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ISSN 2320-9828

SP's MAI

AN SP GUIDE PUBLICATION

₹55.00 (INDIA-BASED BUYER ONLY)

www.spsmai.com

Vol: 3 Issue 7 ▮ April 1-15 • 2013

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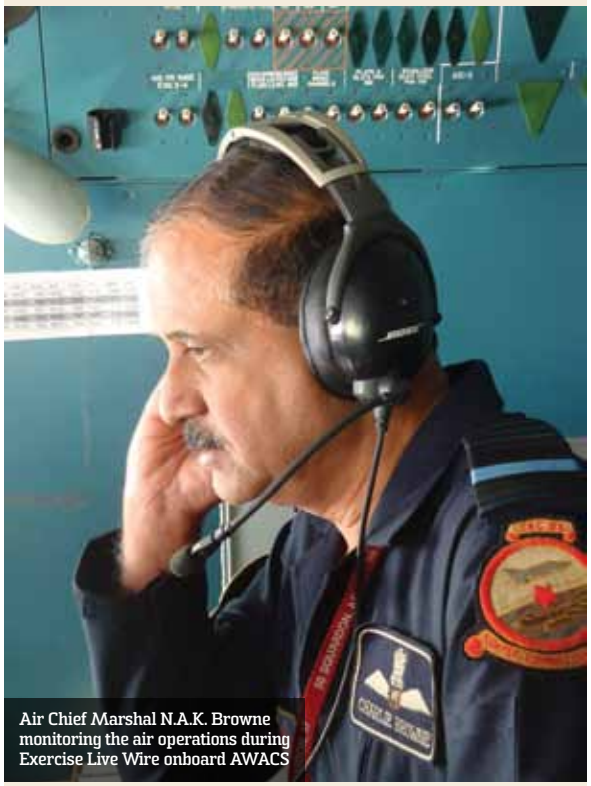

Air Chief Marshal N.A.K. Browne monitoring the air operations during Exercise Live Wire onboard AWACS

PHOTOGRAPHS: Indian Air Force

Cover:
Prime Minister Manmohan Singh at a bilateral meeting with the President of the People's Republic of China Xi Jinping on the sidelines of the Fifth BRICS Summit at Durban, South Africa

Cover images:
PIB, Indian Navy, US Navy

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ANNUAL SUBSCRIPTION
Inland: ₹1,320 • Foreign: US$ 325

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Owned, published and printed by Jayant Baranwal, printed at Kala Jyothi Process Pvt Ltd and published at A-133, Arjun Nagar (Opposite Defence Colony), New Delhi 110 003, India.

Need to tread cautiously with China

For long, India and China have been known in the world for the vastness of their territories, massive population and their political ideologies. Of late, these two Asian behemoths have surged ahead, in terms of economic growth, and while doing so they are reshaping the geopolitics of the region.

There are efforts on the part of both the Asian giants to gain one-upmanship, considering how volatile the region is getting. This game of one-upmanship has been going on for quite some time and the two were engaged in limited war in 1962. Despite this background, there are overtures on the part of both the governments to 'deepen security and military trust'. It is a difficult process.

The latest effort came during the meeting of Prime Minister, Dr Manmohan Singh with China's new President, Xi Jinping in Durban, South Africa, and the latter is said to have opined that there was 'strategic opportunity now to upgrade military cooperation'.

In this issue, we have Air Marshal (Retd) Anil Chopra analysing the induction of Chinese leadership and their impact on India. The Chinese President has acknowledged that the boundary issue is a difficult one to resolve, but has come up with a five-point Sino-Indian relationship. While it is welcome, one just cannot brush aside the 'String of Pearls' which China has been systematically weaving to encircle India.

Air Marshal (Retd) Anil Chopra is of the view that notwithstanding the statesman-like remarks of the Chinese leadership, the relationship is much more complex than meets the eye. Citing boundary disputes; frequent Chinese incursions across the border; massive build up of 'military support' infrastructure in Tibet; dumping of Chinese goods; foreign policy initiatives, etc are factors which need to be looked into with a scanner. Particularly, China cozying up with Pakistan is a worrisome factor as India will have to up its antennae on both the fronts in the northern region. Building a credible military deterrence against China, along with re-visiting our foreign policy seemingly has become urgent.

Continuing on Chinese expansion, in his forthright column, Lt General (Retd) P.C. Katoch warns that the temperature levels in the Indian Ocean is going to rise in the light of China having its 'head in both the Bay of Bengal and the Arabian Sea'. In February 2013, Pakistan handed over the strategic deep-water Gwadar seaport to China and the latter asserts that the port is not only in the best of interest of Pakistan and China but also in the interest of the region's development. How, one wonders.

Another highlight in this issue is the report by the President and CEO of Rafael Advanced Defense Systems, Y. Yaari on the long-standing relationship between Israel and India, particularly in the development of the Indian defence industry. Talking about the indigenous defence industry, we have good news that the third anti-submarine warfare corvette for the Indian Navy was launched by India's leading shipbuilders, the Garden Reach Shipbuilders and Engineers Ltd. The need to expand on India's defence capabilities, with and without outside support is urgent in the background of the emerging geopolitics of the region.

Happy reading!

Jayant Baranwal
Publisher & Editor-in-Chief

LT GENERAL (RETD)
P.C. KATOCH

Serpentine manoeuvres

It is many years since the dragon first appeared in Burma (now Myanmar) – mainly investment, trade and development – reminds you of the East India Company? The aims were clear. The fire burning in the belly of the dragon caused it to aim for the waters of the Bay of Bengal.

The head of the dragon first entered quietly the Irrawaddy River from the North. Myanmar was happy that China would dredge the Irrawaddy basin and make it navigable to large vessels. Today there are over three million Chinese in Myanmar. Plans are afoot for a major rail line connecting Kunming in China with a new deep sea port at Kyaukpyu, developed by China in Myanmar, latter is mushrooming into a special economic zone. Of course, all this came with strategic forethought, with China supplying massive military equipment to Myanmar over the years that included fighter jets, naval ships/vessels and armoured vehicles.

Military cooperation included joint exercises and Myanmar military personnel trained by the People's Liberation Army (PLA). The ultimate aim is to exert strategic influence in the Bay of Bengal and consequently the Indian Ocean. Ironically, on the Coco Island that India gifted to Myanmar, China built an airstrip, naval facilities with an 85-metre-long jetty plus electronic eavesdropping and surveillance facilities to monitor Indian missile launches off the Odisha coast, added advantage being to monitor all shipping in the Bay of Bengal. China is also laying gas and oil pipelines through Myanmar to avoid the Straits of Malacca and has funded the road linking Yangon and Sittwe. China seeks permanent access to Myanmar ports for her Navy, particularly Kyaukpyu and Sittwe, latter being closed to Kolkata harbour.

The dragon is fully entrenched to drink the waters of the Bay of Bengal but having achieved this has turned its attention to the Arabian Sea.

In February 2013, Pakistan handed over the strategic deepwater Gwadar seaport to China. China had been a major funding contributor for this port. The 'higher than the mountain, deeper than the sea' China-Pakistan partnership has achieved another hallmark, having been initiated when Pakistan ceded some 6,000 square kilometers of Indian territory of Shaksgam Valley to China in 1963. A jubilant China, showered Pakistan with weapon platforms, military equipment, nuclear technology and a firm backing for Pakistan to carry on exporting terror as long as Xinjiang remained safe. Thereafter came China's strategic footprints in PoK and Gilgit-Baltistan cashing upon an imploding Pakistan crippled with sectarian strife, the military riding the tiger of terror and the sham democracy wagging its tail to command of the military-ISI and the military-mullah combine.

By getting China into Gilgit-Baltistan, Pakistan hopes to divert attention of the Shia rebellion in the area, where the hapless Shias are being systematically killed through institutionalised attacks. Similarly, by handing over Gwadar to China, Pakistan hopes to deflect from the Baluchistan independence movement, second phase of the Baluch Independence war having commenced in 2005. Agha Amin, a defence analyst and former Pakistan Army officer, forecasts post-2014 happenings by saying, "An extremist dominated Afghanistan; a Baluchistan fully fragmented and crushed…a greater Chinese vassal with far greater Chinese interests in Pakistan….There is no doubt that Pakistan will be a semi autonomous Chinese province by 2030 or so…. Pakistani Baluchistan by 2030 would be a completely Chinese run show."

What is little known is that administration of Gwadar Port was handed over to a firm of Singapore in 2007 but was cancelled now and handed over to a state-owned Chinese company due to simmering rebellion in Baluchistan. For the present, both China and Pakistan are talking that Gwadar port will strictly remain a commercial port but who are we fooling? PLAN will soon come calling for refuelling halt and rest and then PLAN likes to have its own air defence in place to cater for any eventualities. The dragon will now have its head in both the Bay of Bengal and the Arabian Sea. You can expect temperature levels of the Indian Ocean rising. SP

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

By getting China into Gilgit-Baltistan, Pakistan hopes to divert attention of the Shia rebellion in the area, where the hapless Shias are being systematically killed through institutionalised attacks

PHOTOGRAPH: www.dnd.com.pk

Rafael expanding relationship with Indian defence industry

[By **Y. Yaari, President and CEO, Rafael Advanced Defense Systems Ltd.**]

Rafael's long-standing relationship with the Indian defence industry and military is of strategic significance to both Israel and India and to their industries. Many of Rafael's systems are in use by the Indian military, two of which are Litening – an advanced airborne electro-optical Pod, in use by more than 20 air forces around the world, mounted on a variety of fighter aircraft, and SPYDER – a ground air-defence system, based on the Python and Derby interceptors to defend against aerial threats.

Together with the Israeli Aerospace Industry (IAI) and with the defence Research and development Organisation (DRDO), Rafael is working on development of the Barak-8, the next generation of naval air defence. One of Rafael's main strategic endeavours is to bolster its cooperation with the DRDO, as well as with other leading defence industries in India. We are engaged in joint ventures and partnerships with local Indian industries such as Mahindra, BDL and BEL and are on constant search to expand our activities in the country, in cooperation with the DRDO, in order to better address local needs and requirements. We consider India a strategic partner to Rafael, and as such, we will continue to offer it our wide variety of systems and capabilities, including knowledge and productions transfer, while taking into consideration the prolonged nature of procurement processes in the industry. Rafael holds dozens of partnerships and cooperation agreements with many countries, including with the US, countries in Europe, Asia, South America and others. More than 60 per cent of our business is international. Some of Rafael's systems in use by the Indian military include the Barak naval missile defence system.

Changes in today's battlefield coupled with Rafael's innovation, particularly in missile technology, have resulted in the development of world-leading advanced defence systems, some of which are operationally deployed.

Rafael, with its proven building blocks, is one of the few worldwide vendors that can provide an end-to-end solution based on extensive knowledge and experience that has been gained over the last 60 years in providing aerial networks, applications and communication solutions. Rafael's systems are discriminate, precise and proportional, which in turn makes them economic, efficient and effective. Such is, for example, Rafael's Spike Missile Family of tactical, precise missiles with ranges of 0-25 km that can be launched from either naval vessels, helicopters or ground vehicles. Another example is Rafael's Spice air-to-ground precision guided bombs with stand-off ranges of more than 60 km.

Rafael is a world pioneer in armour active protection system, and in the last few years, Rafael's famous passive and reactive armour systems have been joined by the Trophy, an active protection system that rapidly detects and tracks any anti-tank threat, classifies it, estimates the optimal intercept point in space and finally neutralises it away from the platform using a countermeasure. The Trophy Family comes in two main configurations: HV-MV (heavy and medium armoured vehicle) and LV (light armoured vehicle). Both configurations dramatically boost the force's survivability, and provide a vital add-on capability for the manoeuvring combat teams.

In addition, it has also developed the SpotLite-P and Spotlite-M, combat proven electro-optical systems for detecting, locating, investigating and neutralising small-arms fire sources, RPG and ATGM.

Rafael is also a leading C4I supplier for the Israeli Defense Forces (IDF) and various worldwide forces. SP

Spice 2000 and (right) Spice 1000 on F-16 aircraft

PHOTOGRAPHS: Rafael

China's 'String of Pearls'

[By **Air Marshal (Retd) Anil Chopra**]

Chinese President Xi Jinping and Premier Li Keqiang have taken their destined places in the new Chinese hierarchy. Among Xi's opening foreign policy remarks, relationship with India has figured prominently. He acknowledges the boundary issue as having been inherited from history and being difficult to resolve. However, he suggests a five-point Sino-Indian relationship approach which includes continuity in communications on all issues; expanding cooperation for mutual investment; increased people-to-people contact; coordination and support for each other in international forums; and need to show understanding for resolving irritants.

Notwithstanding the statesmanlike opening remarks, the relationship is much more complex than meets the eye. Serious 'near unresolvable' boundary differences, frequent Chinese pin-prick like transgressions across the border, the massive build-up of 'military support' infrastructure in Tibet, the series of dams on Brahmaputra River and possibility of diversion, the dumping of Chinese cheap goods at the cost of survival of Indian small and medium enterprises, serious trade imbalance, covert cyber warfare, and most importantly, the encirclement of India through foreign policy initiatives, referred to by the world as a 'String of Pearls'.

Encirclement

Over the last few decades, China has very systematically woven this 'String of Pearls' to encircle India. It is not only part of their India containment strategy, but also to increase sphere of influence in the Indian Ocean region, and in turn prevent the United States (along with friends) to encircle China. Let us look at the necklace bead by bead. China has been openly supporting Pakistan since early 1960s and overtly/covertly helped it build aircraft industry, missile technology and nuclear power among others. In exchange Pakistan ceded to China significant territory in the strategic north Kashmir area. China built the strategically located Gwadar port near Iranian border in Pakistan and has very recently offered to operate the same on Pakistan's behalf, de facto taking over full control. It is involved in practically every facet of Pakistani economy. This important port in otherwise turbulent Baluchistan will become significant when US pulls out of Afghanistan. China wants to use this port as a gateway from Middle East to its central and western regions and reduce dependence on the long route through Malacca Strait.

For long China has been building roads and airfields in Myanmar. More recently it built an oil and gas pipeline from Myanmar coast to reach China's Yunnan region just north of Myanmar. The well-known 'Hambantota port' complex in southern Sri Lanka opened in 2010. That was also signal to India by Sri Lanka to 'lay off' on Tamil issue else we go to other friends. Chinese aircraft industry is trying to enter Sri Lanka in a big way. China is actively supporting port modernisation at Chittagong and on Sonadia Island in Bangladesh. China is also one of the biggest investors in 'economically impoverished but natural wealth rich' Africa. Especially the Indian Ocean region of Africa is of immediate concern to India. American strategist analyst Dr Robert Kaplan feels all these bouquets of commercial, political, strategic and perhaps military ventures are part of an aggressive strategy. He feels that some of these places could also be used like warehousing hubs for a growing Chinese economy. The aggressive expansion of Chinese navy is part of this grand strategy.

Prime Minister Manmohan Singh at a bilateral meeting with the President of the People's Republic of China Xi Jinping, on the sidelines of the Fifth BRICS Summit at Durban on March 27, 2013

PHOTOGRAPH: PIB

Implications for India

China continues to downplay the so-called 'String of Pearls' theory by explaining all these projects as development support and legitimate economic activity. Yet economic dependence of these developing countries has its political side effects. Military security for Pakistan, ethnic Tamil bulwark against India for Sri Lanka, political and moral support for India-encircled Bangladesh, a shield for politically unstable but now Maoist dominated Nepal, a geopolitical balance for Myanmar, and economic support for beleaguered north-east Africa.

The choices for India are less military and more foreign policy linked. While undoubtedly we need to build a credible military deterrence against China, we need to re-visit our foreign policy neighbour by neighbour. The often spoken 'big-brother' approach with intelligent give-and-take must replace the 'big bully' impression. SP

Third anti-submarine warfare corvette for Indian Navy launched

The third anti-submarine warfare (ASW) corvette for the Indian Navy designed under Project-28 (P-28) by the Navy's Directorate of Naval Design, being built by one of India's leading shipbuilders, the Garden Reach Shipbuilders and Engineers Ltd. (GRSE), was launched in Kolkata, on March 26, 2013.

Named after an island – Kiltan – in the Lakshwadeep archipelago of India, the ASW corvette was launched by Chitra Joshi from GRSE mainyard in the presence of Chief of the Naval Staff, Admiral D.K. Joshi, Chairman and Managing Director, GRSE, Rear Admiral (Retd) A.K. Verma and other officials from the Ministry of Defence, armed forces and West Bengal administration.

With nearly 90 per cent indigenisation content aimed to be achieved in the manufacturing of the ship, the efforts made by the Indian Navy and defence shipyards towards the national goal of indigenisation and self-reliance got a major impetus with this latest ASW corvette launch.

Lauding efforts of GRSE in detail designing of the ship, the Navy Chief singled out its technological landmark, as being the first ship in the country built with a composite superstructure. The superstructure made of carbon fibre composite material has been successfully integrated with the main hull of the ship. Besides reducing the top weight, it will provide improved stealth features and reduce life-cycle maintenance costs.

The ship's hull form is highly efficient with excellent sea-keeping and manoeuvrability characteristics having an overall length of 109 metres. The ship can cut through the sea at a very high speed of 25 knots. Hull of the ship is built with warship grade high tensile indigenous steel.

The ship's advanced stealth features will make it less susceptible to detection and help in effective deployment of soft kill measures. The ships will be fitted with complete indigenous state-of-the-art weapons and sensors, including a medium-range gun, torpedo tube launchers, rocket launchers and close-in weapon system.

These ships are also equipped with a bow-mounted sonar and are capable of deploying a helicopter, adding considerable punch to the ship's anti-submarine capability. These ships also feature an advanced integrated platform management system for controlling and coordinating the propulsion, auxiliary and power generation equipment.

The new P-28 ASW corvettes also mark many firsts including introduction of the 'rail-less helo traversing system' to handle a helicopter on board the ship, foldable hangar door, use of indigenous DMR 249A steel and carbon fibre reinforced plastic (CFRP) superstructure integrated with the steel hull of the ship. SP

PHOTOGRAPHS: Indian Navy

India first country to have submarine launched cruise missile

India, on March 20, successfully carried out the maiden test-firing of the over 290-km-range submarine-launched version of BrahMos supersonic cruise missile in the Bay of Bengal, thus becoming the first country in the world to have this capability.

"The submarine-launched version of BrahMos was successfully test-fired from an underwater pontoon near Visakhapatnam," BrahMos CEO A. Sivathanu Pillai said.

This is the first test firing of an underwater supersonic cruise missile anywhere in the world and it travelled its complete range of over 290 km, he said. He added that the performance of the missile during the test launch was "perfect".

The maiden test of the submarine-launched version of BrahMos comes over a week after the indigenously-built long-range subsonic cruise missile Nirbhay failed to hit its target in its first test.

"BrahMos missile is fully ready for fitment in submarines in vertical launch configuration which will make the platform one of the most powerful weapon platforms in the world," Pillai said.

Defence Minister A.K. Antony congratulated DRDO scientists and Russian specialists along with officers of the Indian Navy associated with the project, for successful test launch of missile from an underwater platform. SP

PHOTOGRAPHS: Raytheon, SP Guide Pubns

Raytheon delivers 8th AN/TPY-2 radar to MDA

Raytheon Company delivered its eighth AN/TPY-2 radar to the Missile Defense Agency (MDA) in support of the US combatant commands. An integral capability of the ballistic missile defence system (BMDS), AN/TPY-2 is a mobile, X-band phased-array radar that helps protect the US, deployed forces, and America's friends and allies by searching, acquiring and tracking threat ballistic missiles and discriminating between threats and non-threats.

"Delivering the vital AN/TPY-2 helps meet the growing demand for radars that can help defend the US and its allies from the more than 5,500 ballistic missiles MDA estimates are not controlled by the US, NATO, Russia or China," said Dave Gulla, Vice President of Global Integrated Sensors in Raytheon's Integrated Defense Systems business. "The AN/TPY-2 has proven itself an indispensable component of our nation's ballistic missile defence and has performed flawlessly in every test to date against every category of ballistic missile, and in raid scenarios."

The AN/TPY-2 radar Raytheon delivered will serve in terminal mode as the fire control radar for the US Army's terminal high altitude area defence missile defence system. Other forward-based AN/TPY-2's that are deployed around the globe cue the BMDS by detecting, tracking and discriminating enemy ballistic missiles in the ascent phase of flight. SP

New British Army DEMS training regiment opens

The British Army has officially opened its new Defence Explosive ordnance disposal, Munitions and Search Training Regiment (DEMS Trg Regt) at a new £100-million training facility at St George's Barracks, Bicester. The training regiment was officially stood up by General Sir Peter Wall, Chief of the General Staff (CGS), on March 15.

At any one time the training school at Bicester is likely to host up to 200 staff and 300 students and is considered a centre of excellence in training service personnel to deal with the threat posed by improvised explosive devices (IEDs). The regiment will teach a number of disciplines and techniques, including IED search and disposal, and underwater disposal.

The new DEMS Trg Regt HQ replaces the previous facility at Lodge Hill in Kent, bringing together personnel from all three services. The school stretches more than 80 hectares and includes 32 separate specialist training spaces including a cave complex and explosive ordnance disposal (EOD) dive pool.

At the opening of the facility, General Sir Peter Wall said "Our explosive search and disposal teams do one of the most dangerous roles in the armed forces often in the most hostile of environments. Their expertise and training is vital in supporting our troops to meet the challenges they face while on active service. This new £100-million facility will for the first time bring their training under one roof and will secure the training into the future."

Lt Colonel Chris Henson, Commanding Officer DEMS Trg Regt, added "This is an absolutely first class training facility bringing together expertise from across the services and marks a major milestone in delivering EOD and search capability to defence."

Over the course of a year 4,000 students will pass through the facility taking part in one of the 73 courses offered. SP

BAE Systems contract to produce more innovative explosives

The US Army has awarded BAE Systems a contract valued at as much as $780 million over the next five years to continue producing explosives at the Holston Army Ammunition Plant in Tennessee. Under this contract, the company received an initial $18.4 million order to produce additional quantities of IMX-101, insensitive munitions that is approved by the Army as a safe and effective replacement for TNT in artillery rounds.

"The work we do at Holston is critical to the defence of our nation and to the safety of our men and women in uniform," said Erin Moseley, President of BAE Systems' Support Solutions sector. "IMX-101 is truly innovative and is revolutionising military ordnance. Once fully fielded, it will help to save lives on and off the battlefield."

BAE Systems developed IMX-101 and fielded it in partnership with the Army at the Holston plant, which the company operates and manages for the government. IMX-101 is part of a new family of explosives under development called insensitive munitions explosives (IMX). These explosive formulations are significantly more stable than conventional TNT and composition B, making the weapon systems they support safer for troops to transport and handle. SP

Saab bags order for Arthur system

Saab has bagged a new order for its Arthur weapon locating system from an unnamed customer. The order, valued at MSEK 128, will see delivery take place in 2014.

Arthur is a C-band medium-range weapon-locating system that detects and locates enemy artillery fire. The system can perform a number of roles, including counter battery operations, fire control, peace enforcement missions and force protection by suppressing enemy rockets, artillery and mortars. It utilises a passive phased-array antenna technology for optimised performance. The technology provides a balance between mobility, range, accuracy, electronic counter-countermeasures, operational availability and operational cost.

Micael Johansson, head of Saab's business area Electronic Defence Systems, said "Saab is a leading provider of weapon locating systems and this order is proof of our customers' confidence in the performance of the Arthur system. We have now sold 80 Arthur systems and their availability is well proven from thousands of hours' operation."

The Arthur system is in use with multiple customers worldwide, including Sweden, Norway, Denmark, the UK, Greece, Czech Republic, Spain and Italy. SP

PHOTOGRAPHS: BAE Systems, Saab Group

First rapid prototype torpedo warning system testing on board CVN

USS George H.W. Bush (CVN 77) and Naval Sea Systems Command (NAVSEA) PMS 415's Surface Ship Torpedo Defense (SSTD) team began at-sea testing and data collection of the rapid prototype torpedo warning system (TWS) and countermeasure anti-torpedo (CAT) system, March 19.

This marks the first aircraft carrier employment of the TWS, which was installed during the ship's recent planned incremental availability (PIA) period.

The TWS was streamed in order to collect acoustic data and fine-tune the system. The SSTD team, led by PMS 415 Programme Manager, Capt. Moises DelToro, has worked on this high priority Chief of Naval Operations (CNO) system in order to be operational for CVN 77's upcoming deployment. Captain DelToro and the SSTD Team have been extremely impressed and grateful for the support, enthusiasm, and professionalism shown by the ship's crew members during the testing and install period.

The TWS/CAT was previously tested only on board smaller ships, such as destroyers, but in 2011 Chief of Naval Operations (CNO), Adm. Jonathan Greenert, approved the system for use on board aircraft carriers. USS George H.W. Bush was chosen to be the first to test and operate this rapid prototype system.

According to Brad Robinson, TWS/CAT fleet liaison, the at-sea testing is a major milestone. "We are able to put this array into the water and collect valuable data to enhance our software and make it a much more reliable alert system when it goes on deployment," said Robinson. "We are collecting noise and acoustics that we were unable to previously collect."

Over the next few months, CVN 77 will continue to test the TWS/CAT, allowing sailors an opportunity to increase their knowledge of the system and ensure safe operation in the future.

"Our sonar technicians (surface) are learning how to work and use the system this week. We're really excited to have it on board," said Cmdr. Andrew Walton, the ship's operations officer. "While the NAVSEA team is embarked they'll be able to make adjustments for future operation based on the lessons learned." SP

Taiwan to test new MLR artillery in exercise

The locally developed Thunderbolt-2000 artillery multiple-launch rocket system (AMLRS) will join the nation's largest annual drill during a scheduled live-fire exercise next month, the Ministry of National Defense (MND) has announced.

The Thunderbolt, a wheeled AMLRS, will be tested during the live-fire exercise to be held at the offshore island of Penghu on April 17 as part of the annual Han Kuang series of exercises, Major General Tseng Fu-hsin of the MND announced recently.

A number of Thunderbolt-2000s will be used during the April 17 drill, he noted, saying 81 rockets will be fired in the process.

The weapon system was developed by the military's chief research facility, the Chungshan Institute of Science and Technology (CSIST). Development of the system began in 1997.

The truck-mounted, multi-barrel AMLRS is designed to provide a quick-fire response against enemy amphibious assault landings. It is expected to be installed at military units around the country soon.

The surface-to-air standard missile II and the locally developed Hsiung Feng III anti-ship missile will not be included in the exercises slated for April, according to the Ministry. SP

PHOTOGRAPHS: Estonian Ministry of Defence, BAE Systems Maritime, Wikipedia

Ground Master air defence radar for Estonia

An official ceremony was held on March 26 on Muhu Island in Estonia to mark the entry into service of the first Ground Master 400 (GM 400) long-range air defence radar system supplied by Thales Raytheon Systems to the Estonian armed forces. The ceremony was presided by Estonia's Defence Minister Urmas Reinsalu.

The system is the first of two radar systems ordered by the Estonian Air Force and is one of 14 radars of the same type ordered jointly by Finland and Estonia. The GM 400 is designed for both fixed-site operation under a radome at the Muhu base and for rapid deployment in the field. In a tactical, truck-mounted configuration with an independent power supply, it can be deployed in the field in less than two hours.

This GM 400 will be connected to the NATO network and can be interconnected with all the other air defense radars deployed across Europe. It will bring Estonia superior detection performance at low and high altitudes, higher availability and simplified maintenance.

"The entry into service of the Ground Master 400 is an important milestone in our air defence programme. We look forward to the operational benefits of this new radar," said Ingvar Pärnamäe, Undersecretary for Defence Investments of the Estonian Ministry of Defence.

"We are delighted that the GM 400 radar is now supporting Estonia's important role in the NATO air defence infrastructure. The new radar system will bring the country an operational long-range air surveillance capability and improved detection performance against a broad array of modern threats," said Philippe Duhamel, CEO of Thales Raytheon Systems SAS. SP

HMS Duncan reaches Portsmouth naval base

The 7,500-tonne vessel, HMS Duncan, armed with the world-leading Sea Viper missile defence system, has sailed to her new home in Portsmouth, where she will undergo a series of trials and tests before being commissioned into the fleet next year.

Her release from shipbuilder BAE Systems and arrival at the naval base marks the end of a successful 12-year build programme to provide the Royal Navy with a fleet of the largest and most powerful air defence destroyers it has ever received.

The Minister for Defence Equipment, Support and Technology, Philip Dunne, said: "The arrival of HMS Duncan in Portsmouth today marks the culmination of the Type 45 programme with the UK shipping industry to provide the Royal Navy with a fleet of world-class destroyers."

"Together these vessels are a formidable force and will play an important part in allowing the Royal Navy to protect our interests wherever needed around the world."

The first Type 45, HMS Daring, arrived in Portsmouth in January 2009. She has been followed by HMS Dauntless, HMS Diamond, HMS Dragon, HMS Defender and now Duncan. They will all be based in Portsmouth. SP

F-35C Lightning II test aircraft launches for the first time from the new electromagnetic aircraft launch system

Electromagnetic Aircraft Launch System

[By **Lt General (Retd) Naresh Chand**]

The first trial take-off of an aircraft took place from the deck of a US Navy cruiser USS Birmingham in 1910 and the first trial landing took place in 1911. The first plane to take-off from a ship under way was from the deck of Royal Navy's HMS Hibernia in 1912. The Japanese were meanwhile trying another approach by carrying sea planes on Seaplane tender support ships during World War I. During September 1914, the Imperial Japanese Navy Ship Wakamiya conducted the world's first naval-launched air raid against the Germans. Wakamiya carried four Maurice Farman seaplanes, which took-off and landed on the water and were lowered from and raised to the deck by crane. The development of flat top vessels produced the first large fleet ships. In 1918, Royal Navy's HMS Argus became the world's first ship capable of launching and landing naval aircraft.

Since then the technique for the take-off and landing aircraft from an aircraft carrier has become more refined and safe. The common systems in vogue are:

- Catapult-assisted take-off but arrested-recovery (Catobar). Catobar system is used for heavier aircraft carrying extensive payload. US, France and Brazil use this system. The catapult is a device used for launching an aircraft from aircraft carriers and follows the same principal of a catapult with which one played in younger days to drop fruit from trees or shoot birds. It has a piston which is called a shuttle and is propelled down a long cylinder under steam pressure. The aircraft is attached to the shuttle using a tow bar or launch bar mounted to the nose landing gear and is literally thrown upwards from the deck with a velocity higher than the minimum take-off.
- Short take-off but arrested-recovery (Stobar). Stobar system is used with lighter aircraft carrying limited payload like Sukhoi Su-33 and MiG-29K which are normally employed for air superiority and fleet defence. This configuration has bow ski-jump and three arrestor wires on the stern of the angled deck. India's INS Vikramaditya, which is currently undergoing a major refit in Russia, is of this type.
- Short take-off vertical-landing (STOVL). STOVL system can be used by Harrier Jump Jet family and Yakovlev Yak-38 which generally have very limited payloads, lower performance, and high fuel consumption, however a new generation of STOVL aircraft, currently consisting of the F-35B has much improved performance.

Electromagnetic Aircraft Launch System

Electromagnetic Aircraft Launch System (EMALS) is under development by the US Navy to launch carrier-based aircraft from catapults using a linear motor drive instead of conventional steam piston. EMALS consists of six subsystems working together and sharing components to power the four catapults on the ship. EMALS is being developed by General Atomics for Ford class carriers. The land-based prototype passed initial tests during 2010. The EMALS uses a linear induction motor (LIM), which uses electric currents to generate magnetic fields that propel a carriage down a track to launch the aircraft. A 91-metre LIM will accelerate a 45,000 kg aircraft to 240 kmph. The electric energy required by a LIM motor in a few seconds of its operations is much more than the power the mother ship can provide thus is achieved by a unique system of storing the power supply in its four disk alternators. It can also be recharged within 45 seconds of the launch as compared to the catapult which is much slower.

EMALS is designed to enlarge the operational capability of the US Navy's future carriers to include all current and future carrier based lightweight unmanned to heavy strike fighters.

It provides higher launch energy capacity, easier system maintenance, improved reliability and efficiency, and better end-speed control. EMAL provides smoother acceleration at both high and low speeds which reduces the stress both on the aircraft and the ship. It also reduces the requirement of water. The Aircraft Launch and Recovery Equipment Program Office of the US Navy has recently reported that EMALS has completed shared generator testing. Further development and testing will continue so that EMAL can be fitted on Ford class carriers. Will the Indian Navy include EMALS in its Indian aircraft carrier programme? SP

PHOTOGRAPH: US Navy

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 O

2014

WE SHALL BE 50 THIS YEAR

Guide Publications is rechristened as SP Guide Publications offering tribute and gratitude to its Founder...Also envisioned is the path of introduction of a few magazines...

2013

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...

1994

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

50 YEARS

SP GUIDE PUBLICATIONS

Keen competition in medium/heavy military rotorcraft market: Forecast International

Forecast International is projecting that 4,796 medium/heavy military rotorcraft will be produced between 2013 and 2022. The Connecticut-based market research firm estimates the value of this production at $114.4 billion in constant 2013 US dollars. The company defines a medium/heavy rotorcraft as one having a gross weight of 6,804 kilograms (15,000 lb) or greater.

Annual medium/heavy military rotorcraft production has grown steadily since 2005. The study projects that this growth will continue into 2013, when production is forecast to reach 615 rotorcraft. Thereafter, the yearly production will enter into a period of gradual decline, falling to only 380 rotorcraft by the year 2022.

This anticipated decline is attributable to several factors. The budgetary environment in the US and many other nations has become severe, and high levels of government debt are forcing officials to look for areas, such as military budgets, in which to reduce spending.

Meanwhile, a number of key military rotorcraft acquisition programmes are well into their production runs and will soon run their course. Other programmes have been stretched out, with smaller annual procurement lots. At the same time, few major new procurement programmes have emerged that would help keep overall build rates growing. Order backlogs at manufacturers are declining. As the market shrinks, the competition among manufacturers for market share will become ever more fierce.

Beyond the forecast timeframe, the study points to the US military's future vertical lift (FVL) programme as being especially important to the long-term future of the military rotorcraft industry. The FVL project involves the development and manufacture of a new rotorcraft family to meet future US attack, scout, and utility rotorcraft needs. Service entry is tentatively planned for around 2030. US military acquisition of FVL-based rotorcraft, combined with possible export sales, means that the market potential for such a rotorcraft family is substantial.

According to Forecast International senior aerospace analyst Raymond Jaworowski, "The contractor or contractor team ultimately selected to produce the FVL series could be in a position to eventually dominate the military rotorcraft market." SP

Malaysia down selects five OEMs for fighter jets

Malaysia which is shopping for combat aircraft has down selected five manufacturers. Malaysia has shown intent of buying 18 combat aircraft to replace its old fleet of Russian-made MiG-29s.

The companies shortlisted are the British-backed Eurofighter Typhoon, Sweden's Saab JAS-39 Gripen, France's Dassault Aviation Rafale, Boeing's F/A-18E/F Super Hornet and Russia's Sukhoi Su-30, according to the country's Defence Minister Zahid Hamidi.

At Langkawi International Maritime and Aerospace Exhibition, the Minister said the programme was looking at 2015 but added that the cost was not known. SP

PHOTOGRAPHS: Boeing, UAC, Dassault Aviation

Airbus Military and PT DI sign plan for NC212i

Airbus Military and PT Dirgantara Indonesia (PT DI) have signed an agreement covering the development plan for the NC212i light utility transport aircraft.

The agreement, signed at the LIMA Airshow in Langkawi, Malaysia by PT DI CEO Budi Santoso and Airbus Military CEO Domingo Ureña-Raso, ratifies and details the joint development, manufacturing, commercialisation and support work-packages for the new NC212i launched in November 2012.

Under the terms of the agreement, the companies will be long-term, risk-sharing partners with engineering and manufacturing being led by PT DI, supported by Airbus Military, and certification being an Airbus Military responsibility. The aircraft will be delivered from Bandung, in Indonesia and will be promoted and supported by PT DI and Airbus Military teams worldwide.

The NC212i is a development of the Airbus Military C212-400 as a highly competitive and versatile transport for both civil and military customers with new digital avionics and autopilot systems, and a new civil interior for 28 passengers rather than the current 25. It will be EASA and FAA FAR 25 certified. SP

Bangladesh plans to buy 24 Russian jet trainers

Bangladesh is planning to buy 24 Yak-130 Mitten jet trainers on $1 billion credit from Russia, Russia's state arms exporter Rosoboronexport said.

"Bangladesh has a whole list of arms it wants, but so far that is a state secret. I will reveal one little secret: The purchase of Yak-130 warplanes is a very significant subject of negotiations between Russia and Bangladesh," Rosoboronexport Deputy Chief Viktor Komardin said at the Langkawi International Maritime and Aerospace exhibition (LIMA 2013). He added that negotiations on Yak-130s are due to begin later this spring.

The Yak-130 is a highly manoeuvrable aircraft with an extended range of about 2,000 kilometres and a maximum speed of 1,060 kilometres per hour in level flight. SP

Spain deploys Tigre helicopters in Afghanistan

Spain has become the third country, after France and Germany, to deploy Tigre attack helicopters to Afghanistan; all have been transported by chartered Antonov An-124 freighters. Three Tigre helicopters of Attack Helicopter Battalion (BHELA) No. 1, stationed at the Coronel Sánchez Bilbao base at Almagro (Ciudad Real), were loaded on an Antonov transport plane for their transfer flight to Herat base, in Afghanistan.

During its first combat mission, the Tigre's vast capabilities will provide protection and security to our forces during their withdrawal. Two Tigre deployments are planned, each composed of 32 military, including pilots, mechanics and general staff personnel.

Over the past six months, the unit has carried out several exercises in Chinchilla, Agoncillo, Bardenas Reales, Almagro and Colmenar Viejo to evaluate the capabilities and the readiness of crews and maintenance personnel.

The Tigre helicopter can be defined as a true "weapon system." It is equipped with a 30mm cannon in the nose, and can carry up to four Mistral air-to-air missiles together with 44 68mm rockets (air-to-ground).

The helicopters being deployed to Afghanistan are equipped with a defensive system consisting of radar warning receiver (which alerts you when radar transmissions are detected) missile launch warning system (which detects and warns of a nearby missile launch), and a laser warning receiver (detects if a laser beam is pointed on the helicopter, indicating it is being designated as target).

It also is fitted with countermeasures such as chaff and flare launchers, to deceive or decoy missiles fired at the helicopter.

Each of the two deployments is composed of 32 people, including pilots, mechanics and general staff personnel. The first deployment will consist of eight officers, 15 NCOs and nine troops, while the second deployment will comprise seven officers, 16 NCOs and nine troops. In principle, the duration of each deployment is four months. SP

Sukhoi and Malaysia sign deal on fighters' maintenance

Russian aircraft maker Sukhoi and the Malaysian Defense Ministry have signed a $100-million contract for the technical maintenance of Malaysia's fleet of Su-30MKM fighters, said a spokesman for the organising committee of the LIMA 2013 aerospace exhibition.

The contract covers technical maintenance as well as supplies of spare parts for 18 Russian Su-30MKM fighters that were delivered to Malaysia between 2007 and 2009 under a $900-million contract signed in 2003. In addition to its 18 Su-30MKM Flanker fighters, Malaysia also has 16 MiG-29N Fulcrum fighters in its combat aircraft fleet. The Su-30MKM is a multi-role Flanker based on the Su-30MKI model and features a customised avionics package built to Malaysian specifications. Su-family fighters constitute the bulk of Russia's arms exports. SP

Philippine Navy signs contract for three AW109 power helicopters

AgustaWestland has signed a contract with the Philippine Navy for three AW109 Power maritime helicopters plus two options. The helicopters will be used for a wide range of naval missions including economic zone protection, surface surveillance, SAR and maritime security. The aircraft will be delivered in 2014 and will operate from both shore and ship bases. The contract includes initial logistics support and training for aircrew and maintenance personnel.

Vincenzo Alaimo, AgustaWestland's head of Regional Sales for South East Asia, said: "We are delighted that the Philippine Navy has selected the AW109 Power as part of its armed forces modernisation programme after an extensive evaluation of competing types. The AW109 Power's multi-role abilities and high performance will provide the Philippine Navy with an enhanced maritime operational capability."

The AW109 Power is a three-tonne class eight seat helicopter powered by two Pratt & Whitney PW206C engines with FADEC. The spacious cabin is designed to be fitted with a number of modular equipment packages for quick and easy conversion between roles. The aircraft's safety features include a fully separated fuel system, dual hydraulic boost system, dual electrical systems and redundant lubrication and cooling systems for the main transmission and engines.

The AW109 Power has established itself as the world's best-selling light-twin helicopter for maritime missions. The AW109 Power's superior speed, capacity and productivity combined with reliability and ease of maintenance make it the most cost-effective maritime helicopter in its class. For shipboard operations the aircraft has a reinforced-wheeled landing gear and deck mooring points as well as extensive corrosion protection measures. SP

PHOTOGRAPHS: Eurocopter, AgustaWestland, IAF

Brazilian Air Force and Embraer conclude critical design review of the KC-390 project

The Brazilian Air Force (FAB) and Embraer Defense & Security have successfully concluded the critical design review (CDR) of the KC-390 military transport aircraft.

During the CDR, the definitive aerodynamic and structural configurations, as well as the architecture and systems installations were confirmed, and meaning that the design is sufficiently mature to begin the detailed project and manufacture the prototypes of the aircraft.

Participating in the closing of the CDR were members of the Brazilian Air Force High Command, with special mention of Air Force Lt General Aprígio Eduardo de Moura Azevedo, Air Force Chief of Staff. The FAB delegation got a close look at the tools and models used in developing the KC-390, such as an engineering simulator and a life-size model of the cockpit.

"We have concluded an important stage of the KC-390 Programme and, therefore, we gave an accounting to the FAB of the work done. We will now begin the production phase of the prototypes," said Luiz Carlos Aguiar, President and CEO of Embraer Defense & Security. The manufacture of the first pieces of the prototype will soon begin and all of the activities of the project are focused on taking the first flight in the second half of 2014. The KC-390 is the largest airplane ever conceived and built by the Brazilian aeronautics industry and will establish a new standard for medium-sized military transport aircraft, in terms of performance and payload, as well as advance mission and flight systems. SP

Cassidian to provide Canadian Air Force with latest radar technology

Cassidian has won a €50 million programme to equip the airfields of the Royal Canadian Air Force with latest-technology airport surveillance radars. The Canadian contracting authority Public Works and Services Canada has selected Cassidian to deliver seven of its ASR NG airport surveillance radars to improve the flight safety on Canadian airbases and to enhance the integration of military aviation into civil air traffic. Cassidian is working together with Lockheed Martin Canada as a strong local partner in this project.

According to Simon Jacques, head of Cassidian Canada, "the radar provides outstanding performance for wide-area surveillance around airbases as well as safe guidance of individual aircraft during take-off and landing". He continued: "Our ASR NG guarantees outstanding performance so that even very small objects such as ultra-lightweight aircraft or even flocks of birds can be reliably detected and classified". Due to a specific data processing software the ASR is able to track air traffic even in windfarm shadows. As a special feature, the ASR NG comprises the secondary radar MSSR 2000 I allowing for reliable individual identification of more than thousand aircraft at a time. SP

Kadet Defence Systems completes delivery of aerial targets to Indian Army

Kadet Defence Systems (P) Ltd recently announced that it has successfully completed delivery of 70 JX2 Aerial Targets along with spares, ground support equipment and training aids.

The JX2 Aerial Target System is a versatile training aid for air defence gunnery and missile practice and has been supplied in the sleeve tow configuration pursuant to a contract entered into in May 2010 with the Ministry of Defence, India for 350 Aerial targets, spares, ground support equipment and training services.

The deliveries were preceded by extensive quality assurance tests, confirmatory Flight and Environmental trials.

"We created history by being able to secure the first UAS Contract to the Indian private industry and then successfully deliver our product which once again reaffirms our commitment to the users" said Avdhesh Khaitan, KDS CEO and Founder. "This contract gives us a strong foothold into the emerging Aerial Targets segment in India and further enables us to introduce our JX3 Jet Powered Aerial Target to address emerging threats".

The JX range of Aerial Targets are comprised of the propeller driven JX2 Aerial Target and the jet powered JX3 Aerial Target. The systems can be configured to emulate various threat perceptions and can carry various payloads including IR flares, smokes, luneberg lense, chaff and miss distance indicators. The Aerial Targets can also be retrofitted with tow systems to economise weapon training and development. SP

PHOTOGRAPHS: Embraer, Kadet Defence Systems, Cassidian

Camcopter S-100 demonstrates capabilities at LIMA

The Langkawi International Maritime and Aerospace (LIMA) exhibition saw demonstrations of the Schiebel Camcopter S-100 unmanned air system (UAS). Schiebel's second attendance at the LIMA exhibition in cooperation with Alaf Strategi underlines the strong interest for the Camcopter S-100 in the region. In June 2012, the S-100 successfully completed a series of demanding trials for the Malaysian armed forces and the Malaysian Maritime Enforcement Agency (MMEA) representatives.

Operated by Alaf Strategi personnel, the S-100 flew from a makeshift helipad at the beach various missions out to 30 nm in Teluk Batik, Malaysia. Several maritime ISR missions were performed by day and night, including a mission to identify and track several fast-moving MMEA vessels.

Although S-100 is tested on three oceans of the world, on 14 different classes of vessels, each trial is a unique and challenging experience. Hundreds of takeoffs and landings, relative wind speeds up to 40 knots, hovering close above the helicopter deck and automatically following the ship's movements, with a subsequent smooth touch down and proven automatic decking capabilities, are just a few of the outstanding characteristics of the Camcopter S-100.

"Operating as part of either single ship or task force operations, the S-100 is a true force multiplier." said Hans Georg Schiebel, Chairman of the Schiebel Group. "It expands the area of influence, providing high-definition observation, allowing commanders increased decision times for counter action and target engagement. Close collaboration of maritime patrol and unmanned air systems together with satellites, radar- and sensor systems ensure secure traffic across oceans, preventing aggression, detecting piracy, securing coastlines and protecting pipelines."

We are convinced that the worldwide proven Camcopter S-100 UAS represents the perfect asset for any surveillance mission. The series of regional trials conducted by Alaf Strategi personnel were successful and generated a lot of interest, not only in Malaysia. Our goal is to establish the S-100 as the leading UAS in Malaysia and beyond," commented Zainal Ashraf Awal, CEO of Alaf Strategi Sdn. Bhd. SP

Mali: 1,000 flight hours for the Harfang detachment

During the night of March 15-16, 2013, the Harfang detachment flew its 1000th flight hour in support of Operation Serval. Deployed since January 17 in support of the French operations in Mali, the Harfang detachment of Drone Squadron 1/33 "Belfort" logged over one thousand flight hours, by day and night, in less than two months.

The Harfang drone accompanied the French forces who liberated Douentza and supported special forces operations as well as airborne troops over Timbuktu. It provided a decisive contribution to the troops engaged in the reconquest of northern Mali, in the Adrar des Ifoghas mountains.

Making a substantial contribution to the collection of information in theatre through its sensors and its persistence in the area, Harfang also used its detection capabilities to help the aircraft of the French air force and Marine Nationale to acquire and engage enemy targets.

Thanks notably to its onboard laser illuminator, drone crews also guided precision bombs fired by other vectors to their target. Thus in 1,000 flying hours, the Harfang detachment was engaged in all phases of operation Serval, and throughout the entire operational theatre. In over fifty sorties, it covered a broad spectrum of operational missions, and thus contributed significantly to the tactical success of operation Serval. SP

Rockwell Collins supplies tactical targeting network technology for X-47B unmanned demonstrator

Rockwell Collins tactical targeting network technology (TTNT) was used by Northrop Grumman Corporation and the US Navy as they successfully completed a series of deck handling trials of the X-47B unmanned combat air system aboard the aircraft carrier USS Harry S. Truman (CVN-75).

The exercises demonstrated the ability to manoeuvre the tailless, strike-fighter-sized aircraft quickly and precisely on the flight deck using a wireless handheld controller. The tests are the latest in a series of activities leading up to the first carrier landings of the X-47B, which are planned for mid-2013.

"TTNT is part of the overall command and control architecture for the X-47B, and it plays an essential role in helping the aircraft perform vital functions," said Bob Haag, Vice President and General Manager of Communication and Navigation Products for Rockwell Collins. "We're pleased that our technology is helping Northrop Grumman and the Navy successfully prepare for the introduction of unmanned aircraft to carrier operations."

TTNT provides high data rate, long-range communication links for airborne platforms. As a complement to existing tactical data link networks, TTNT adds significant airborne network capacity while providing rapid, low latency message delivery. The minimal network planning requirements of TTNT will enable participants to enter and exit the network without extensive preplanning.

It has been used in demonstrations on more than a dozen airborne platforms, including the F-16, F-22, F-15, F/A-18, B-2, B-52, Airborne Warning and Control System, Battlefield Airborne Communications Node and E-2C Hawkeye. SP

PHOTOGRAPHS: Schiebel, Northrop Grumman

Threats today are complex and interconnected: Chidambaram

The Finance Minister P. Chidambaram delivered the K. Subrahmanyam Memorial Lecture on "India's National Security—Challenges and Priorities" at the Institute for Defence Studies and Analyses (IDSA) recently and here are excerpts from the talk:

"Until recently, we had taken a very compartmentalised view of national security. Each threat to national security was neatly fitted into one compartment. The first, of course, was a war with Pakistan. That was fitted into a compartment and was meant to be deterred, or defended, through the might of our armed forces. A war with China was and remains unthinkable, and therefore that threat was fitted into another compartment and reserved to be dealt with through a mixture of engagement, diplomacy, trade, and positioning adequate forces along the borders. Beyond Pakistan and China, we did not perceive any external threat to our security. Other threats such as communal conflicts, terrorism, Naxalism or Maoist violence, drug peddling and fake Indian currency notes (FICN) were bundled together under the label "threats to internal security" and were left to the Ministry of Home Affairs. Some threats were not acknowledged at all as threats to national security and these included energy security, food security and pandemics. K. Subrahmanyam was one of the earliest to argue that we should take a more holistic view of the threats to national security.

"A close examination of the threats to national security will reveal that each one of them is connected to one or more other threats. For example, the threat of terrorism is connected to the threat of proliferation of arms, including weapons of mass destruction. The threat to the security of our sea lanes is connected to the threat to energy security. Low-intensity conflicts have a direct bearing on social cohesion. Technology security will be the key to building new institutions. Natural disasters, especially those caused by climate change, can wreck food security. Pandemics and diseases, if uncontrolled, can diminish our capacity to defend the borders against our adversaries or to defeat the militants within the country. National security is, therefore, caught in a complex spider's web and unless we recognise that each strand of this web is connected to other strands, we would not be able to do justice to our fundamental obligation to protect and defend the security of the nation.

"Defending and promoting national security stands on three important pillars: firstly, human resources; secondly, science and technology; and thirdly, money. "

China invests heavily in security

"High growth in China inevitably translated into higher expenditure on security, and as a logical corollary, a high degree of security. In the same speech, President Hu Jintao said, 'Military preparedness has been enhanced. The armed forces have greatly enhanced their capability of carrying out their historic mission in this new stage in the new century, and they have accomplished a host of urgent, difficult, dangerous and arduous tasks.' The results of higher expenditure show up in the hardware. According to the Stockholm International Peace Research Institute (SIPRI), China has nearly 62 intercontinental ballistic missiles (ICBMs). China is reportedly developing the JL-2 SLBM for its new strategic submarines, four of which are already sailing while two more are under construction. India has purchased one from Russia that is used for training purposes.

"There are reports that China has commissioned its first indigenously renovated aircraft carrier, unveiled its fifth-generation stealth aircraft (the J-20 and the J-31) and tested an anti-satellite weapon once, and a missile interceptor twice. There is also a report that China has developed a strategic heavy-lift transport aircraft. China has a space lab in orbit and it also plans to launch 100 satellites during its ongoing five-year-plan from 2011-15. Twenty spacecraft will be launched this year, including its third Lunar probe and a manned spacecraft that will dock with China's space lab. There are indications that by 2020, China may have more than 200 spacecraft in orbit accounting for about one-fifth of the world's total. These examples are sufficient to emphasise the point that sustained high growth is the key to become, if a country aims to become, a "comprehensive national power".

"I conclude by asserting that there is no substitute for sustained growth over a long period of time if India should attain the status of, at least, a middle-income country. It is only sustained growth that gives as a chance to tune the growth model in favour of inclusive development. Without growth, there will be neither development nor inclusiveness." SP

PHOTOGRAPHS: IDSA

Centre convenes meeting of Chief Ministers on internal security

The Centre has convened a meeting of Chief Ministers on April 4 to discuss various internal security issues. The meeting will discuss issues concerning the country's internal security, activities of various terrorist organisations, militant activities in Jammu and Kashmir and insurgency problems in north-eastern states.

The conference will specifically deliberate the issue of setting up of the National Counter Terrorism Centre (NCTC), which is being opposed by Chief Ministers like Mamata Banerjee (West Bengal), Narendra Modi (Gujarat), J. Jayalalitha (Tamil Nadu) and Naveen Patnaik (Odisha). The Centre has already suggested NCTC would be out of the ambit of Intelligence Bureau and it would conduct any search operation or arrest anyone in any state only after informing the state police chief. Those opposed to NCTC have been maintaining that allowing NCTC to conduct operations unilaterally would infringe on the states' powers and would hurt the federal structure of the country.

The last meeting of the Chief Ministers, held on March 5, 2012, had failed to evolve a consensus on NCTC. Home Minister Sushilkumar Shinde had said he would discuss the issue of NCTC with the Chief Ministers in a bid to break the logjam. The meeting will also discuss the menace of the left-wing extremism and how to tackle it in close cooperation between then state governments and the Centre. SP

Internal security budget crosses ₹50,000-crore mark

The central spending to counter internal security challenges is set to cross the ₹50,000 crore-mark over the next one year, twice of what was being spent in 2008 when terrorists struck Mumbai. In the budget, the police has got a generous 19 per cent hike to fight crime and terror.

Chidambaram's budget earmarked ₹52,264 crore for the internal security establishment for the next fiscal. The Home Ministry's security budget for the current year is ₹43,700 crore.

Much of it will go to pay salaries of central security personnel fighting terrorists in Jammu and Kashmir, Northeast and Maoists. SP

US strategy for homeland

The US Department of Defence (DoD) has released the strategy for homeland defence and defence support for civil authorities. This policy establishes DoD's priorities in the areas of homeland defence and defence support of civil authorities through 2020, consistent with the President's National Security Strategy and the 2012 Defence strategic guidance.

It links with other DoD and national strategic documents related to missile defence, space, cyberspace, counterterrorism, and the Western Hemisphere. The strategy identifies two priority missions for the department in the homeland: defend US territory from direct attack by state and non-state actors; and provide assistance to domestic civil authorities in the event of natural or man-made disasters, potentially in response to a very significant or catastrophic event.

The strategy emphasises cost-effective policy mechanisms and innovative approaches to defend the homeland against direct attacks and to provide timely responses to routine and catastrophic events on US territory. It stresses the continuation of DoD capabilities to defend against conventional and emerging threats in the air and maritime domains, while expanding cooperation with federal, state, and local partners to defeat asymmetric threats – including, for example, home-grown violent extremists who may seek to use improvised explosive devices. Additionally, it addresses DoD preparations for responding to man-made and natural disasters. SP

Changes to the prohibited items list at US airports

From April 25, 2013, the US Transport Security Administration (TSA) of the United States has relaxed rules at the airports on prohibited items.

Through TSA's layered approach to security, and to align more closely with International Civil Aviation Organization standards, effective April 25, 2013 TSA will allow knives that do not lock, and have blades that are 2.36 inches or 6 centimetres or less in length and are less than 1/2 inch in width, novelty-sized and toy bats, billiard cues, ski poles, hockey sticks, lacrosse sticks and two golf clubs as part of their carry-on baggage. This is part of an overall Risk-Based Security approach, which allows TSA security officers to better focus their efforts on finding higher threat items such as explosives. SP

PHOTOGRAPHS: TSA, US Coast Guard

Boeing and Bharat Electronics expand partnership

Boeing and the Bharat Electronics Limited (BEL) are expanding their partnership through a follow-on contract involving the manufacture of subassemblies for the Boeing F/A-18E/F Super Hornet fighter jet.

This contract, for Super Hornet subassemblies, expands work Boeing awarded BEL in 2011. BEL delivers components for the Super Hornet and P-8I maritime reconnaissance aircraft; and is a partner with Boeing at the Analysis & Experimentation Centre in Bengaluru that opened in 2009.

"Boeing's relationship with BEL demonstrates our commitment to working with the Indian industry to provide customers with the best products while fostering global growth and market access," said Dennis Swanson, Vice President of International Business Development for Boeing Defense, Space & Security in India.

Through the new contract BEL will produce Super Hornet subassemblies including the ground power panel, helmet vehicle interface stowage and switch assembly and cockpit console panels. For the F/A-18, BEL also produces a stowage panel for the joint helmet mounted cueing system connector cable and an avionics cooling system fan test switch panel with a night vision imaging system-compatible floodlight assembly. For the P-8I it provides the identification friend or foe interrogators and data link II communications systems.

"BEL believes this cooperation with Boeing is a great opportunity and is ever willing to take it to greater heights," said H.N. Ramakrishna, BEL Director of Marketing. SP

Safran acquires Goodrich Electrical Power Systems

After completing all required approval procedures, Safran announced that it has finalised yesterday the acquisition of Goodrich Electrical Power Systems (GEPS), a leading supplier of on-board aerospace electrical power systems. The cash consideration for the transaction amounts to approximately euro 300 million.

GEPS brings new capabilities to Safran's product offering, including the critical electrical power generation know-how and experience which is the heart of electrical power systems. GEPS will be consolidated within Safran's existing Aircraft Equipment business with effect from April 1, 2013 and is expected to generate additional revenues of approximately euro 120 million for 9 months in 2013, of which the aftermarket business (spares and MRO services) should contribute half. SP

Let us look beyond Hawk: BAE Chairman

Led by Chairman, Dick Olver and Chief Executive Officer, Ian King, Board Members of BAE Systems paid a rare visit together outside the UK/US to HAL's facilities in Bengaluru recently. They interacted with HAL Chairman, Dr R.K. Tyagi and top officials and discussed about various business areas of mutual interest.

Olver insisted that the deep routed business relationship with HAL should go beyond Hawk to make the future even better than past. India being the second largest market for Hawk after UK, he said both the partners could think of working on new projects in 17 countries where BAE has its presence.

Dr Tyagi said HAL would be keen to carry forward this relationship. A new business model such as Performance Based Logistics (PBL) could be an area of cooperation with HAL learning from BAE experiences. HAL and BAE Systems have been together since the 1940s when Tiger Moths were overhauled and the relationship strengthened through production of Jaguars in the 1980s and the Hawk fleet in the last 20 years, he added.

Currently HAL produces Hawk Mk. 132 under licence from BAE Systems, UK and the first aircraft was handed over to the Indian Air Force in August 2008. The Hawk Mk 132 is an advanced jet trainer with tandem duel seats meant to provide advanced flying and weapons training. SP

Raytheon consolidates businesses and announces key executive roles

Raytheon Company announced that it is consolidating its businesses to streamline operations, increase productivity and achieve stronger alignment with its customers' priorities.

The Raytheon Company structure will consist of four businesses: Intelligence, Information and Services, resulting from the combination of the Intelligence and Information Systems and Raytheon Technical Services businesses; and the Integrated Defense Systems, Missile Systems, and Space and Airborne Systems businesses, each of which will be expanded by the realignment of the former Network Centric Systems business operations. This new structure is effective April 1, 2013.

Additionally, Raytheon's Board of Directors has elected Dr. Thomas A. Kennedy to the new position of Executive Vice President, Chief Operating Officer. Kennedy previously served as Vice President, Raytheon Company, and President of Integrated Defense Systems.

Daniel J. Crowley has been named President, Raytheon Integrated Defense Systems (IDS), succeeding Kennedy. Headquartered in Tewksbury, Massacheusetts, IDS will now include two new product lines: C4I Systems and air traffic management. The expanded business had annual external sales1 of approximately $6 billion in 2012.

Lynn A. Dugle has been named President of the newly-formed Raytheon Intelligence, Information and Services (IIS) business. John D. Harris II, formerly President of Raytheon Technical Services Company LLC (RTSC), has been named Vice President and General Manager of the new business, reporting to Dugle. IIS combines the operations of the former Intelligence and Information Systems business, based in Garland, Texas, and RTSC, based in Dulles, Virginia. The combined business had annual external sales of approximately $5.5 billion in 2012.

Dr Taylor W. Lawrence continues to lead Raytheon's Missile Systems (RMS) business based in Tucson, Arizona. The expanded business will now include Combat & Sensing Systems, along with Raytheon UK. The combined business had annual external sales1 of approximately $6.5 billion in 2012.

Richard R. Yuse continues to lead Raytheon's Space and Airborne Systems (SAS) business based in El Segundo, California. The expanded business, with 2012 annual external sales1 of approximately $6 billion, will now include Integrated Communication Systems and Advanced Programmes. SP

Colombian marines procure tactical weapon simulators

Laser Shot, in collaboration with the Programme Executive Office for Simulation, Training and Instrumentation (PEO STRI) Foreign Military Sales (FMS) Division, has been awarded a contract valued at $9,44,000 for the delivery and installation of tactical weapons simulators (TWS) to provide firearms training for the Colombian Marines. The TWS have been installed at a naval training base in Colombia.

In a co-ownership, the Colombian Navy and Marines needed to find a better way to train their personnel in a more cost effective manner, while still providing an excellent standard of military training. Colombian Marines wanted to focus on individual and collective training efforts towards marksmanship and tactical skill sets.

The contract will provide the Colombian Marines TWS systems with 40' and 20' wide screens for tactical and marksmanship training using virtual imagery walls that provide visual immersion into a combat or marksmanship environment. The system includes an array of Laser Shot's marksmanship and judgemental training courseware as well as Virtual Battlespace 2 (VBS2) for tactical training. The training courseware allows multiple options to include: training data for record, adapting to training skill level, building custom training scenarios, instructor ability to control tactical environments, etc. For use with the TWS systems, Laser Shot will be fabricating and fitting custom Galil rifle laser recoil kits enabling Marines to train with their primary service rifle. Additional training weapons include inert (non-recoil), simulated recoil weapons and recoil kits for the M9 Beretta and the M4 Carbine assault rifle. SP

Patriot simulator at Israeli academy

The Aerial Defense Academy in southern Israel now hosts a new Patriot simulator, meaning service members training to operate the anti-aircraft and anti-missile weapon will be able to practise at home instead of travelling to the United States.

"With this new addition, we have upgraded our training methods," said Capt. Matan Shalom in a statement. Shalom, who heads the Patriot unit in the Instruction Division at the Aerial Defense Headquarters, added that the new simulator would also change methods of instruction, simulation reconstructions, and debriefings for the weapon.

The simulator has 10 stations that simulate those in the control trailer of the Patriot, in addition to instructional stations that control the exercise. While the simulation currently asks operators to find and react to hostile targets, it could eventually interoperate with additional training tools such as flight simulators.

"The connection will allow cooperation with other formations in the force," said Lt Colonel Gershon Zlutnik, head of the Instructional Division at the ADA. "There may be a time where a pilot and a Patriot controller will have to cooperate." SP

Virtual convoy simulator

Retired paratrooper Ronnie Bland is the senior enabler on a life-sized, virtual convoy-skills trainer called the Special operations reconfigurable vehicle tactical trainer.

"I wish we had something like this when I was in," said the former signal soldier, who deployed for Desert Shield/Desert Storm and twice for Operation Iraqi Freedom.

Housed in a half-dozen trailers on the edge of Fort Bragg's weapons ranges, the convoy simulator incorporates four life-sized Humvees, each surrounded by screens with synchronised projected video of a mission scenario.

Each Humvee is outfitted with a field radio, GPS-based "Blue Force Tracker," and weapon options that include an assortment of machine guns, grenade launchers, rifles and anti-tank devices.

"We see the Tactical Trainer as a way for our soldiers to learn the fundamentals of battle drills without having to dispatch vehicles and draw weapons," said Captain Robyn Boehringer, commander of a company that provides forward support to paratroopers with the 82nd Airborne Division's 2nd Battalion, 504th Parachute Infantry Regiment, part of the 1st Brigade Combat Team.

The virtual training was a prelude to live-fire training her company is scheduled to participate in within a month or two, she said.

Inside the trainer, the life-sized graphics, realistic sounds and pneumatically induced weapon recoil can be tailored to a unit's requests, said Bland. One room houses an array of monitors that acts as a tactical operations centre during missions and as a debriefing room for after-action reviews during which missions can be replayed from a variety of viewpoints on several monitors simultaneously, he said.

Soldiers can practise maintaining vehicle-spacing intervals, using the radios, plotting routes and sending messages on the Blue Force Tracker, and reacting to enemy contact from roadside bombs, small-arms fire, tanks, aircraft and minefields. SP

PHOTOGRAPHS: Laser Shot, US Army

Emma Watson tops McAfee list for 'security compromise'

Harry Potter series female lead Emma Watson is this year's most dangerous celebrity, according to digital security firm McAfee. When McAfee means she is the most dangerous celebrity, it means that search engine queries for her name or image are more likely to lead to malware or other forms of Internet nastiness that queries for any other celebrity. The English actress portrayed Hermione in the Harry Potter series.

"In today's celebrity culture, consumers expect to be able to go online to catch up with the latest photos, videos, tweets, and stories about their favourite celebrities," said McAfee director of Web security research Paula Greve in a press release. "Due to the richness of the data and the high interaction, oftentimes consumers forget the risks that they are taking by clicking on the links."

Following Watson was American actress Jessica Biel, fiancée of singer/actor Justin Timberlake and 2009's Most Dangerous Celebrity. The No. 3 was actress Eva Mendes, who, McAfee noted, "is currently in the news for her fling with Ryan Gosling." Last year's No. 1, German model and reality-show host Heidi Klum, didn't even make this year's top 10. SP

Seven Navy SEALs reprimanded for lapse

Recently, seven US Navy SEALs were reprimanded for giving classified information to a video game manufacturer to make the Navy SEALs tradecraft on video games lot more realistic. The seven were charged with the unauthorised showing of their official combat gear and dereliction of duty for disclosing classified material after an investigation found the seven to have worked as paid consultants for two days with the video game company Electronic Arts.

The seven members were consulting with Electronic Arts on the game "Medal of Honor: Warfighter". The game touts that it is developed with the help of former and active duty commandos.

All seven are active duty members of SEAL Team 6, considered the most elite of the Navy's SEAL community. At least one of the team members was on the raid that killed Osama bin Laden last year, according to a Navy official. They have been reprimanded and their pay taken for two months. The move essentially prevents their chances for promotion and ends their military careers. SP

Fake bomb gets through Newark Airport security

At Newark Airport in the US, a federal agent with a fake bomb got through the screenings of the Transportation Security Administration (TSA), showing a stunning lapse of security. The agent got through the scanners with a small fake bomb stuffed in his pants. According to reports he was cleared all the way into Terminal B which is home to American Delta and JetBlue airlines.

A New York congressman Rep. Peter King is calling for extensive review of security operations at Newark Liberty International Airport in the wake of a report that said an undercover inspector concealing a mock bomb recently slipped past security screenings.

The February 25 incident is the latest high-profile security lapse to occur at the airport in recent years.

"The fact that 11½ years after 9/11 you're able to get explosives past security onto a plane is absolutely inexcusable; it's disgraceful," Rep. Peter King has said. "Over the years, there's been a number of security breaches at Newark airport…such as people being at areas of the airport where they're not allowed to be."

One of the hijacked planes on 9/11 took off from Newark. King said he wants a full review of security at the airport. SP

PHOTOGRAPHS: Wikipedia, www.a-gc.com, www.medalofhonour.com

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