SOFT TO PULP : A VIEWPOINT PAGE 4

ISSN 2320-9828

SP's MAI

AN SP GUIDE PUBLICATION

₹55.00 (INDIA-BASED BUYER ONLY)

www.spsmai.com

Vol: 3 Issue 8 ▪ April 16-30 ▪ 2013

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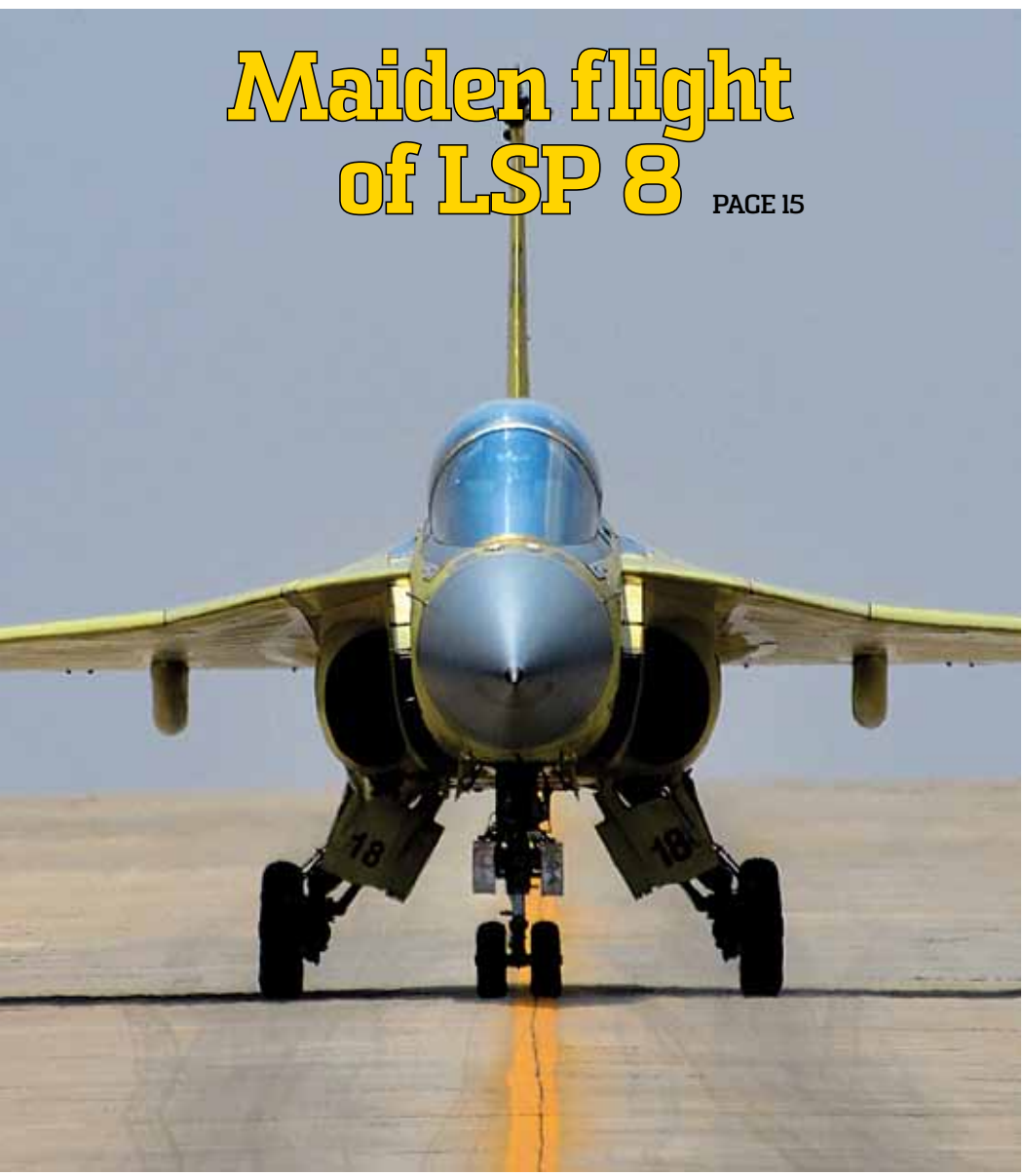

Maiden flight of LSP 8 PAGE 15

M1A1 Abrams during an excercise in Frankfurt

World military spending falls, says SIPRI PAGE 2

India, Russia agree on specifications of PAK FA fighter PAGE 14

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World military spending falls, but China and Russia's spending rises: SIPRI

World military expenditure totalled $1.75 trillion in 2012, a fall of 0.5 per cent in real terms since 2011, according to figures released recently by the Stockholm International Peace Research Institute (SIPRI).

The fall—the first since 1998—was driven by major spending cuts in the United States and Western and Central Europe, as well as in Australia, Canada and Japan. The reductions were, however, substantially offset by increased spending in Asia, Eastern Europe, the Middle East and North Africa, and Latin America. China, the second largest spender in 2012, increased its expenditure by 7.8 per cent ($11.5 billion). Russia, the third largest spender, increased its expenditure by 16 per cent ($12.3 billion).

PHOTOGRAPHS: US Navy

Despite the drop, the global total was still higher in real terms than the peak near the end of the cold war.

"We are seeing what may be the beginning of a shift in the balance of world military spending from the rich Western countries to emerging regions, as austerity policies and the drawdown in Afghanistan reduce spending in the former, while economic growth funds continuing increases elsewhere," said Dr Sam Perlo-Freeman, Director of SIPRI's Military Expenditure and Arms Production Programme. "However, the USA and its allies are still responsible for the great majority of world military spending. The NATO members together spent a trillion dollars." SP

Cover:
LCA-Tejas was flown covering a flight envelope at supersonic speeds and at an angle of attack of 20 degrees which is the current maximum limit cleared by design. With this, the initial operation clearance for the aircraft can be expected soon.

Cover images:
HAL, US Army, Sukhoi

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

SP GUIDE PUBLICATIONS
www.spguidepublications.com

China-Pakistan nuclear capabilities destabilising the region

In February this year, China and Pakistan signed a formal agreement to construct a third nuclear reactor at Chashma in Pakistan, creating ripples internationally. The US has stated that this violated Beijing's promise under an international anti-nuclear weapons accord.

China National Nuclear Corp is to construct the 1,000 megawatt power plant at Chashma, located in the northern province of Punjab where two earlier Chinese reactors were built. There is no denying the fact that Pakistan's nuclear arms programme has been majorly supported by China. Alarming reports are emanating from the US on how Pakistan is on course to modernise its nuclear arsenal which is estimated to contain as many as 110 nuclear warheads. The two countries are getting aggressive, 'destabilising' the region.

In an analysis, Air Marshal (Retd) Anil Chopra has traced nuclear development programme in Pakistan and how it is supposedly developing nuclear weapons. Pakistan has openly stated that "it will use nuclear weapons 'even if India did not use' atomic weapon first". This is their way of deterrence to a superior conventional threat. The success of such a doctrine was visible from India's subdued response after the attack on the Indian Parliament and the Mumbai attacks. Pakistan feels that they have achieved the cold war deterrence scenario as India's reaction militarily in the recent past have to be seen in this background. Air Marshal Chopra asks are we now branded a weak nation?

What is more scary is the nuclear arsenal falling into rogue elements in Pakistan. The US has confirmed from satellite images that Pakistan has dispersed its nuclear weapons across the country, increasing the risk of falling into terrorist hands.

In his fortnightly column, Lt General (Retd) P.C. Katoch has disapproved of the Indian Government's soft attitude towards Pakistan and China. He states that it is amusing to observe some Indian media's view that we should only look at positive aspects of Rehman Malik's visit—easing visa norms et al. He hopes that the same logic will not apply to Siachen and Sir Creek. He wonders has the government turned to 'total' pulp?

Coming to acquisitions, Air Marshal Chopra has dwelt at length on the process of acquisitions and states that the total cost of acquisition (TCA)-based L1 determination is a good model, resulting in significant cost saving over the life of the aircraft.

Although there are delays in acquisitions and indigenous programmes, one thing for sure the Indian armed forces are driven by a sense of commitment and this was displayed in full strength when the Indian Air Force conducted its largest exercise ever, 'Live Wire 2013'. Operations with Indian Navy were conducted in Exercises 'Tropics' and 'Dakshin Parhar' as a prelude to the main exercise. Around the same time, HAL conducted the maiden flight of the last aircraft in the limited series production programme of light combat aircraft Tejas (LSP-08). It is heartening to note that the different organisations are working hard to get the LCA going.

Happy reading!

Jayant Baranwal
Publisher & Editor-in-Chief

LT GENERAL (RETD)
P.C. KATOCH

Soft to pulp

Post Salman Khurshid rushing to Jaipur to host a banquet for Raja Pervez Ashraf who was on a personal visit to Ajmer, the latter displayed his tremendous gratitude by heading a motion in Pakistani Parliament denouncing the hanging of Afzal Guru before demitting office.

India's transition from a 'soft state' to a 'pulp state' was complete when Home Minister Sushil Kumar Shinde referred to Hafiz Saeed in Parliament as "Shri Saeed" despite he being wanted in the 26/11 Mumbai terror attacks holding open anti-India rallies. This was topped by Omar Abdullah referring to Afzal Guru as "Afzal Saheb" in Jammu and Kashmir Assembly. Earlier, Rehman Malik was invited against bureaucratic advice. He insults you in your own house and you grin and grasp his hand. So pulverised was Shinde that he did not even have the spine to rebut the insidious joker equating 26/11 Mumbai terror attacks to Babri Masjid demolition and branding Abu Jundal an Indian agent. Despite all this, Prime Minister Manmohan Singh still met Malik and Shinde tamely said in the Parliament that Malik was "ill informed". New catches emerged in the Samjhauta blast case perfectly synchronised with Malik's clowning—despite the US investigators clearly blaming the LeT and Al-Qaeda for the Samjhauta blast.


Raja Pervez Ashraf

If CBI can be pressurised what is great about the National Investigation Agency (NIA)? B. Raman, former Additional Secretary, Cabinet Secretariat, wrote in 2010, "According to American investigators, LeT and Al-Qaeda were responsible for the Samjhauta Express blast and the HUJI for the Mecca Masjid blast. If the American investigators, who have better sources in Pakistan, are correct, how can our investigators claim that some arrested Hindus were responsible for these incidents? ..... Both cannot be correct". But why should a 'pulp state' bother about US investigations when vote banking has overtaken every other form of banking and money laundering (read black money) tops all agendas. The GFI study (co-authored by GFI Lead Economist Dev Kar and GFI Economist Sarah Freitas) titled *Illicit Financial Flows from Developing Countries: 2001-2010*, released during December 2012, states illegal financial outflows from India during this period amounted to $123 billion (annual average of $12.3 billion). So where is the question of targeting corruption and crime? Look at the state of crime in the country's capital but then you can hardly blame the state Chief Minister who had made the remarkable statement that a family of five can live 'comfortably' for a complete month in ₹600 ($10.94), declaring it openly—surpassing even Montek Singh's Ahluwalia's genius of ₹32 ($0.58) a day for a below poverty line Delhi citizen. Are the Nobel Foundation, United Nations and Government of India listening?

It is amusing to see government sponsored articles in media saying we should only look at positive aspects of Rehman Malik's visit —easing visa norms et al. Hopefully, the same logic will not apply to Siachen and Sir Creek; Indian withdrawal, positive aspect being it will make both China and Pakistan 'very happy'. But has the government turned to 'total' pulp? Not by any chance. The pulp takes solace in belittling its own military. Note the response to Rehman Malik's reasoning for mutilation and killing of Captain Saurabh Kalia's patrol; timid statement by Defence Minister A.K. Antony that we will take it up with Pakistan (what about UN and ICJ – violation of Geneva Conventions?), decades long debate on the war memorial and pugnacious approach in denying legitimate entitlements and justified demands of military personnel, both serving and veterans. Little wonder media channels still invite General Pervez Musharraf for leadership summits and Chinese say "what to talk of nuclear forces, India does not even know how to use their conventional forces". In mocking its military, the pulp government should heed former US President Dwight D. Eisenhower's famous words, "As the nation's final safeguard, the army cannot afford a failure in either circumstance. Failure of army can lead to national catastrophe, endangering the survival of the nation." SP

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

In mocking its military, the pulp government should heed former US President Dwight D. Eisenhower's famous words, "As the nation's final safeguard, the army cannot afford a failure in either circumstance. Failure of army can lead to national catastrophe, endangering the survival of the nation."

PHOTOGRAPH: PPI

Pakistani nuclear bomb

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

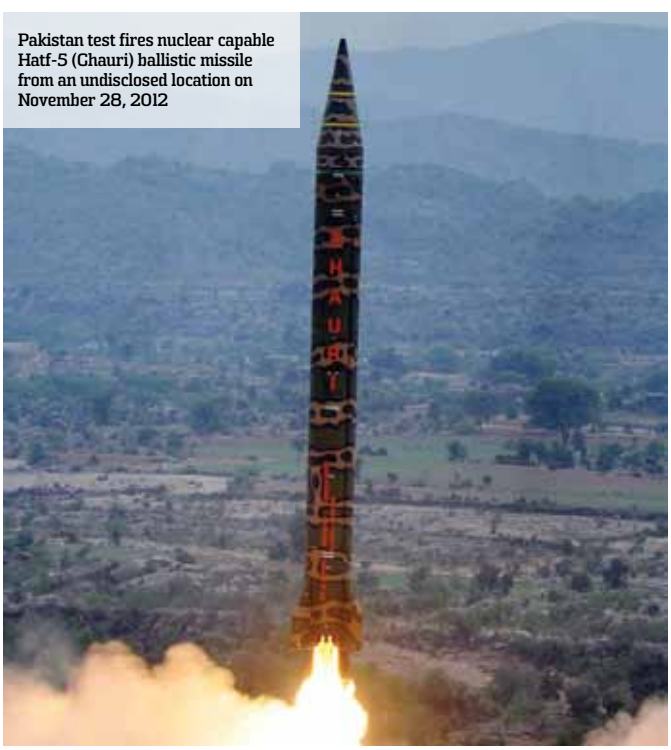
Zulfiqar Ali Bhutto is credited to be the founder of Pakistan's atomic bomb. In 1956 he played a key role in setting up the Pakistan Atomic Energy Commission (PAEC). As the Minister for Fuel, Power, and National Resources in 1960, he directed funds for research in nuclear weapons. Immediately after the 1965 war he made that, highly quoted, statement, "If India builds the bomb, we will eat grass and leaves for a thousand years, even go hungry, but we will get one of our own." Pakistan started working towards a nuclear bomb in all earnest in 1972 when they heard of advanced Indian nuclear research at Trombay. Along with India and Israel it remained outside the Nuclear Non-Proliferation Treaty (NPT). On May 18, 1974, India tested a 10-15-kilotonnes device; code named 'Smiling Buddha', at Pokhran in the Rajasthan desert, and called it a 'peaceful nuclear explosion'. Bhutto launched an aggressive campaign and refused to be subjected to 'nuclear threat and blackmail'. It also became a trigger to launch an extensive plutonium reprocessing and uranium enrichment programme. Abdul Qadeer Khan (AQ) joined the programme in 1976 and later became the 'father' of the Pak bomb.

An implosion type test was reportedly carried out in Pakistan in 1978 and successful cold tests in 1983. Finally, on May 28, 1998, a few days after India's second nuclear test 'Operation Shakti', Pakistan detonated five nuclear devices at Chagai in Baluchistan. This was followed by a sixth test of a weapons grade 'plutonium' device few days later. These became known as the Chagai I and II tests. The underground iron-steel tunnels had been constructed a few years earlier indicating premeditated intent. In 1999 Prime Ministers Nawaz Sharif of Pakistan and Atal Bihari Vajpayee of India signed the 'Lahore Declaration' agreeing to a bilateral moratorium on nuclear testing. Since then, the two have been regularly exchanging lists of nuclear facilities. Another agreement signed in March 2005 expects both nations to alert the other on ballistic missile tests and a hotline is maintained for the purpose.

Nuclear Capability

Pakistan is known to have around 110 nuclear warheads. Weapons can be carried by more than 50 modified F-16 and JF-17 aircraft. The air-launched nuclear tipped cruise missile has a range of 350 kilometres. Pakistan possesses a variety of Shaheen and Ghauri series nuclear-capable ballistic missiles with ranges up to 2,500 kilometres. It has 700-km range nuclear-armed Babur cruise missiles. Pakistan is also supposedly developing battlefield tactical nuclear weapons of around 60-km range. The land-based missiles are controlled by Pakistan Army. Pakistan is also developing a sea-based variant of the Hatf VII Babur cruise missile and nuclear tipped torpedoes. Pakistan Navy (PN) also wants to kick-start a proposal to build its own nuclear submarine as a direct response to the Indian nuclear submarine programme. Pakistan has also been increasing its capacity to produce plutonium, a fuel for atomic bombs.

The world, led by United States, has been repeatedly blaming China for transfer of technology and materials to support Pakistan's nuclear and missile programmes. US intelligence has confirmed Pakistan's second-strike capability. "Don't assume that the Pakistan's nuclear capability is inferior to the Indians", US General Zinni, former US Central Command (CENTCOM) Commander reportedly told TV channel NBC sometime back. In 2010 a Russian Foreign Ministry report indicated 1,20,000 personnel directly involved in Pakistan's nuclear and missile programme. India has for years been championing the cause of global disarmament, however, is not open to declaring only South Asia as a nuclear weapons free zone in view of possible threat from China.



Pakistan test fires nuclear capable Hatf-5 (Ghauri) ballistic missile from an undisclosed location on November 28, 2012

Will Use Strategy

Pakistan has openly stated that "it will use nuclear weapons 'even if India did not use' atomic weapon first". This is their way of deterrence to a superior conventional threat. The success of such a doctrine was visible from India's subdued response after the terrorist attacks on the Indian Parliament and Mumbai. Political scientist Vipin Narang argues that Pakistan's asymmetric escalation posture, or the rapid first use of nuclear weapons against conventional attacks has neutralised India's conventional options for now. Pakistani officials and strategists emphasise that nuclear deterrence will maintain a balance and

PHOTOGRAPH: PPI

Pakistani military truck carrying IRBMs

safeguard its sovereignty and ensure peace in the region. President Zia-ul-Haq had reportedly said in 1987 that "If Indian forces cross our border by an inch, we will annihilate Indian cities".

To exercise control over nuclear weapons, Pakistan set up the National Command Authority (NCA) in February 2000. It is comprised of two civil-military committees that advise the Prime Minister and President on the development and deployment of nuclear weapons. In November 2009, President handed over the chairmanship of NCA to the Prime Minister. Chairman, Joint Chiefs of Staff Committee (JCSC) is the deputy chairman. The committees include senior cabinet ministers and the respective military chiefs of staff. NCA establishes guidelines for effective command-and-control to safeguard against the accidental or unauthorised use of nuclear weapons. Under the NCA, Strategic Plans Division (SPD) is responsible for the physical protection and to ensure security of all aspects of country's nuclear arsenals and functions under the JCSC which reports directly to the Prime Minister.

Rogue Elements

The United States has confirmed from satellite images that Pakistan has dispersed its nuclear weapons across the country, increasing the risk of falling into terrorist hands. In view of the crumbling political status of Pakistan, the United States has been worried about these weapons falling into rogue hands. Pakistan administration has however been claiming that their weapons are more secure than anywhere else in the world. More than the threat from India, Pakistan has of late been worried about possible US attacks to disarm their nuclear arsenal.

Preventing Pakistan's nuclear weapons and technology from falling into the hands of terrorists has thus been top US priority. Growing anti-America sentiment among junior Pakistani armed forces officers is bothersome. *The Times* published a report in early 2010 that the US is training an elite group to recover Pakistani nuclear weapons or materials should they be seized by militants. A Harvard University study titled 'Securing the Bomb 2010', found that Pakistan's weapons "face a greater threat from Islamic extremists seeking nuclear weapons than any other nuclear stockpile on earth". However, in April 2011, International Atomic Energy Agency (IAEA) declared that Pakistan's nuclear programme is safe and secure. Pakistan is training a special force to protect the nuclear arsenal which is expected to be ready later 2013.

A recently published collection of essays by eminent Pakistani and Indian scientists documented in 'Confronting the Bomb: Pakistani and Indian scientists speak out' (Oxford University Press) covers some ground realities. The nuclear landscape in South Asia is dynamic and a complex mixture of politics, technology, and emotion; nuclear debates in the two countries are less analytical and more rhetoric; Pakistan feels they have achieved the cold war deterrence scenario; Pakistan continues to have the fastest growing nuclear arsenal; If India were to react militarily to a future trigger event, Pakistan is doctrinally willing to unleash nuclear weapons; Pakistani nukes are in safe and secure hands; Pakistan Army is steadily getting Talibanised; As part of Shia-Sunni rift Pakistan sides with Saudi Arabia, and in spite having initially supported covertly, is worried about Iranian nuclear programme. Pakistan's nuclear complex could be sympathetic with the Saudi kingdom's nuclear ambitions for religious reasons and financial opportunity. A shift on the subcontinent towards tactical nuclear warfare increases the threat of a nuclear confrontation and the danger of losing command and control of nuclear weapons. Serious emotion charged-dispute over Kashmir and short missile flight-time make South Asia a high risk zone. The divisions within Pakistan, its Army and the powerful Inter-Services Intelligence (ISI) over the issues of national identity and the role of Islam add to the risk.

Pakistani nuclear bomb seems to have served the purpose. It has emboldened an otherwise failing state to push its political agenda and systematically bleed India through low-cost state sponsored terrorism. It's 'Will First Use' policy has proved a deterrent. It has repeatedly forced India to negotiating table even after major Pak-sponsored terrorist attacks. Did India miss an opportunity to teach a lesson during the Kargil War when the world opinion was with us? Are we now branded a weak nation? SP

PHOTOGRAPH: en.academic.ru

Agni-II hits target area accurately

The Strategic Forces Command (SFC), fired the medium-range Agni-II missile propelled by the solid rocket propellant system, with a range capability of over 1,700 km utilising the range facility at Wheelers Island, off the Odisha coast on April 7.

The entire trajectory of the missile was tracked by a battery of sophisticated radars, telemetry observation stations, electro-optic instruments and naval ships.

Agni-II missile is equipped with state-of-the-art avionics, advanced high accuracy navigation system and guided by an innovative guidance scheme. An SFC spokesman said, the flight "most importantly conveys our preparedness to meet any eventuality. The mission "fully validated our operational readiness as also the reliability of the systems and the missile." SP

Araguari, 3rd OPV of Brazilian Navy on sea trials

The Brazilian Navy's latest BAE Systems built warship has set sail for the first time to be put through her paces on an extensive programme of sea trials off the UK coast.

Araguari, the third Ocean Patrol Vessel (OPV) in the Amazonas class, sailed out of Portsmouth recently with her BAE Systems crew and Brazilian Navy observers. They will spend two weeks testing all elements of the ship's functionality, including her propulsion and combat systems.

Members of Araguari's 81-strong crew have now moved into their new residence on HM Naval Base Portsmouth and have begun training to handle the OPV. The naval base is already home to the Brazilian Navy support team, which is overseeing the delivery of the entire class of ships.

Nigel Stewart, Commercial Director of BAE Systems Maritime, said: "Today is the start of an exciting new stage in the delivery of this highly capable warship, as well as another milestone in our strong partnership with the Brazilian Navy. The BAE Systems team will test Araguari's performance and work with her crew to ensure they are ready for the challenges that the ship will face when delivered to Brazil to provide maritime security, humanitarian relief and search and rescue."

Over 250 members of the Brazilian Navy have now been stationed in the UK since the contract was signed at the end of 2011 for three OPVs and ancillary support services, which includes a manufacturing licence to enable further vessels of the same class to be constructed in Brazil.

Amazonas, the first ship in the class, is already in operation after arriving in Brazil while APA, the second ship, is currently on her 16,000-km delivery voyage. Araguari is scheduled to be handed over to the Brazilian Navy in June.

The 90-metre Amazonas class ships are based on the design of the Royal Navy's River Class OPVs and are ideal for providing maritime security in Brazil's territorial waters, including the protection of the country's oil and gas platforms. SP

PHOTOGRAPHS: DRDO, UK MoD, BAE Systems

Ricardo receives order for additional Foxhound vehicles

Ricardo has received an order from prime contractor General Dynamics Land Systems-Force Protection Europe (GDLS-FPE), for the assembly of 76 additional vehicles, bringing the total Foxhound fleet size ordered to date by the UK Ministry of Defence to 376. Arguably the world's most agile and best-protected vehicle in its weight class, all Foxhounds vehicles are assembled by Ricardo at the purpose-designed production line commissioned in 2011.

"The Foxhound is exactly the right vehicle for British forces, providing what commanders on the ground in Afghanistan are describing as 'an enormous leap forward' in capability," commented Ricardo CEO Dave Shemmans. "This highly impressive vehicle that has the potential to save many lives, has resulted from our very successful subcontract with prime contractor General Dynamics. Ricardo is proud to have assembled all of the Foxhounds ordered for British forces by the MoD."

"Production of the Foxhound is already well under way at our special vehicle production facility where we have commissioned a dedicated production line for this purpose," added Mark Barge, Director of manufacturing operations. "Together with our work for premium vehicle customers such as Bugatti, McLaren and the motorsports industry up to and including Formula 1 teams, Ricardo has an enviable track record of manufacturing exceptional products." SP

Brazil to buy German anti-aircraft tanks

Brazil will buy 34 1A2 Gepard anti-aircraft tanks from Germany to provide security at major religious and sporting events, like the upcoming World Cup. The tanks are likely to be used when Brazil hosts the World Cup next year and the 2016 Olympic Games. A Defence Ministry statement said the contract would be signed in the coming days with the total value still under negotiation.

The used, 47.5-tonne tanks, which were upgraded in 2010 and fitted with new radar systems, will be able to operate until 2030, the G1 news website quoted anti-aircraft artillery brigade chief General Marcio Roland Heise as saying.

Eight of the armoured vehicles are to be delivered before June and will be used during World Youth Day, the Catholic youth fest that Pope Francis plans to attend in Rio in July.

"I want all troops to be ready and trained to use this new (anti-aircraft) system at the opening and closing of the Confederations Cup and during the Pope's visit to protect those who will be in stadiums," Heise said.

The other tanks are to be delivered by 2015.

Rio hosting Latin America's biggest defence trade fair. South Africa's privately-owned Paramount Group, which is attending the LAAD Defense and Security expo, signed a contract with Rio de Janeiro state for the sale of eight police armoured vehicles that will be delivered by December. SP

PHOTOGRAPHS: Lockheed Martin, Exelis, Wikipedia

Lockheed Martin's Havoc completes marine tests

Lockheed Martin's Havoc 8x8, an eight-wheel-drive armoured modular vehicle, successfully completed amphibious testing as part of its evaluation for the marine personnel carrier (MPC) competition. The trials in and near the surf at Marine Corps Base Camp Pendleton, California, were conducted with the vehicle loaded to its full combat weight. Havoc demonstrated its resistance to water penetration while easily accommodating a full complement of Marine Corps battle gear for the crew.

"The Havoc 8x8 showed its ability to negotiate all surf and wave conditions required by the United States Marine Corps," said Scott Greene, Vice President of Ground Vehicles for Lockheed Martin Missiles and Fire Control. "The vehicle maintained 100 per cent operational readiness throughout the test."

Lockheed Martin leads a team that includes industrial partner Patria Land Systems. Havoc is a multi-mission, expeditionary ground combat vehicle that is an evolution of the Patria 8x8 armoured modular vehicle, a battle-tested design used by armed forces globally. Its configuration allows for a wide range of weapons, sensor and communications options to address evolving mission requirements. Employing the baseline architecture of the Patria vehicle, Havoc features exceptional mobility and transportability, and can protect its crew against a variety of extreme threats.

Havoc's designed-in supportability combined with Lockheed Martin's award-winning experience in managing performance-based logistics programmes for ground platforms enables increased system readiness and lower ownership costs. Lockheed Martin's total-system approach to vehicle missionisation reduces crew workload and ensures troops remain connected on the battlefield. SP

Exelis wins Italian Army night vision order

ITT Exelis (XLS) has received a contract from Selex ES to manufacture the binocular i-Aware tactical mobility night vision goggle (TM-NVG) for the Italian Army's Future Soldier programme.

The i-Aware TM-NVG is an advanced, multi-purpose night vision goggle that connects the individual soldier to the larger tactical network. Providing enhanced situational awareness to the warfighter, the i-Aware TM-NVG can be a part of the complete soldier system or used as a stand-alone night vision goggle. A key benefit of the goggle is its ability to increase operational effectiveness in both nighttime and daytime missions. It provides the soldier with real-time video access to critical tactical intelligence

and the capability to share video from the individual soldier to the tactical network.

"For more than 50 years, Exelis has been advancing night vision technology to support the missions of our domestic and international customers," said Nick Bobay, President of the Exelis Night Vision & Tactical Communications Systems division. SP

New-generation Casspir raises the standards for mine-protected vehicles

Denel Mechem, the company which designs and manufactures the durable vehicle Casspir, have upgraded the hull protection by using a higher quality of steel, increased its power, improved the accessibility for passengers and mounted it on a more versatile and reliable vehicle platform.

The Casspit is the vehicle of choice for demining or military operations and has been used from Afghanistan to Mozambique, by the United Nations, the SA National Defence Force, private security companies and police services around the globe. More than three decades after the first Casspir came off the production line in 1979 the New Generation 2000 will provide its end-users with new options and increased protection.

There are two versions of the Casspir NG 2000 – one mounted on a Mercedes Benz drive train and the 2000B using a Powerstar engine as platform. Both versions will feature an upgraded steel hull meeting the highest industry standards of protection.

Jack Geldenhuys, Mechem's Manager for Vehicle Systems, says the new vehicle will also feature side doors for the driver and crew and an improved back door design for troops or passengers to enter and exit during operations. SP

iRobot wins $29 million US Navy robot order

iRobot Corp., Bedford, Massachusetts, is being awarded a $2,87,76,935 modification to previously awarded contract for the procurement of Man Transportable Robotic System production systems, depot level repair parts, spare kits, depot repair services, parts supply, training, engineering enhancements, configuration management and approved accessories.

The man Transportable Robotic System is a small robotic vehicle used by Explosive Ordnance Disposal technicians to conduct remote reconnaissance, render safe, and/or dispose of explosive devices.

Work will be performed in Bedford and is expected to be completed by April 2014. No funding will be obligated at the time of the award. Fiscal 2013 Operations and Maintenance, Navy and Operations and Maintenance, Army contract funds will not expire at the end of the current fiscal year.

The Naval Surface Warfare Centre, Indian Head Division, Indian Head, Maryland, is the contracting activity. SP

PAC-3 missiles intercept TBM target

Lockheed Martin's PAC-3 missile successfully detected, tracked and intercepted a tactical ballistic missile (TBM) in a lower tier project office flight test recently at White Sands Missile Range, New Mexico.

Two PAC-3 missiles were ripple-fired in the test per current doctrine. The first interceptor destroyed the target and the second PAC-3 missile self-destructed as planned. Mission objectives were focused on reducing risk for a flight test of the PAC-3 Missile Segment Enhancement (MSE) scheduled later this year.

"Today's flight test provided us the opportunity to demonstrate the PAC-3 Missile against a challenging TBM target," said Richard McDaniel, Vice President of PAC-3 Missile programmes at Lockheed Martin Missiles and Fire Control. "Our preliminary data indicate that all objectives were achieved."

The PAC-3 and MSE Missiles are two of the world's most advanced, capable and reliable theatre air defence missiles. They defeat tactical ballistic and air breathing targets. As the most technologically advanced missile for the Patriot air defence system, PAC-3 significantly increases the Patriot system's firepower, allowing 16 PAC-3 Missiles to be loaded in place of just four legacy Patriot PAC-2 missiles on the launcher. SP

PHOTOGRAPHS: US Army, iRobot, Lockheed Martin

Life Cycle Costing: Value for Money

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

For years, for capital procurements, the country had been following a 'Single-Stage Two-Bid System' wherein both the technical and commercial bids were submitted simultaneously. The technical aspects were subjected to detailed evaluation following which commercial bids of only those that were technically compliant were considered by the Contract Negotiation Committee (CNC) for determination of the 'lowest bidder,' popularly known in the corridors of power as the 'L1'.

The L1 was determined on the basis of 'procurement cost' of items contracted. Although this process ensured induction of the cheapest equipment, it did not address the issue of very high cost of operation over its life-cycle which depends on the type of technology and design philosophy. Employment of better technology and design would reduce operating costs over the life-cycle of the equipment.

In our personal life, when we want to buy a car we don't look at only the initial cost, we go into details of running expenditure such as fuel consumption, cost of spares, repair and servicing facilities across the country, etc. That is one of the reasons why diesel cars are so popular in India in spite of higher initial cost. That is what life-cycle cost (LCC) model is all about.

LCC Model

LCC is defined as the sum of all recurring and non-recurring (one time) costs over the full span of planned utilisation period. LCC includes the

Dassault Rafale has been shortlisted for IAF's MMRCA

PHOTOGRAPH: Dassault Aviation

costs of procurement, installation, operation, maintenance and also factors in the residual or salvage value recoverable at the end of useful life. It is thus the cost of ownership over the full life. The LCC model in different forms has been adopted since the 1980s by Austria, Germany, Iceland, the Netherlands, Switzerland and the United States. Australia has a Parliamentary Act mandating the use of LCC for all public procurements. The concept is known by various names such as LCC, cost of ownership (COO) and the total cost of acquisition (TCA). More than 19 internationally reputed vendors have responded to the Indian Government RFPs with the TCA model. No vendor has raised any issue or expressed lack of clarity on the subject.

The LCC analysis is carried out using the defined procurement objectives, cost drivers, established parameters, escalation methodology, discounting rate, etc. The methodology is stated upfront in the RFP. The Indian Defence Procurement Procedure (DPP) has been gradually moving towards LCC since 2002. A committee was formed by the Ministry of Defence (MoD) in 2007 with members from MoD (Finance) and the Air HQ to suggest a suitable model for the medium multi-role combat aircraft (MMRCA) case.

The committee recommended inclusion of all major elements that were quantifiable, verifiable and relevant. They proposed a TCA model for inclusion in the MMRCA RFP. Finally all the determinable factors, including the operating cost and MTB-linked warranty were included. The TCA model proposed by the committee for determination of the L1 vendor was approved by Secretary (Defence Finance), Defence Procurement Board (DPB) and the Defence Acquisition Council (DAC) for inclusion in the MMRCA RFP (for the first time) issued in August 2007. While considering the heavy-lift helicopter procurement case in February 2009, the DPB directed that all 'applicable elements' of the MMRCA TCA model may be used for all future aircraft procurements. This has become the norm since then.

While the TCA model was used for the first time in MMRCA RFP, the contract for procurement of basic training aircraft (BTA) was the first case to fructify using the TCA model. BTA case using the TCA model was accorded 'no objection' by the Ministry of Finance (MoF) and the Cabinet Committee on Security (CCS) approval in May 2012, thereby validating the TCA model. Based on the experience gained and suggestions of MoF, a proposal to include TCA model for all major weapon system procurements is being processed for inclusion in the DPP.

Elements of TCA

TCA includes direct cost of acquisition, cost of total technical life (TTL)-based reserves, cost of time between overhauls (TBO) mean time between failures (MTBF)-based reserves, cost of inspection level servicing, cost of repair level servicing and overhaul, basic operating costs and cost of transfer of technology (ToT). The types of spares include daily use spares such as consumables, line replaceable units (LRUs) and items like nuts, bolts, filters, fuses, etc. Intermediate level spares are used for rectification of the LRU up to card level. Depot level requires spares for major servicing and repairs. TTL and TBO-based reserves include components with specified life after which they need to be mandatorily replaced such as engine, pumps, gear boxes, cartridges, etc. If an aircraft has a TTL of 10,000 hours and engine TTL is 5,000 hours, two engines will be required in the life time.

MTBF-based reserves relate to items which are not lifted but will have to be replaced on failure. The MTBF provided by the vendor forms the basis for these reserves. Manufacturer recommended list of spares (MRLS) caters for scheduled and unscheduled servicing and maintenance for the first five years after induction. The vendor is bound by 'adequacy of spares' clause and a 'buy back' clause in case of under/over assessment of spares required.

The direct cost of acquisition includes aircraft, weapons, support and handling equipment, MRLS for five years, tools and testers up to intermediate level servicing, initial training of personnel, training aids and publications. Cost of TTL-based spares include all mandatory replacement items up to stipulated life. Cost of spares for intermediate level is included in the MRLS, so only man-hour cost has to be factored in. Cost of depot level servicing over the entire life includes man-hours and spares and the ammortised cost of infrastructure required to be set up at repair depot. The operating costs are essentially for fuel.

MMRCA TCA included seven elements. For all subsequent cases only five elements were involved as cost of MTBF-based reserves and cost of ToT were not applicable. MMRCA case is for 126 aircraft to be operated from five to six different locations requiring a large inventory of spares and reserves. MTBF-based reserves are low in all other cases as the numbers and locations are fewer and the platforms are less complex

L1 Determination

For fair comparison, the cost of bids need to be brought to a common 'date and currency'. As per DPP, all bids are to be compared as on the date of opening of the commercial bids. Therefore, for TCA, all costs are brought to their 'net present value' (NPV) as on the 'bid opening day'. The vendor with the lowest NPV of TCA emerges as the L1. Since the RFP seeks a 'firm and fixed' cost, to calculate NPV, all the future cash flows for the entire contract period need to be 'discounted' to bring them to their 'present value' through the discounted cash flow (DCF) method. The prevalent 'lending rate' by Central and state governments is used as the 'discounting rate'. Early payments will result in higher 'present value' in comparison to the same amount with delayed payment.

The vendors quote cost for a 'base year' (stated upfront in the RFP) along with an 'indices based escalation formula'. These costs are 'escalated' to their 'present value', as on the 'bid opening day', using the escalation formulae. Similarly, cost of TTL-based reserve and 'D' level servicing is quoted for a base year and these are escalated to their 'present value', as on the 'bid opening day'. Vendors only provide 'man-hours' for 'I' level servicing and its 'present value' is computed using the man-hour rate (MHR) prevalent in India on the bid opening date. The 'fuel consumption' is determined during the flight testing and the 'present value' of operating cost is computed using the 'fuel rate' prevalent in India on the bid opening date.

Hence, all elements of TCA are at their 'present value' as on the bid opening date. The vendor with the lowest NPV of TCA emerges as the L1. Direct acquisition costs are validated by the Technical Evaluation Committee and during flight and maintenance evaluation, and validated by CNC. Certified manuals, component log cards, servicing task cards are also studied. The contract includes all 'specifications' and 'cost parameters' quoted by the vendor. The contract also includes a specific clause stipulating that subsequent revenue contracts would be mutually finalised on the basis of these reference cost parameters and escalation formulae. To bind the vendor to the MTBF data provided by him, the contract includes a strong MTB- linked warranty for 10 years with a bond of five per cent the contract value.

TCA-based L1 determination will result in significant cost saving over the life of the aircraft. Besides binding the vendor to the DCA, as in the conventional model, the TCA model goes a step further to provide the cost parameters and specification of all elements with a strong MTBF-linked warranty. Thus, the TCA model provides a much better visibility and price discovery for future revenue contracts as compared to the conventional DCA model. TCA model will obviate situations wherein an aircraft inducted with low initial cost, has very high operating and maintenance expenditure. TCA model is a 'scientific method' of procurement decisions. SP

(with inputs from IAF Headquarters)

1964

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

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

1974

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

1984

50

JUST 1 STEP SHORT OF

WE SHALL BE 50 THIS YEAR

2014

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

2013

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

2004

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

1994

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

50 YEARS

SP GUIDE PUBLICATIONS

Embraer begins commercial campaign for KC-390 military transport jet

Embraer Defense & Security announced at the LAAD Defence & Security trade fair, that it is beginning to promote and sell the KC-390 military transport jet on the market.

Embraer recently concluded the critical design review (CDR) of the project with the Brazilian Air Force, showing the maturity of the product and setting the definitive configuration of the aircraft, which made it possible to begin releasing information for producing the prototypes. The finalisation of this important phase of the programme also permitted establishing the final technical specifications, and it set the price and the delivery conditions, which opens the way to begin the commercial campaign.

"The project has firmly and consistently moved forward and, now that we have concluded the CDR, we are ready to begin holding discussions with potential customers of the aircraft," said Luiz Carlos Aguiar, President and CEO of Embraer Defense & Security. "There is a heavy demand for replacing older aircraft in this segment of the international market."

"The KC-390 has exceeded our expectations and will bring significant operational gains to the FAB," said Lieutenant-Brigadier Juniti Saito, Commander of the Brazilian Air Force. "The excellent performance, flexibility and optimal logistics of the aircraft will be decisive for increasing efficiency of our missions."

The KC-390 is the largest airplane ever built by the Brazilian aeronautics industry and will set a new standard for medium-sized military transport aircraft, in terms of performance and payload capacity, and it will have advanced mission and flight systems. With its 23-tonne capacity and a maximum cruising speed of 465 knots (860 kmph), the KC-390 will provide significant mobility gains for its operators and will considerably reduce mission time.

The KC-390 also provides the best the market has to offer for increasing the efficiency of its missions, such as the latest-generation integrated avionics, a fly-by-wire system that gets maximum performance from the aircraft, a cargo handling system that allows for a rapid reconfiguration for different types of missions, and precision for cargo drops, as well as a state-of-the-art self-protection system. Besides all of these capabilities, the KC-390 will be easy to keep up, with longer cycles between inspections and less maintenance down time, thus offering the lowest life-cycle cost in its category. SP

India, Russia agree on specifications of PAK FA fighter

The contract to develop a sketch and technical project of the Russian-Indian perspective multi-functional fifth-generation fighter aircraft (PMI/FGFA) was completed. The fighter design was fully developed.

Both parties have agreed upon on the amount and division of work during the research and development (R&D) stage. A contract for the R&D is being prepared. It is to be signed this year.

The agreement on the joint development and production of the fifth-generation fighter aircraft was signed on October 18, 2007, in Moscow at the Seventh Session of the joint Russian-Indian Intergovernmental Commission on Military and Technical Cooperation. It is the largest joint project of the Russian-Indian military and technical cooperation.

In December 2010, Rosoboronexport, Sukhoi Company and the Hindustan Aeronautics Limited signed a contract to develop a sketch and technical project of the fighter.

In the course of the first stage of the project the Russian side has trained Indian professionals, provided them with the original data and the software to create a single working environment.

The Indian working group of experts has been working in Russia since January 2012 and a group of Russian specialists in India. Both parties exchange the necessary information.

The PMI/FGFA fighter developed by the parties will have some differences from the Russian prototype due to specific requirements of the Indian Air Force.

Sukhoi Company is currently involved in other Russian-Indian joint programmes, such as modernisation of the Indian Air Force Su-30MKI fighters and adaptation of the Russian-Indian air-to-ground BrahMos cruise missile to the Su-30MKI. SP

PHOTOGRAPHS: Embraer, Sukhoi

Maiden flight of LSP 8 (LCA-Tejas)

The last aircraft in the limited series production (LSP) programme of the light combat aircraft (LCA)-Tejas (LSP-08) took off on its maiden flight recently from the Hindustan Aeronautics Limited (HAL) airport in Bengaluru. The performance of the aircraft was flawless, said Dr R.K. Tyagi, Chairman, HAL. The aircraft was flown covering a flight envelope at supersonic speeds and at an angle of attack of 20 degrees which is the current maximum limit cleared by design. With this, the initial operation clearance (IOC) for the aircraft can be expected soon.

Air Cmde K.A. Muthana, VSM, Programme Director (Flight Test) piloted the aircraft on its maiden flight.

The aircraft with a build standard akin to the IOC standard underwent series of rigorous checks by the certifying and inspecting agencies during the last fortnight with a few taxy checks to assess the aircraft performance. The flight clearance by the certifying agencies was accorded today for the aircraft after ensuring that all the aircraft systems were functioning satisfactorily on ground.

Till now aircraft normally undergo high speed taxy trials prior to the first flight. However, with the confidence gained by the flight crew and the certifying agencies during the build and ground checks a decision was taken to proceed with first flight without going through a separate high-speed taxy trial.

Aircraft systems related to fuel, environment condition, electrical and avionics which had undergone series of modifications based on feedback from earlier aircraft functioned well. SP

Lockheed Martin delivers first C-130J in Africa to Tunisia

Lockheed Martin delivered the first C-130J Super Hercules to the Republic of Tunisia recently, marking the first delivery to an African country. Lockheed Martin signed a contract in 2010 with Tunisia to deliver two C-130Js between 2013 and 2014, in addition to providing training and an initial three years of logistics support.

"Again we see a nation recapitalising its airlift resources with the proven, unequalled C-130J," said George Shultz, Vice President and General Manager of C-130 programmes at Lockheed Martin.

Tunisia's two Super Hercules are the longer fuselage or "stretched" variant of the aircraft. The Tunisian Air Force currently operates a fleet of C-130Hs and C-130Bs, first purchased in the mid-1980s. The new C-130Js will support Tunisian operations across the mission spectrum, including relief efforts around the world, firefighting and traditional airlift sorties.

In addition to Tunisia, other nations that are operating or have ordered the C-130J include Australia, Canada, Denmark, India, Iraq, Israel, Italy, Kuwait, Norway, Oman, Republic of Korea, Qatar, the United Kingdom and the United States. SP

Boeing delivers seventh production P-8A Poseidon aircraft to US Navy

Boeing handed over the seventh production P-8A Poseidon to the US Navy on schedule March 29, marking the first delivery from the second low-rate initial production contract awarded in November 2011.

The maritime patrol aircraft departed Boeing Field in Seattle for Naval Air Station Jacksonville, Florida, where it joined six P-8As currently being used to train Navy crews.

"This is our second P-8A delivery of 2013, and we'll continue to provide the Navy with new Poseidon aircraft at a rate of nearly one a month," said Rick Heerdt, Boeing Vice President and P-8 Program Manager. "We've got a full factory of P-8As for the US Navy and P-8I aircraft for India, and we're working side-by-side with both customers to introduce the aircraft's advanced capabilities into their fleets."

Boeing is on contract to build and support 24 P-8A aircraft as part of three LRIP contracts awarded in 2011 and 2012. The Navy plans to purchase 117 P-8As, which are based on the next-generation Boeing 737-800 platform. The versatile multi-mission aircraft provides broad long-range maritime patrol capabilities – anti-submarine warfare, anti-surface warfare, intelligence, surveillance and reconnaissance — and will replace the Navy P-3 fleet. SP

PHOTOGRAPHS: HAL, Boeing, Lockheed Martin

The Chief of the Air Staff Air Chief Marshal N.A.K. Browne during his visit to a forward Northern airbase as part of his Exercise Live Wire tour to various bases

Exercise Live Wire 2013

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

The Indian Air Force has conducted its largest exercise ever, Live Wire 2013, between March 18 and April 4, 2013. After exercise 'Gagan Shakti' in 2006, this was the first exercise of this scale. There were many firsts this time. The new systems fielded extensively were the Su-30MKI, airborne warning and control system (AWACS), C-130J, new radars, and integrated air command and control system (IACCS). The operational Air Force Net (AFNET) allowed network-centric operations to be tested. Operations with Indian Navy were conducted in Exercises 'Tropics' and 'Dakshin Parhar' as a prelude to the main exercise. The exercise was initially restricted to the western sector and to test its swing forces, a two-front war scenario was part of the later days. The missions culminated in live weapon firing. Flight refuelling was extensively used for inter- and intra-theatre sorties. Defence of targets in the air and on the ground was the main theme.

Large force packages with AWACS support were flown. Offensive operational tactics and doctrines were validated. Transport aircraft and helicopters also flew live weapon missions. There were significant joint operations with the Indian Army. An important feature was the flexi use of airspace. An exercise of this massive scale was flown without any disruption to civil traffic and yet not compromising on tactical value. The 8,000-plus-hour exercise included operations in the Northeast. In the coming days, IAF would be analysing data and evolving important lessons. SP

PHOTOGRAPHS: Indian Air Force

Lockheed Martin's new UCLASS drone's concept design made public

Lockheed Martin's Skunk Works division has unveiled the concept design of the company's unmanned carrier launched airborne surveillance and strike (UCLASS) air vehicle, that integrates technologies from F-35C, RQ-170 and other systems to provide persistent intelligence, surveillance and reconnaissance (ISR) and light strike capabilities. Artist's renderings of the designs were presented at the company's booth during the Navy League's annual Sea Air Space conference.

According to Lockheed, UCLASS will balance endurance, early operational capability and inherent growth that will enable operations in any environment or threat scenario. Envisaged to be a versatile, carrier-based unmanned aircraft system, the UCLASS will feature integration of proven technologies; persistent 24/7 ISR operations; full spectrum adaptability; signature control; open systems architecture; reduced manpower requirements for command, control, and maintenance; and future growth provisions. The project is a part of the US Navy's bid for the next attack jet. SP

BlueBird to supply advanced SpyLite mini-UAVs to Chile

BlueBird Aero Systems — a leader in the design, development and production of micro, mini and small tactical UAS and peripheral equipment — announced winning a tender for the supply of SpyLite mini-UAV systems, for the Chilean Army, surpassing competing systems in both performance and price levels.

The company displayed the SpyLite Mini-UAS – as well as the micro-B micro-UAS, a unified ground control system (UGCS), and a remote video terminal (RVT) – at LAAD in Rio de Janeiro, Brazil.

SpyLite is a mature, advanced, combat-proven, extended performance electric Mini-UAS, optimised to provide covert, "over-the-hill" or extended range real-time visual intelligence. SpyLite is unique in its ability to fly even in strong winds and on cloudy or rainy days, assuring high operational availability for over four hours and a communication range of over 50 km. The SpyLite system can be configured to backpacked, vehicle-mounted or HQ stationary configurations.

Fully autonomous, from its point of launch to its accurate parachute and airbag recovery, the system delivers autonomous ease of use and high reliability, providing a very versatile and stable ISR platform. Combining a stabilised CCD and IR payload with proprietary ground exploitation software — the SpyLite allows for GPS-marked imagery to be relayed in real time to the ground station. This capability delivers enhanced situational awareness, contributing substantially to the success of the mission.

The SpyLite system presents an ultimate solution for supporting real time video or tactical mapping on demand for open area as well as urban warfare scenarios for military, peacekeeping, low intensity conflict, security, disaster management and commercial applications.

The SpyLite system has accumulated thousands of operational flight hours in the service of several international customers, and has been in operational use by the Israeli Ministry of Defense since 2006. SP

Insitu's small tactical UAS has successful maritime flight

Insitu Inc. has announced the successful first maritime flight of the US Navy and US Marine Corps small tactical unmanned aircraft system (STUAS) RQ-21A. The nearly two-hour flight launched from the USS Mesa Verde (LPD 19) after three months of land-based development testing and operational assessment.

"Insitu is extremely proud of the partnership we have with Naval Air Systems Command," said Insitu Senior Vice President of Integrator Programmes Ryan Hartman. "We see this milestone as confirmation of our government-industry team's commitment to delivering the first expeditionary, multi-intelligence UAS in this class to the Navy and Marine Corps."

RQ-21A is an expeditionary, no-runway solution that supports missions afloat and ashore and has demonstrated rapid payload integration to help commanders quickly adapt to emerging threats.

Naval Air Systems Command (NAVAIR) awarded the STUAS programme to Insitu for its Integrator UAS in July 2010 to provide persistent maritime and land-based tactical intelligence, surveillance and reconnaissance data collection and dissemination capabilities. The Integrator UAS design served as the baseline for the RQ-21A UAS design. SP

PHOTOGRAPHS: Lockheed Martin, Insitu, BlueBird Aero Systems

Soon you may have to remove shoes, belt and jewellery to pass security at IGI Airport

The Bureau of Civil Aviation Securtiy (BCAS) is contemplating tighter security check norms at airports, beginning with the Indira Gandhi International Airport in New Delhi. If shoes, clothing items or other accessories containing metal set off an alarm, the security screener would insist on further checks, including pat-down frisking.

The BCAS has said that necessary technology, such as sophisticated door-frame metal detectors would be in place which would allow passengers not having any metal on their person to pass through without a pat-down.

Currently, its takes around two to three minutes for the Central Industrial Security Force's (CISF) personnel to clear a person during the security check but with implementation of the new proposal, this is likely to increase to 5-7 minutes, an airline official said.

BCAS had recently carried out a trial run of the system at Terminal 1D to access the problems that may crop up when the system is put in place, but the official sources said the response was not good as proper infrastructure was lacking.

In the US and Europe, passengers are required to take off their shoes, belts, all metallic objects, mobile phones and other electronic items in a separate tray before passing through the metal detectors.

Similarly, the passengers in New Delhi would soon have to put all their belongings and cabin baggage in a tray along with the footwear when they pass through the metal detector. SP

India, Azerbaijan sign treaty on assistance in criminal matters

A treaty on mutual legal assistance in criminal matters was signed between India and Azerbaijan on April 4, 2013, in New Delhi. The treaty was signed by Sushilkumar Shinde, Home Minister, and by Fikrat Mammadov, Minister of Justice, Republic of Azerbaijan.

The mutual legal assistance treaty is one of the significant legal instruments to improve and facilitate effectiveness of the contracting states in investigation and prosecution of transnational crime including terrorism by providing the necessary legal framework for rendering/receiving legal assistance in criminal matters. SP

India, Russia sign agreement on 'emergency management'

The Government of India and Government of Russian Federation have signed on April 10, 2013, in Moscow a regulation defining the structure, functions and procedure of the joint commission which was established by an agreement signed on December 21, 2010, in New Delhi in the field of emergency management.

Sushilkumar Shinde, Union Minister of Home Affairs, and Vladimir Puchkov, Minister of the Russian Federation for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters have signed this agreement. The agreement will enable both the countries to help each other in the field of prevention and elimination of the consequences of emergency situations. It will further strengthen the bond of friendship between the two countries and enhance the Indo-Russian cooperation.

The Indo-Russian Commission will ensure the implementation of the agreement for catalysing cooperation in the field of emergency management and contribute to the well-being and safety of the people of both the countries in the event of disasters and also to exchange mutually beneficial scientific and technical information in the area of emergency management. The meetings of the Commission will be alternatively held in India and Russia. SP

Wasan to continue as NIA Director General

N.R.Wasan, IPS, at present Additional Director General, National Investigation Agency (NIA) will look after the duties of Director General, NIA with immediate effect and till an officer to the post of Director General, NIA, is appointed on regular basis, or until further orders. SP

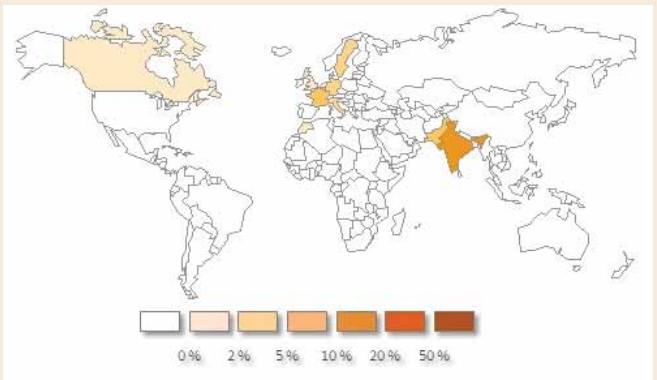
PHOTOGRAPHS: SP Guide Pubns, PIB

Spam campaign focused on India

Symantec has observed that a recent malicious spam campaign focused on users in India. The e-mails contained a malicious attachment, detected as Spyware. Redpill, which is used by cyber criminals to steal confidential information. This includes credentials for social networking accounts, bank account details, e-mails written on compromised computers and screenshots.

A statement issued by Symantec said that upon opening the attached file, users receive an error message indicating that the file was corrupted. However, the malware is silently executed and has already begun to steal information, even as its malicious purpose remains hidden from the user. In the background, the malware installs itself on the compromised computer. It also creates a registry entry subsequent to which keystrokes are recorded and screenshots taken.

"The stolen information is sent to an e-mail account hard-coded into the programme. In our investigations we found details of the e-mail account used by the attacker to receive the stolen data—for instance, it received over 12,000 e-mails in March 2013," said Abhijit Limaye, Director, Development, Security Response, Symantec. SP



US, China to set up working group on cyber security

China and the United States will set up a working group on cyber security, US Secretary of State John Kerry has said. John Kerry who was on an official visit to China said in Beijing that the two countries had agreed on the need to speed up action on cyber security, an area that Washington says is its top national security concern.

Kerry said "Cybersecurity affects the financial sector, banks, financial transactions, every aspect of nations in modern times are affected by the use of cybernetworking and obviously all of us—every nation—has an interest in protecting its people, protecting its rights, protecting its infrastructure".

China's Foreign Minister Wang Yi reportedly told Kerry in their meeting that China and the United States should make joint efforts to safeguard cyberspace.

Beijing and Washington have traded accusations in recent months of massive cyber intrusions. The United States says hacking attacks emanating from China have targeted US Government and corporate computer networks among others, stealing government and commercial data.

A US computer security firm released a report in February saying a secretive Chinese military unit is believed to be behind a wave of hacking attacks against the United States. China claims it is the victim of large-scale cyber attacks from the United States, though it has given few details. SP

PHOTOGRAPHS: Symantec, US DoS

India, Britain for cooperation on cyber security

Top experts from India and Britain recently discussed cyber security and online security, a pressing international issue demanding global cooperation.

The discussions were part of a four-day workshop, which began on March 24 and has been jointly organised by Research Councils UK (RCUK) and India's Department of Science and Technology, the Indraprastha Institute of Information Technology-Delhi (IIIT-D), and Britain's Science and Innovation Network (SIN), a press release said.

Cyber crime, privacy and security in online social media, human factors and usable security, risk identification and monitoring of systems and networks were among the topics discussed at the workshop. The world's increased reliance on electronic systems means that cyber attacks are likely to have significant damaging consequences, said the release.

"We need a clearer understanding of our current and future vulnerabilities and the inadequacies of current approaches, along with innovative solutions to tackle the important challenges," said RCUK Deputy Director Helen Bailey. SP

Gujarat setting up cyber security cell in each district

The Gujarat Government has decided to set up cyber security cell in every district of the state, according to the Minister of State for Home Rajnikant Patel.

"At a time when there is an exponential increase in the crimes committed through Internet and computer technology, the state government, to effectively prevent it, has decided to set up fully equipped cyber security cells in every district," Patel told the House during discussion on budgetary demands for his department. Seeking Assembly's approval for the demands of ₹3,615 crore, he said the state government had allocated ₹25 crore to establish cyber security cells and 300 policemen will be trained to fight cyber crimes. SP

HAL-BrahMos partner for more indigenisation

The Hindustan Aeronautics Limited (HAL) and BrahMos—the supersonic cruise missile manufacturer in the country—have forged the partnership for long-term support towards all variants of BrahMos programmes at a meeting held in Hyderabad recently.

HAL will install and augment required facilities under the technical support of Research Centre Imarat (RCI, a DRDO agency dedicated for development of inertial systems) to meet the current and the future programme expectations, said Dr R.K. Tyagi, Chairman, HAL.

Dr A. Sivathanu Pillai, CEO and MD, BrahMos, and other top officials from both the sides were present. The two sides also agreed to partner and enhance indigenous content of the BrahMos programme. HAL will develop certain critical electronic systems towards achieving this goal. SP

Sikorsky Aerospace Services launches Black Hawk Training Center In Colombia

Sikorsky Aerospace Services (SAS) has announced the opening of a new UH-60 Black Hawk Helicopter Flight Simulator Training Center at the Colombian Air Force Base in Melgar. The first of its kind in South America, the centre provides pilot and flight crew training for the Colombian Armed Services and Sikorsky military customers throughout the region. Sikorsky Aerospace Services, Sikorsky's aftermarket business, is overseeing training and support efforts in Colombia. Sikorsky Aircraft Corp. is a subsidiary of United Technologies Corp.

"Operating the world's fourth-largest Black Hawk fleet, Colombia is a longtime strategic customer and valued partner," said David Adler, SAS President. "Based on their fleet requirements, SAS continues to expand in-country aftermarket services. In fact last year we doubled the maintenance support team and expanded depot capabilities for crash and battle damaged aircraft. The new training facility will further improve the operational readiness of the Colombian Armed Services. Additionally, it's a major milestone that exemplifies our overall commitment to Sikorsky customers in Latin America."

The new training centre offers the region's only full motion, high fidelity, FAA Level D Equivalent Black Hawk simulator—the highest qualification currently available. Equipped with industry leading motion and control loading technology, it offers a highly detailed cockpit replication of all controls and aircraft systems including wide-field outside-world visual systems. All components are mounted on six degree-of-freedom motion platforms that respond to pilot control movements and external aerodynamic factors.

"The Black Hawk helicopter is an integral component for us to successfully defeat narco terrorism. Our ability to sustain in-country pilot training is paramount. As our relationship with Sikorsky continues to evolve, we are pleased to partner in this training effort," said Brigadier General del Aire Guillermo Leon Leon, General Manager, CIAC. SP

EADS headquarters reorganisation

The new headquarters organisation of EADS became effective from April 1, including the setting up of a single operational headquarters in Toulouse. In the frame of the reorganisation, a total of 116 positions currently based in Paris and 75 positions currently based in Munich are transferred to Toulouse.

Upon conclusion of the headquarters reorganisation, more than 500 positions—including the integrated functions of EADS and Airbus Human Resources and Finance and a part of Shared Services as well as other key steering functions—will be permanently located in Toulouse, while the Group will retain around 250 service and support functions in Paris and more than 300 in Munich.

The new EADS headquarters in Toulouse will be fully operational as of September 1, 2013. "I wish to thank the works councils in France and Germany for constructive and trustful negotiations over the last few months. This agreement is a key milestone to further integrating EADS. We will support our employees in the best way possible to ensure a smooth transition process towards a single operational headquarters", said Tom Enders, CEO of EADS. SP

New EADS Board of Directors elects Chairman, Committee Members

The new EADS Board of Directors has elected Denis Ranque as its Chairman and has reappointed Tom Enders as Chief Executive Officer. The Board also approved an 18-month share repurchase programme up to €3.75 billion.

New Board of Directors also elected the members of the Audit Committee and the Remuneration & Nomination Committees.

Based on their strong experience in recent years, Sir John Parker and Hermann-Josef Lamberti were elected to continue serving as Chairmen of the Remuneration & Nomination Committee and Audit Committee respectively.

Joining Sir John Parker in the Remuneration & Nomination Committee as members are Jean-Claude Trichet, Lakshmi N. Mittal and Hans-Peter Keitel.

Besides Hermann-Josef Lamberti, the Audit Committee is composed of Anne Lauvergeon, Michel Pébereau and Josep Piqué i Camps. SP

Insitu partners with Santos Lab

Insitu has announced the launch of its partnership with Santos Lab, a leading/innovative developer and manufacturer of hand-launched unmanned aircraft systems (UAS).

"Partnering with Santos Lab is the first step in establishing a local presence for technology transfer, which will enable Insitu's UAS business in Brazil to grow. We are excited to team with Santos Lab — one of the country's most successful indigenous UAS companies," said Insitu President and CEO Steve Morrow.

Joining forces with a young, innovative company such as Santos Lab is a natural fit for Insitu; the company is proud of its own entrepreneurial beginnings nearly two decades ago. Insitu quickly recognised Santos Lab's potential to grow their capabilities in synch with its own growing need for a local partner to handle more complex requirements and execute Insitu's capability roadmap.

"Having a local partner that is already serving the Brazilian armed forces is a great strategic advantage. We look forward to jointly developing solutions for the current and future needs of the Brazilian armed forces," said Insitu Business Development Executive Juan R. Gomez, an Insitu Business Development Executive for Southern Europe and Latin America. SP

CAE has good simulator sales

Canada-based CAE has announced that it has sold five full-flight simulators (FFSs) as well as a series of training devices, long-term service agreements and update services to airlines and original equipment manufacturers in Asia, Australasia, North America and Europe. The contracts are worth a total of approximately C$85 million at list prices and bring the total number of FFS sales that CAE announced in fiscal year 2013 to 35.

"Our simulator sales in fiscal 2013 continue to reflect our global reach. We have sold 60 per cent of our simulators this year to customers in Asia and Australasia, 23 per cent in North America and 17 per cent in Europe," said Jeff Roberts, CAE's Group President, Civil Simulation Products, Training and Services. "We are very pleased that our long-standing customers continue to select CAE as their FFS partner of choice and that new airlines and OEMs are turning to CAE for the first time."

CAE also announced a batch of military contracts totaling approximately 130 million Canadian dollars ($128 million) from the armed services of Australia, Kuwait and the United States.

Under a US foreign military sales (FMS) contract, CAE will develop an avionics maintenance trainer and weapons load trainer (AMT/WLT) for the Sikorsky MH-60R helicopter for the Royal Australian Navy. CAE USA will be the prime contractor responsible for the design and manufacture of the AMT/WLT, which is scheduled for delivery in 2015 to shore station HMAS Albatross, near Nowra in New South Wales.

CAE USA has also been awarded an FMS contract by the US Army Corps of Engineers to construct a training facility for the Kuwait Air Force at Al Mubarak Air Base in the Arabian Gulf emirate. The two-bay training facility will house a KC-130J full-mission simulator that CAE is currently under contract to design and manufacture for the Kuwaiti air arm.

The US Air Force, meanwhile, has placed a contract, plus options, for CAE to perform operations and maintenance support for KC-135 boom operator weapon systems trainers (BOWST).

The Air Force is acquiring new KC-135 BOWSTs to provide the tankers' boom operators with increased synthetic training capabilities. CAE USA will incorporate the training devices into the overall KC-135 training programme and provide maintenance support for the equipment.

The initial contract for the first year of operations and maintenance is valued at more than $5 million, with annual KC-135 BOWST maintenance support contract options for the remaining seven years of the KC-135 ATS programme valued at approximately $50 million. SP

Urban Warrior 5 in understanding future battlefield

The British Army in January this year conducted its largest virtual battle simulation, involving 220 soldiers. The experiment was carried out at the Army's Land Warfare Centre in Warminster, Wiltshire. The two-hour scenario saw soldiers from 2nd Battalion The Royal Welsh on computers completing virtual missions in a fictional French town.

Urban Warrior 5, as the project is called, has cost about £1million to develop and was built with VBS2 software, which is also used commercially by the games industry to create virtual worlds.

Further simulations involving different troops will be run until June 2013, after which all the data will be analysed. Exercise Urban Warrior 5 used advanced science and computer technology as part of a cutting-edge experiment designed to help the Army better understand the battlefield of the future. SP

Meggitt Training Systems awarded army targetry systems

Since December 2012, Meggitt Training Systems (MTS) has been awarded delivery orders worth $7.9 million to support the US Army's Targetry Systems programme with TACOM, the US Army Contracting Command in Warren, Michigan—one of the Army's largest weapon systems research and development organisations. The programme is part of an effort to provide equipment for live-fire training ranges at US Army installations worldwide.

Under these orders, MTS will deliver some 1,100 infantry and armour units, both stationary and mobile. Equipment will be delivered across 10 military installations.

Delivery orders are open to competition amongst Meggitt Training Systems, Lockheed Martin, Action Target, Strategic Systems and Saab Training.

Ronald Vadas, President of Meggitt Training Systems commented: "Award of these delivery orders is a further testament to the strength of our 16-year relationship with the US Army and we look forward to continuing to respond to its evolving range development and moderniation requirements." SP

PHOTOGRAPHS: CAE, UK MoD

Crown casino security breach

Melbourne's Crown casino recently was at the centre of high-tech security scandal, with police investigating a breach worth tens of millions of dollars. According to reports, at least one Crown casino employee has been sacked as of March 2013.

A foreign VIP high roller has also been implicated in the scam which is believed to involve a complex manipulation of the venue's surveillance systems. It's the biggest security threat in the casino's 19-year history. Crown Limited last reported a $181 million net profit to December 31. SP

Security breach at Seattle airport

A passenger entered a secure area through an exit, breaching security at the Seattle-Tacoma International Airport recently. Authorities cleared several concourses until the passenger was located, meaning other passengers in those concourses had to leave the area.

According to reports about 1,500 passengers later had to be re-screened through security checkpoints.

Sea-Tac spokesman Perry Cooper said police and Transportation Security Administration officials located the errant passenger and added that the security breach involved a misunderstanding. After the man was cleared, passengers began the re-screening process. SP

Peshawar's grid station attack: security lapse

Recently dozens of heavily armed gunmen descended on a major grid station outside Peshawar in Pakistan, killing at least seven people and destroying equipment. Parts of Peshawar went dark as a result.

That no lessons have been learnt from previous such assaults is underscored by the fact that this was the third attack on the grid station which is Khyber Pakhtunkhwa's biggest. The handful of security personnel at the facility were obviously no match for the horde of heavily armed militants.

Equally disturbing was the lack of a timely response from army units and rapid reaction teams of the police and Frontier Constabulary. They were not dispatched to defend the vital facility when it came under attack.

The Interior Ministry had already warned of terrorist attacks in the run-up to the elections. It specifically pointed out that government installations in Peshawar could be targeted by the militants. SP

Mock exercise exposes security lapse in Goa

Security lapse was exposed at the Goa Legislative Assembly complex during the state-wide Sagar Kawach exercise initiated by the security forces when a decoy terrorist planted a fake bomb under a minister's car in the underground parking of ministerial complex

In a mock exercise, the fake bomb was placed few metres away from the state Legislative Assembly complex, where the budget session is going on.

Goa Police, Indian Coast Guard, Navy and other security agencies were executing Sagar Kawach exercise throughout the state to plug the security loopholes. The decoy terrorist managed to plant a fake bomb under the minister's car, which was parked in the basement of ministerial complex. The decoy was reportedly stopped by security when he tried to enter into the ministerial block with the second fake bomb in his hand. SP

PHOTOGRAPHS: www.bluff.com, Wikipedia

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