise the military'. Though this is unlikely to happen in India with such good military traditions, however, the political leadership should not indulge in skulduggery. It is fervently hoped that the issue is resolved without getting to the courts.

Moving from the controversy, we see the outlook for defence contracting for 2012 to be extremely bright with many projects coming to fruition, beginning with the medium multi-role combat aircraft (MMRCA). There are many contracts that will see the light of the day, thus putting in top gear the modernisation plans of the armed forces. Having said that, there is still a worrisome point and that is to do with the acquisition of submarines for the Indian Navy. In this issue, we have focused on how the submarine arm of the Navy is depleting. Presently, there are only 14 hunter-killer submarines and considering the threat scenarios, they are highly inadequate.

While acquisitions from overseas are most welcome, there needs to be concerted efforts to indigenise defence production

to scales that are not just viable but also qualitatively superior. In another column, Lt General (Retd) Katoch mentions how China has been able to 'reverse engineer' some of the technologies and arm PLA to the teeth. There has to be serious rethinking on the part of the defence research organisations on the priorities and then pressure the government to allot funds accordingly.

In 2012 and in the immediate future, there are going to be many acquisitions, calling for offsets, and unless the government, the industry and also the defence sector get their act together, we will end up with a lost opportunity. The world is looking at India as it is emerging not just as a giant economic power, but also militarily. It is now for the leadership to give proper direction, starting with the issue of the age of the Army Chief, though it may be a minor issue.

Jayant Baranwal
Publisher and Editor-in-Chief

[By SP's Special Correspondent]

MICA missile for upgraded Mirage 2000



After getting stuck at the Finance Ministry for months, the weapons package for India's upgraded Mirage 2000s was finally cleared last week, with the Cabinet Committee on Security (CCS) giving its stamp of approval to a \$1.2 billion deal for 490 MBDA MICA IR/radar-guided beyond visual range air-to-air missiles (BVRAAM). The MICA will be the primary air superiority stand-off weapon in the IAF Mirage's new avatar. With a stated operational range anywhere between 500 metres and 80 km, the MICA has not only been recognised by the IAF as one of the most versatile munitions in the market today, but also one of the costliest. While MBDA has refused to confirm numbers of price, figures in the public domain would suggest that India will be buying the MICAs at over \$2 million a piece. In December, two IAF Mirage 2000s proceeded to France to begin the \$2.2 billion upgrade programme being conducted by Dassault and Thales. The remaining 49 aircraft will be upgraded by HAL in Bangalore with transferred technology. Like the Mirage upgrade deal, the MICA deal with MBDA has an offsets component of 30 per cent that the French company will have to plough back into India. Sources reveal this could be partly through the Bharat Dynamics Ltd, which is still to absorb advanced technology in a meaningful way. MBDA has also been pitching the VL (vertically launched) MICA to the Indian Navy for the ship-borne air defence role. On the Mirage 2000, the MICA takes over the roles so far played by the Matra Magic II short range fire and forget IR-guided missile and the active radar guided Matra Super 530D medium range missile. **SP**

Israel signs \$1.1-billion deal with India

Israel Aerospace Industries (IAI) has notified the Tel Aviv stock exchange of a \$1.1-billion defence contract with an Asian customer for "intelligence gathering systems, anti-missile defence



platforms, unmanned aerial vehicles and other platforms". While neither side is willing to confirm, it is well known that this is a deal with the Indian Government (Indian External Affairs Minister S.M. Krishna visited Israel shortly after the notification) for unspecified numbers of IAI Aerostats sporting the EL/M-2083 long range air defence radar, Barak point defence systems for the Navy, surveillance UAVs to augment the existing all-Israeli fleet and certain other systems. It may be remembered that India is currently processing a solicited IAI proposal to supply two more Phalcon AWACS systems. India-Israel defence ties have grown from strength to strength in the last decade, currently underscored by three major joint-development efforts for a naval rotary UAV (NRUAV), medium range surface to air missile (MR-SAM) system and the LR-SAM (Barak 8 NG). Apart from several billions of dollars worth of equipment for the three services, a raft of proposed equipment is currently being considered by the Indian Government. This includes Spike man-portable anti-armour systems, Delilah-II anti-radiation loitering munitions, Gabriel Mk.3 anti-shipping missile, submerged launch vehicle, bomb guidance kits and sundry avionics packages. **SP**

NAL struggles to resume flight test of Saras utility aircraft

After almost three years without a single flight since the March 2009 crash of a prototype in which three IAF test crew were killed, the beleaguered Saras light multi-role transport aircraft programme is hoping to take to the air again shortly. The National Aerospace Laboratories (NAL) is engaged in converting the first prototype Saras to the PT-2 (the aircraft which crashed) standard, with higher powered engines PW PT6-67A, new engine stub wing and nacelle, landing gear actuators, and minor improvements to the flight control systems and flaps. The agency is also in the process of completing a production standard aircraft, which features an all-up weight lower by 500 kg using advanced composite components specifically in wings, empennage, pressure bulkhead, fuselage top skin, and a weight-optimized fuselage structure. Weight had been one of the chief concerns of the Saras platform during early trials. According to sources, the production standard Saras will be fully equipped with "a digital cockpit, advanced avionics and flight control systems, a fully digital autopilot, an engine instruments and crew alerting system and an all-moving horizontal tail". If everything goes as planned, and the first prototype takes to the air shortly, the production standard aircraft should fly by November-December this year, with expected certification by end 2013 under FAR-23 regulations. A special review committee looking into the programme has recommended that NAL begin building a second production standard aircraft to speed up the certification effort. The IAF has a standing indent for 15 aircraft that it intends to use for light communication and logistics duties. **SP**



[By SP's Special Correspondent]

India's depleting submarine arm

The Indian Navy's submarine arm is in a precarious situation. As the Navy labours to keep its operational fleet seaworthy and fighting fit, the numbers game is beginning to get worrisome. At present the Navy has 10 Soviet-vintage 877EKM Kilo class and four German HDW Type 209 diesel-electric hunter-killer submarines, though only a maximum of eight are operational at any given time. With major delays in the Project 75 line building six Scorpène submarines, and the effort to freeze requirements for the follow-on Project 75I programme nowhere near completion, internal projections within the Navy paint a worrying picture.

The six DCN designed Scorpène submarines being built under licence at the Mazagon Dock Limited are already three years behind schedule, and will begin deliveries only in 2015, completing deliveries in 2020. With negotiations on to equip Scorpene No. 5 and 6 with air independent propulsion modules for submerged longevity could involve further delays unless things fall into place quickly. Major teething troubles, mostly pertaining to the sourcing of local components and aggregates, meant that the licence build programme has had a bumpy ride so far. Nevertheless, the Navy is already thinking in terms of exploiting the Scorpène production line to build at least three more of the type, for a total fleet strength of nine Scorpène submarines. The navy feels this tie in with force level worries, and will also provide economy to the build programme as the government gets it act together on the follow-on programme.

The follow-on Project 75I (India) programme, which was accorded financial sanction in August 2010 by the Defence Ministry, is still to get off the ground, with the Navy still fine-tuning a request for proposal based on feedback received in response to a request for information sent out a month later in September 2010. Sources reveal that the next-generation conventional licence production line is proving to be a huge challenge, and that once the tender is ready to be floated, it will be one of the most rigorous ever. Submarines likely to compete for the massive contract, which could once again be expanded to nine submarines, instead of the stipulated six, include the CKB Rubin Amur 1650, the Fincantieri-Rubin S1000, Kockums Archer class, Navantia S-80 and HDW Type 214. India's submarine building plan had laid down that at least one of the two production lines needed to be of Western technology, a clause inserted to offset Russian influence in shipbuilding at the time. While it was once almost a given fact that the follow-on line would go to the Russians, it is no longer definite.

India's indigenous submarine programme is a highly skewed one. It remains the only country that has begun by developing and building the most complex type – a large nuclear powered ballistic missile boat for strategic deterrence, choosing to procure conventional attack submarines only through the licence-build route. In December 2011, Chief of the Naval Staff, Admiral Nirmal Verma said that India's under-trial boomer Arihant would sail out of its Visakhapatnam harbour into open waters for extensive sea trials by June this year. The space vacated by the submarine at the Shipbuilding Centre there will quickly be

filled by a second hull for the next Arihant class boat. The Navy expects the first Arihant to enter service no later than 2013, though this may still be wishful thinking. Either way, the Arihant class can't be counted among the country's submarine arsenal per se, since its role is strategic nuclear deterrence and not sea denial, anti-ship/submarine ops, intelligence gathering, mine laying or extended patrol. However, a few weeks from now, India will welcome the INS Chakra, an 8,000-tonne Russian Akula-II class nuclear-powered attack submarine (SSN, formerly K-152 Nerpa) into service on a 10-year lease. While the submarine has been leased ostensibly as a test and training platform for sustained operations at sea, the Chakra will be capable of mounting extended patrol/intelligence gathering operations as well as anti-ship/submarine missions if necessary. In 2009, an internal study by the tri-services HQ Integrated Defence Staff noted that



HDA class 209 submarine INS Shankush, one of two of the types that was on display

“The Government of India may consider expediting P 75 (I) through urgent issue of RFP so as to initiate indigenous production of a second line of SSK.” The same study urges the Navy and government to proceed with development of a nuclear-powered attack submarine, with an aim to launch a first type by 2020 – there are no indications that the the government is engaged in any such programme yet.

The same study also noted that “The submarine arm of the nation has never been poised in such a vulnerable situation with regard to operational availability and strength. While infrastructure has been built up for adequate force levels, and training continues with legacy procedures, the force is currently at a highly precarious state, demanding urgent attention of the MoD/government. It is a matter of deep concern that in the next five years, India will have its lowest submarine capability in the history of the submarine arm.”

The Navy has put up a brave face and is making every effort to increase the availability of its 14 submarines, a monumental task given the constraints at both Mumbai and Visakhapatnam. **SP**

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2012: A busy year for Indian defence contracting



Dassault Rafale



Eurofighter Typhoon

[By SP's Special Correspondent]

The coming year promises to be an exciting one for Indian defence. 2012 will see India sign military hardware deals adding up to a potential value greater than any previous year in its long history of international defence contracting. Across the three services, from rudimentary equipment to advanced network-centric backbone systems, the coming year will see the Indian armed forces and Defence Ministry contract across the spectrum. A whole raft of long-pending contracts will see conclusion, while delayed acquisition programmes will finally get off the ground. In addition, several research and development programmes will come to fruition, with acceptance and induction into the armed forces. Several indigenously built weapon platforms will enter service with the armed forces, significantly upping the self-reliance index.

MMRCA to set the tone

The year is expected to begin on a high note in January.

The most keenly anticipated competition is without doubt the Indian Air Force's medium multi-role combat aircraft (MMRCA) deal, valued at roughly \$11 billion, the country's largest single defence purchase yet. The year is in fact expected to kick-off on a dramatic note, with the winner of this decade-long competition being announced in the third week of January, with contract signature before the financial year is complete in March 2012. The contract will bring to a close one of the longest and most dramatic competitions in the history of aerospace contracting.

A prominent entrant to the Indian military arsenal is INS Chakra, the Akula-II class nuclear propelled hunter killer submarine that Indian Navy has taken on lease for a decade. The boat is expected to be sailed down to Visakhapatnam later this month by its Indian crew.

Agni-pariksha?

Also in January, India's most ambitious strategic weapon, the Agni-V is expected to undergo its debut test from the Integrated Test Range (ITR) off India's east coast. The weapon which was scheduled for a test in December had to undergo last-minute software updates for its debut test this month.

Not far away, in Bangalore, by the end of January, India's first carrier-borne fighter jet, the LCA-Navy is also expected to take off for the first time. Problems with weight and certain configurations have delayed the aircraft's debut flight by over a year, though the team is now confident of a first flight. A first attempt will be made in end January.

RSH & other big-ticket deals

But the rest of 2012 promises to be no less action-packed.

Aircraft contracts that are scheduled to be awarded later in 2012 include the billion-dollar deal for 197 reconnaissance and surveillance helicopters (RSH) for the Army and IAF, currently a toss-up between the Eurocopter AS550 Fennec and the Ka-226 Sergei, a contract to Boeing for 22 AH-64D Block III Apache Longbow assault helicopters, an undecided award for 12 heavy-lift helicopters (a fight between the Boeing CH-47 Chinook and Mil Russia's Mi-26 T2).

The Indian Government will also soon conclude a \$1.2-billion follow-on deal for six more Lockheed-Martin C-130J Super Hercules special mission transports to augment the six already purchased.

A crucial contract to be awarded before March 2012 is a \$565-million deal for 75 basic trainer aircraft to Swiss airplane maker Pilatus for the PC-7 Mk.2. Delayed following a protest by Korean Aerospace Industries (KAI), the IAF is keen to see the contract concluded at the earliest, considering the compounded effect it is having on the training regimen at the Air Force Academy.





Navy's major asset build-up

The Indian Navy will be at the forefront of issuing requests for proposal for crucial asset acquisition programmes. These include a tender for the much-delayed Project 75 India for a second line of diesel-electric hunter-killer submarines that will be built in India alongside the delayed Scorpene line.

Apart from awarding a deal for four more P-8I Neptune long range maritime reconnaissance aircraft to Boeing, the navy will also conduct trials for six-eight medium-range maritime reconnaissance (MRMR) and anti-surface warfare aircraft, a competition expected to be fought by contenders that include a de-rated version of the Boeing P-8I, Saab 2000 MPA, Dassault's Falcon 900 MPA, Alenia Aeronautica ATR-72 MP and EADS CASA CN-235 MPA.

Following the impending commissioning of INS Sahyadri, the third in the Project 17 Shivalik class stealth frigate series, the navy will make an even more significant induction in March 2012: the first indigenously-built Project 15A guided missile destroyer INS Kolkata under construction at the Mazagon Dock in Mumbai. A few months later, in June 2012, the navy will commission into service INS Kamorta, its first indigenously built Project 28 anti-submarine warfare corvette, currently under final construction at the Garden Reach Shipbuilders & Engineers in Kolkata. These two inductions will ramp up the Navy's



Pilatus PC-7 Mk.2 trainer



C-130J Super Hercules

self-reliance index in a big way. The Shivalik class of frigates have already elicited international interest.

Finally, INS Vikramaditya (ex-Admiral Gorshkov)

If all goes according to plan, the year 2012 will be rounded off by one of the most crucial naval purchases. The INS Vikramaditya (ex-Admiral Gorshkov) STOBAR aircraft carrier is to be delivered to the Indian Navy by Russia in December 2012, many years later than promised. Once it arrives, the Vikramaditya will be based at INS Kadamba, the massive new naval base at Karwar. In Kochi, the indigenous aircraft carrier Vikrant will enter its crucial second phase of construction, which officially aims at launch by the end of 2012, though this is an ambitious target.

If Navy chief Admiral Nirmal Verma's wishes come true, 2012 will also see India's first nuclear-propelled ballistic missile submarine (SSBN) Arihant (designated S-2 in the navy) begin sea trials in the Bay of Bengal. While the pressure water reactor is yet to go critical, the boat is understood

to be ready in all other respects to begin a rigorous regimen of trials where it will for the first time leave the Site Brave at the Shipbuilding Centre in Visakhapatnam.

Before March 2012, the Army will begin receiving its first weaponised Dhruv helicopters (Dhruv-WSI Mk.3), platforms armed with guns, anti-armour and air-combat weapons. **SP**

19 years of Corps of Army Air Defence

The Corps of Army Air Defence (AAD) celebrated its 19th anniversary on January 10. The Corps, which has sadly been in a state of chronic neglect, is finally on the threshold of deep transformation, both in terms of doctrine and equipment. Starting at the bottom, its oldest equipment, the Soviet-era ZU-23-MM guns are currently being considered for an upgrade, following a decision taken by the Army in December 2009. The guns, which began inductions over three decades ago, are intended to be mated with a new electro-optical fire control system, electro-mechanical gun drives and new power supply for all the gun's systems. The effort is proving to be a challenge

considering how old the guns actually are. Concurrently, a month after kick-starting the ZU-23-MM-2B upgrade effort, the Army also announced that it was in the market to identify successors to the ZU-23 as well as the Swedish Bofors L-70 anti-aircraft autocannon. A recent internal assessment pegged the level of obsolescence in the corps at a worrying 70 per cent, unacceptable for such a crucial combat arm. The Corps is also preparing to receive a slew of new missile systems, including two regiments of the indigenous Akash SAM, quick reaction SAMs and man-portable air defence systems to replace the in-service Igla. The Corps's Shilka anti-aircraft vehicles are also to be upgraded. In tandem, the Corps also stands to receive new sensors in the form of 3D radars, easily transportable low-level radars and specially configured radars for high altitude areas. **SP**



ZU-23MM-2B at Siachen

—SP's Special Correspondent



Navistar Defense to provide \$880 million in upgrades for MRAP vehicle fleet

Navistar Defense recently received a \$880 million delivery order to upgrade 2,717 International MaxxPro Mine Resistant Ambush Protected (MRAP) vehicles. The order from the US Marine Corps System Command calls for MaxxPro units to be upgraded with the company's rolling chassis solution. The award also includes engineering changes, supplies and services.

"As defence budgets are being reduced, it is imperative that we continue to develop economical solutions that repurpose assets while also working to ensure warfighters have access to emerging technologies and capabilities," said Archie Massicotte, President, Navistar Defense. "Our rolling chassis solution allows us to leverage our unique vehicle design and replace an older chassis with a new, highly mobile independent suspension chassis. During all this we keep the armoured capsule intact while creating commonality through the entire MaxxPro fleet."

Under the delivery order, MaxxPro vehicles will be retrofitted with new rolling chassis. This enhancement further improves the vehicle's off-road capability with the addition of the DXM™ independent suspension, a MaxxForce 9.3 engine, 570 amp alternator and driveline.



Work will begin at the company's West Point, Mississippi, assembly facility in January 2012 and is scheduled for completion in October 2013.

In addition to rolling chassis, Navistar is also considering new vehicle options. In October, the company unveiled its new International Saratoga light tactical vehicle, which Navistar has been testing for the last year at its own expense. **SP**



Austal launches second littoral combat ship

On January 10, 2012, Austal's Mobile, Alabama shipyard completed the launch of the second 127-metre Independence-Variant Littoral Combat Ship, Coronado (LCS 4).

The roll-out marked Austal's second use of an innovative self-propelled modular transporter system to transfer the ship from the yard's final assembly bay onto a drydock for launch. This system was first used a few months ago, in September 2011, to successfully launch USNS Spearhead (JHSV 1).

Austal and the US Navy collaborated in the design of a new set of keel stands to support the ship during construction and facilitate the transition from the assembly bay. Austal's own self-

propelled modular transporters (SPMTs) supplemented those of Berard Transportation of New Iberia, Louisiana, to provide a total of 3,800-tonne lift capacity, on some 104 axle lines.

The 127-metre Austal trimaran seaframe is the platform for the LCS's mission and weapon systems. This seaframe provides superior seakeeping and aviation as a result of its long, slender central hull and smaller side hulls ("amahs"). The trimaran hullform provides a large internal mission deck with a high payload carrying capacity. Located above the mission bay is the enormous flight deck capable of conducting dual H-60 helicopter operations. The vertical location of the flight deck on the trimaran hull form provides the highest flight deck elevation on a combatant ship other than a major amphibious vessel or aircraft carrier. **SP**

Raytheon delivers first upgraded Patriot radar to Kuwait

Raytheon completed its first configuration-3 Patriot radar upgrade for Kuwait. This is the first of six radar modernisation deliveries due under contract to the US Army Aviation and Missile Command.

"These upgrades to the latest Patriot configuration will boost Kuwait's capability to defend itself against tactical ballistic missile attacks. They also highlight the continuing efforts by Kuwait Air Defense to maintain Patriot readiness and effectiveness to counter evolving regional threats," said Sanjay Kapoor, Vice President for Integrated Air and Missile Defense at Raytheon's Integrated Defense Systems (IDS) business. "We continue to modernise the Patriot system and are committed to providing our partners with increased system reliability and reduced life cycle costs." **SP**





RUAG vehicles for Swiss Armed Forces

RUAG, a technology partner of the Swiss Armed Forces, teamed up with systems specialist Rheinmetall to manufacture and market the armoured engineer and mine clearance vehicle. The vehicle represents a technological world first based on a Leopard-2 chassis. Alongside its military capability, it can be equipped to provide valuable support in the event of disasters or for civil-military collaboration.

Delivery of the units to the Swiss Armed Forces was delayed to iron out problems with the power shovel hydraulics that surfaced during endurance tests under extreme military operational conditions. The system was optimised jointly by Rheinmetall and RUAG and successfully subjected to a battery of tests involving other components.

The armoured engineer and mine clearance vehicle features a powerful hinged-arm excavator with a quick-release coupling allowing the excavator bucket to be exchanged for a number of other engineering devices including a bulldozer system with innovative cutting and tilt angle settings and a double-winch system consisting of two 9-tonne capstan winches. If the need arises, the dozer blade can be swapped for a full-width mine plough. This turns the vehicle into a high performance mine-field-breaching system that is also capable of clearing field fortifications and installing or clearing obstacles and barriers. **SP**

General Dynamics to support Trident II systems

The US Navy recently awarded General Dynamics Advanced Information Systems a \$95.9 million contract for production and deployed-systems support of US and UK Trident II submarine strategic weapons systems, including the SSBN fire-control system, the SSGN attack weapon-control system, the US SSBN-replacement and the UK SSBN-successor common missile compartment.

The contract has a maximum value of \$225 million if all options are exercised. General Dynamics Advanced Information Systems is a business unit of General Dynamics.

The Trident submarine force is the backbone of the US and UK navies' nuclear deterrence strategies. To ensure this capability remains at peak readiness and safety, the US Navy undertook the D5 life extension programme in 2002 to replace ageing components of the Trident II missile. **SP**

Lockheed Martin gets UAE contract for THAAD

Lockheed Martin received an undefinitised contract totaling \$1.96 billion to produce the terminal high altitude area defence (THAAD) weapon system for the Missile Defense Agency and the United Arab Emirates.

The contract is the first foreign military sale (FMS) of the THAAD weapon system and includes the production of two THAAD weapon systems and additional maintenance and support equipment.

"Lockheed Martin is pleased the US Government and the United Arab Emirates have reached an agreement on a path forward for the first foreign military sale of the THAAD Weapon System," said Tom McGrath, Vice President and Programme Manager for THAAD at Lockheed Martin. **SP**

Daewoo wins submarine contract for Indonesian Navy

Daewoo Shipbuilding and Marine Engineering signed a contract to build three submarines for the Indonesian navy. The contract calls for DSME to build three 1,400-tonne submarines for the Indonesian navy for a total of \$1.1 billion, making the contract the largest single defence contract to be awarded to a Korean firm.

The vessels will be of 61.3 metres in length, and will be capable of carrying a crew of 40 sailors. The submarines will be fitted with eight weapon tubes for torpedoes and other weapons. The company plans to complete the contract by the first half of 2018. **SP**

General Dynamics awarded \$60 million for Abrams Tank upgrades

The US Army TACOM Lifecycle Management Command has awarded General Dynamics Land Systems \$60 million under an existing contract to continue upgrading M1A1 tanks to the M1A2 systems enhancement package (SEP) V2 configuration. General Dynamics Land Systems is a business unit of General Dynamics.

The most technologically advanced digital tank, the M1A2 SEP V2 includes improved colour displays, day and night thermal sights, commander remote operated weapon station (CROWS II), a thermal management system (TMS) and a tank-infantry phone. The M1A2 SEP V2 maximises the fighting ability of the tank on today's battlefield while preparing the platform for tomorrow's challenges.

Work is expected to be completed by June of 2013. **SP**





Raytheon buoyant about Indian market

Eyeing for a greater pie of the growing Indian defence market, the US defence company Raytheon is in talks with many Indian public and private sector companies for possible partnerships in its various programmes—missiles, network-centric systems, solutions for homeland and cyber security, coastal surveillance, etc.

Addressing a press conference ahead of the Army Day in New Delhi, the company officials briefed the media about the different programmes they have on offer for the Indian Army. The company is trying to broaden its footprint in India with the sale of its Air-to-Air Stringer, Javelin, Excalibur, Talon laser guided rocket, Serpent, etc., as well as its tactical radios for Indian defence forces. Raytheon's air-to-air version of its famous Stinger missile is a part of the weapons package with the AH-64D Block III Apache Longbow proposed for the 22 attack helicopter deal of the Indian Air Force.

The officials though optimistic about partnerships with Indian private sector for homeland and cyber security solutions, denied reports of Raytheon's much talked about partnership with Reliance and termed it as a 'rumour'. On being asked by Jayant Baranwal, Editor-in-Chief, *SP's M.A.I.*, to elaborate on possible Indian partnerships in India and the potential private industry partners, the officials said, "Raytheon is looking at small and medium enterprises (SMEs), defence public sector undertakings and big private sector companies as well. The Indian private sector's role in the civil domain is world class, but the tricky thing is to bring them into the defence sector. We need to fill in the gaps." The company has already tied up with Precision Electronics to jointly develop communication technologies for military and civil use.



William L. Blair

William L. Blair, President, Raytheon India, informed that the company has developed a vehicle-launched version of the Javelin anti-tank guided missile and is in talks with Tata Motors for developing it to meet the Indian requirements.

Brad Barnard, Senior Manager, International Business and Strategy for Raytheon Missiles System (RMS) informed that the Raytheon's Serpent missile, which is ideal for India's military and paramilitary requirements, will be demonstrated at Defexpo 2012. He further informed that the RMS has responded to a request for information (RFI) for 120mm mortar terminally guided munitions and is looking for a potential partner in India.

Replying to another query by Jayant Baranwal on Raytheon's strength over its European and Israeli competitors in the Indian Army's battlefield management system (BMS), the officials said that situational awareness is a crucial factor. "Our potential digital radio capability without GPS suits well with BMS. Lack of dependency on infrastructure and greater situational awareness gives us an edge over our competitors."

With regard to the US Government's limitations on transfer of certain technologies to India, the company said that the company has had many successful transfer of technology (ToT) programmes across the globe under the US guidelines, and is optimistic about India as well.

"In India, we need to prove by winning over some key programmes. We know we need to indigenise, but we will do that with the support of the US Government."

The company is also in talks with Indian companies for possible partnership for Excalibur, a precision-guided, long-range artillery projectile. "We have identified the core capability in India and we hope to finalise the partnership soon," said Barnard. **SP**

—Sucheta Das Mohapatra

Nexter Munitions export strategy

The announced cuts in defence budgets in Europe and the increased competition in key weapons markets have spurred Nexter Munitions to develop a proactive export strategy. The company plans to double its export market share within the next five years. This represents 20 per cent of its sales in 2011 and 45 per cent of the current order book.

"Multi-year orders provide a favourable framework for ensuring the bedrock of activity and long-term view we need to engage in ambitious projects. The project for investment in a robotised facility for machining and belting of ammunition rounds for the CAESAR artillery system, Nexter Systems' flagship export product was launched within this framework in September 2010."

This facility, which incorporates the latest technological innovations, will allow Nexter Munitions to increase its competitiveness, reactivity and independence. It will improve Nexter Munitions' market position in manufacturing flare and smoke

ordnance in the 155mm artillery round range, ordered by the French Army under a multi-year contract. It will allow our productions to be relocated while maintaining domestic jobs. **SP**

BAE ships for Brazilian Navy

Hampshire-based BAE Systems has signed a £133 million deal to supply ships to the Brazilian Navy for the first time. It will supply three 90-metre ocean patrol vessels, originally built for the government of Trinidad & Tobago, for maritime security roles.

The first two ships will be delivered in 2012 and the third will follow in early 2013. The contract also contains a manufacturing licence for similar class ships to be built in Brazil.

Andrew Davies, Managing Director of BAE Systems' Maritime business, said: "This is a significant step forward in our relationship with Brazil. The ocean patrol vessels are highly capable ships and I am sure they will be a tremendous asset to the Brazilian Navy."

"We are looking forward to working together and hope this will be the start of a long-term partnership with Brazil in the maritime sector." **SP**





LT GENERAL (RETD)
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Taming the military any which way

As Government rejected the statutory complaint of the Army Chief, TV debates went live. A bureaucrat talked of 30 to 40 years of good civil-military relations forgetting 1962 and the manner in which Field Marshal Sam Manekshaw was treated when alive and post demise. Speakers harped on ethics and values – one who still serving went to court and fought pettily for the post of presidentshipship of the Delhi Gymkhana Club, while the other's bank account remains sealed under a Citibank fraud. This case is legally watertight in favour of the Army Chief. Impression created of him recently craving for an additional year is grossly untrue. Mischief originated in the Military Secretary's (MS) Branch (which is no authority for age) 36 years after commissioning and he has been representing for 'reconciliation' of his birth date ever since. The Adjutant General's (AG) Branch (sole authority for age of officers) has throughout maintained his birth date as May 1951. What more proof of mischief is required when the Ministry of Defence (MoD) directs MS Branch to undertake an inquiry into the issue in conjunction AG's Branch, the inquiry is not held and MoD rejects the petition for 'reconciliation of age', describing it a petition for 'change of date of birth', citing findings of the inquiry that was never held.

The government knows it has done a wrong, advertent or inadvertent, but is scared to admit it. The bureaucratic role stands obfuscated as the issue portrayed is Army Chief versus the Defence Minister. The political interlocutor kept singing lullabies, exhorting patience till December 29, when courts shut down for the year. Next day, the statutory complaint is rejected, the Attorney General having changed recommendations twice. The Law Minister says rules are rules – that 'change of date of birth' can only be taken up within three years of service without clarifying how this applies to the Army Chief who has never asked for change of date of birth. Should the case go to court, efforts can be expected to delay the verdict beyond May 31, 2012

– MoD purported date of his retirement. On first hearing of PIL filed on the same issue, judge heading the bench says he knows the Army Chief and needs to be taken off. The next hearing scheduled January 20 may find a similar reason or even not admit the PIL on plea it has no bearing on "public interest", ignoring the military, veterans and public at large waiting for a just ending. Not admitting the PIL will be another shameful day for India.

If Parliament symbolises democratic India, a Service Chief is the symbol of the military. If government doubted integrity of General V.K. Singh, why was he appointed Chief? Where Supreme Court has to direct Delhi citizens to wear seat belts and helmets, it would only be appropriate for the esteemed court to take

suo moto notice of this case, summon both parties and give expeditious verdict. It must intervene, noting the attack being mounted on the military that will have far-reaching repercussions. Concerned Military Secretary should be summoned along with concerned MoD official and asked to produce the report of the inquiry ordered by MoD on the issue. ETV investigators have gone public in unveiling murky dealings including influence of contractors, land and arms mafias – something that had also emerged when Lt



General H.S. Panag (another impeccably upright officer) was unceremoniously shunted out from Northern Command in 2008. Some say General V.K. Singh going to court will set precedence. Conversely, if he does not, then too he sets precedence of accepting deceitful political skullduggery as a Service Chief. This is not a case of an apolitical military going political but deliberate politicisation of an apolitical military. General V.K. Singh clarifies the issue all along has been of honour and integrity. The Home Minister brought on TV (who has nothing to do with the issue) skirts these and talks of not knowing any vested interests. Can the Supreme Court avert this shame to the nation? **SP**

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

If Parliament symbolises democratic India, a Service Chief is the symbol of the Military. If Government doubted integrity of General V.K. Singh, why was he appointed Chief?



NHI celebrates delivery of the 100th NH90

NHI has delivered the 100th NH90 helicopter. This helicopter is a NH90 TTH (tactical transport) variant, and was delivered to the Italian army on January 3, 2011.

The NH90 is already deployed and operational in several countries, replacing several types of previous-generation helicopters for utility, transport or maritime missions. **SP**



US and Saudi sign \$30 billion sale

Boeing Chairman, President and CEO Jim McNerney has welcomed the announcement by the Kingdom of Saudi Arabia that it has reached an agreement to purchase from the US Government 84 new Boeing F-15 fighter aircraft and to upgrade 70 of its existing F-15s.

"For Boeing, this agreement represents the continuation of an enduring partnership between the company and the Kingdom that dates back to 1945 when President Franklin D. Roosevelt presented a DC-3 Dakota airplane to King Abdulaziz Al-Saud, the founder of the Kingdom of Saudi Arabia," said McNerney. "We appreciate the efforts of the Obama Administration and the trust of King Abdullah's government in finalising the agreement, which will support tens of thousands of American jobs and help the Kingdom enhance its defence capabilities and diversify its workforce."

Saudi Arabia is one of Boeing's valued customers operating a fleet of Boeing F-15s, Apache helicopters, AWACS, and special mission aircraft. "Boeing is privileged to support the important US/Saudi bilateral relationship, and we are pleased Saudi Arabia has chosen the proven, state-of-the-art capabilities of our F-15 and rotorcraft platforms," said McNerney. "Boeing views Saudi Arabia as a market with great potential and has made it a prior-

ity to invest in Saudi Arabia's aviation industry while working to strengthen local technical and vocational training programmes and institutions."

The signing of the letter of offer and acceptance between the US Government and Saudi Arabia on the F-15 is the last official step toward completing an overall sale announced in late 2010 for 84 new and 70 upgraded F-15s.

The US Government has also offered Saudi Arabia 70 new AH-64 Apache strike helicopters and 36 AH-6i helicopters, plus support and training. All the LOAs together will total approximately \$24 billion in Boeing sales. **SP**

Longbow receives order for radar systems

The Longbow LLC, a joint venture of Lockheed Martin and Northrop Grumman Corporation, received a \$181 million contract from the US Army for AH-64D Apache Block III Longbow systems.

The contract includes the first international purchase of the Block III Longbow fire control radar (FCR) by Taiwan, which will receive 15 Block III Longbow FCR systems.

Longbow LLC will also produce 18 radar electronic units (REU), 14 unmanned aerial system tactical common data link assembly (UTA) systems and spares to equip the US Army's new fleet of Block III Apaches. **SP**

Turkey to buy F-35

Turkey has officially decided to purchase Lockheed Martin's F-35 fighter jets. As a member of the international F-35 consortium, this was the country's first official expression of commitment in buying the aircraft.

Turkey's top decision-making body has paved the way for Turkey's formal participation in a US-led programme for the production of next-generation F-35 Joint Strike Fighter Lightning II fighter aircraft.

SSM and Lockheed Martin, the plane's main manufacturer, now are expected to sign a formal document for the sale of the first two aircraft. This decision enables Turkey to begin the reception of the aircraft in 2015. **SP**



PHOTOGRAPHS: NHI Industries, def.gov



A-29 Super Tucano wins defence contract in US

The US Air Force announced that it has selected the A-29 Super Tucano, produced by Embraer Defense and Security, for the light air support (LAS) programme. The aircraft will be supplied in partnership with Sierra Nevada Corporation (SNC) as the prime contractor, and will be used to conduct advanced flight training, aerial reconnaissance and light air support operations.

"This opportunity to serve the US Government with the best product for the LAS mission, under the leadership of the Sierra Nevada Corporation as the prime contractor, honors us," said Luiz Carlos Aguiar, CEO of Embraer Defense and Security. "We are committed to pursuing our US



investment strategy and to delivering the A-29 Super Tucano on schedule and within the budget."

As specified by the Air Force, this is a firm-fixed price delivery order contract in the amount of \$355 million for the LAS aircraft and associated support. Twenty LAS aircraft will be provided, as well as ground training devices to support pilot training and support for all maintenance and supply requirements for the aircraft and associated support equipment.

The A-29 Super Tucano was built specifically for counter-insurgency missions and is currently used by five air forces and on order by others. It has proven extremely capable for LAS missions and is credited with helping the Colombian Government defeat the FARC and other governments counter-illegal activities. The 150+ units now in operation around the world have logged over 1,30,000 flight hours, including more than 18,000 combat hours without any combat loss. **SP**

Boeing delivers first C-130 AMP aircraft modified by Warner



Boeing and Warner Robins Air Logistics Center has delivered the first C-130 avionics modernisation programme (AMP) aircraft modified by Warner Robins. The aircraft is the fourth to be delivered to Little Rock Air Force Base, Arkansas; the first three were modified by Boeing.

The C-130 AMP cockpit upgrade simplifies and standardises the multiple C-130 configurations operated by the US Air Force.

"This is the first of the US Air Force C-130 AMP aircraft we will deliver to the warfighter, and we are proud of the product," said John Adams, Chief, Tactical Airlift Division, Robins Air Force Base.

The aircraft is one of five that will participate in initial operational testing and evaluation (IOT&E) at Little Rock Air Force Base beginning later this month. The second low rate initial production aircraft at Warner Robins – scheduled for delivery in February – will be the fifth aircraft in the IOT&E fleet.

"Boeing is excited to see this upgrade become a reality for America's armed forces," said Mahesh Reddy, Boeing C-130 AMP Programme Director. "C-130 AMP will standardise the C-130H fleet and reduce annual ownership cost while offering the crews more situational awareness to perform their missions." **SP**

Bell Helicopter's 429 for Turkey

Bell Helicopter has been selected by the Turkish National Police from a field of several companies to enter final negotiations for an award for 15 Bell 429s with an option for five additional aircraft.

"This selection represents the culmination of the efforts of a dedicated team at Bell Helicopter in collaboration with our independent representative, Saran Group, Inc., located in Turkey," said Larry Roberts, Senior Vice President for Bell Helicopter's Commercial Business.

The Bell 429 is the world's newest and most advanced light twin-engine helicopter. It has conducted extensive flight demonstrations in every continent, except Antarctica, and has been certified in more than 40 countries. With configuration options ranging from VIP to air-medical, law enforcement, utility and oil and gas, the Bell 429 offers superior mission capability and adaptability. **SP**



"T-Hawk does not require a runway or large volumes of airspace to get into position"

The T-Hawk micro air vehicle has been proven in combat. In an exclusive interview with SP's M.A.I., Pritam Bhavnani, President, Honeywell Aerospace India, spoke about the unique characteristics of T-Hawk.

SP's M.A.I. (SP's): Apart from being a ducted fan vertical takeoff and landing (VTOL) micro UAV, what are the special features of the Honeywell RQ-16A T-Hawk?

Pritam Bhavnani (Bhavnani): The Honeywell T-Hawk is another example of innovative technology initially created for defence purposes that can play crucial roles in humanitarian and disaster relief efforts. One of the unique aspects of this particular UAV is that from a logistics perspective, its size and weight provide tactical operators real-time intelligence, surveillance, and reconnaissance (ISR) benefits without the significant 'gear-footprint' required by other UAVs. The entire unit can be carried by one person into various locations or environments.

SP's: At what level of command or formation in the battlefield is the T-Hawk micro air vehicle (MAV) designed to be deployed?

Bhavnani: The T-Hawk is a tactical airborne ISR asset designed to be deployed at the platoon or squad level. In its current roles, it is asset-managed at the battalion level in a manner similar to special weapons such as crew-served weapons like heavy machine guns and mortars. Field experience with T-Hawks has been positive with deployed units having great success with route clearance operations, explosive ordnance disposal missions, infantry support, and base and perimeter security.

SP's: Has the T-Hawk completed its developmental flight test programme?

Bhavnani: The T-Hawk micro air vehicle has been proven in combat with the US Army and Navy, with more than 2,500 combat missions flown and 2,000 flight hours till date in Iraq and Afghanistan as part of Operation Iraqi Freedom and Operation Enduring Freedom, respectively.

SP's: How does the T-Hawk decrease combat risk for troops?

Bhavnani: The T-Hawk reduces combat risk by giving tactical decision-makers more options in an often compressed operational timeline. It offers commanders an upper hand during counter-IED missions by providing information about how and when insur-



gents may have planted explosives along roads or on other targets. The T-Hawk is an airborne ISR asset used by route clearance units and EOD technicians to detect and positively identify IEDs.

SP's: Are you thinking of using more sophisticated sensors in this micro UAV?

Bhavnani: While the current electro-optical (EO)/long wave infrared (IR) sensor payload gives tactical units a clear advantage, our development team knew that additional payload versatility would enable a wider span

of ISR missions. With this in mind additional payloads including a true high definition EO camera, a high-resolution long wave IR camera, an integrated EO and high-resolution IR camera, a short wave IR camera, and various standoff real-time radiation and chemical sensors are considered for adoption.

SP: It could be used in the Army at the Company/Platoon level and in counterinsurgency it could be used for homeland security.

Bhavnani: Precisely so. The T-Hawk's broad range of real-time ISR capabilities increases the potential success across a spectrum of combat missions. Its ability to fly rapidly to a target and execute detailed inspection from various standoff distances, positions and angles, deliver high quality real-time video to the operator, and provide accurate position data even in cluttered urban areas is a force multiplier in both military and homeland security missions.

SP: How are the versions of the T-Hawk designed for the US Navy and the Army different from each other?

Bhavnani: Weighing in at less than 20 pounds with vertical take-off and landing capability, the T-Hawk does not require a runway or large volumes of airspace to get into position. It has an endurance run time of around 40 to 50 minutes, an approximate working sphere of a 10,000-foot ceiling and an operating radius of about six nautical miles (11 km). The primary difference between the US Navy and US Army systems lies in the mission requirements. Both the Navy and the Army utilise the T-Hawk to perform a variety of missions, from reconnaissance to communications operations. **SP**



K-MAX unmanned helicopter makes first cargo delivery

A new era in unmanned aviation began earlier this month when Marine Unmanned Aerial Vehicle Squadron 1 operated a K-MAX unmanned helicopter during its historic 90-minute flight, December 17. K-MAX is the Marine's first unmanned helicopter designed for resupplying troops in remote locations.

During its maiden flight, K-MAX successfully delivered about 3,500 pounds of food and supplies to troops at a forward operating base in Afghanistan without risk to a pilot. **SP**

Turkish SSM to purchase Anka UAV

The Turkish Government has announced that it will be purchasing the Anka unmanned aerial vehicle (UAV) from TAI. The government committee, consisting of Prime Minister Recep Tayyip Erdogan, Defense Minister Ismet Yilmaz, Chief of the General Staff General Neçdet Özel and procurement chief Murad Bayar, made the announcement in a statement that also included a commitment to purchase Lockheed Martin's F-35 fighter jets.



According to the statement, the Turkish defence procurement agency (SSM) will purchase 10 Anka aircraft from TAI. The announcement comes after three successful flight tests were conducted on the UAV, following a bumpy start to the programme which saw the first three flight tests of the vehicle end in crash landings.

The committee's decision will pave the way for the serial production of the 10 Anka platforms for the Turkish military. **SP**

Army to deploy vertical take-off UAS

The US Army is using a hybrid-type acquisition approach to develop a helicopter-like, vertical-take-off and landing unmanned aerial system (VTOL-UAS) with ARGUS wide-area surveillance sensor suite designed to beam back information and images of the surrounding terrain.

"Beginning in May or June of 2012, the Army will deploy three Boeing-built A160 Hummingbird, to Afghanistan as part of a quick reaction capability, an acquisition approach aimed at delivering cutting-edge and emerging technologies to theatre to add capability and inform requirements while simultaneously developing a formal programme of record approach, said Lt Colonel Matthew Munster, Product Manager, UAS Modernization.

"These aircraft will deploy for up to one full year as a way to harness lessons learned and funnel them into a programme of record," Munster said. **SP**

Navy's customised RQ-4 Global Hawk in action

Two years after extensive tests in Middle East, the US Navy's customised RQ-4 Global Hawk UAV is now operating with a carrier task force at sea. This navy version of the US Air Force RQ-4 is called BAMS (Broad Area Maritime Surveillance). Circling above the task force, at 22,500 metres (70,000 feet), BAMS is monitoring sea traffic off the Iranian coast and the Straits of Hormuz. Anything suspicious is checked out carrier or land based aircraft, or nearby warships. The BAMS aircraft fly a 24-hour sortie every three days. The first production BAMS will be available in six months, and these models will begin entering service in three years.



The navy plans to buy 20 BAMS and 117 P-8As to replace 250 P-3Cs. This replacement is supposed to be complete in about a decade. The new surveillance aircraft provide more information over a wider area.

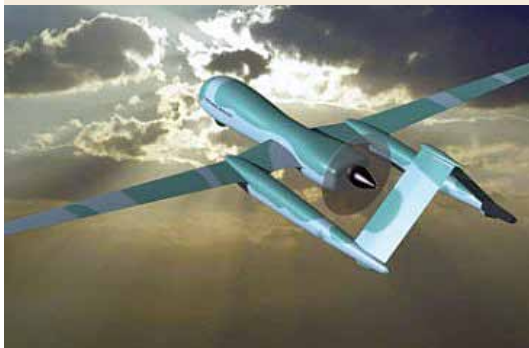
The US Air Force and Navy are buying the B version of the RQ-4 Global Hawk UAVs at a cost of over \$60 million each. This version is larger (wingspan is 5 metres/15 feet larger, at 42.2 metres/131 feet, and it's nine per cent longer at 15.5 metres/48 feet) than the A model, and can carry more equipment. To support that, there's a new generator that produces 150 per cent more electrical power. The RQ-4 has a range of over 22,000 kilometres and a cruising speed of 650 kilometres an hour. **SP**



Joint venture Harpia Sistemas unveils UAV design

Back in September Embraer formalised the creation of a joint-venture between its defence division, Embraer Defesa e Seguranca S.A. and Elbit Systems' Brazilian subsidiary Aeroelectronica (AEL) Sistemas to create Harpia Sistemas. Embraer Defesa will own 51 per cent and AEL will take the remaining 49 per cent of the company. Harpia Sistemas will engage in the field of unmanned aircraft, avionics systems, simulators and logistics support. Harpia will eventually maintain, modify and offer the Hermes and other unmanned aerial vehicle (UAV) to Brazil and other countries in Latin America.

Now Embraer has released an image of a Predator class medium-altitude UAV, under



development by the recently established Harpia Sistemas. The aircraft is distinguished by a twin-boomed tailed, aft end fuselage propeller and dolphin-shaped nose to potentially house a beyond line-of-sight antenna. No information on data or capabilities was provided, however the aircraft is likely to be one step above the performance of the Hermes 450, already in service with the Brazilian Air Force.

Embraer is rapidly expanding its defence division and joint-ventures like Harpia are key factors to develop the necessary future defence technologies in today's highly competitive defence market. Embraer's main priority is to equip and support the Brazilian UAV market, but it is clear that Embraer has its eyes in dominating the Latin American market by following the steps of the successful EMB-314 Super Tucano primary trainer and the highly anticipated KC-390 cargo aircraft. **SP**



Northrop pitches new Fire Scout UAV to US Marine Corps

The US Navy's newest Fire Scout drone may also become the Marine Corps newest aerial cargo drone if prime contractor Northrop Grumman has its way.

The Marines are currently testing Lockheed Martin's K-MAX aerial drone and Boeing's A160 Hummingbird as potential candidates for the unmanned airlift mission. Naval Air Systems Command recently decided to stop development work on the A160 for the Marines. The A160 is already in use by Army and Special Operations Command. The K-MAX is currently undergoing flight tests in Afghanistan. That stoppage has opened the door for the Fire Scout's entry into the programme.

Northrop engineers are busy building in a cargo-carrying capability — along with others — into its new, long-range version of the Navy's MQ-8 Fire Scout unmanned aircraft. The Navy is expected to issue a formal deal to Northrop to buy 12 new C-model Fire Scouts as soon as March. These new C-models will be able to fly further and carry more advanced intelligence payloads than the older B-models Fire Scouts already in the fleet. **SP**

Elbit Systems awarded Hermes 900 contract in Americas



Elbit Systems announced that it was awarded a contract, valued at approximately \$50 million, to supply Hermes 900 unmanned aircraft systems (UAS) to a governmental office of a country in the Americas. The UAS will be operated in a variety of perimeter security missions. The project will be performed over approximately one year. The UAS will also include systems such as the universal ground control stations (UGCS), Elbit Systems Electro-Optics Elop's highly advanced DCoMPASS payload systems, as well as satellite communication systems. **SP**





New DC for Indian Coast Guard

Vice Admiral M.P. Muralidharan, who has been appointed as Director General of the Indian Coast Guard, is its 19th Director General.

The Admiral is an alumnus of the National Defence Academy and was commissioned into the Indian Navy on January 1, 1975. A Navigation and Direction specialist, he is also a graduate of the Defence Services Staff College, Wellington. In an illustrious career of three and half decades, he has held significant operational and staff appointments.

His operational appointments include command of INS

Chatak, Sharda and Ranvijay; Fleet Operations Officer of Western Fleet and Principal Director of Naval Operations at Integrated Headquarters of the Ministry of Defence (Navy). His staff appointments include Director of Indian Naval Tactical Evaluation Group, Naval Assistant to FOC-in-C (West) and to the Chief of the Naval Staff, Naval Attaché at Moscow, Flag Officer Sea Training, Chief of Staff of Western Naval Command, Flag Officer Commanding Maharashtra and Gujarat Area. He was also the first Commandant of the Indian Naval Academy, Ezhimala in Kerala. He was Chief of Personnel at the IHQ MoD (N), prior to taking over as the Director General. **SP**



Intranet Prahari project launched for BSF jawans

All Border Security Force (BSF) Jawans posted in 237 locations will now be able to access their personal data from wherever they are posted. This is a major benefit from the Intranet Prahari Project apart from efficient office management which will help in quick decision making. This was stated by the Union Home Minister P. Chidambaram while launching Intranet Prahari Project at a cost of ₹229 crore.

Under this project network connectivity has been extended up to Battalion level i.e. to 237 locations of BSF. State-of-the-art data centres have been established; the main data centre; a disaster recovery data centre (in a different seismic zone) and mini data centres at Frontier HQs for data storage. Sufficient cyber security measures to ensure network security and to prevent data loss or pilferage have been incorporated.

The system will facilitate operational analysis, efficient planning in the domain of procurement, finance and manpower management resulting in quicker and better decision-making and is also expected to considerably reduce paper work. **SP**

Development projects in naxal-affected areas

The government is introducing a special scheme to address the development of 35 left-wing extremism (LWE) affected districts. The Planning Commission will prepare an inte-

grated action plan (IAP) for the affected areas and that adequate funds would be made available for the same.

The 34 districts referred to in the Finance Minister's announcement were a subset of the 83 LWE affected districts identified by the Ministry of Home Affairs for coverage under its security related expenditure (SRE) scheme. This subset consisted of those districts where more than 20 per cent of the police stations experienced some incidents of naxal violence.

To begin with, the IAP for 60 tribal and backward districts was to be implemented with a block grant of ₹25 crore and ₹30 crore per district during 2010-11 and 2011-12 respectively for which the funds were to be placed at the disposal of the Committee headed by the district collector and consisting of the superintendent of police of the district and the district forest officer.

The district level committee will have flexibility to spend the amount for development schemes according to need, as assessed by it. The Committee would draw up a plan consisting of concrete proposals for public infrastructure and services such as school buildings, anganwadi centres, primary health centres, drinking water supply, village roads, electric lights in public places, etc. **SP**

US Coast Guard rescues Iranians

The US Coast Guard Cutter Monomoy, assigned to Commander Task Force 55, rendered aid to six Iranian mariners who were aboard a distressed vessel in the North Arabian Gulf recently.

At approximately 3 a.m. local time, Monomoy was operating in the area when it was hailed by flares and flashlights from the Iranian cargo dhow, Ya-Hussayn. The dhow's master requested assistance from Monomoy indicating the engine room was flooding and deemed not seaworthy.

Monomoy immediately launched their small boat and approached the Ya-Hussayn. Two persons were rescued from the vessel and four from a life raft tied off to the dhow's stern. **SP**





McAfee unveils 2012 threat predictions

McAfee has unveiled its 2012 *Threat Predictions* report, outlining the top threats that McAfee foresees for the coming year. The list indicates that emerging threats from 2011 are on track to become the major players for cyber-activity in 2012, including mobile banking, “legal” spam and virtual currency. McAfee Labs also predicts that attacks involving political motivation or notoriety will also make headlines, including high-profile industrial attacks, cyberwarfare demonstrations and hacktivist attacks targeting public figures.

“Many of the threats that will become prominent in 2012 have already been looming under the radar in 2011,” said Vincent Weafer, senior vice president of McAfee Labs. “Over the past year, the general public has become more aware of some of these risks, such as threats to critical infrastructure or the impact of hacktivism as they gain international media attention. In the meantime, we continue to see cybercriminals improving their toolkits and malware and are ready to make a significant impact in 2012.”

Industrial attacks:

Water, electricity, oil and gas are essential to people’s everyday lives, yet many industrial systems are not prepared for cyberattacks. Many of the environments where SCADA (supervisory control and data acquisition) systems are deployed don’t have stringent security practices. Attackers will continue to leverage this lack of preparedness, if only for blackmail or extortion in 2012.

Advertisers will “legalise” spam

McAfee Labs has seen a drop in global spam volumes in the past two years. However, legitimate advertisers are picking up where the spammers left off, using the same spamming techniques, such as purchasing e-mail lists of users who have “consented” to receive advertising or purchasing customer databases from companies going out of business. McAfee Labs expects to see this “legal” spam and the technique known as “snowshoe spamming” to continue to grow at a faster rate than illegal phishing and confidence scams.

Mobile threats: attackers will bypass PCs

In 2012, McAfee Labs expects for mobile attackers to improve on their skill set and move towards mobile banking attacks. Techniques previously dedicated for online banking, such as stealing from victims while they are still logged on while making it appear that transactions are coming from the legitimate user, will now target mobile banking users. McAfee Labs expects attackers will bypass PCs and go straight after mobile banking apps, as more and more users handle their finances on mobile devices.

Embedded hardware

McAfee Labs expects to see proofs-of-concept codes exploiting embedded systems to become more effective in 2012 and beyond. This will require malware that attacks at the hardware layer, and will enable attacks to gain greater control and maintain long-term access to the system and its data. Sophisticated hackers will then have complete control over hardware.

Hacktivism

McAfee Labs predicts that in 2012, either the “true” Anonymous group will reinvent itself, or die out. Additionally, those leading the digital disruptions will join forces with physical demonstrators, and will target public figures such as politicians, industry leaders, judges and law enforcement, more than ever before.

Virtual currency

Virtual currency, sometimes called cybercurrency, has become a popular way for people to exchange money online. These online “wallets” are not encrypted and the transactions are public, making them an attractive target for cybercriminals. McAfee Labs expects to see this threat evolve into spam, data theft, tools, support networks and other associated services dedicated to solely exploiting virtual currencies, in order to steal money from unsuspecting victims or to spread malware.

Cyberwar

Countries are vulnerable due to massive dependence on computer systems and a cyberdefence that primarily defends only government and military networks. Many countries

realise the crippling potential of cyberattacks against critical infrastructure, such as water, gas and power, and how difficult it is to defend against them. McAfee Labs expects to see countries demonstrate their cyberwar capabilities in 2012, in order to send a message.

Rogue Certificates: Untrustworthy and undetectable

Organisations and individuals tend to trust digitally signed certificates; however, recent threats such as Stuxnet and Duqu used rogue certificates to evade detection. McAfee Labs expects to see the production and circulation of fake rogue certificates increase in 2012. Wide-scale targeting of certificate authorities and the broader use of fraudulent digital certificates will affect key infrastructure and secure browsing and transactions, as well as host-based technologies such as whitelisting and application control. **SP**





L-3 WESCAM products for targeting and surveillance

WESCAM designs and manufactures the MX-Series grouping of stabilised EO/IR/Lasing turrets for surveillance and targeting applications on land, sea and air. With 40 years of design experience, WESCAM continues to enhance its MX-Series product line with leading magnification, resolution and stabilization technology. The design of WESCAM's turrets enables simplified cabling options and lighter overall installation weights – allowing for integration versatility and prolonged time in theatre. With varying sizes, weights, and clearance levels, WESCAM has flight-proven surveillance and targeting solutions for all types of platforms. Over 2000 systems are fielded world-wide, and WESCAM's systems can be found on more than 100 different types of fixed wing, rotary-ring and aerostat airborne platforms, as well as numerous ground, and sea-based platforms.

WESCAM continually re-invests in product development, and continues to provide leading visual capabilities. The following technological advances can be

found within WESCAM's 2012 product line:

- **High Definition IR:** Providing a true HD image over a wide IR field-of-view
- **Increasing identification ranges:** 20 per cent in both low-light and daylight conditions
- **1500mm Spotter:** Improving range performance by 50 per cent
- **Laser Spot Tracker:** Acquires and tracks a laser designator spot originating from ground forces or allied aircraft
- **Embedded Navigation-Grade IMU:** When coupled with existing IMU, this technology creates a 3x-4x improvement in the angular accuracy of our MX-GEO target tracking software suite
- **Short Wave IR:** Expanding the spectral domain
- **10 Sensor Payload Capacity:** Expanding mission flexibility in all environmental conditions

As WESCAM's installed base of equipment continues to expand, WESCAM is well positioned to deliver off-shore support services through 12 maintenance facilities, 24 hour dispatchable Field Service Representatives and MX-RAid remote diagnostic testing capabilities. **SP**



Meprolight unveils new weapon sights

Meprolight has announced the unveiling of two new weapon sights, including the Mini-Hunter, a light-weight night vision weapon sight, and NOA NYX, an uncooled thermal weapon sight with 2x magnification.

According to the company, both sights are 'remarkably light weight and robust'. The Mini-Hunter Compact Lightweight Night Vision Weapon Sight was developed and manufactured by Meprolight's sister company, Pulse Inteco Systems. Weighing less than 1 lb (<400 grams), this very easy-to-use sight offers a 2x magnification. Designed for durability, the sight can withstand the most challenging battlefield conditions. Highly flexible, the Mini-Hunter can also be used for observation, and fits a variety of weapon types, including rifles, assault rifles, rocket launchers

and machine guns. Powered by a single, standard AA battery, the unit can operate continuously for up to 40 hours.

Meprolight's NOA NYX uncooled thermal weapon sight with 2x magnification was developed in response to the critical need for precise target detection and engagement, even in conditions of dust, smoke, and total darkness. Weighing less than 2.2 lbs (<1 Kg), the advanced NOA NYX uses high-resolution microbolometer technology to ensure clear and consistent results. The flexible unit can be used as a hand-held device or fitted to light machine guns, assault rifles, and submachine guns. Due to its light weight and long-range capability, it is also suitable for sharpshooter rifles with an x2 and x4 digital zoom. The sight can detect man-sized targets at up to 900m. Output can be fed to a remote screen or recording equipment via its "video out" feed. Storing up to 3 user-configured sighting reticules and requiring a warm-up time of less than 5 seconds, the NOA NYX can operate continuously for 7 hours using 4 "AA" batteries. **SP**

RFI/RFP/TENDERS

Indian Army

RFI: Electronic bird deterrent system
Army Aviation
Publication date: December 5
Last date: January 20

RFI: Weapon system for shooting around the corner
DGRR

Publication date: December 23
Last date: January 31

RFI: Large scale maps
DGIS

Publication date: December 16
Last date: February 15

Indian Air Force

RFI: Search and rescue equipment
Air Hqrs
Publication date: December 23

Last date: January 23

Tender: Spares for MIG 29 aircraft
Air Hqrs
Publication date: November 14
Last date: February 8

Indian Navy

Tender: CCTV surveillance
INS Dronacharya, Fort Kochi
Publication date: December 8
Last date: January 23



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Technology any which way

With continuing government ambivalence, the DRDO and PSUs want to start from scratch not because they do not realise values of technology-reconfiguration-reverse engineering but simply because more money can be made in adopting the former.

The West says China is not amongst the world's top ten defence exporters even while being the second biggest military spender in the world. This is attributed to sanctions post the Tiananmen Square massacre and poor Chinese technology. It apparently discounts China fooling the world akin to her colossal unofficial defence budget albeit these statistics do not include costs of sale of nuclear technology to North Korea, Pakistan, Iran, Silkworm missiles to Saudi Arabia, ring magnets to Pakistan and the like.

China is innately focused on technology acquisition and couldn't care how. She has begun capitalising on her growing foreign policy reach into new markets offering low priced products like J-10 and JF-17 fighters, missiles, radars, communication equipment, etc. There have been instances of financial gains inducing European firms circumventing sanctions in providing new technologies to China through technology transfer or joint ventures on Chinese soil.

Defence platforms like multipurpose helicopters are finding their way into China under commercial sector cover. China is leapfrogging technology regimes at a tremendous pace employing every possible means with complete disregard to international propriety and established rules including intellectual property rights. She has already achieved sixth position in global innovativeness in 2009.

Spying, cloning, reverse engineering are institutionalised through a road map with blessings of the Chinese hierarchy and every opportunity is optimised. Unexploded US cruise missiles that Osama bin Laden eluded in Afghanistan were carted away by China. Remains of the MH-60M Black Hawk stealth helicopter crashed during the US raid in Abbottabad were examined by the Chinese.

The latest catch has been the US RQ-170 stealth UAV downed by Iran, access to which would have surely been given to China. China has stolen US stealth technologies not only through cyber attacking US defence firms but even successfully penetrating the Federal Bureau of Investigation (FBI). Employing hundreds of Russian

scientists post-breakup of Soviet Union, China used reverse engineering to fill technical gaps and improve upon Soviet designs.

Spying, snooping, reverse engineering has given China designs of the US F-16, B1 Bomber, US Navy's quiet electric drive, US W-88 miniaturized Nuke (used in Trident Missiles) to name a few. China aims parity with the United States in science and technology in three decades plus. The J-20 stealth fighter has been developed in record time. Stealth helicopters and vessels should be following. The indigenous aircraft carrier under development is estimated to be twice as fast with double the capacity of launching and landing capabilities through twin decks.

All this will give China a tremendous boost in defence exports aside from a modernised PLA. What India needs to learn from China is optimising technology reconfiguration wherein available technology is integrated in multitude of combinations to attain self-reliance. Technologies notwithstanding, base level equipping of PLA (Army, Navy, Air Force) is almost completely indigenised.

In contrast, we took 15 years to develop an assault rifle which still has numerous faults and today our Army is forced to import some 44,000 carbines and 66,000 assault rifles while the DRDO spends lakhs of rupees in self-aggrandisement through advertisements for having developed mosquito repellent and skin ointment for Leucoderma – shameful state for a country with the third largest army in the world. The latest media blitz of DRDO developing NBC warfare equipment capitalises on the citizenry's ignorance that the army had imported such equipment over three decades back. With continuing government ambivalence, the DRDO and PSUs want to start from scratch not because they do not realise values of technology-reconfiguration-reverse engineering but simply because more money can be made in adopting the former. So why care about technology any which way? SP

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

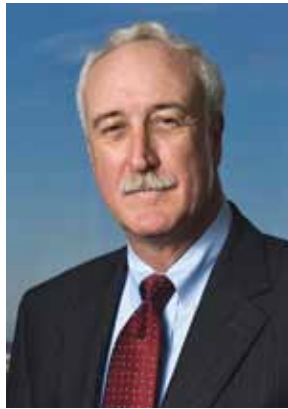




Sean O'Keefe new Chairman of EADS North America

O'Keefe, a former NASA administrator and secretary of the Navy, replaces recently retired Ralph Crosby, who had served as the company's chairman and CEO from 2002 to 2009. Crosby remained chairman when O'Keefe became the CEO in 2009.

"As we make this important leadership change, I look forward to 2012 and another year of exciting growth and expansion for EADS in North America," O'Keefe said in a statement. **SP**



Boeing to close Wichita facility by the end of 2013

Boeing recently announced that the Boeing Defense, Space & Security (BDS) facility in Wichita will close by the end of 2013. The Wichita facility currently employs more than 2,160 employees.

"The decision to close our Wichita facility was difficult but ultimately was based on a thorough study of the current and future market environment and our ability to remain competitive while meeting our customers' needs with the best and most affordable solutions," said Mark Bass, Vice President and General Manager for BDS' Maintenance, Modifications & Upgrades division. "We recognise how this will affect the lives of the highly skilled men and women who work here, so we will do everything possible to assist our employees, their families and our community through this difficult transition."

Boeing Wichita is the base for the company's Global Transport & Executive Systems business and its B-52 and 767 International Tanker programmes. The facility also provides support for flight mission planning and integrated logistics.

Over the past five years, contracts in Wichita have matured, programmes have come to a close or are winding down, and the site does not have enough sustainable business on the horizon to create an affordable cost structure to maintain and win new business.

"In this time of defence budget reductions, as well as shifting customer priorities, Boeing has decided to close its operations in Wichita to reduce costs, increase efficiencies, and drive competitiveness," said Bass. "We will begin programme transitions in the coming months, with the complete closure of the site scheduled for the end of 2013. We do not anticipate job reductions as a result of this decision until early in the third quarter of 2012."

Future aircraft maintenance, modification and support work will be placed at the Boeing facility in San Antonio. Engineering work will be placed at the Boeing facility in Oklahoma City. Although work on the KC-46 tanker will now be performed in Puget Sound, Washington, the 24 Kansas suppliers on the programme will be providing vital elements of the aircraft as originally planned. **SP**

Mineseeker Operations and Morgan Aircraft to develop UAV

Wisconsin-based Morgan Aircraft LLC and UK-based Mineseeker Operations announced that the two companies have signed a strategic cooperation agreement to jointly develop an unmanned aerial vehicle (UAV) platform that can, in addition to serving many other needs, be customised to meet the mission requirements of Mineseeker operations.

Morgan Aircraft is developing a unique vertical lift UAV which combines the operational advantages of a helicopter with the range and speed of a fixed-wing aircraft, but with none of the tilting parts which have plagued other such programmes in the past.

Mineseeker Operations' primary focus is the safe and cost-effective mapping and clearing of mines and other unexploded ordnance from former and current war zones. To facilitate this, Mineseeker has developed a unique airborne visual overlay technology which can detect and map surface and subsurface objects using multi-spectral images and radar (MIR). **SP**

SECURITY EVENTS

Integrated Missile Defence Summit

17-18 January
Los Angeles
<http://www.iqpc.com/Event.aspx?id=613932>

Joint Forces Simulation & Training

24-25 January
Grange City Hotel, London
www.jointforcetraining.com

Border Security Asia Pacific

30-31 January
Singapore
www.bordersecurityasiapacific.com

Defence Exports Asia-Pacific

1-2 February
Grand Copthorne Waterfront Hotel
Singapore
www.defence-exportsasia.com

International Armoured Vehicles 2012

20-23 February
FIVE, Farnborough

UK

www.iqpc.com/Event.aspx?id=518778

Defence & Security 2012

5-8 March
Impact Exhibition Centre
Bangkok
Thailand
<http://www.asiandefense.com/>

Info Security Europe 2012

24-26 April
Earls Court
London, UK
<http://www.infosec.co.uk/>



Security guard killed John Lennon

John Lennon, the legendary English musician and one of the founders of the famed group The Beatles, was shot dead by Mark David Chapman at the entrance of the building where Lennon lived in New York City on December 8, 1980. Lennon had just returned from the Record Plant Studio with his wife, Yoko Ono.

Jose Perdomo, the Dakota's doorman, and a nearby cab driver saw Chapman standing in the shadows by the archway. Ono walked ahead of Lennon and into the reception area. As Lennon passed by, he looked at Chapman briefly and continued on his way. Within seconds, Chapman took aim directly at the centre of Lennon's back and fired five hollow-point bullets at him from a Charter Arms .38 Special revolver in rapid succession.

Earlier, as Lennon and Ono walked to their limousine, they were approached by several people seeking autographs, among them, Chapman. It was common for fans to wait outside the Dakota to meet Lennon and ask for his autograph. Chapman, a 25-year-old security guard from Honolulu, Hawaii, had first come to New York to murder Lennon in October (before the release of *Double Fantasy*), but changed his mind and returned home. Chapman silently handed Lennon a copy of *Double Fantasy*, and Lennon obliged with an autograph. After signing the album, Lennon asked him, "Is this all you want?" Chapman smiled and nodded in agreement. Photographer and Lennon fan Paul Goresch took a photo of the encounter. Chapman had been waiting for Lennon outside the Dakota since mid morning. **SP**



Alec Baldwin taken off American Airlines flight

Recently, Alec Baldwin was deplaned from an American Airlines flight in Los Angeles, apparently after he used an electronic device to play a Scrabble-like game before the plane departed.

Baldwin had tweeted how a Flight attendant on American Airlines had sent him out for playing a game. He tweeted "no wonder America Air is bankrupt."

Another passenger Michael J. Wolfe tweeted "On an AA flight at LAX. Alec Baldwin removed from the plane. We had to go back to the gate. Terrible that everyone had to wait." Other reports said he was shunted out not just for playing a game, but for talking on his cell phone and for being 'abusive and aggressive'.

American Airlines also tweeted "Our flight attendants were following Federal safety procedures on electronics devices when aircraft door is closed." **SP**



PHOTOGRAPHS: Wikipedia

Ex-con as security director

Herman Cain has dropped out of the US presidential race for 2012, but he had gained Secret Service protection. His campaign security director, Kristian Otto Herzog, an ex-con with an addiction to publicity and to celebrities, had raised eyebrows of many.

"He is scary and dangerous," said Jason DeWitt, a private detective who investigated Herzog between 2010 and 2011 for a Hollywood celebrity who felt scammed by Herzog when he volunteered to be her bodyguard.

"Bodyguards try to stay under the radar, not become the actual story. But this guy is unstable and wanted fame that he apparently thought would give him credibility," DeWitt added. **SP**

KTPS security snags

The Kothagudem Thermal Power Station (KTPS) at Paloncha in Andhra Pradesh has been in the news some months back for inadequate security personnel at V and VI phases of KTPS, which had resulted in regular thefts at the site.

Loopholes in security and repeated technical snags are leading to reduction in power production in KTPS. Two copper bundles were stolen at the VI stage of the KTPS. Each bundle costs ₹10 lakh and they are needed for smooth running of generators and boilers. Subsequently, AP Genco decided to recruit 400 security personnel for all power projects across the district. **SP**

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