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Vol: 3 Issue 23 ■ December 1-15 • 2013



Chief of the Naval Staff Admiral D.K. Joshi at the Indian Navy Day press conference held at New Delhi

Navy Chief on Self-Reliance

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Rahul Bhatia, Managing Director, InterGlobe Enterprises, and Marc Parent, President and Chief Executive Officer, CAE, inside the simulator

InterGlobe and CAE set up India's largest pilot training facility

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Navy to exercise INS Vikramaditya in 2014

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First ever joint India-Russia Air Force exercise to be held in 2014


Meeting just two days after the successful commissioning of the much-awaited aircraft carrier INS Vikramaditya into the Indian Navy, India and Russia agreed to expand the range of their strategic partnership in a significant manner at the 13th Meeting of the India-Russia Inter-Governmental Commission on Military Technical Cooperation (IRIGC-MTC) which was co-chaired by the Defence Minister A.K. Antony with his Russian counterpart Sergey Shoigu in Moscow.

The meeting decided that the two countries will hold joint Air Force level exercise for the first time besides a joint Navy Exercise in the Peter the Great Bay in the Sea of Japan, both in 2014. It may be recalled that the Armies of the two countries had recently held exercise Indra in Rajasthan recently and the focus was on anti-terrorism. The two Ministers agreed that there is a need for further cooperation at all levels, especially in



view of the regional and global challenges and to fight the menace of terrorism jointly. Both sides reviewed the situation in West Asia, especially in Syria and the evolving paradigm in Afghanistan.

In order to give a new impetus to the relationship which has gathered momentum over the years, the two sides agreed that the time has come to expand the cooperation not only in product design and development, which has made significant progress over the years but also to involve various echelons of the defence establishments in strategising policies and cooperation in the fast changing global security scenario.

Referring to fifth-generation fighter aircraft and the multi-role transport aircraft Antony said, the two projects are significant because they symbolise going-past the relationship of buyer-seller. He said both sides must give their best at all phases of the execution of these two projects-design, development and production. 



Cover:

At the Navy Day press conference held at New Delhi, Chief of the Naval Staff Admiral D.K. Joshi, gave updates of various Indian Navy programmes P-8I going great, RFP for MRMR issued, Arihant likely to inducted within a year.

Cover images:

Indian Navy, InterGlobe, Russian Navy

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SUBSCRIPTION/ CIRCULATION

Annual Inland: ₹1,320 • Foreign: US\$ 325

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1964 - 2014



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SP GUIDE PUBLICATIONS

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Internal security has to be given top priority

General elections are round the corner, though dates are yet to be announced. When political battles are being fought tooth and nail and security forces are deployed in the run-up to the elections, it is around this time elements inimical to state interests become lot more active. Already, we have had a major incident at a Patna rally of the Bharatiya Janata Party (BJP) where the prime ministerial candidate was addressing. Six people were killed and 83 were injured in seven bomb blasts in Patna. Two days after serial blasts targeted Narendra Modi's Patna rally, the Uttar Pradesh police said they had received intelligence inputs about terrorists plotting to attack the BJP's prime ministerial candidate's October 19 rally in Kanpur. They could have used rocket launchers and improvised explosive devices (IEDs).

Indeed, frightening scenario. Recently, the Union Home Minister Sushilkumar Shinde, who inaugurated a conference of Directors General of Police (DGPs) in New Delhi said that India is facing multifarious challenges on the internal security front in the form of militancy in J&K, insurgency in some parts of the Northeast, the threat of left-wing extremism (LWE) and terrorism in the hinterland.

The Home Minister has clearly stated that the Indian Mujahidden, which draws its motivation and sustenance from inimical forces operating from across the western border, has been responsible for three out of four major terrorist attacks in our hinterland this year. These include Hyderabad twin blasts and the series of blasts at

Bodhgaya and Patna. Keeping all this mind, we need to invest lot more on strengthening internal security and investment is not just financially, but also through various developmental activities and through continuous dialogue with moderate elements.

In this issue, Lt General (Retd) P.C. Katoch has underscored the importance of equipping the Special Forces, considering that they are being deployed in several anti-terror activities. He has pointed out how there is no proper planning in the creation of Special Forces and also how equipment is acquired and distributed, leaving the units ill-equipped.

Moving from internal security to Navy, we have good news that India's second aircraft carrier INS Vikramaditya is on its way to India from Russia to be inducted in January and that there would

be exercises in 2014 and with other countries in 2015. No doubt, INS Vikramaditya will find pride of place in the Western Fleet as the country's flagship.

With regards to exercises, the third round of India-China joint army exercises held recently in China was focused on counter-terrorism drills that included tactical hand signals, arrest and escort, hostage rescue, joint attacks and complete anti-terror drills. Lt General (Retd) Katoch writes that the underlining truth is that a joint Sino-Indian effort to counter Islamic radicalism is vital for stability in the region. China should understand this better with increased violence in Xinjiang and with the recent terrorist strike at Tiananmen Square.

Thus, internal security has become a very critical factor in the economic development of a nation and there is no doubt whatsoever that the government of the day has to give primacy to this.

We look forward to your feedback as to improve our coverage. Happy reading !

A handwritten signature in blue ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

Jayant Baranwal
Publisher & Editor-in-Chief

Navy to exercise INS Vikramaditya in 2014

As the Indian Navy works on sailing its newest acquisition back home, it has already decided that the INS Vikramaditya will be part of preliminary internal exercises in the Arabian Sea in 2014, but will be fielded in joint exercises with other countries only from 2015 onwards.

After operating a single aircraft carrier for over 16 years, the Indian Navy is once again technically a two-carrier force with INS Vikramaditya all set to join the INS Viraat in the Western Fleet when it arrives in Indian waters in January. The 44,500-tonne aircraft carrier will operate from Karwar, where the Seabird project is all set to receive her along with her 183-strong Russian guarantee squad, that will remain at the base for a period of one year to iron out induction issues that could spring up in the near term.

The two-carrier navy notion, though, is only that right now a notion. The Vikramaditya won't be operational as a fighting platform for more than a year. The MiG-29Ks at INS Hansa will begin operating from the ship's deck in 2014, and will only be fully operational by early 2015. The INS Viraat, on the other hand, over 50 years old in total service, is on its last legs, though its last refit may see it extended in service till 2017-18. The ship itself is a lower cause for worry, since its embedded fleet of upgraded Sea Harriers are small in number, and availability issues constrain sustained operations. Therefore, it may not be until 2015 that India has a fully functional aircraft carrier force again.

Be that as it may, the INS Vikramaditya will find pride of place in



the Western Fleet as the country's flagship. For \$2.35 billion, the Indian Navy may have been forced to wait nearly a decade, but is satisfied with the results, and is looking forward to exploring the capabilities of its newest warship. **SP**

Indian Customs to float significant small-arms requirement



The Indian Customs has decided to replace over 6,000 of its old and obsolete hand weapons deployed in anti-smuggling and engagement operations. Following a decision taken by the DG Revenue Intelligence earlier this year on the state of the Indian Customs armoury of weapons, the service has decided to float a slew of tenders to replace its old .303 rifles, revolvers and handguns with modern new weapons. A committee comprising Customs Preventive Commissioners had been mandated earlier

this year with defining usage and deployment norms for newly acquired norms. With the definition process completed, the Customs is now ready to kickstart the acquisition process. According to reports, the Customs field operators currently use about 1,500 different pistols, 1,500 revolvers, 65 light machine guns on patrol vessels, and nearly 600 self-loading rifles. Representatives from Indian Customs have spent the last few months reviewing available equipment from a list of vendors both in India and abroad, including the Ordnance Factory Board, Italy's Berretta, Austria's Glock, Israeli Weapon Industries, US firms Smith & Wesson and Colt, Germany's Sig Sauer and others. **SP**

Russia to offer Skat UCAV tech to India?

After BAE Systems, EADS, Saab and Dassault, the latest contractor now apparently ready to cooperate with India in UCAV technology is RAC-MiG. The company's discontinued Skat unmanned combat air system demonstrator. Currently, Russia's future UCAV platform is being spearheaded by Sukhoi with technology inputs from RAC-MiG, though sources indicate that Russia has sent feelers to India for



possible cooperation in that sphere as well. The topline aviation partnerships between the two countries currently include the ongoing Su-30MKI licence build in Nasik, the fifth-generation fighter aircraft and the multi-role transport aircraft. In 2010, the Indian Air Force conducted an abortive campaign to procure UCAVs from the global market, ending up with a profusion of information, rather, on the systems available and what cooperation was possible. While no country was willing to sell systems outright—indeed, no systems are operational yet, except for the US-built Reaper hunter-killer drones—several offers for cooperation were forthcoming. **SP**

Bharat Forge-Elbit JV to focus on gun, vehicle programmes

The newly cleared Bharat Forge and Elbit Systems joint venture—BF Elbit Advanced Systems Ltd—will initially focus on the Army's artillery requirements before expanding into more advanced equipment for all three services. **SP's** can confirm that the new company has received RFIs and enquiries pertaining to several prospective acquisitions including surface to air missile systems and other advanced weapon platforms. However, the company has taken a decision to initially focus on the Army's 155mm artillery modernisation initiative. The JV will offer solutions in the artillery guns & mortars segment based on Elbit Systems' ATHOS 155/52 Towed Gun System, the ATMOS 155/52 Mounted Gun System and the upgraded 130 mm M46 Gun to a 155/45 Gun (KARAN). The JVC will also role out a range of products like the Advanced Indian Gun System. B.N. Kalyani, Chairman and



Managing Director of Bharat Forge Limited has said while announcing the joint venture earlier this year, "The strategic cooperation between Elbit Systems and Bharat Forge and specifically the JVC will address Indian defence requirements with operationally proven systems from Elbit Systems that have been customised and adapted for Indian conditions and manufactured at the world-class manufacturing facility for end-to-end solutions for artillery systems and armoured vehicles upgrades established by Bharat Forge recently in India." **SP**

Tender out for Rustom-II's SATCOM Antenna

With its first flight scheduled for February 2014, the Aeronautical Development Establishment (ADE) has floated a global tender to acquire a SATCOM Airborne Antenna Assembly System (SAAAS) for the Rustom-II medium altitude long endurance UAV. The SATCOM antenna, a communication bridge between the air vehicle and ground station will function in the frequency range of Ku-band for the beyond line of sight communication, in which the uplink carries aircraft command and control, in addition to voice information while the downlink carries multi sensor payload information and multiplexed telemetry data as and when required. The SATCOM parabolic dish antenna will need to be between 0.6 and 0.73 metre in diameter. Vendors participating in the tender will also need to supply inertial navigation and GPS sensors as part of the package. The ADE has stipulated that the SAAAS needs to be operational at non-presurised altitudes of up to 35,000 feet. The ADE has provided an extremely detailed list of specifications for the SATCOM's performance. The work package will be divided into two phases, with the first constituting delivery of three airworthy systems to ADE and the second phase comprising flight testing and performance evaluation of one of the systems on a Rustom-II flying platform. This is likely to take place next year once flights begin. ADE has strongly indicated that it prefers a modified existing system to cut down on time. In March this year, **SP's** had reported how the DRDO had also decided to outsource the SATCOM data-link for the Rustom-II. The ADE has also called for interest in development of the automatic take-off and landing system (ATOL) for the Rustom-II. **SP**



Contract for Army's new MBRL carriers soon

A ₹100-crore contract for the Army's new BM21 multibarrel rocket launcher vehicles is likely to be awarded shortly to the Ashok Leyland-L&T consortium that was declared lowest bidder in the competition earlier this year. Sources say the company is likely to be contracted for the supply of about 100 units, covering virtually the entire BM21 Grad rocket arsenal. The Indian Army has bolstered its rocket regiments with the Russian Smerch system and indigenous

Pinaka, both of which have proved to be excellent performers. However, with the Soviet-vintage Grad systems still in functional form, a decision was taken in 2009 to spruce up their carriers to extend the lives of the BM21 rocket regiments. The Ashok Leyland-L&T consortium is poised to bid for other vehicle requirements of the Army too, as is Tata Motors, to fill the void left by the Tatra controversy. As **SP's** has reported before, the Indian Army is in the market for the entire spectrum of specialised vehicles from light infantry vehicles to heavy specialised vehicles across the spectrum of missions and capabilities. **SP**



Our enthusiasm is 100 per cent, the industry has to respond: Navy Chief on Self-Reliance

At the customary Navy Day press conference held at New Delhi, Chief of the Naval Staff Admiral D.K. Joshi gave updates of various Indian Navy programmes, including the P-8I which is going great, the recently issued RFP for MRMR and Arihant likely to be inducted within a year.

[By Sucheta Das Mohapatra]

There has been no pirate attack reported within 450 nautical miles of our coast in the last two years," said the Chief of the Naval Staff (CNS) Admiral D.K. Joshi, while also calling for regulations to check the incidences of private floating armouries and the private armed guards operating close to Indian waters. Addressing a press conference ahead of the Navy Day on December 3, the Navy Chief said that the floating armouries could perpetrate attacks similar to 26/11. "Adverse fallout of piracy of serious concern is the largely unregulated carriage of armed guards onboard merchant ships. There are scores of ships operating as floating armouries, outside any coastal state jurisdiction. Lack of any provisions to deal with such vessels or armed personnel hampers legal actions. We have recommended that this necessitates formulation of a regulatory framework by the International Maritime Organisation (IMO)."

Expressing satisfaction at India's effort at self-reliance, the Navy Chief said that the Navy is proud that all 45 ships and submarines, which are currently on order for Indian Navy, are being constructed in India in both public as well as private shipyards. "Launch of Vikrant, attainment of criticality of Arihant's nuclear reactor and its impending sea trials, induction of Shivalik class stealth frigates, ongoing trials of Kolkata, the lead ship of Project 15 A stealth destroyers, have demonstrated the strength of our research and development (R&D), naval design and industry. The synergy between Navy, the Defence Research and Development Organisation (DRDO) and industry has enhanced the pace, quantum and quality of indigenisation. Globally very few select countries construct their own ships, aircraft carriers and submarines, including nuclear ones, and this achievement is a matter of national pride."

PHOTOGRAPH: Indian Navy

The launch of GSAT-7 in collaboration with the Indian Space Research Organisation (ISRO), a dedicated satellite for Navy under project Rukmani is a landmark achievement in enhancement of our blue-water networked operations. We are also supporting ISRO in the Mars Mission through Naval teams embarked on ships currently in the South Pacific."

Explaining further to a question on self-reliance raised by Jayant Baranwal, Editor-in-Chief, *SP's M.A.I.*, CNS said that a lot of money needs to be invested in R&D and the industry has to show interest. "Our enthusiasm is 100 per cent, the industry has to respond." In the three operational capabilities required for a ship—"float, move and fight"—he said "we have 100 per cent capability in the first category, something to be really proud of; while a lot of improvement is needed in the 'move' and 'fight' categories." Giving details on India's self-reliance efforts, Vice Admiral N.N. Kumar, the Chief of Material, Indian Navy, informed *SP's* that the Indian Navy, DRDO, the Bharat Electronics Limited (BEL) and industry are working together on many programmes; Pipavav is working on five offshore patrol vessels (OPVs), and Larsen and Toubro (L&T) on torpedo tubes and rocket launchers.

Replying to a question on coastal security by Jayant Baranwal, the Navy Chief informed that the coastal security measures taken at present are at a vastly improved stage and much of the hardware for the coastal security network has already fructified. As regards registration of the fishing vessels, he said that the process is on. He assured that the Navy continues to maintain enhanced vigil across the entire spectrum of India's maritime interests, including coastal security and is enhancing its preparedness gradually. "Coastal security remains a key focus area for us. With regular exercises and setting up of Joint Operations

Three P-8I Neptunes have been delivered to the Indian Navy



The recently launched indigenous aircraft carrier Vikrant



Centres (JOCs), coordination between various agencies has improved considerably. Situational awareness has also improved with phased implementation of National AIS Network and coastal radar chains. We are constantly upgrading the military infrastructure and facilities in our island territories to improve surveillance, joint and well coordinated operations. While downstream activities are being progressed, we are concurrently working towards further augmentation of assets and infrastructure under Coastal Security Phase II."

Admiral Joshi informed that a Coastal Security Bill to further improve multiple agency and Centre-state interface has also been drafted. The bill, he said, will enhance coordination among multiple agencies under different Ministries as well as Centre-state. The Ministry of Home Affairs (MHA) has agreed to steer it. He also explained about the 'hub and spoke' model as part of the coastal security measures wherein information is received from the coastal police force, radars, transponders and the data is analysed at the regional headquarters level and concurrently shared with the JOCs and all that neutral and non-hostile inputs are filtered out.

On China's increasing maritime capability and recent activities in the South China Sea, he said that the Indian Navy has no confrontation with any Navy and is constantly in the process of evaluating the capability of other navies which could be detrimental to our Navy. "We do not embark on any country specific preparation but only capability development. We look at the capability of other navies and see how we can counter, in our national interest. Our capability should be such that we are able to safeguard our maritime interest." On the South China Sea, he said that the Indian Navy does not operate on a regular basis but has units at sea and the issue is under close observation.

The Navy Chief said that INS Vikramaditya's recent commissioning has bolstered Indian Navy's carrier centric 'blue-water' capability. The MiG-29K fighters at Goa are undertaking intensive training, to commence deck flying and integrate Vikramaditya into Navy's operational architecture. Vikramaditya bridges the time gap between Indian Navy's existing capability and our indigenous aircraft carrier project.

Further giving details of different programmes, the Admiral said that the Vikrant is expected to be commissioned around 2017. On the Hawk advanced jet trainers (AJTs), he said with its recent induction, naval aviation is undergoing a qualitative transformation. Similarly, the recent induction of P-8I Boeing has ushered in a new era for Navy's air surveillance and stand-off attack capabilities. "The P-8I programme is going great. It is a long-range surveillance and stand-off attack aircraft." Informing further on the maritime patrol aircraft of the Navy, he said that the long-range maritime reconnaissance (LRMR) is the biggest in the category and request for proposal

(RFP) for medium-range maritime reconnaissance (MRMR) has been issued a month back. Admiral Joshi said that the Indian Navy, which already has experience in operating amphibious craft like the Sealant, does have plans for induction of amphibious aircraft, which would be of great use in far-flung islands like in Lakshwadeep and Maldives. Updating on Project 75I, the Navy Chief admitted that there has been delay and the Navy is hopeful that the final approval would be accorded early. Arihant, the nuclear powered submarine, he said, is likely to be inducted within a year and 100 per cent of harbour acceptance trials are now over.

On the Sindhurakshak incident, the Admiral informed that salvage activity has not yet commenced and the Navy is in the process of finalising from five international vendors, out of which three were called for commercial bid. The L1 vendor will be decided soon. Quite a bit of investigation has been done, and further details would be found after the salvage activity. "The Board of Inquiry (BOI) will take for weeks, but the submarine has to be floated."

As regards foreign cooperation, the Navy Chief said that bilateral Coordinated Patrols (CORPAT) along shared international maritime boundaries are being regularly conducted with Indonesian and Thai navies, to address common concerns of poaching, drugs and human trafficking, and gunrunning. The maiden CORPAT with Myanmar was undertaken this year and "we plan to invite more Indian Ocean Region (IOR) countries into similar cooperative endeavours. Two of our initiatives IONS and MILAN have been receiving overwhelming response as well as requests for membership, and have helped productive interaction with a number of navies. The IONS Operational Seminar, held at Mumbai in September this year, was a success and saw participation by 22 regional navies. Similarly, MILAN has been steadily gathering momentum. Beginning with just five members in 1995, we hosted 14 navies for MILAN 2012. Next year we are expecting 20 littoral navies to participate in MILAN 2014." On his recent visit to Sri Lanka which was soon followed by the Sri Lankan Defence Minister's India visit, the CNS said that it's an ongoing activity and there is at present no plan of scaling up naval cooperation with the country.

On the proposal for the appointment of a four-star officer as the permanent Chairman of Chiefs of Staff Committee, the Navy Chief stated that all the three services have agreed to have a permanent Chairman of Chiefs of Staff Committee who would be in-charge of looking after the tri-services issues and a final decision on the matter would be taken by the government. However, discussions on whether the Chairman would be from the Indian Army, Navy or Air Force, service or non-service has not been discussed by the services and would be a political decision. **SP**

Equipping Special Forces

[By Lt General (Retd) P.C. Katoch]

Being under different chains of command, there is little commonality in equipment of the Military's Special Forces. Then is the essential requirement of provisioning 'packaged equipping' that is generally ignored. 'Packaged Equipping' implies that if a subunit of Special Forces is authorised particular weapons and equipment, these must be made available as a package in the required quantities.

Packaged equipment is essential because if a subunit does not have the complete authorised equipment, its combat capability will obviously be less. Unfortunately, indigenous development by the Defence Research and Development Organisation (DRDO) and Ordnance Factory Board (OFB) have not been able to provide even the very basic requirements of say rucksacks and rappelling gloves, leave aside weapons, imports being relied upon in case of the latter even by Infantry - assault rifles, carbines, light machine guns etc. Ironically, even the indigenous night vision and surveillance devices produced indignously continue to be inferior to imported counterpart despite the fact that we still are importing 100 per cent IR Tubes, own R&D having yet to develop these.

Then is the glaring void of light weight hand-held laser designators for which an empowered committee had visited Israel in 2002 but unfortunately Israel had won the bid as L1 while the equipment in question was still in unassembled form under laboratory testing. The French equipment was available but L2 and hence bureaucratic red tape did not permit its procurement. More than a decade has gone by and still the Army's Special Forces are without these laser target designators. Another glaring void is the information system package for communication with all the required entities including calling in required shooters.

A Special Operations Command Post (SOCP) that was to be developed has again been delayed by more than a decade despite the fact that single vendor indigenous capability existed and the vendor had actually sold the software to the Special Group of the Special Frontier Force (SFF). Ironically, mired with red-tape, development of the SOCP under powers of ARTRAC was eventually shelved and the requirement has been dovetailed into the battlefield management system (BMS) which itself has been hiccupping in delays and has recently taken the next step, the expression of interest (EoI) has recently been issued on November 11, 2013.

If all goes well then prototype development and fielding for user evaluation should likely happen by December 2016 and equipping from 2017 if the trials are successful. This schedule is possible only if there are no more hurdles. In general terms, the equipment that is lacking presently with Special Forces is in terms of light weight hand-held laser target designators, information system package to communicate with required entities to include voice, data, video streaming, light weight long range global communications to call multiple weapon strikes, state-of-the-art listening and surveillance devices - from miniature devices hand-held to MAVs, helicopter transportable all terrain vehicles, corner shots, goggles/devices to see through

walls, hand-held EW weapons, state-of-the-art explosive devices with long-term timers, all terrain light weight clothing and load carriage, latest survival equipment, to name a few.

What has also hit equipping of Special Forces is the unprecedented expansion of Special Forces in completed contrast to global norms ignoring the overall dilution including in terms of manpower, training, equipping - all culmination into lowered combat capability. The already has eight Special Forces battalions. Orders to raise the ninth such unit are under issue and the tenth one will be raised after this raising is completed. This is in stark contrast to expansion of Special Forces in foreign armies. The average authorised rate of annual expansion of US Special Forces (USSF) remained constant at 1.8 per cent for many years but was raised to 2.5 per cent in 2011 because of global commitments. In our case we went in for a 120 per cent increase in period 2001-04 alone including converting 3 x Para battalions to Special Forces and adding the fourth assault team in all SF units.

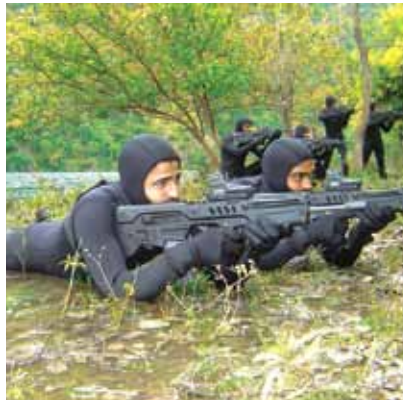
The unprecedented expansion was resorted to by deliberately feeding the hierarchy that 20,000 USSF were operating in Iraq and Afghanistan, which was untrue since this included 82 and 101 Airborne Divisions

of the US. Actually even in the peak period of USSF deployment only 90 x Operation Detachments Alpha (ODAs) were actually used (each ODA is 10-12 strong). This happened because successive unlike any other country in the world, the Army's Special Forces battalions and the Parachute Battalions are grouped in the same regiment and whenever the Parachute Regiment was headed by a Colonel of the Regiment without any Special Forces experience, the whole emphasis was to somehow convert the entire Parachute Regiment into Special Forces, in complete disregard to the adverse consequences to the overall Special Forces capability and the concept of the Special Forces.

The idea of 20,000 USSF in Iraq and Afghanistan was mooted by the then Colonel of the Parachute Regiment who happened to be heading Perspective Planning of the army.

Not only was this not checked, the section in Military Operations Directorate looking after Special Forces was posted mostly with paratrooper officers and not Special Forces officers, as should be the case. The two star appointment in Military Operations Directorate as Additional Director General (Special Forces) is headed by a paratrooper (not Special Forces) officer since its raising few years ago, which continues to date. To top this, the one star appointment under him designated as Deputy Director General (Special Forces) gets posted by an officer from the unit/regiment of the prevailing Army Chief merely to get a stamp of serving with the Military Operations Directorate.

The effect of all this has been that weapons and equipment imported for Special Forces battalions get distributed to normal parachute units. This plus the new raisings in rapid succession is seriously affecting the manpower and equipping of existing Special Forces battalions. Special Forces battalions that should be holding some nine lakh rounds of ammunition for imported Tavor assault rifles are down to the region of some 40,000 rounds. How this affects even routine firing training needs no explanation. This is just one example. Yet, the hierarchy remains oblivious. There is certainly need for reflection. **SP**



Antony compliments Navy on commissioning of INS Vikramaditya

Complimenting the Indian Navy for the commissioning of the aircraft carrier INS Vikramaditya, the Defence Minister A.K. Antony has said that coupled with the MiG-29K aircraft, the carrier has the potential to become a force multiplier in enhancing the combat capability of the Navy.

Inaugurating the Naval Commanders' Conference in New Delhi, Antony said, over the last six months the Navy has inducted an impressive range of platforms including the P-8I aircraft and the Goa Shipyard Limited built offshore patrol vessel. In the coming months, the first ships of P-15A, Kolkata and P-28, Kamorta will be inducted into the Navy apart from additional P 8I an advance jet trainer aircraft.

Antony said the launch of our indigenous aircraft carrier on August 12, 2013, is a crucial milestone. It has placed India in a select group of six nations who can design and operate aircraft carriers. "The fact that all 45 naval ships presently under construction are being built in India is ample proof of our indigenous shipbuilding capability."

The Defence Minister said a major boost to India's strategic deterrence capability was the achievement of criticality of the reactor on board Arihant. "Once we reach the next milestone, namely



commencement of sea trails of the submarine, it would make India only the sixth nation in the world to build and operate nuclear-powered submarines. This would mark another stride forward in realising our long cherished objective of achieving nuclear triad capability," he said. In addition, the launch of GSAT-7 will also significantly increase our net-centric capabilities."

Turning to geopolitical and security matrices in and around the country, Antony said, these have been changing and evolving at a rapid pace. He expressed satisfaction that the Navy has maintained a fairly high operational tempo particularly over the past six months. "Despite the extended monsoon, the Navy has remained focused on maritime and coastal security in collaboration with other organisations and agencies."

Describing the loss of 18 crew members on board INS Sindhurakshak on August 14 this year as an unprecedented tragedy, Antony said, we need to seriously reflect upon the incident, analyse it and also draw lessons for future even as attempts to salvage the submarine and an inquiry to ascertain the possible cause of the accident is already under way. "It must be ensured that safety mechanisms are accorded topmost priority and standard operating procedures are adhered to strictly and without any exception," he said. **SP**

Spanish ship ESPS Cantabria in Goa

After spending a year in Australia, the Spanish combat supply ship ESPS Cantabria arrived at Mormugao Port, Goa, on November 26. This port visit to India is the ship's second stop on its journey back to Spain after 10 days from the port of Jakarta in Indonesia.

Since its departure from Ferrol Port in Spain on January 3, 2013, until its expected arrival in Spain on December 21, the ESPS Cantabria in its about a year-long deployment in Australia, has worked hand-in-hand with the Royal Australian Navy (RAN). The aim of was to reinforce and increase the mutual relation of trust and support as well as enhance interoperability between both navies.

On November 26, Indian Navy officials visited the ESPS Cantabria followed by representatives of the Spanish Defence Industry (Navantia & Indra). On November 27 the Ambassador of Spain, Gustavo de Arístegui, visited the ship. A reception hosted by the Ambassador of Spain also took place onboard the ship and was attended by Rear Admiral B.S. Parhar. The ESPS Cantabria finally departed Mormugao Port on the morning of November 28 to continue its



journey back to Ferrol Port in Spain. Its last stop before heading back home is expected to be at the Turkish Port of Aksaz. **SP**

Aircraft carrier Gerald R. Ford takes first voyage



Huntington Ingalls Industries' (HII) Newport News Shipbuilding (NNS) division launched Gerald R. Ford (CVN 78) into the James River for the first time in November. The first-of-class aircraft carrier was moved to the shipyard's Pier 3, where it will undergo additional outfitting and testing for the next 28 months.

Gerald R. Ford has been under construction in Dry Dock 12 since November 2009 and was moved about one mile south to the shipyard's Pier 3 with the assistance of six tugboats. The ship will be moored at Pier 3 to complete outfitting and testing. Habitability spaces, such as berthing and mess areas, will be completed, and distributive, mechanical and combat systems, such as catapults and radar arrays, will be tested. The ship is scheduled for delivery to the US Navy in 2016. **SP**

Thales to supply mission suite for Indonesian PKR vessels

Thales announced the signing of a contract with the Dutch shipyard Damen Schelde Naval Shipbuilding for the delivery and installation of a full mission systems suite for the two PKR class vessels under construction for the Indonesian Navy.

Thales will supply the latest release of the TACTICOS Combat Management System; SMART-S Mk2 surveillance radar; STIR 1.2 Mk2 EO fire control system; KINGKLIP sonar; LINK-Y datalink, as well as its naval communication and navigation systems. The first delivery is scheduled for the end of 2014. The programme is scheduled to end in 2017.

Thales will also increase its existing industrial cooperation with the Republic of Indonesia, with PT LEN Industri devel-



oping part of the combat management system software suite. In addition to software development, Thales will continue to involve the local industry in service support and will continue to develop its long-term partnership with the Indonesian industry on future programmes in both the military and civil sectors.

Gerben Edelijn, CEO of Thales Nederland, said: "This agreement strengthens the decades-long relationship between the Indonesian Navy and Thales. It further highlights our ability and know-how to involve the local industry in the transfer of technology and be a supplier or choice to a demanding world-class Navy." **SP**

PHOTOGRAPHS: US Navy, Sagem Defense, Thales

Hagel visits first Zumwalt class destroyer

The US Defense Secretary Chuck Hagel said the not-yet-launched Zumwalt class destroyer he toured recently "represents the cutting-edge of our naval capabilities."

The ship, now known as the pre-commissioning unit (PCU), Zumwalt, will become the USS Zumwalt, named for former Navy Adm. Elmo Zumwalt. Officials said the ship is about a year away from joining the fleet.

The Zumwalt, Navy officials explained, has highly accurate long-range weapons, an impressive power generation capability and a design emphasising "stealthy" radar-defeating materials and shapes.

Hagel thanked General Dynamics and its workforce at Bath Iron Works, which will produce all three of the Zumwalt class ships



planned for production. The secretary called the facility "a magnificent institution that's been part of the security of this country for 130 years."

The ship can generate 78 megawatts of power, and can channel it to propulsion, shipboard use and weapons systems. Officials said the guided missile destroyer is the first navy ship to be fully electrical, and it was designed to use automated systems as much as possible to decrease the number of sailors needed as crew. **SP**



Sagem navigation system for Indonesian submarines

Sagem (Safran) beat out an international field to win the contract from Daewoo Shipbuilding & Marine Engineering Co. Ltd (DSME) of South Korea as prime contractor for the navigation system to be installed on three 1,400-tonne ocean-going submarines to be deployed by the Indonesian Navy.

Ordered by Indonesia in 2012, this new class of ocean-going submarine is the first South Korean-designed submarine to be sold in international markets.

The Sagem navigation system (NAVS) offers outstanding reliability and precision, making it the best system for demanding submarine missions, whether at sea or for operations along coastlines. NAVS comprises two high-performance Sigma 40XP laser gyro inertial reference units, a computer and safety-critical navigation software, all contributing to the submarine's stealth and safety during dives.

The decisive factors in DSME's choice were Sagem's proven capabilities as systems integrator, plus its expertise in data fusion and transmission to the ship's combat system, along with extensive experience in managing major defence programmes. **SP**

Building confidence

[By Lt General (Retd) P.C. Katoch]

The third round of India-China joint army exercises held recently in China was in sharp contrast to the recent video clips shown on Indian news channels of PLA troops jostling and pushing Indian troops on the LAC in an atmosphere of arrogance and defiance of the mutually signed agreement to maintain peace and tranquillity along the borders. This joint army exercise named 'Hand in Hand' was held at Miaoergang, south of Chengdu in China combining both training and sports. About 160 soldiers each of 16 Sikh Light Infantry of India and 1st Battalion Infantry Division of 13 Group China's People's Liberation Army (PLA) participated.

The 10-day joint drills that commenced November 5, 2013, was focused on counterterrorism drills that would include tactical hand signals, arrest and escort, hostage rescue, joint attacks and complete anti-terror drills.

PLA Lieutenant General Yang Jinshan, Deputy Commander of the Chengdu MAC, highlighted terrorism "as a global challenge" and said, "It is a signal to both sides that the militaries can do something to improve the bilateral relationship." Though the prospects of actual joint Sino-Indian counter-terrorism operations is not an impossibility but the objective of this joint exercise is more of confidence building and trust especially since such joint training remained suspended for the last five years.

The underlining truth is that a joint Sino-Indian effort to counter Islamic radicalism is vital for stability. China should understand this better with increased violence in Xinjiang and with the recent terrorist strike at Tiananmen Square on October 28, 2013. The fact of the matter is that the present Sino-Indian relationship has plenty of unease despite the facade of normalcy that both governments project, border settlement being the main issue - aggravated much more since the 2005 preposterous Chinese claim to whole of Arunachal Pradesh as 'South Tibet'. Besides, China's state TV has been showing Indian maps with J&K as part of Pakistan.

The onus of betterment of relations actually lies predominantly on China and the recent deep intrusions by China especially in Depsang and Chumar areas of Ladakh have not helped. More significantly, these intrusions are in wilful defiance of all the previous joint agreements: maintenance of peace and tranquility along the line of actual control in the India-China border areas signed on September 7, 1993, another agreement on confidence-building measures in the military field along the line of actual control in the India-China border areas signed on April 11, 2005, and the agreement on establishment of a working mechanism for consultation and coordination on India-China border affairs signed on January 17, 2012. India has now signed the Border Defence Cooperation Agreement (BDCA) with China and has also agreed not to tail and shadow Chinese patrols but it is for China to ensure that akin to violation of earlier agreements, the BDCA too is not violated.

China's political hierarchy should also review its policy for opposing a seat for India in the UN Security Council in consideration of the fact that the UN seat was first offered to India but Pandit Nehru, Indian Prime Minister, gave it to China saying that first 'Big Brother' should have that privilege. Then is the issue of Pakistan which remains a major irritant in both Sino-Indian relations because of its proxy war on India that is likely to increase once US-NATO forces exit Afghanistan.

There have been indications that China has been giving tacit support to Pakistan in this, an example being China's initial efforts to scuttle a resolution at the UN against Hafiz Saeed, the main perpetrator of the 26/11 Mumbai terrorist attack. Ironically, both US and China are concerned about terrorism emanating from Pakistan only in context of their respective mainland and not what terrorism Pakistan is subjecting India to. However, it would be prudent for China to take stock after killing of three Chinese nationals on June 23, 2013, at the western base camp of Nanga Parbat by the newly set up wing (Junood ul-Hifsa) of Tehreek-e-Taliban Pakistan (TTP), the October 28, 2013, terrorist strike in Tiananmen Square.

When Pakistan has been double crossing the United States, it can deal with China similarly. That is perhaps the reasons why Pakistan is sheltering the 600 strong special unit of the East Turkestan Islamic Movement hiding in Pakistan? Of course there are other irritants like bilateral trade imbalance, stapled visas/denial of visa for Indians from J&K and Arunachal Pradesh and warning India not to assist Vietnam in oil exploration in Vietnamese waters on grounds that it is a disputed territory but herself undertaking numerous projects in Pakistan occupied Kashmir (PoK) including exploration of minerals and more significantly digging tunnels in PoK to deploy missiles.

Another serious issue is the Chinese support to insurgents in India. There have been periodic intelligence

reports that China is supplying arms to Indian Maoists and has even provided arms manufacturing facilities to Kachen rebels in Myanmar and Indian Maoists. By arming the United Wa State Army in Myanmar to the teeth including machine guns, mortars, shoulder-fired air defence missiles, mechanised vehicles and even missile fitted helicopters (this year), China has created a lethal terrorist organization in India's neighbourhood much more powerful than even the Liberation Tigers of Tamil Eelam.

Chinese intelligence has also been supporting other Indian insurgent outfits. For example, when the United Liberation Front of Assam camps were route from Bhutan, China accommodated them on Chinese soil and provided training and arms. China's links (training and provision of arms) to the Taliban too are well documented. What China must realise is the immense benefits of normalisation of relations with India. The single-most significant gain that this will lead to her getting access to Indian ports should lead China to adopt change course and adopt this approach. **SP**



Invest in manufacturing: Kapil Sibal to US industry

At the Indo-US Resurgence Summit held at New Delhi, Indian and US industry leaders converge and look forward to developing a stronger partnership

[By Sucheta Das Mohapatra]

America is interested in only selling its products in India and is showing least interest in manufacturing,” said Kapil Sibal, Union Minister of Communications and Information Technology, and Law and Justice. He opined that the only way forward in the Indo-US relationship is by keeping in mind the interest of 1.2 billion people living in India and their stake in global economy. “India will be a manufacturing economy in the days to come. Invest in manufacturing,” he told the US industry and suggested: “we are the oldest and strongest democracy. Whether you like it or not, willy-nilly we are long-term partners.” The Minister was speaking at the “Indo-US Resurgence Summit: A Search for Innovative Strategies” organised by the Indo-American Chamber of Commerce (IACC) at New Delhi on December 2.

Sibal even suggested that the organisers change the name of the summit from Indo-US Resurgence Summit to Indo-US Convergence Summit. “We need to talk about convergence before talking about resurgence.” India is the largest potential market and keeping in view its growing population, there are different areas where the US can invest as we leapfrog from the industrial revolution to digital revolution.

While the Minister’s statement received great applause, representatives of the American industries in India spoke out in defence stating that offset for them is not a compulsion but a choice. “We look at offset as an opportunity and not as an obligation. It makes sense to us as a global company,” said Nikhil Khanna, Country Director India, Global Business Development, Raytheon International Inc, while Pratyush Kumar, President, Boeing India said that Boeing’s journey in India came much before offsets. The India Heads of the US defence and aerospace majors gave out details of their programmes in India and their plans for component manufacturing, training of new generation aerospace engineers and creating capacity in India for a thriving and growing aerospace and defence sector in India. Nalin Jain, President and CEO, South Asia, GE Transportation, also spoke on how an ecosystem is building up in India. He gave details of how GE is helping India in building infrastructure, infusing technology in defence and aerospace and the many transfer of technology (ToT) agreements with the Hindustan Aeronautics Limited (HAL) for Tejas, Hawk, Navy frigates, etc. Ajay Kumar, Programme Director, US-India Aviation Cooperation Programme, informed about a workshop being organised during the India Aviation 2014, and said that there are many proposals meant to develop India’s aviation ecosystem and an ex-number of projects have also been identified.

Presenting the micro, small and medium enterprises (MSME) was Commodore (Retd) S.L. Deshmukh, the Vice President (Technology and Industrialisation), Aerospace and Defence, Sun Group who complained that while there has been a lot of debate on offset, it is still being seen as a compulsion by the industry and the number of offset contracts signed till date is only a few. While he welcomed the Indian Government’s policies on MSMEs including the provision in the Defence

Procurement Procedure (DPP) 2013, he questioned can a sector which contributes 50 per cent of industrial employment and 50 per cent industrial production in India, be neglected.

“The landscape of US-India relationship in the last one decade is nothing short of a revolution,” said Dr Vivek Lall, Chairman and Defence Committee, IACC, NIC and President and CEO, New Ventures, Reliance Industries Limited, and added that today the Indo-US relationship is broader and deeper than before. John McCaslin, Minister Counselor for Commercial Affairs, US Embassy, who has just finished his visit to six major cities of the country—Chennai, Mumbai, Kolkata, Ahmedabad, Bengaluru and Hyderabad—in his four-month tenure said that he is optimistic and the US Government is committed to further bilateral relationship. Raman Roy, Chairman, NIC’s IT and Cyber Security Committee and Chairman Managing Director, Quatro Global Services Pvt Ltd, spoke about disruptive innovation and said that if India and US are able to integrate the disruptive innovation, it will be mutually beneficial for the two large democracies having huge potential. Raghupati Singhania, Chairman and Managing Director, JK Tyre and Industries Ltd said that cost of doing business is certainly high in India, but we are not discriminating. He asked the Indians to make US industry feel at home and urged the US industry to be liberal in their investments in India. He said that the Indo-US relationship that moved forward with the dialogues that began between Prime Minister Manmohan Singh and President Barack Obama is now multifaceted and is building a strong edifice in the mutual relationship.

Speaking about the airlines industry perspective in India, Piyush Gupta, Partner, Kochar and Co, said that lack of proper infrastructure, bureaucracy/red-tapism, weak state-owned airline, high taxation, fuel prices and airport charges are the major hurdles faced by the industry. Dhiraj Mathur, Executive Director, PricewaterhouseCoopers, said that aerospace market has significant potential as well as challenges. He sent across some key messages to the government to rationalise indirect tax provisions for level playing field and encouraging MROs; simplifying and clarifying export procedure; bringing clarity on equipment that requires an industrial licence. He also said that the Indian industry should strategically leverage offset policy, invest and build capability for the long haul and collaborate with global players. His presentation was followed by Amber Dubey, Partner and Head-Aerospace and Defence, KPMG, who laid out the positives of the aerospace industry in India and said that there is huge opportunity for the American suppliers and business with India’s growing population. Policy changes will happen sooner or later; he said and added that the MRO sector is also opening up with the Indian defence’s plans to outsource maintenance of aircraft like MiGs and Antonov An-32s. On the aviation turbine fuel (ATF), West Bengal had already reduced or removed taxation on fuel and states like Goa and Odisha are also thinking on those lines. South China Sea is a concern, said Dubey, and added that India and US have to coordinate on this. **SP**

InterGlobe and CAE set up India's largest pilot training facility

[By R. Chandrakanth]

InterGlobe Enterprises and CAE recently inaugurated their ultra-modern pilot training facility in Greater Noida in the National Capital Region (NCR). The centre, CAE Simulation Training Private Limited (CSTPL), is a 50:50 joint venture between InterGlobe Enterprises and CAE. An investment of over \$25 million has already been made in setting up the facility and equipment. CAE and InterGlobe announced a long-term pilot training services agreement with GoAir, a low-fare domestic carrier. Starting in December 2013, GoAir's A320 pilots will train at the facility.

Speaking at the opening ceremony of the centre, Rahul Bhatia, Managing Director, InterGlobe Enterprises, said: "CAE are global leaders in civil aviation technology and we are proud to be associated with them. This training centre is a landmark in India's aviation training facility. It is the largest such facility in India and it is also a preferred Airbus training centre and can be used by all the airlines not just in India but also those in neighbouring countries to train their pilots. Also individual pilots can obtain flying licences over here. Over time we will encourage military pilots and also explore starting courses for aircraft maintenance. We have two full flight simulators which can give real time scenario."

Four more simulators by 2017

By 2017 we plan to introduce another four simulators. The centre will be preferred for A320 simulation to train pilots and also for those who want to renew their pilot licences. The centre will be continuously upgraded. Once the six simulators are operational, the centre will be able to train 5,000 pilots in a year. Presently, the centre can train 1,000 pilots over the next few years. As there is a shortage of technicians, we have to rapidly address the needs of the industry."

Untapped market

India's aviation market despite turbulence has grown exponentially. By 2019, India will be the third largest aviation market, behind the US and China. By then 420 million passengers will be flying and in the short term here it is estimated India will need 3,000 pilots. It is a large untapped market. India is a country of 1.2 billion which represent one aircraft for every three million people. In China and Russia, the aircraft penetration is three to four times more and we are not talking about mature markets such as US or Europe. This means India will need several thousand aircraft. Presently, the aviation sector's contribution to the GDP is 1.5 per cent and it provides 17 million jobs."

There are challenges to its growth but these challenges are not insurmountable. It requires all stakeholders to work to get the right kind of policies as to have a sustainable growth story of India. Amidst challenges, we have to collaborate to grow."

CAE dominant player in Indian market

Marc Parent, President and Chief Executive Officer of CAE said: "This is a world-class state-of-the-art training centre. I can tell you that some years ago when I came here, I could see cows grazing in the field...look at where we are today... it is a miracle. I am very

proud of the modern structure we have put up in association with InterGlobe."

It is such an understatement to state that India is a dynamic country, it is one of the fastest growing civil aviation markets. The Indian commercial airline fleet has doubled in the last 10 years. There are 500 aircraft on order and this translates to a requirement of 3,000 pilots over the next five years...this is just a fraction of the potential India has."

CAE has infrastructure capabilities to support traffic growth here. Today 75 per cent of civil simulators in this country are built by CAE. In 2008 the first civil aviation training centre was established in Bengaluru and this produced 1,500 pilots last year. We also operate training centre with the Hindustan Aeronautics Limited (HAL) and in partnership with the Government of India, run ab initio training in Gondia and Rae Bareilly."



(L-R) Rahul Bhatia, Marc Parent, Arun Mishra (DGCA) and Srinivasan Dwarakanath

The six-simulator centre will provide training to airline pilots with facilities such as wet and dry training, besides jet indoctrination training."

DGCA extends support

Arun Mishra, Director General of Civil Aviation (DGCA), praised the endeavour stating that it would add a lot to the safety of civil aviation in India. He complimented InterGlobe and IndiGo for changing the pace of aviation in India. "IndiGo has pushed the aviation market with low fares, on time performance etc. While we have huge potential but what worries me is that while we are getting good airports, we are lacking in the development of manpower, the next-generation of aviation professionals."

Regarding stand-alone training centres, he said there were certain niggling issues, but added that the DGCA was in the process of formulating rules and regulations to evolve the best international practices. **SP**

Chief of Royal Malaysian Air Force calls on Indian Air Chief

General Tan Sri Dato Sri Rodzali Bin Daud, Chief of the Royal Malaysian Air Force who was on a four-day visit to India, called on Air Chief Marshal N.A.K. Browne, Chairman Chiefs of Staff Committee and Chief of the Air Staff.

The meeting saw a wide range of bilateral issues being discussed which relate to the ongoing defence cooperation between the two countries. As there is a commonality of aircraft being operated by the two air forces, General Rodzali Bin Daud also visited IAF's Pune airbase to see the training facilities of Su-30MKIs and Ozar base repair depot in Nasik which houses MiG-29 upgrade and overhaul facility as well as Su-30 manufacturing facility.

A team of IAF pilots and technicians were in Malaysia in 2008 for a period of two years to train the Malaysian pilots, weapon system operators (WSO) and maintenance staff for the smooth induction and operation of their newly acquired Su-30MKM fighter aircraft. IAF has also assisted them in setting up a Systems School for the Su-30MKM at Gong Kedak Air Base. **SP**



Boeing delivers C-17 cargo compartment trainer to Royal Australian Air Force



Boeing has delivered a full-scale C-17 Globemaster III cargo compartment trainer (CCT) to the Royal Australian Air Force (RAAF), ensuring that RAAF loadmaster training can be cost-effectively completed in Australia instead of in the United States.

The CCT is a fully functional replica of a C-17 fuselage in a dedicated facility at RAAF Base Amberley. It can realistically simulate both day and night operating and loading conditions for loadmaster, aeromedical evacuation and aeromedical specialist training.

The facility at Amberley also includes classrooms, loading vehicles, simulated cargo and other training assets. It is the third operational Boeing C-17 CCT; the two others are located at Altus Air Force Base in the United States.

"The C-17 programme has delivered a substantial capability to Australia; this CCT represents the final component of that programme," said GPCAPT Warren Bishop, Air 8000 Programme Director. "It will add significant value to the RAAF, providing the capability to train pilots and loadmasters in Australia." **SP**

Northrop Grumman to supply air defence radar systems to Royal Thai Air Force

Northrop Grumman Corporation has been selected by the Royal Thai Air Force to supply additional AN/TPS-78 air defence and surveillance radar systems. Under the terms of the contract, Northrop Grumman will begin supplying equipment to the Royal Thai Air Force in 2015. The company will also provide training, spares and logistics support.

"With this award, we continue our 25 years of support of the Royal Thai Air Force



and the national security infrastructure of Thailand," said Robert Royer, Vice President of Northrop Grumman's International Systems business unit. "Highly mobile and proven in a wide range of environmental conditions, the AN/TPS-78 will give the Royal Thai Air Force a powerful new capability for monitoring its national airspace."

The Northrop Grumman AN/TPS-78 is among the latest generation of highly mobile, state-of-the-art radars made possible by advances in high power transistor technology and designed to operate in some of the harshest, most demanding environments. The radar has proven particularly adept at detecting small targets in areas of difficult land and sea clutter, making it well suited for use in mountainous and coastal regions. **SP**

Lockheed delivers 13th Super Galaxy transport

Lockheed Martin delivered its 13th C-5M Super Galaxy to the US Air Force from its facilities recently. Maj General Kenneth D. Merchant, Director, Global Reach Programs, Office of the Assistant Secretary of the Air Force for Acquisition, Headquarters US Air Force, Washington, D.C., officially delivered aircraft tail number 85-0004 to the 436th Airlift Wing at Dover Air Force Base, Delaware.

"We are very excited to receive another C-5M," said Colonel Rick Moore, 436th Airlift Wing commander. "It will strengthen our fleet and enhance our worldwide airlift capabilities." **SP**

Marine Wing Commander endorses aerial refuelling mission for V-22 Osprey



Bell Helicopter-Boeing Co. proposal to use the V-22 Osprey tilt-rotor aircraft as a refuelling tanker has the endorsement of one of the Marine Corp's wing commanders, and at least one of his higher-ups.

Major General Steven Busby, commanding general of the third Marine aircraft wing at Marine Corps Air Station Miramar, California, said November 20 at the Milcom conference that he would welcome having some of the service's MV-22 variants serve in that capacity.

"Having a tanker version of the MV-22 coming off an amphibious platform is going to be able to extend the range of the Joint Strike Fighter beyond what we currently have with the F-35B and is going to be able to provide potential refueling capabilities maybe for the CH-53," he said.

The Bell-Boeing consortium that manufactures the tilt-rotor V-22 Osprey successfully demonstrated the aircraft's ability to be used as an aerial refuelling tanker last summer, using their own research-and-development dollars. **SP**

Peru selects Alenia Aermacchi C-27J Spartan tactical airlifter

Alenia Aermacchi, a Finmeccanica Company, has been selected to supply the Peruvian Ministry of Defense with 2 C-27J Spartan tactical airlifters. The contract, to be signed as soon as the administrative procedures are completed, has a value of around 100 million euros inclusive of a substantial logistic support package for the two aircraft.

"The choice by the Peruvian MoD" said the Finmeccanica, "is a confirmation that, when an air force has a stringent airlift requirement in terms of performances and capabilities, the Spartan is the only solution able to guarantee an excellent value for money. The C-27J is a clear example of the capabilities of the Italian aeronautical industry, but this success is also the result of the intense relationship between Italy and Peru in the defence field since 2002 and which is constantly renewed through the years."

The Spartan has already been ordered by the air forces of Italy, Greece, Bulgaria, Lithuania, Romania, Morocco, Mexico, United States, Australia and by an undisclosed African country for a total of 74 aircraft. The aircraft has also been selected by Slovakia and the contract is under negotiation. **SP**



Rossell Techsys gets order from Boeing for manufacturing of wire harnesses

Rossell India has received an order from Boeing for wire harness manufacturing for the company's F/A-18 Super Hornet fighter jet. "We are proud of the confidence shown in our company strategy by a customer like Boeing," said Rishab Gupta, Executive Vice President of Rossell India Limited.

"Right from the time we started our first interactions with Boeing, we were unwavering on the company strategy - and that was to offer a strong value proposition for long-term partnerships, built on proactive investments, global standard infrastructure, a process-driven culture and a high calibre staff.

"From offering our customers state-of-the-art infrastructure, to having a highly committed, capable and capacious workforce, to establishing optimal and efficient processes, to safeguarding precious intellectual property, our vision is to offer foreign customers a similar experience to home ground and one which is seamless and fully integrated," added Gupta.

Rossell's aerospace division concentrates on three key competencies of interest to foreign original equipment manufacturers (OEMs)—automated test equipment (ATEs), wire harness engineering and loom fabrication and avionic product support services. The company has also signed memorandum of understandings (MoUs) with many other foreign OEMs in the aerospace domain and continues to see increased traction in its competency areas. **SP**

Boeing delivers third P-8I to India

The third Boeing P-8I long-range maritime reconnaissance and anti-submarine warfare aircraft for the Indian Navy arrived recently in India, on schedule. The aircraft departed Boeing Field in Seattle for Naval Station Rajali, where it joined two P-8Is currently undergoing flight trials and testing. The first P-8I arrived in India in May.

The P-8I is one of eight aircraft Boeing is building for the Indian Navy as part of a contract awarded in 2009. Based on the company's next-generation 737 commercial airplane, the P-8I is the Indian Navy variant of the P-8A Poseidon that Boeing has developed for the US Navy.

The P-8I incorporates not only India-unique design features, but also India-built subsystems that are tailored to the country's maritime patrol requirements. **SP**



FICCI cautions MoD against rollback of RFP to replace IAF's ageing Avro fleet

[By SP's Correspondent]

The Federation of Indian Chambers of Commerce and Industry (FICCI) has cautioned the government against re-examination of the request for proposals (RFPs) issued to global aviation majors to replace the ageing Avro fleet of transport aircraft of the Indian Air Force (IAF).

In a communication to A.K. Antony, Minister of Defence, FICCI has stated that any such re-examination and subsequent rollback of RFP will mark a setback to the open and transparent approach and the innovative model cleared by the Defence Acquisition Council (DAC) of a new categorisation of 'Buy & Make' with transfer of technology (ToT) to an Indian Production Agency (IPA).

Recent media reports with regard to the re-examination of the RFPs issued to global aviation majors like Airbus Military, Embraer, Lockheed Martin, Ilyushin, Saab, Antonov and AleniaAeronautica to replace the ageing Avro fleet of transport aircraft of the IAF have caused apprehensions amongst private sector players that the open and transparent manner in which Indian industry was involved over the last three years in conceptualising the innovative model in this proposal through interactions at various levels at HQ IDS and Service HQs, would send the wrong signal regarding the opening up of defence production and doing away with the erstwhile nomination regime.

FICCI has stated that the proposal envisaging buying 16 transport aircraft in flyaway condition to meet the immediate operational requirements of the IAF and setting up a production facility for producing the remaining fleet of 40 aircraft in the country is commendable as it would create a second line of aircraft production. This innovative model is seen by Indian industry as a farsighted measure to build capabilities in Indian industry that would act as a force multiplier and pave the way for domestic capability creation to address the growing needs of the Indian defence as well as civilian aerospace sectors.

The involvement of the private sector from the very beginning sent the right signals and gave Indian Industry confidence about the Ministry of Defence's (MoD) intent to truly open up defence production and doing away with the erstwhile nomination regime. It also made them initiate and engage in serious discussions with foreign aircraft producers for possible future tie-ups. This also augurs well with the intention of the Defence Production Policy (DPP) which calls for a move towards "substantive self-reliance and of the DPP that envisages opening of the sector to the private sector".

FICCI has commended the change in thinking of the MoD and collective wisdom that prevailed to support a second line of production of aircraft. The benefits of this strategy are unique as it is envisaged that the indigenous content in this second line of production will increase gradually from 30 per cent to 60 per cent over the life of the programme. Also capabilities acquired through the maintenance ToT will reduce cost to the exchequer over the life period. There exist further opportunities for industry with possible civilian spin-offs and export opportunities.

According to Naina Lal Kidwai, President of FICCI, "This golden opportunity to the private sector should not be frittered away since it will not only enhance India's strategic capability in the aerospace sector but have multiple spin-offs in ancillary industry development, job creation and export opportunities."

The chamber has said that a rollback in the RFP for the Avro replacement programme and bringing in 'nomination' for placing orders for aircraft is likely to be a repeat of the submarine story. FICCI has brought to the attention of the MoD that as per a decision taken at the highest level of the Government of India, it was decided more than a decade back to bring into existence a second line in the manufacture of submarines to meet the operational and strategic requirements of the Indian Navy. However, till date, this decision has not seen the light of day due to various pressure groups clamouring for continuance of 'nomination' to the public sector undertaking (PSU) shipyards. All this while Navy kept experiencing depletion of its operational submarine fleet; India not only lost the opportunity of timely and periodic induction of indigenously built submarines to its fleet, but also an opportunity to harness indigenous capabilities and capacities built in the private sector.

It is universally known and understood that competition has always benefited the user while both private and public sector become more efficient. We need competition and to create a strong supply chain in India. Contrary to the apprehensions that the Hindustan Aeronautics Limited (HAL) is being denied the opportunity to participate in the programme, nothing stops HAL to team up with IPA in a consortium/SPV model and contribute to the programme through value propositions by sharing its vast experience as well as facilities invested in to by MoD. It is also noteworthy, said FICCI, that HAL has its order books full with ongoing nominated programmes like Su-30MKI fighters, Hawk advanced jet trainer (AJT), advanced light helicopter (ALH) Dhruv, Chetak helicopter, a mega programme like medium multi-role combat aircraft (MMRCA) awaiting to be concluded in near future and development programmes like light combat aircraft (LCA), intermediate jet trainer (IJT), light combat helicopter (LCH), fifth-generation fighter aircraft (FGFA) and upgrades of Jaguar and Mirage 2000. Saddling it with another major programme will not be in the strategic interests of the nation.

"While there are some concerns raised about the private sector like certifications, physical infrastructure, etc. these are not insurmountable and are in fact symptomatic of the continued nomination policy of the past, rightly being remedied by MoD under your leadership," stated Dr Didar Singh, Secretary General, FICCI, in his letter to the Defence Minister.

FICCI fully supports initiatives to create a second line of aircraft building and has sought early intervention of the Defence Minister to dispel all doubts and accord expeditious clearance to this project of national importance which could be a game changer for our military and civilian aerospace industry. The chamber has, therefore, advised against retraction of the RFP which will slowdown the development of capabilities in the Indian aerospace sector. **SP**



PHOTOGRAPH: SP Guide Publications

Israel Aerospace Industries' UAS surpass one million operational flight hours

Israel Aerospace Industries' (IAI) unmanned aerial systems (UAS) have accumulated over one million operational flight hours worldwide – an unprecedented accomplishment.

IAI presented its UAS and unmanned ground vehicles (UGVs) at the AUS&R 2013 Expo of Autonomous, Unmanned Systems & Robotics, held in Reshon Lezion, Israel.

Regarding the AUS&R Expo, Joseph Weiss, IAI's President & CEO, said: "IAI has long been a leading pioneer in the field of unmanned aerial systems. With over 40 years of operational experience and 50 customers worldwide, I am proud to announce that IAI's unmanned aerial systems have accumulated over one million flight hours.

"The Heron UAS has been the leading system in its class in the international markets for over a decade and has been sold to 20 customers worldwide. Heron has accumulated over 2,00,000 operational flight hours with extensive use in combat in Afghanistan



and in other hot spots around the world.

"As a result of the lessons learned from the Heron's exceptional history and extensive experience, we continue to refine and upgrade the Heron and our UAS's design." **SP**

Northrop Grumman delivers additional MQ-8C Fire Scout to US Navy



Northrop Grumman Corporation has delivered the second MQ-8C Fire Scout unmanned helicopter to the US Navy after completing final assembly at the company's unmanned systems centre in Moss Point, Mississippi.

The aircraft is joining the first one delivered to Naval Base Ventura County, Point Mugu, California, to conduct flight testing before using the system for operational missions in 2014.

The MQ-8C Fire Scout is the Navy's newest unmanned helicopter that can fly twice as long and carry three times more intelligence, surveillance and reconnaissance payloads than the existing variant. Including the two test aircraft, 14 new Fire Scouts are currently under contract to be

built. The Navy's current plan is to purchase 30 MQ-8C Fire Scouts. **SP**

Dutch choose Reaper unmanned aircraft

From late 2016, Netherlands Defence will be able to collect aerial information with the MQ-9 Reaper: That is what Defence Minister Jeanine Hennis-Plasschaert wrote in a letter to the Lower House recently.

The Reaper is an unmanned aircraft that is available 24 hours a day, and can be used virtually anywhere the world; only part of its crew need to be present in-theatre defence will buy the unmanned aircraft off the shelf. By the end of 2017, the system will be fully integrated in the armed forces.

The Netherlands already has access to smaller unmanned systems, such as the Raven and Scan Eagle. In 2011 Defense announced that it also wanted to buy a medium altitude long endurance (MALE) unmanned aerial vehicle (UAV). **SP**



Piaggio Aero P.IHH Hammerhead UAS programme achieves first flight

Piaggio Aero, together with Selex ES, announced at the Dubai Airshow 2013 that the P.IHH Hammerhead unmanned aerial system (UAS) has achieved the demonstration and validation phase of the programme with the maiden flight of the P.IHH DEMO, Piaggio Aero's UAV technology demonstrator. This flight is a fundamental milestone that paves the way to the next phase of the programme development.

The flight readiness of the P.IHH DEMO flight Technology Demonstrator had been confirmed by the first flight, which occurred on November 14, 2013, at the Trapani (Italy) "Birgi" Italian Air Force base.

A joint team from Piaggio Aero and Selex ES conducted the flight operations. "The success of the first flight test of the P.IHH DEMO brings us closer to providing the first European developed state of the art MALE UAS, capable of performing at the highest technological level aerial, land, coastal, maritime, offshore, COMINT/ELINT and electronic warfare missions," said Alberto Galassi, CEO of Piaggio Aero. **SP**

The flight was conducted from the Trapani (Italy) "Birgi" Italian Air Force base. The P.IHH DEMO is a medium altitude long endurance (MALE) unmanned aerial system (UAS) designed for intelligence, surveillance and reconnaissance (ISR) missions. It is capable of performing at the highest technological level aerial, land, coastal, maritime, offshore, COMINT/ELINT and electronic warfare missions. **SP**



India facing multifarious internal security challenges: Home Minister

The Union Home Minister Sushilkumar Shinde, who inaugurated the three day conference of Directors General of Police (DGPs) in New Delhi recently, said that India is facing multifarious challenges on the internal security front in the form of militancy in J&K, insurgency in some parts of the Northeast, the threat of left-wing extremism (LWE) and terrorism in hinterland of the country.

“Indian Mujahiddeen, which draws its motivation and sustenance from inimical forces operating from across the western border has been responsible for three out of four major terrorist attacks in our hinterland this year. These include Hyderabad twin blasts and the series of blasts at Bodhgaya and Patna. Another blast that took place in Bengaluru was the handiwork of some misguided fundamentalist youth and remnants of Al-Ummah. However, I am happy to inform you that all these cases have been successfully worked out. I compliment officers of intelligence agencies and police forces for having made critical breakthroughs in this regard. Here, I would like to make a special mention of the apprehension of Yasin Bhatkal who was wanted in a large number of cases of bomb blasts in different parts of the country. Our security agencies have also arrested Abdul Karim, also known as Tunda, a wanted terrorist in different bomb blast cases. These arrests constitute a major breakthrough in our fight against the terrorism and demonstrate the resolve of the Government of India to bring to justice all those who commit crimes of terrorism in our country. It is important that the leads emanating from the investigations are vigorously pursued to apprehend all those associated with this network. Our security forces have to remain constantly alert and act in a cohesive manner to deal with these challenges.

“In our fight against terrorism, the Multi Agency Centre (MAC) has emerged as an effective platform for proper coordination between Central and State agencies. The scope of MAC is now being extended to more than 450 districts across the country. I believe there is a dire need for upward flow of intelligence into MAC for dissemination to stakeholders, which can be achieved by upgrading the capability of special branches of state police. This is only possible if states upgrade their special branches for which

Government of India is prepared to extend all possible help.

Left-wing extremism remains another major threat to our national security. Despite reduction in violence levels, naxals have continued to target security forces and those reposing faith in our democratic polity. The attack on political leaders in Chhattisgarh and the killing of a Superintendent of Police in Dumka district of Jharkhand are instances of Naxal brutality. Central and state security forces, however, have achieved notable successes in restricting their areas of influence, denying them fresh recruits and eroding their top leadership. There has also been a drop in the casualty figure of security forces from 111 last year to 97 this year. On the other hand, the number of Naxals killed has gone up to 97 from 71 last year for the same period.

“The Union Government remains committed to root out this menace. It will continue to help the affected states by placing at their disposal CAPFs and support various security as well as development related interventions in Naxal areas. However, the driving force to deal with this problem must come from local initiatives led by the States. The institution of police stations must be strengthened to play a focal role in this fight. It is also imperative to recruit personnel for special forces from local marginalised sections of the society. They would need to be trained and equipped for jungle warfare and put under command of the inspiring police leadership.

“The situation in Jammu and Kashmir (J&K) continues to be a challenge for us. This year, there has been an increase in targeted attacks on security forces resulting in nearly 50 personnel losing their lives. These attacks indicate a nefarious game plan hatched across the border to demoralise our security forces and demonstrate to the people of J&K that the capabilities of militants remain undiminished. There have also been violent actions and ceasefire violations along the border, particularly in Poonch district of Jammu region. Our security forces have responded in right measure and succeeded in neutralising several militant commanders and eliminating 35 terrorists on the line of control (LoC) this year. Security forces, however, cannot afford to lower their guard, particularly in view of Lok Sabha and Assembly elections next year. A fine balance needs to be maintained by them between firm handling of terrorism and adequate restraint in public order situations. This is important to limit civilian casualties and to deny space to separatist elements for fomenting further disturbances.” **SP**



Plan to deploy troops on Indo-Myanmar border

A plan to deploy 41,000 troops and setting up of ₹5,000-crore infrastructure will be on the government's table this week as it looks to replace Assam Rifles with the Border Security Force (BSF) to guard the porous Indo-Myanmar border. A team of senior BSF officials will soon make a detailed presentation to the Ministry of Home Affairs as to the force's requirements for station-

ing its personnel and creating posts along this 1,640-km-long border, which is notorious for movement of insurgents and smuggling of arms and narcotics.

A field survey team is already in the border areas to map the topography and the terrain and forests in the area. BSF, according to sources, has projected a requirement of 41 battalions (roughly 41,000 personnel), under three new sectors, to man this border.

The estimated cost of creating the infrastructure for the above, over a period of five years, is about ₹5,000 crore. **SP**



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Technology boosts terror

A day after Manchester based England company Tamicare announced it has developed technology to produce disposable panties, sportswear and bandages with 3D technology, media reported on November 11, 2013, that Texas company Solid Concepts has made the first metal gun using a 3D printer, taking the ability to create one's own firearms to a new level.

The company claims to have fired 50 bullets from this gun, some hitting the bullseye over 30 yards. The weapon built from 33 mostly stainless-steel parts and a carbon-fibre handgrip is reportedly copy of the Browning handmade pistol used in the Philippines-American War. Earlier on May 8 this year, *The Mail* printed the first plastic gun in UK, capable of firing a live round, using a 3D printer costing £1,700 and then took it on board a fully packed Eurostar train on May 10, 2013, without being stopped passing through tight security.

Significantly, *The Mail* acknowledged they produced the weapon from blueprints available on the internet and then two reporters passed completely unchallenged through strict airport-style security to carry the gun on to a London to Paris service in the weekend rush hour, alongside hundreds of unsuspecting travellers. Once on board the packed Eurostar train, they were able to assemble the pieces to create a fully functional firearm, and pose for pictures close to unsuspecting passengers. Because all parts of the weapon are plastic, they did not trigger the metal detectors.

The weapon is named 'Liberator' - a 16-part pistol created from designs from the Internet. Interestingly, the designs were originally published by an American university student, who proved the triumph of these designs by successfully firing a bullet on the shooting range. The blueprints were reportedly downloaded more than 1,00,000 times before the US State Department ordered the concerned company to remove it from their website. However, the designs are now freely circulating on the Internet by those who had already downloaded the blueprints. Since the pistol parts are entirely plastic except for a small firing pin and ammunition, the gun presents a huge security problem worldwide as it can be broken down into parts that do not set off metal detectors and may not show up on conventional body and bag scanning devices, as demonstrated by the reporters who boarded the Eurostar train from London to Paris from St Pancras International Station albeit the firing pin

and bullets were deliberately not carried.

The first working 3D printer was created in 1984 by Chuck Hull of 3D Systems Corporation. 3D printing is a process of making a three dimensional solid object of any shape from a 'digital model'. This is achieved by laying successive layers of material in different shapes - termed 'additive process'. Global market of 3D printers and services in 2012 was estimated at \$2.2 billion. 3D printers are available online and Indian firms too are selling these.

Significantly, the Liberator costs just \$25 if you have the 3D printer. Solid Concepts that has produced the first metal gun using the 3D printer that it cannot be acquired using a desktop 3D printer and that they had used a specialised high-end 3D printer whose cost would be out of reach of most people. However, use of the term "most people" by itself blows the cover of any vestige of security. Terrorists organisations are mostly linked with drug and other mafia with no dearth of funds besides prices of what are considered high-end 3D printers will come down with commercialisation. As to availability, it is axiomatic that a 3D printer that can produce a weapon (plastic or metal) would remain on sale because of multiple applications.

Then is the question of blueprints - well a 16-year-old had made a nuclear device some 30 years back learning how to do it from the Internet. India needs to take note. Jason Overdorf and Poh Si Teng in their special report dated December 21, 2010, in globalpost reported that of the 75 million illegal weapons in the world, 40 million are circulating in India.

More significant is the report by Manimugdha S. Sharma in *The Economic Times* dated November 25, 2013, as per which AK-47 and AK-74 assault rifles can be procured from Gaffar Market in Delhi's Karol Bagh retail marketplace, for anything between ₹60,000 and ₹5 lakh, depending on the originality of the weapon. Knock-offs are cheaper and usually originate in Hungary, Bulgaria, Pakistan or China. The 3D weapons will likely be commercialised fastest in India. What we need to understand is that India has to fight terror by itself. Ashley Tellis of the Carnegie Foundation has no hesitation in saying, "India being continuously subjected to terror actually suits many....India is a sponge that absorbs global terror." **SP**

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



The 3D weapons will likely be commercialised fastest in India. What we need to understand is that India has to fight terror by itself.

Abu Dhabi Ship Building and Navantia sign MoU

Abu Dhabi Ship Building (ADSB), leading shipbuilder and naval support provider in the Gulf region, and Navantia, the Spanish state-owned reference company in design, construction, integration and life-cycle support of naval vessels, have signed, on November 17, a memorandum of understanding (MoU) regarding the cooperation in identification and management of future business opportunities for shipbuilding and services related projects for the UAE Navy and other Gulf countries.

The collaboration of this agreement includes the following areas: Through life support, combat and platform systems integration, procurement management, operational and maintenance training and transfer of technology.

The MoU was signed between ADSB Chief Executive Officer, Dr. Khaled Al Mazroui and the Commercial Vice President of Navantia, Gonzalo Mateo-Guerrero at the Dubai Airshow. The aim of this MoU is to support and optimise naval shipbuilding, maintenance, repair and refit activities across all UAE maritime forces. ADSB is also keen to look outside the UAE borders and provide similar solutions to complex Naval fleets across the region.

This MoU is to be considered as a preliminary understanding for future agreements for naval projects in UAE and the GCC countries and provides excellent opportunity for ADSB and Navantia to dem-



onstrate their joint expertise in the UAE and Gulf region with a view to achieve long-term relationship working closely with major navies of the region.

The agreement represents the strong commitment of ADSB and Navantia for collaboration and to be part of the development of the naval capabilities in the GCC countries. The cooperation between both companies will strengthen the industrial capabilities of UAE in the defence sector, particularly in the naval field.

Navantia is currently participating in two tenders, for the construction of seven landing crafts and six multi-mission corvettes. **SP**

Paramount acquires majority stake in Nautic Africa

Paramount Group, Africa's largest privately-owned defence and aerospace firm, has acquired a majority (51 per cent) stake in Cape Town-based Nautic Africa, one of the continent's leading specialist shipbuilding and maritime solutions companies.



The deal comes amid a growing need to protect and secure Africa's coastlines, including oil pipelines, shipping lanes, tourist areas and national borders. The merger of the two companies will see Nautic Africa double its staff employment to 200 by 2015.

According to the Western Cape provincial government, boat building is a competitive and fast-growing sector of the provincial economy. It generates more than R1 billion for the region's gross domestic product each year and creates employment for more than 2,500 residents.

Ivor Ichikowitz, executive chairman of Paramount Group, said: "We are committed to the development of the South African shipbuilding industry and putting Africans at the heart of it."

"Our acquisition of Nautic Africa signals our commitment to growing an innovative shipbuilding industry and delivering 21st-century solutions to protect African assets."

He said Nautic's modern high-speed vessels "are not only vital strategic and logistical assets for African countries — they are also key tools for solving security challenges that are shared by much of Latin America, south Asia and the Middle East".

Nautic was recently awarded contracts worth more than R600 million to build seven "multi-role" patrol vessels for West African clients. The 35-metre "fast vessels" will be the first in their class to be designed and built in South Africa. **SP**

Brazil picks Thales, Arianespace for satellite contract

Visiona Tecnologia Espacial S.A. and Telebras formally recently signed a contract to supply the defense and strategic communications geostationary satellite (SGDC) system. The R\$ 1.3 billion contract provides for the system to be delivered by the end of 2016. The project involves the Ministries of Communications, of Defense, and of Science and Technology. The satellite will be operated by Telebras on the K (civilian) band and by the Ministry of Defense on the X (military) band.

Visiona is a joint venture of Embraer and Telebras and will be responsible for integration the SGDC system, which will expand broadband internet access in remote regions of the country, through the National Broadband Program (PNBL) and ensure Brazil's sovereignty over the communications of its armed forces. After the signing of the contract, Visiona will formalise the hiring of suppliers and will begin developing and integrating the system.

The selected companies are Thales Alenia Space (TAS) to supply the satellite and Ariane Space to launch the device. The contract with suppliers also provides for the transfer of technology to Brazilian companies, and that task will be supervised by the Brazilian National Space Agency (AEB).

"The SGDC system not only will meet the needs of Telebras' National Broadband Program (PNBL) and the strategic communications of the Brazilian Armed Forces, but it is also an opportunity for Brazil to ensure the sovereignty of its strategic communications in both the civilian and military areas," explains Telebras President Caio Bonilha. **SP**

Results from Army, university tests could improve vibration testing for auto, aviation industries

Results from a recent study that looked at how battlefield-born vibrations, like those from blasts and heavy armoured vehicles, for example, are leading research scientists to rethink military vehicle testing and evaluation methods that could also, eventually, improve automotive and aviation industry standards.

A group of Army and University of Maryland researchers and engineers have developed reliability tests to better capture unforeseen failures in ground and air vehicle designs before the military adopts systems and components.

Ed Habtour, principal investigator on the project at the US Army Research Laboratory (ARL), said the physics of failure (PoF) based reliability models and test methods developed by ARL, US Army Materiel Systems Activity Analysis, Aberdeen Test Center, the University of Maryland's Center for Advanced Life Cycle Engineering (CALCE), Team Corporation and Data Physics Corporation were run on the Team Tensor 900 six degrees of freedom (6-DoF) shaker, one of only two of its kind in the world.

The project receives support from the industry-government consortium which sponsors this research at CALCE. The consortium consists of leading electronics manufacturers and users from both military and commercial arenas, said Dr Abhijit Dasgupta, professor at the University of Maryland's CALCE.

Instead of the current practice of vibrating a product sequentially for every axis, the Tensor 900 is capable of vibrating a product in three translational and three rotational motions simultaneously. Results provide a way for researchers to better understand how components fail under the military's - and industry's - most rigorous conditions where vibration is extreme, and with this information, ground and air vehicles can be built better to guard against known vulnerabilities.

The sequential and simultaneous vibration comparison studies have shown that the traditional sequential axial testing is inadequate, expensive, time consuming and provides misleading non-conservative reliability predictions. "When we saw the results, it was so surprising to us that we wanted to make sure we could repeat them," said Habtour. He said the tests results could "really change the way industry conducts vibration testing" for cars, trucks and aircraft.

The current military standard calls for systems, equipment, other machinery and devices to withstand tough climate condi-



tions. Military Standard 810G is the current specification that the Department of Defense (DoD) has in place for equipment to survive and thrive, and this same standard has been adopted by the automotive, aerospace and electronics industry.

Changes to the military standard are going to impact these industries positively by truly improving reliability while reducing testing time and cost, Habtour said.

ARL is working closely with the US Army Test and Evaluation Command, Aberdeen Test Center and Redstone Testing Center to update testing standards such as MIL-STD-810G based on the outcomes of this research.

"In military applications, the reliability of components and devices play a vital role in mission success because some of these devices provide crucial tasks such as control, guidance, communication, and reconnaissance," Habtour said.

For years, he said, the military has had to rely on commercially-available components that are not designed for military applications. But this has led to concerns about their reliability in harsh battlefield environments. Nonetheless, these components can be easily ruggedised with the aid of the multiaxial shaker that can simulate a "real-world" vibratory environment.

The two-year effort covers components in most ground and air vehicles from 20 to 3,000 hertz, such as AH-64, UH-60, C-130, MATV, JLTV, military robotics and commercial automobiles and aircraft. The work does not cover the vibration spectrum of projectiles or missiles in flight. **SP**

Chips meet tubes

The submillimeter wave, or terahertz, part of the electromagnetic spectrum falls between the frequencies of 0.3 and 3 terahertz, between microwaves and infrared light. Historically, device physics has prevented traditional solid state electronics (microchips) from operating at the terahertz scale. Unlocking this band's potential may benefit military applications such as data rate communications, improved radar and unique methods of spectroscopy-imaging techniques that provide better tools for scientific research. However, access to these applications is limited due to physics.

Researchers under the Defense Advanced Research Projects

Agency's (DARPA) Terahertz Electronics (THz) programme have designed and demonstrated a 0.85 Terahertz power amplifier using a micromachined vacuum tube—a world's first. The achievement comes from DARPA-funded researchers at Northrop Grumman Electronic Systems, who built the 1 centimetre-wide travelling wave vacuum tube. The vacuum tube power amplifier is only one achievement of the broader THz programme, which seeks to develop a variety of breakthrough component and integration technologies necessary to one day build complex THz circuits for communications and sensing.

"Further research and development in this field will help unlock applications for our military in this historically difficult to access part of the spectrum," said Palmer. **SP**

Since Monica Seles' 1993 stabbing, security for tennis icons heightened

On April 30, 1993, Gunther Parche ran down from the middle of the stands and stabbed Monica Seles between the shoulder blades with a seven-inch boning knife while she sat on the bench on a changeover during her quarterfinal match against Magdalena Maleeva in Hamburg.

"We've had threats to Monica before, and to other players as well," said Gerard Smith, Executive Director of the Women's Tennis Association then. "But this is bizarre. You can't imagine someone who would take a sport to such an absurd level!"

The good news is security has indeed tightened since then. As Roger Federer, Maria Sharapova and Serena Williams transcended the sport to become celebrity icons, a more robust system of background checks, bodyguards and watch lists developed. And for all the concerns about how social media can put an athlete at risk, it also has allowed players and security personnel to identify potential threats and red flag individuals. **SP**



Man bolts past airport security and into plane at Seattle

A possibly intoxicated man allegedly bolted past terminal security, ran onto the tarmac and broke into an airplane at Seattle-Tacoma International Airport. The man described as in his late twenties, was at checkpoint 5 in concourse D at Sea-Tac airport from where he sprinted past security agents.

As he was being chased, the man ran up some stairs into a jet bridge, and before officers could catch him, he climbed stairs to a door on the plane, but was unable to open the door because it was locked, Sea-Tac Airport spokesman Perry Cooper said. The man then punched through a window on the door and climbed through that window to board the aircraft, Cooper said.

The Port of Seattle police and TSA officers, who had chased the man, were able to apprehend him on the plane. Cooper told media that it appears that drugs were involved.

American Airlines requested bomb sniffing dogs to do a sweep and a full inspection of the plane, according to a Sea-Tac spokesman. The aircraft was inspected and cleared, and there was no damage to the plane. The man was booked into King County Jail on suspicion of trespassing and assault on a police officer. **SP**



Vermont health-care website security breached

Vermont recently confirmed that a security breach of the state's health-care exchange website gave at least one user access to another resident's social security number, a disclosure that has the exchange's top official in hot water.

The Vermont Health Connect's privacy watchdog reported the security breach in a letter to the federal Centers for Medicare & Medicaid Services. According to that report, one consumer who had logged on to the exchange's website received a copy of his application for insurance in the mail, from an unnamed sender. A note scrawled on the back of the envelope read: "VERMONT HEALTH CONNECT IS NOT A SECURE WEBSITE!"

The Department of Vermont Health Access commissioner Mark Larson told it was the only security breach to occur since the site launched October 1. But he had told state legislators at a hearing on November 5 that his department had only investigated one complaint about security breaches, and that the complaint was unfounded. **SP**

Turkish derby incident a security lapse, says Deputy PM

The Turkey's Deputy Prime Minister, Bulent Arinc has pointed to security negligence in the failure to prevent groups from invading the pitch at the Besiktas-Galatasaray football match in what he called an incident "orchestrated for provocation".

Bulent Arinc told reporters that between 3,000 and 5,000 people seemed to have entered the stadium covertly for provocative actions. He said necessary and even radical measures should be taken to prevent similar incidents from taking place. Hundreds of fans halted the Istanbul derby between Galatasaray and Besiktas after storming the pitch at the Olympic Stadium. Galatasaray was leading 2-1 in the third minute of added time when the match was stopped. **SP**

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