

SP's



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EXCLUSIVE INTERVIEW

Chief of the Army Staff General Bipin Rawat

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Chief of the Air Staff, Air Chief Marshal B.S. Dhanoa, who flew MiG-21 Type 96 solo, before the flight

Leading from the front

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Narendra Modi, Hon'ble Prime Minister of India (*message received in 2014)



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[**SP's @ 53** PURSUING EXCELLENCE OVER FIVE DECADES SINCE 1964]

Indian Air Force and Royal Air Force of Oman Chiefs review Exercise Eastern Bridge-IV at Jamnagar

The Chief of the Air Staff, Air Chief Marshal B.S. Dhanoa, PVSM, AVSM, YSM, VM, ADC, and Commander of Royal Air Force of Oman (RAFO) Air Vice Marshal Matar Ali Matar Al-Qbaidani reviewed the progress of fourth joint Indo-Oman Air Exercise Eastern Bridge-IV at Air Force Station Jamnagar on January 18. The exercise commenced on January 16, 2017.



During review the Chief of the Air Staff and Commander of RAFO interacted with the participating crew and held bilateral discussions.

The RAFO is participating with five F-16 Block 50 Air Defence Fighters belonging to No. 18 Squadron based at Thumrait. IAF is participating in the exercise with Su-30MKI Air Dominance Fighters, MiG-29 Air Superiority Fighters, Jaguar Maritime Strike aircraft and MiG-27 aircraft.

This is the first time that RAFO F-16s are participating in an air exercise outside the Gulf countries. **SP**



Cover:

General Bipin Rawat took over as the new Chief of the Army Staff on January 1, 2017. In an interview with SP's M.A.I., he gave his candid views on a wide range of subjects and the major challenges confronting the Indian Army and how these are being tackled institutionally.

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Indian Army moving towards a 'capability based modular and responsive structure'

SP's M.A.I. has begun 2017 on an optimistic note, starting with the exclusive interview with the new Chief of the Staff of the Indian Army, General Bipin Rawat. In an exhaustive interview, the General has rightly pointed out how important it is to carry forth the great tradition of the Indian Army, even while accelerating the pace of modernisation.

The interview with our team, he has touched upon various aspects of the Indian Army, wherein the General has pointed out how the Army is doing its best to expedite the procurement and maximise operational readiness, by setting achievable targets. Some of the initiatives have been to reduce the procurement timelines as we all know in many instances how procurement decisions have protracted for years together, impacting the capabilities of the armed forces. The General has said efforts were on to strengthen procurement organisations, ensure concurrent procurement activities, faster decision making and establishment of a robust monitoring mechanism.

On the need to be ever alert, the General has said the principal regional and extra regional threats are from across the land frontiers. The threats need to be deterred by maintaining requisite 'strike formations'. The active borders characterised by harsh and inhospitable terrain mandate a 365 days vigil with 'boots on ground'. These threats need to be deterred by maintaining combat ready 'strike formations' thus translating into force structure imperatives. He has underscored how India needs a multi-role force capabilities wherein conventional and subconventional capabilities can be balanced to respond across the spectrum of conflict, with minimum restructuring and at optimum costs. "We need to make a transition from the present 'threat-cum-capability based force structuring', which has its underlining theme as 'war prevention through deterrence', towards a 'capability based modular and responsive structure' based on envisaged future force application scenarios. Right-sizing commensurate to ongoing modernisation is also a key imperative that impacts current and future force structures."

As the New Year dawned, the Indian Air Force (IAF) welcomed Air Chief Marshal B.S. Dhanoa, a fighter pilot of repute and with an impeccable professional credentials and an impressive career profile, who took over as the 25th Chief of the Air Staff from Air Chief

Marshal Arup Raha who had been at the helm of affairs since January 1, 2014. Soon after taking over, Air Chief Marshal Dhanoa set a fine example of 'leading from the front' when he embarked on a solo mission on a MiG-21 Type 96 fighter aircraft at an air force base in the Western Sector. This has helped revitalise confidence of fighter pilots in the MiG-21 fleet and had a positive impact on the morale of personnel in the IAF.

In his fortnightly viewpoint, Lt. General P.C. Katoch (Retd) has said that India should never join the CPEC (China-Pakistan Economic Corridor) as it does not give land access to India to Afghanistan and Central Asia through Pakistan; it may increase India-China trade but with the existing bilateral imbalance heavily in favour of China, it would increase the imbalance manifold and also Chinese belligerence; and it would legitimise PLA lodgement and projects in Gilgit-Baltistan (Indian territory) undertaken without any reference to India; it would also indicate India's intransigence to Pakistan's genocide in Balochistan; and it will fit into Chinese plans to keep India boxed into South Asia.

We wrap up this edition on a good note, the launch of Agni-V and India joining the exclusive ICBM 5,000+ league. This indeed is a proud moment and a feather in the cap of the DRDO.

We wish all our readers a Very Happy New Year!
Happy reading!

A blue ink signature of Jayant Baranwal, written in a stylized, cursive script. The signature is located above the name and title of the publisher and editor-in-chief.

Jayant Baranwal
Publisher & Editor-in-Chief

EXCLUSIVE



The Chief of the Army Staff General Bipin Rawat addressing the press conference as run up to the Army Day 2017, in New Delhi on January 13, 2017

'We need multi-role force capabilities wherein conventional and subconventional capabilities can be balanced to respond across the spectrum of conflict'

General Bipin Rawat took over as the new Chief of the Army Staff on January 1, 2017. In an interview with SP's M.A.I., he gave his candid views on a wide range of subjects and the major challenges confronting the Indian Army and how these are being tackled institutionally. Excerpts...

SP's M.A.I. (SP's): Having taken over the reins of our illustrious Indian Army at the start of the new year 2017 and with a fairly reasonable tenure of three years you are in a position to make substantial changes within the force and in maintaining a cordial civil-military relationship. What will be your key result areas that you may have chalked out for yourself?

Chief of the Army Staff (COAS): The vision statement and thrust areas have been enunciated by my predecessor. I find these are all encompassing, well defined and we need to continue with our efforts in realising these. An abrupt change would only cause confusion amongst the rank and file of the Army. These are reiterated as under:

- **Vision.** Ensure capability enhancement and operational effectiveness of the Army to meet all contemporary and emerging challenges.
- **Key Result Areas**
 - Ensure the highest standard of operational preparedness to meet present and emerging challenges.
 - Ensure force modernisation incorporating relevant contemporary technologies.
 - Make up critical deficiency of weapons and equipment at the earliest.
 - Develop requisite capacities and infrastructure with special



General Bipin Rawat reviewing the Army Day parade in New Delhi on January 15, 2017

- emphasis on our northern and north-eastern borders.
- Enhance inter-Services jointmanship at all levels in letter and spirit.
- Ensure the highest level of security consciousness amongst our rank and file.
- Optimally enhance human resource development to fully exploit the inherent strength of the Indian Army.
- Improve the quality of life and living conditions of all ranks with special emphasis on the soldier.
- Foster an organisational climate based on mutual respect and camaraderie amongst all ranks.
- Ensure requisite welfare measures for ex-servicemen and Veer Naris.

SP's: The external threats and challenges to India's sovereignty are evolving at a rapid rate and the nature of wars has changed. As you have seen these developments taking place in your service in the Army, what do you think should be done to arrest the decline and to restore the Army's modernisation status? In your view which are the priority areas for modernisation?

COAS: Army is doing its best to expedite the procurement and maximise operational readiness. We have set achievable targets and we are making steady progress. In-house measures have been initiated to reduce procurement timelines. These include strengthening of the procurement organisations, ensuring concurrent procurement activities, faster decision making and establishment of a robust monitoring mechanism. With concerted focus and special impetus on indigenisation, as reflected in the Defence Procurement Procedure (DPP) 2016, the situation will improve in the coming years. Government has implemented several policy initiatives such as liberalisation of FDI policy and industrial licensing policy, simplification of export procedures, creating level playing field for Indian private and public enterprises, streamlining of offset implementation process and providing preference to 'Buy (Indian)', 'Buy and Make (Indian)' categories of capital acquisition over 'Buy (Global)' category in DPP to make the country self-reliant in defence production.

The Indian Army has identified 24 priority proposals which are critically required; the procurement for the same is being pursued on fast-track basis with support from the government. Broadly, these schemes address modernisation of our mechanised fleet, night enablement, replacement of aviation assets and empowerment of

the soldier by improving battlefield transparency and facilitating decision making process.

I am quite satisfied with the progress. With much coordinated effort, we have been able to ink the contract for procurement of 145 ULHs (ultra light howitzers). We have also initiated a large number of cases which are at trial or GS evaluation stage. Overall, I think we are moving well. Minor glitches will always be there and those have to be overcome.

SP's: Considering the current threats and challenges confronting India and the nature of wars in our context in the future what major changes do you foresee in the force structuring and re-organisation of the armed forces?

COAS: Force structuring is a dynamic process and future security scenarios need to be benchmarked against appreciated timelines and security implications. These need to be evaluated from the perspective of national interests and its concomitant requirements on military as an instrument of national power.

In the present day, our principal regional and extra regional threats are from across the land frontiers. The threats need to be deterred by maintaining requisite 'strike formations'. The active borders characterised by harsh and inhospitable terrain mandate a 24 x 7 x 365 vigil with 'boots on ground'. These threats need to be deterred by maintaining combat ready 'strike formations' thus translating into force structure imperatives.

We need multi-role force capabilities wherein conventional and subconventional capabilities can be balanced to respond across the spectrum of conflict, with minimum restructuring and at optimum costs. We need to make a transition from the present 'threat-cum-capability based force structuring', which has its underlining theme as 'war prevention through deterrence', towards a 'capability based modular and responsive structure' based on envisaged future force application scenarios. Right-sizing commensurate to ongoing modernisation is also a key imperative that impacts current and future force structures.

With emerging technologies, we must ensure that our weapon systems and equipment incorporates technology upgrades and are capable of operating in a digitised networked environment. **SP**

*For the complete interview, please refer to:
SP's Military Yearbook 2016-2017*

After taking over as the Chief of the Army Staff, in his first press conference on January 13, 2017, General Bipin Rawat answered a few questions posed by SP's M.A.I.:

- **China vs Pakistan**

'China a bigger threat.'

- **Reactive/Proactive**

'We need to be proactive and be offensive rather than only being reactive with any hostile activities of adversaries.'

- **Future Soldier Programme**

'We need to empower our soldiers with necessary gadgets, NVGs, network-centric capabilities.'

- **Induction of Latest Technology**

'We are buying some hundreds of UAVs. Will buy almost a 100 more UAVs.'



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2016: An eventful year for Ministry of Defence



Kalvari submarine at sea

[By SP's Correspondent]

Speedy modernisation of the armed forces to meet present and emerging challenges, development of requisite capacities and infrastructure for making up critical deficiency of weapons and equipment and creating a robust defence set up in the country through the 'Make in India' initiative, were the salient achievements of the Ministry of Defence (MoD) during 2016.

The year also saw progress for the welfare of ex-servicemen as the much awaited One Rank, One Pension (OROP) scheme funds reaching the accounts of ex-servicemen and families. During the year as part of defence diplomacy, India engaged with its neighbours and Far Eastern countries, as well also developed countries through bilateral talks, ship visits and trilateral military exercises. To expedite capacity building, as well as offensive capabilities of the armed

forces, the Defence Acquisition Council (DAC), the apex body of the Ministry of Defence in matters of acquisitions, cleared different critical and high-end defence procurement proposals to the tune of more than ₹1,00,000 crore.

The new Defence Procurement Procedure (DPP) 2016 was promulgated for capital procurements and came into effect from April 1, 2016. DPP 2016 has a focus on achieving the 'Make in India' vision by according priority to 'Buy Indian-IDDm' (Indian Designed, Developed and Manufactured) and 'Buy (Indian)' categories. It also focuses on enhancement and rationalisation of indigenous content.

The Ministry of Defence also issued guidelines for penalties in business dealings with entities, which have come into effect from November 21. The guidelines lay down policy for levy of financial penalties and/or suspension/banning of business dealings with entities, seeking to enter into contract with/having entered into a contract for the procurement of goods and services by the Ministry

of Defence. 'Entities' will include companies, trusts, societies, as well as individuals and their associations with whom the Ministry of Defence has entered into, or intends to enter into, or could enter into contracts or agreements. The guidelines are available at <http://mod.nic.in/writereaddata/guideentities.pdf>.

Indian Army

Current Situation in Jammu and Kashmir: The security situation in J&K is at an important crossroads. Ceasefire violations (CFVs) which saw a significant rise in the preceding months, wherein several incidents of calibre escalation to artillery/120mm mortar were attempted by Pakistan. This has seen a drastic reduction in CFVs post the Director General of Military Operations (DGMO) level talks which took place on November 23. Relentless operations by the Army both along the line of control (LoC) and in the hinterland in concert with other security forces have thwarted the designs of the nexus to give a fillip to the proxy war being waged against India. Army along with Central Armed Police Forces (CAPF) and J&K Police continues to put in relentless efforts to bring back normalcy to the Kashmir Valley.

Situation along LAC: There is no commonly delineated line of actual control (LAC) in the border areas between India and China. From time to time, on account of differing perception of the LAC, situations have arisen on the ground that could have been avoided if we had a common perception of the LAC. Army regularly takes up any such situation along the LAC with the Chinese side through established mechanism including border personnel meetings, flag meetings, meeting of Working Mechanism for Consultation & Coordination on India-China Border Affairs and diplomatic channels.

Surgical Strikes along LoC: Based on specific and credible inputs about some terrorist teams having positioned themselves at launch pads along LoC to carry out infiltration and conduct terrorist strikes in Jammu and Kashmir and in various metros in other states, the Indian Army conducted surgical strikes on September 29 at several of these launch pads to pre-empt infiltration by terrorists.

The operations were focused on ensuring that these terrorists did not succeed in their design to cause destruction and endanger the lives of our citizens. During these counter terrorist operations significant casualties were caused to terrorists and those providing support to them.

Training Events and Military Exercises: The following exercises were conducted with different countries: India-France Joint Military Exercise Shakti; India-Nepal Combined Military Training Exercise Surya Kiran IX; India-Indonesia Joint Training Exercise Garuda Shakti IV; Exercise Force-18, the largest ground forces multinational field training exercise on Humanitarian Mine Action and Peacekeeping Operations culminated at Pune; Exercise Shatrujeet; Exercise Chakravayuh-II; Exercise Jalrahat; Exercise Maitree; Exercise Yudh Abhyas; India-Kazakhstan Joint Exercise; Exercise Indra-2016 with Russia; Sino-Indian Joint Exercise, and India-China Joint Training Exercise.

Indian Navy

To enhance its blue water capability, the Indian Navy opted to strengthen its submarine arm for which request for proposal (RFP) to acquire six more conventional submarines under Project 75(I) was cleared by the DAC. The project will cost around ₹80,000 crore.

Kalvari, the first of the Scorpene class submarine, being built at the Mazagon Dock Shipbuilders Limited in Mumbai (MDL), went to sea on May 1 under her own propulsion for the first sea trial, off the Mumbai coast. The submarine is presently undergoing advanced/deep-dive trials and is likely to be commissioned in early 2017.

Bilateral/multilateral Exercises: To enhance India's presence in the maritime arena/across area of responsibility/interest, the

Indian Navy was deployed extensively across the globe and conducted exercises with friendly foreign navies. Some of these are: Naseem-Al-Bahr with the Royal Navy of Oman; the International Fleet Review (IFR) 2016 at Visakhapatnam from February 4-8, culminated with Indian and foreign naval ships undertaking a Passage Exercise (PASSEX) in the Bay of Bengal on February 9. Some 54 ships that participated in IFR 2016 sailed out from Visakhapatnam in the first ever PASSEX with combined participation of foreign and Indian warships. The unprecedented scale and scope of the PASSEX was indicative of India's growing stature in the maritime domain and the bridges that have been painstakingly built by the Indian Navy towards achieving the motto of the International Fleet Review in letter and spirit 'United through Oceans'.

Then there were Exercise Malabar 2016 with US and Japan; Exercise RIMPAC off Hawaii; Indo-Thai Coordinated Patrol (CORPAT); ADMM Plus Exercise on Maritime Security and Counter Terrorism; Coordinated Patrol and India-Indonesia Bilateral Maritime Exercise; Exercise Konkan 16; Indra Navy 2016; Indo-Myanmar Coordinated Patrol (IMCOR); deployment of P-8(I) to Seychelles for EEZ Surveillance; INS Beas visits Doha; deployment to Male, Maldives; Western Fleet ships INS Vikramaditya and deployment to Mauritius; and Ships of First Training Squadron visited Thailand and Sri Lanka.

Commission of Trials of Ships: INS Kadmat, second ship of Project 28 (P-28) class anti-submarine warfare corvettes, indigenously designed by the Indian Navy's in-house organisation, the Directorate of Naval Design and constructed by the Garden Reach Shipbuilders and Engineers Limited (GRSE), Kolkata, was commissioned at the Naval Dockyard in Visakhapatnam on January 7.

Launch of Yard 2097/2098/2099: The sixth, seventh and eighth ships of LCU MK IV project were launched in March, November and December at the GRSE.

INS Tarmugli: The Indian Navy commissioned the highly manoeuvrable fast attack craft INS Tarmugli at a ceremony at the Naval Dockyard in Visakhapatnam on May 23.

Indian Air Force

Rafale Acquisition Deal: The much awaited Rafale deal with France was signed on September 23 in New Delhi under which France will provide 36 Rafale fighter jets to India. The twin-engine, multi-role aircraft will be capable of carrying out various combat missions like air defence, ground attack, reconnaissance, anti-ship strikes, etc.

Tejas Induction: The light combat aircraft (LCA) Tejas was inducted into No. 45 Squadron of the Indian Air Force (IAF) on July 1. The squadron will operate from Bengaluru for nearly two years, before it moves to its designated location at Sulur near Coimbatore. It is the first fighter squadron to be a part of the Southern Air Command of IAF headquartered at Thiruvananthapuram.

Operations

The IAF had embarked on an ambitious reconstruction plan to upgrade eight ALGs including infrastructure development at an overall outlay of nearly ₹1,000 crore following a MoU between the Government of Arunachal Pradesh and the Ministry of Defence in June 2009. Five ALGs at Ziro, Along, Mechuka, Pasighat and Tuting were upgraded and made operational in 2016.

Exercises

Exercise Iron Fist 2016: A day-night exercise demonstrating the combat and firepower of the IAF was conducted on 18 Marat Rajasthan's Pokhran firing range in the presence of the President Pranab Mukherjee and Prime Minister Narendra Modi. The event



Rafale acquisition deal was signed on September 23, 2016



The light combat aircraft (LCA) Tejas was inducted into IAF on July 1, 2016

comprised of six packages depicting six themes in which more than 180 aircraft, including fighters, transport and helicopters participated.

HADR Operations

Op Sankat Mochan: Stranded Indian nationals were evacuated from Juba, the capital of war-torn South Sudan on July 14. The Minister of State for External Affairs, General V.K. Singh (Retd), flew to Juba in one of the two C-17 Globemaster aircraft in the operation which was named Operation Sankat Mochan.

Defence Cooperation

Exercise Red Flag with US Air Force; Desert Eagle II with UAE: This was the second in the series of bilateral exercises between the IAF and the United Arab Emirates Air Force (UAEAF). This was a 10-day air combat exercise in which the IAF and the UAEAF undertook air exercises from Al-Dhafra Air Base, Abu Dhabi starting from May 22.

India gets Women Fighter Pilots: History was created as the first three women fighter pilots of the IAF were commissioned at the Combined Graduation Parade at Air Force Academy, Dundigal, on June 18. With this, India joined a select few nations in the world that have women fighter pilots. These women fighter pilots are Flying Officers Avani Chaturvedi, Bhawana Kanth and Mohana Singh. Subsequently, on August 12 Marshal of the Indian Air Force Arjan Singh, DFC, felicitated the three women fighter pilots in New Delhi.

Defence Research and Development Organisation

Agni-V Successfully Test-fired: Agni-V, the long-range surface-to-surface ballistic missile, was successfully flight tested by DRDO on December 26 from Dr Abdul Kalam Island, Odisha. The full range test-flight of the missile further boosted the indigenous missile capabilities and deterrence level of the country.

Light Combat Aircraft (LCA) Tejas: Indigenously developed LCA is an advanced technology, single-seat, single-engine, supersonic, lightweight, all-weather, multi-role, air superiority fighter designed for air-to-air, air-to-ground and air-to-sea combat roles. During the year, Tejas made its international debut in January 2016 with participation in the Bahrain International Air Show. The Hindustan Aeronautics Limited (HAL) handed over the first two Tejas aircraft to IAF at a ceremony at the Aircraft and Systems Testing Establishment (ASTE) in Bengaluru on July 1, 2016, which will make up the Flying Daggers 45, the name of the first squadron of LCA.

Long-range Surface-to-Air Missile (LRSAM): LRSAM is a joint development programme of DRDO, Indian Navy and Israel Aerospace Industries (IAI). The missiles are intended to equip three guided missile destroyers of the Indian Navy. LRSAM home-on-tests were conducted at the Integrated Test Range (ITR) during September to prove three intercept scenarios with Banshee Jet 80 as target.

Medium-range Surface-to-Air Missile (MRSAM): MRSAM is being developed for the IAF for protecting our territory and ground forces from air attacks by intercepting aerial targets like fighter aircraft and guided weapons. The system is jointly developed by DRDO, IAF and IAI, Israel. During the year, three flight trials were successfully carried out in June and July to evaluate target detection and tracking by Long Range Detection and Tracking Radar, missile launch and homing on target and radar tracking.

Anti-tank Missile PROSPINA: Nag is a third-generation anti-tank missile (ATM) with fire & forget and top attack capabilities, which can be used in day and night. It is deployed on a specially modified infantry combat vehicle (ICV) BMP-2 vehicle NAMICA. During the year, guided flight tests of Nag were carried out with the objective of demonstrating range capabilities of IIR Seeker during worst time of the day in summer environment. SP



LT GENERAL
PC. KATOCH (RETD)

India joins ICBM 5,000+ league

India successfully undertook the fourth and final test-firing of the Agni-V on December 26 from Wheeler Island, off the coast of Odisha. This is a wholly indigenously developed intercontinental ballistic missile (ICBM), which by itself is a gigantic achievement. Even the BrahMos missile, which is a short-range ramjet supersonic cruise missile (not in ICBM category), has been developed with Russian collaboration.

With Agni-V, India joins the exclusive club of five countries that already possess ICBMs with a range of over 5,000-5,500 km; the five countries being the United States, Russia, China, France and the UK. The first test of the three-stage Agni-V was conducted in April 2012 in open configuration, followed by the second test in September 2013 in similar configuration. However, the third test conducted in January 2015 saw the ICBM being fired from a hermetically sealed canister mounted on a Tatra truck launcher. This third launch on January 30, 2016, successfully proved operational flexibility for the armed forces for swiftly transporting and firing the ICBM from anywhere they want.

This was a game changer from earlier firings in open configuration. The missile had vertically blasted off from the truck mounted launcher and splashed down in the India Ocean 20 minutes later. The mobile canister version ensures the 50-tonne missile can be fired from stop-to-launch in just few seconds, as also higher reliability, longer shelf-life and lesser maintenance. The reaction time required to fire Agni-V is small, making it highly survivable and enabling assured retaliatory-strike capability, in line with India's 'no first use' nuclear policy.

DRDO sources had then said that only one more test of Agni-V was required, after which the objective was to begin induction by end of 2015 itself. Understandably, India had decided to delay the final test of Agni-V because of the negotiations for India to join the 48-country Nuclear Suppliers Group (NSG). Unfortunately China, smarting under the fact that India was granted membership of the 34-nation Missile Technology Control Regime (MTCR) while the same was denied to China, decided to block India joining the NSG. China has indicated it will continue to block India joining NSG — act-

ing global 'watchdog' while herself blatantly violating provisions of the NSG through nuclear proliferation. China's stance that she does not believe in waivers (NPT in case of NSG membership) is hollow because China herself agreed to a waiver in favour of India during the Indo-US Nuclear Deal of 2008. However, any support from China on any issue, leave aside for NSG, would be utopian considering China now is inexorably coupled with Pakistan in an anti-India embrace, even repeatedly protecting terrorist mullahs of Pakistan at the UN.

The Agni-V ICBM was tested to its full range. The Agni-V will bring whole of China within the range. The Agni-V has a range of 5,500 km and is nuclear capable with a payload capacity of 1,500 kg of high-explosive warhead. Interestingly, the Chinese media went bellyaching with the Indian plans to deploy BrahMos missiles in our North East along the line of actual control (LAC) with China. India's Strategic Forces Command (SFC) already holds the shorter-range Prithvi and Dhanush missiles, and has inducted the Agni-I, Agni-II and Agni-III missiles as well — mainly geared towards Pakistan. The Agni-IV and Agni-V are specifically meant for deterrence against China. Following the final test of the Agni-V, the SFC will begin user trials. It will perhaps take another two years for this ICBM to be fielded with the SFC. As per DRDO sources, they are capable of developing ICBMs with strike ranges of 10,000 km or more comparable to China's DF-31A missile that can hit targets at 12,200 km range. However, this is a policy decision that the government may not want to take for the time being considering that the Agni-V will cover whole of China.

As of now, the DRDO has also been working upon 'manoeuvring warheads or intelligent re-entry vehicles' to defeat enemy ballistic missile defence systems as well as multiple independently targetable re-entry vehicles (MIRVs) for the Agni missiles; single missile carrying several nuclear warheads, with each programmed individually to hit different targets. Every Indian was looking forward to today's launch of Agni-V and India joining the exclusive ICBM 5,000+ league. This indeed is a proud moment and feather in the cap of the DRDO. **SP**



With Agni-V, India joins the exclusive club of five countries that already possess intercontinental ballistic missiles with a range of over 5,000-5,500 km



On Army Day, Indian Army celebrates being instrument of national power

Indian Army celebrated its 69th Army Day on January 15, 2017. General Bipin Rawat, Chief of the Army Staff (COAS), reviewed the Army Day parade at the Cariappa Parade Ground, Delhi Cantonment, and awarded 15 Sena Medals (including five posthumously) for individual acts of gallantry and 14 COAS Unit Citations for commendable performance of their respective units.

Every year Indian Army celebrates January 15 as 'Army Day' to commemorate the day when General (later Field Marshal) K.M. Cariappa took over the command of Army from General Sir F.R.R. Bucher, the last British Commander-in-Chief in 1949 and became the first Commander-in-Chief of Indian Army post Independence.

General Bipin Rawat in his address stated that while India sought peace on line of control, ceasefire violations or untoward incidents propagated by Pakistan will be responded to by force. He also brought out that confidence building measures were being

further strengthened along the line of actual control with China to reduce tensions. The COAS highlighted contribution of Indian Army in UN peacekeeping missions, modernisation projects in the pipeline and welfare schemes being instituted for serving soldiers, ex-servicemen and Veer Naris. He reinforced the point that redressal of individual grievances by serving personnel should be carried out through established mechanisms within army rather than resorting to platform of social media for the same.

The parade was commanded by Major General Rajesh Sahai, Chief of Staff, Delhi Area. The leading contingent of the parade was formed of the recipients of the Param Vir Chakra, Ashok Chakra Awardees and International Sports Awardees. This was followed by army contingents which included T-90 tank Bhishma, infantry combat vehicle BMP-II, BrahMos missile system, weapon locating radar (Swathi), Akash missile system, chemical, biological, radiological & nuclear (CBRN) reconnaissance vehicle, mobile transportable satellite terminal vehicle and seven marching contingents including mounted horse cavalry.

The Veterans Tableaux, organised by the Directorate of Indian Army Veterans, depicted their role and contributions towards the nation. A motorcycle display by 'Shwet Ashw' team of the Army Corps of Military Police was the other attraction during the parade. A paramotors display was also carried out by a team from the 50 (I) Para Brigade.

The grand finale was a combat demonstration, which showcased combat techniques of the army subunits. Combat actions included strafing runs depicted by armed helicopter, combat manoeuvres by tracked combat vehicles and special operations including air insertion and extrication of soldiers behind enemy lines.

The Indian Army is regarded as one of the most credible institutions and instrument of national power. Indian Army operates in the most inhospitable conditions with resolve and pride. It has acquitted itself extremely creditably in internal security and counter-insurgency operations and has extended invaluable aid to civil authorities in disaster management and maintenance of law and order.

Earlier in the day, wreaths were laid at Amar Jawan Jyoti, India Gate, by the three Service Chiefs to commemorate the Army Day. **SP**

Lt General Sarath Chand takes over as Vice Chief of Army Staff

Lt General Sarath Chand took over as Vice Chief of Army Staff. The General Officer was commissioned into the Garhwal Rifles in June 1979. During career spanning over 38 years, he has served in all operational theatres and has participated in many active combat leadership roles at every stage of command. The early operational service of the General includes the command of Company in the Kargil Sector of Ladakh and in active operations during Operation Pawan as part of the IPKF in Sri Lanka.

He commanded battalion in Operation Rhino and Operation Falcon, an Infantry Brigade in the deserts and a Counter Insurgency Force deployed in the Kashmir Valley and thereafter commanded a strategically important 4 Corps. He has also held a number of important staff as well as instructional appointments during his career. The General Officer has served at the United Nations Mission in Somalia.

The General Officer in his capacity as Vice Chief will head the General Staff Branch at the Army Headquarters and will provide



crucial support to the Army Chief in discharge of his duties. He will be responsible for ensuring the operational effectiveness of the Army by directly overseeing the functioning of the military operations, intelligence and logistics directorates. He will coordinate and facilitate decision making on critical issues involving multiple stakeholders within and outside army. **SP**

Submarine Khanderi launched

Khanderi, the second of Indian Navy's Scorpene class stealth submarine, was launched recently by the Minister of State for Defence Dr Subhash Bhamre paving the way for her sea trials. Admiral Sunil Lanba, Chief of the Naval Staff, and a host of other dignitaries witnessed the launch at the Mazagon Dock Shipbuilders Limited (MDL).

The submarine is expected to be delivered to Navy by the year-end. She has been christened after her illustrious predecessor, an erstwhile Foxtrot class submarine decommissioned in 1989, which is as per the traditions of the Indian Navy. The construction of six Scorpene submarines is presently being progressed at the MDL, under Project 75 with transfer of technology from DCNS France as the collaborator. The first of the class submarine, Kalvari is presently undergoing sea trials and likely to be commissioned into Navy by mid-2017. These submarines, post induction, would form the core of Navy's conventional submarine arm.

Dr Subhash Bhamre said that Project 75 Kalvari is a key milestone in self-reliance and indigenisation for the country. Admiral Sunil Lanba said during his address that the fact that submarine Khanderi compares with the best in the world, speaks highly of the experience and expertise our shipbuilders have gained over the years. He added that as Indian Navy celebrates golden jubilee of the submarine arm in 2017, the induction of Project 75 submarines would mark the beginning of a new chapter in our submarine capabilities.



The launching of Khanderi also marks a critical milestone event for the shipyard which earlier has delivered two Shishumar class submarines in the 1990s and has now strengthened its position as a submarine building yard for Indian Navy. Started as a small dry dock facility for East India Company, MDL today has established itself as a forefront defence public sector undertaking, with indigenous construction of several ships and submarines for Navy such as P-15(B) Destroyers and P-17(A) class stealth frigates being the latest. **SP**

Successful test-firing of guided Pinaka



The Pinaka Rocket converted to a Guided Pinaka was successfully test-fired from Launch Complex-III, ITR, Chandipur on January 12, 2017. The Pinaka Rocket Mark-II, which evolved from Pinaka Mark-I is equipped with a navigation, guidance and control kit and has been transformed to a Guided Pinaka. This conversion has considerably enhanced the range and accuracy of Pinaka. The test-firing has met all mission objectives. The radars, electro-optical and telemetry systems at Chandipur tracked and monitored the vehicle all through the flight path. The Guided Pinaka is developed jointly by ARDE Pune, RCI Hyderabad and DRDL Hyderabad. ITR Chandipur provided the range and launch support.

Dr K.M. Rajan, Director of ARDE, B.H.V.S. Narayana Murthy, Director of RCI, Dr B.K. Das, Director of ITR, and R. Appavuraj, Director, PXE, Chandipur, monitored the launch operations.

An armed forces team witnessed the flight test. Dr G. Satheesh Reddy, Scientific Advisor to Defence Minister, was present during the test-firing. **SP**

Meeting between Indian and Sri Lanka Coast Guards

A three-member delegation led by Director General of Sri Lanka Coast Guard (SLCG) Rear Admiral Samantha Wimalathunge, was on a three-day visit to India from January 3, 2017, for a high level meeting, with the Indian Coast Guard (ICG). The Indian delegation was led by Director General of Indian Coast Guard Rajendra Singh. The visit was in continuation of the various efforts by the governments of the two countries in furthering cooperation between the coast guards of two countries on maritime issues of mutual concern to formulate a cooperative approach.

Of late the Sri Lankan Coast Guard has been proactive in meeting the challenges in the new global safety and security regime in this region. The recent visit is significant in providing continued impetus to the existing ties between the two organisations. The focus of the meeting was on further strengthening the operational level interaction for search and rescue, preservation and protection of marine environment, revalidating operational and communication procedures between the two coast guards.

During the visit, the Sri Lanka delegation also called on the Defence Secretary G. Mohan Kumar and deliberated on issues of common maritime interests.

During the high level discussions, it was mutually agreed to strengthen the cooperation on evolving collaborative approach, in addressing a spectrum of maritime issues concerning safety and security and further streamlining the procedure for release/repatriation of fishermen. **SP**



National level pollution response exercise

India's energy requirements (approximately 70 per cent) are met by oil resource that is being imported into our country by ships. The transportation of oil through sea route is fraught with inherent risks and requires preventive measures to be taken both by the ship-owners and the oil receiving facilities inside port.

The Indian Coast Guard (ICG) is the central coordinating authority for oil spill response and has put into place a robust pollution response system to check the preparedness levels of oil handling agencies at regular intervals. The Gulf of Kutch houses ecologically sensitive mangroves and coral reefs, which are fraught with danger in case of an oil spill. To address issues relating to an oil spill, the sixth edition of National Level Pollution Response Exercise (NATPOLREX-VI) was conducted by the Indian Coast Guard on December 20-21, 2016, off Mundra in Gulf of Kutch.

Representatives of various ministries and departments of central and state governments, ports, oil handling agencies and other stakeholders participated in the exercise. In addition, representatives of Oil Industry Safety Directorate and observers from three foreign nations also witnessed the NATPOLREX-VI exercise. Some 125 personnel from various agencies/stakeholders participated in the exercise.

Nine Coast Guard ships, two Coast Guard helicopters, two Dornier aircraft, one Indian naval ship, one air force aircraft (C-130J Super Hercules), three tugs from KPT/Mundra Port, one tanker of the Shipping Corporation of India, 2 MSV/OSV from other resource agencies and teams for beach cleaning from state government also participated in the exercise.

The highlight of the exercise was participation of ICG pollution control vessels (PCV) and integration of air force into the Oil Spill Disaster Management System for aerial assessment/delivery of oil spill dispersant (OSD) for mitigation of the spilled oil. The NATPOLREX-VI was precluded by a table-top exercise on December 20, 2016, for simulation of the situation.

The Indian Coast Guard assumed responsibility of protecting marine environment in her maritime zones on March 1, 1986, when these responsibilities were transferred from the Ministry of Shipping. Subsequently, the Coast Guard prepared the National Oil Spill Disaster Contingency Plan (NOSDCP) for combating oil spill disaster at sea, which was approved by the committee of secretaries in 1993. The Indian Coast Guard has also established three Pollution Response Centres at Mumbai, Chennai and Port Blair and has the capability to respond to oil spills up to 10,000 tonnes with assistance of various agencies.

Chief Minister of Gujarat Vijaybhai R. Rupani reviewed the preparedness of all agencies during the exercise on December 21, 2016, from onboard Coast Guard ship Sarathi along with Rajendra Singh, PTM, TM, the Director General of the Indian Coast Guard. **SP**

India's largest bank teams up with the nation's largest warship

INS Vikramaditya, the largest warship and latest aircraft carrier of the Indian Navy, has a strength of over 1,500 personnel. A versatile national capability and a full-fledged township by herself, the ship has a new acquisition — an ATM machine installed onboard by the nation's largest bank and banking network, the State Bank of India (SBI). The one-of-a-kind ATM machine was inaugurated onboard at a function at the naval base Karwar on January 21, 2017, jointly by Rear Admiral K.J. Kumar, Flag Officer Commanding, Karnataka Naval Area, and Rajnish Kumar, Managing Director and Group Executive (National Banking Group), SBI.

The facilities offered by the SBI to the ship include cash withdrawals, generation of mini-statements, access to bank balance details and change of PIN numbers. In the near future, the facility will be upgraded to a recycler machine with a cash deposit facility. Additionally, facilities like cash transfer, card-to-card transfer, credit card payment, mobile number registration and updation would also be available. The Indian Navy has a memorandum of understanding with the SBI that operates defence salary packages. This joint venture between India's largest warship and largest banking network is a significant step towards cementing the partnership between the Navy and the bank further, underlines the mutually supportive rela-



tions the two organisations share. The ATM machine is a unique floating banking system, and along with the point of sale machine that is also proposed to be installed onboard, would go a long way in supporting cashless transactions on the ship, in line with the government's policy of digitising the Indian economy. **SP**



LT GENERAL
P.C. KATOCH (RETD)

Why India should never join CPEC

Khaled Ahmed, consulting editor, *Newsweek* Pakistan, in his recent article titled 'Corridor of Uncertainty' writes that Pakistan's General Aamir Riaz inviting India to join the China-Pakistan Economic Corridor (CPEC) is conditional on India calling off its Afghan proxy warriors mobilised expressly to disrupt CPEC because it "endangers India's security". Whether Riaz has been recruited by the Communist Party of China (CPC) as another joker in the Chinese pack is not known but Riaz calling his offer contingent upon India calling off its Afghan proxy warriors certainly is joke of the decade, considering the intense proxy war waged by Pakistan across its western and eastern borders. What Riaz does not realise is that India is never eager to join the CPEC.

On November 13, 2016, the CPEC became provisionally operational with the first convoy of trucks laden with Chinese goods traversing the CPEC's 3,000-km journey from Kashgar in China arriving at Gwadar and further seen off in a Chinese ship from Gwadar to Middle East and Africa. Pakistan's top civilian and military leaders were reportedly present at Gwadar to see off the Chinese ship. Prime Minister Nawaz Sharif stated that Pakistan will provide best possible security to foreign investors to enable them to use Gwadar for international trade.

The CPEC is to absorb \$46 billion Chinese investment — \$11 billion by Chinese Government and balance \$35 billion by private companies of China. Pakistan expects its GDP to rise because of the CPEC and 7,00,000 jobs for Pakistanis. No Pakistani can enter Gwadar Port (guarded by PLA) without valid ID card. Pakistan is responsible for the security of the CPEC with all costs to be borne by Pakistan. Pakistan has raised additional forces for specifically guarding the CPEC, with major portion of this special security force deployed in Baluchistan. Obviously, Nawaz Sharif and Pakistan's military hierarchy received hefty bribes for bartering Pakistan's sovereignty to China in exchange of Gwadar and the CPEC.

As per analysts, economically it is 11 times cheaper to transport the same goods by sea even to and from China than through the CPEC, even though the sea journey is longer. But the CPEC is alternative to the Malacca Dilemma of China should the Straits of Malacca get choked. Under cover of economic activity for "mutual benefit" and "good for the region", what China would never admit is that the CPEC is China's Strategic Highway to the Indian Ocean. The CPEC became even more important when Myanmar denied China the use of its territory for sim-

ilar strategic purpose. China keeps harping for India to join the CPEC but on the question of land access for India to Afghanistan and Central Asia, responds that CPEC is only bilateral arrangement with Pakistan. The obvious intention is to keep India restrained, plus if CPEC is only 'bilateral' arrangement then why the façade of asking India to join it? Clearly, Gwadar is a future Chinese SSBN base, which together with the Pakistani naval bases of Karachi and Omari to which China has access, would challenge India at sea.

China has deep links with Taliban even the ones based in Qatar, Pakistan has hold on both Taliban through the Haqqani Network chief Sirajuddin Haqqani, the ISIS in Af-Pak is the creation of Pakistan, and most importantly all Pakistani proxies also are Chinese proxies. That is why with the strategic though covert lodgment of PLA in PoK and Pakistan, terror attacks in Afghanistan and violence in

Jammu and Kashmir including ceasefire violations by Pakistan have shot up exponentially. Pakistani objective of carving out more Afghan territory as strategic depth (implying influence at subconventional level) is in sync with China's strategic designs. Pakistan's growing hostility towards India suits China similarly. Repeated terror attacks in Baluchistan aids Pakistani designs to subdue the Baluch population and eliminate maximum non-Sunnis in the entire country.

Terror attacks against Baluchis suit China very well too as it desists Baluch rebels from any feeble attempts to disrupt the CPEC which anyway is guarded by the Pakistani Army. India should never join the CPEC because: one, it does not give land access to India to Afghanistan

and Central Asia through Pakistan, which India has always wanted; two, it may increase India-China trade but with the existing bilateral imbalance heavily in favour of China (according to information provided in Parliament, it stood at close to \$45 billion in 2015-16 with India's exports amounting to only around \$8 billion), it would result in increased imbalance manifold with increased Chinese belligerence, having conned India into such arrangement; three, it would legitimise PLA lodgment and projects in Gilgit-Baltistan (Indian territory) undertaken without any reference to India; four, it would also indicate India's intransigence to Pakistan's genocide in Balochistan, fully backed by China, and; five, most importantly it will fit into Chinese plans to keep India boxed into South Asia. **SP**

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



Pakistan Prime Minister Nawaz Sharif unveiling the plaque of CEPC pilot project at Gwadar in 2016



AIR MARSHAL
B.K. PANDEY (RETD)

Leading from the front

The positive results of the solo flight on MiG-21 Type 96 by Air Chief Marshal B.S. Dhanoa, Chief of the Air Staff, IAF, are immense and cannot be quantified or measured

On the occasion of New Year's day this year, Air Chief Marshal B.S. Dhanoa took over as the 25th Chief of the Air Staff (CAS), Indian Air Force (IAF), from Air Chief Marshal Arup Raha who proceeded on retirement. Within two weeks after taking over as the CAS, Air Chief Marshal Dhanoa scripted history of sorts when he, while on an official visit to Air Force Station, Utarlai in Rajasthan, undertook a solo flight on the MiG-21 Type 96 combat aircraft of the IAF. This was the very first visit by the CAS to a forward operational base in the Western sector after he took over his new appointment. The stated aim of the visit was "to assess operational readiness and review the morale of the personnel stationed there".

The Air Chief Marshal flew a sortie lasting for around 30 minutes in the MiG-21 Type 96 single-engine aircraft. The aircraft is also known as the MiG-21M. In his younger days, he had flown the same type of aircraft during the war in Kargil. In the operations against the Pakistani forces entrenched in the icy heights of Kargil, he had carried out several night strike missions in the mountainous terrain. It was for his role in and contribution to the victory in Kargil that he was honoured with the award of Yudh Seva Medal by the President of India.

The MiG-21 Type 96, one of the variants in the MiG family of combat platforms, was inducted into the IAF in the mid-1970s and has now been in service for over four decades. Overall, the MiG-21 fleet of the IAF has not enjoyed a good reputation as it has had a troubled history of accidents attributable to technical failure or malfunction. The fleet has recorded 22 major accidents in the period May 2007 to March 2015 as per a report of the Parliamentary Standing Committee on Defence submitted to the Parliament. In fact, the MiG-21 aircraft was dubbed as the "Flying Coffin", a sobriquet that would have been somewhat discomfiting for those flying the aircraft and their families. Fortunately for the IAF, this fleet is on the way out and is scheduled to be retired from service by the end of this decade.

This action by Air Chief Marshal Dhanoa is not without precedent. Earlier on, Air Chief Marshal Dilbagh Singh who was the CAS from 1981 to 1984, and Air Chief Marshal A.Y. Tipnis who held this appointment from 1998 to 2001, too flew solo missions on the MiG series while on visits to operational bases. After the solo flight, Air Chief Marshal Tipnis had said that he flew the aircraft solo to send a message to all that the aircraft was safe to fly.

However, flying a solo sortie by a serving CAS has implications and is not without potential hazards. The reliability of the MiG-21 being somewhat doubtful, a hazardous situation could well develop if a technical failure or malfunction should take place during the mission. However, the CAS undertaking a solo flight especially on the MiG-21, would certainly have a phenomenal impact on confidence levels and the morale of personnel of not only the squadron which operates the particular aircraft, but on the entire air force fraternity.



Air Chief Marshal Dhanoa in the cockpit of MiG-21 Type 96 before the flight

Thus a solo flight by Air Chief Marshal Dhanoa though lasting for a mere 30 minutes would have helped restore the confidence of pilots in the IAF who are deputed to fly this aircraft as also the other variants of this platform. Also, it would elevate the spirits of the technical personnel who maintain and service the fleet as a solo flight by the CAS on the aircraft would symbolise the trust and faith he reposes in the capability, competence and dedication of the technical team. This symbolic action by the CAS will also help strengthen the bonds between officers and airmen in the organisation. The positive results of the solo flight by the CAS are immense and cannot be quantified, measured or assessed.

In the final analysis, Air Chief Marshal Dhanoa is clearly leading from the front and has started his tenure as the CAS literally with a bang! **SP**

Air Marshal S.B. Deo takes over as Vice Chief of the Air Staff of IAF

Air Marshal S.B. Deo has taken over as Vice Chief of the Air Staff (VCAS) at Air HQ. He was commissioned as a fighter pilot in the IAF on June 15, 1979. He is an alumnus of the National Defence Academy and the Defence Services Staff College, Wellington. He is a Fighter Combat Leader and a 'Cat A' Qualified Flying Instructor with over 3,800 hours of operational and training flying. He was also Directing Staff at Tactics and Air Combat Development Establishment (TACDE).



Air Marshal Deo has been AOC of a major fighter base. He commanded a MiG-21 Bison squadron and a Signal Unit besides being the Chief Ops Officer of a forward base. As Station Commander of the Signal Unit he was actively involved in the induction of modern assets and sensors in the IAF. Prior to taking over as VCAS, he was the AOC-in-C of Western and Eastern Air Commands, DG Air (Ops), AOC COBRA Group, AD Commander & Air I and has held various staff appointments and worked in Ops/Plans Directorates at Air HQ (VB).

In recognition of his meritorious service and professionalism, he was awarded Param Vishisht Seva Medal, Ati Vishisht Seva Medal, Vayu Sena Medal, Vishisht Seva Medal and ADC by the President of India. **SP**

Air Marshal C. Harikumar takes over as AOC-in-C, Western Air Command

Air Marshal C. Harikumar took over as AOC-in-C, Western Air Command (WAC), on January 1, 2017. Air Marshal Harikumar was commissioned in the IAF in the year 1979. A Qualified Flying Instructor and a Fighter Combat Leader, he has over 3,300 hours of flying. He has done instructional tenures at Fighter



Training Wing, TACDE and College of Air Warfare. He is a graduate of Defence Services Staff College and National Defence College. He has commanded a MiG-21 Sqn, TACDE and a front line fighter base. His staff appointments include Ops-1A, Air-I at HQ WAC and Deputy Director Air Staff Inspection, Director Operations (Joint Planning) and Assistant Chief of the Air Staff Operations (Offensive) at Air HQ and Senior Air Staff Officer at HQ South Western Air Command.

The Air Marshal was AOC-in-C HQ Eastern Air Command (EAC) prior to his present appointment. He was awarded CAS commendation in October 1997, Vishisht Seva Medal in January 2005, Vayu Sena Medal in January 2011 and Ati Vishisht Seva Medal in January 2016. **SP**

Air Marshal Anil Khosla takes over as AOC-in-C, Eastern Air Command

Air Marshal Anil Khosla took over as Air Officer Commanding-in-Chief of Eastern Air Command on January 1, 2017. Air Marshal Khosla, an alumni of the National Defence Academy, was commissioned in the fighter stream of IAF in December 1979. Air Officer has to his credit over 4,000 hours of accident free flying mainly on different variants of Jaguar, MiG-21 and Kiran aircraft. He is equally experienced on both ground attack and air defence roles with specialisation on maritime role.

He is post-graduate from Defence Services Staff College and holds two M.Phil degrees in military studies. He is an 'A2' category Flying Instructor and a fighter strike leader. He has had the distinction of standing first in the order of merit in all the courses he attended (i.e. Flying Instructor course, Fighter Strike Leaders course, Junior Command course and Staff course). He was awarded Commandants medal during Higher Command course at Army War College. He has attended Senior Defence Management course at College of Defence Management and is also an alumni of National Defence College.

Air Officer has vast instructional experience and has been Directing Staff at prestigious institutions TACDE and Flying Instructor School (FIS). He has commanded a Jaguar squadron with maritime role and two front



line bases of the IAF at Jaisalmer and Ambala. He has held various staff appointments at Air HQ. These include Principal Director at Directorate of Information and Electronic Warfare, Director in Personnel branch and Joint Director at Directorate of Concept Studies.

For his distinguished service Air Marshal Khosla has been awarded Ati Vishisht Seva Medal, Vayu Sena Medal and has been commended by the CAS. **SP**

Air Marshal Sanjay Sharma takes over as Air Officer-in-Charge Maintenance

Air Marshal Sanjay Sharma assumed the responsibilities of Air Officer-in-Charge Maintenance at Air Headquarters, New Delhi, on January 1, 2017. The Air Marshal was commissioned in the Aeronautical Engineering (Electronics) branch of IAF on July 12, 1979. He is a graduate in electronics engineering from University of Indore and post-graduate in computer science and data processing from IIT Kharagpur.

He is also an alumnus of the prestigious National Defence College. He has rich experience in the fields of high power radars, real time data processing systems, automation of command & control systems and communication & information technology.

Prior to assuming the present appointment, the Air Officer had held various important appointments, Chief Technical Officer of THD 1955 Radar Stations, Senior Project Engineer (Radar) at erstwhile RCPO, Director IACCS (Tech Planning), Director Signals (Air), Principal Director of IACCS, Assistant Chief of Air Staff (Signals & IT) at Air HQ, Deputy Senior Maintenance Staff Officer at HQ Maintenance Command, Assistant Chief of Air Staff (Maintenance and Planning) and Director General (Aircraft) at Air HQ. He has also commanded a major Communication Hub Centre and was deputed to the Government of Botswana for three years to oversee installation and commissioning of Radar Automation System of Botswana defence forces besides setting up the Technical Training Wing for their Air Defence Operations Centre.

For his distinguished service, Air Marshal has been commended twice by the Chief of Air Staff in 1998, and 2007. **SP**



Hawk AJT clocks 1,00,000 hours with Indian Air Force

The Hawk advanced jet trainer (AJT) has clocked 1,00,000 hours of flying hours with the Indian Air Force (IAF). BAE Systems, the makers of Hawk Mk132 AJT, termed the achievement as an “important milestone” and a compelling story of success.

BAE quoted Steve Timms, Managing Director, Defence Information, Training and Services, saying: “Hawks provide new-generation training to next-generation air warriors and delivering our commitment to ‘Make in India’ in partnership with the Hindustan Aeronautics Limited (HAL). The IAF is one of the largest operators of the Hawk globally and we wish its air warriors safe landings.” The IAF operates Hawks based out of Air Force Station in Bidar in Karnataka.

The IAF also has its Surya Kiran aerobatic display team now flying the Hawks. The team’s first public display of four Hawks was at AFS Hindon during Air Force Day celebrations in 2015. Since November 2016, the team has added two more jets to the display team and eventually the strength will be raised to nine.

BAE credits the latest milestone to the long-standing association with the IAF and HAL. “Together, BAE Systems and HAL are committed to strengthen their relationship through ongoing discussions on exploring long-term sustainable business opportuni-



ties, globally,” says a company release.

The Indian Navy operates around 17 Hawks, mostly based out of INS Dega in Visakhapatnam in Andhra Pradesh. **SP**

First production conforming Scorpion jet completes successful first flight



Textron AirLand LLC announced the successful maiden flight of the first production-conforming Scorpion jet. This programme milestone closely follows the recent successful weapons capability exercise on the prototype Scorpion completed in early October. The Scorpion jet is a bold new direction for tactical aircraft designed to excel in roles ranging from intelligence, surveillance and reconnaissance to close air support and armed reconnaissance.

The aircraft took off from McConnell

Air Force Base in Wichita and conducted a range of manoeuvres during the one hour and 42 minutes flight. The multi-mission, twin-engine jet performed extremely well and was piloted by experimental test pilots Don Parker and Dave Sitz, who verified the avionics and aerodynamic performance as well as a number of aircraft systems.

The latest version of the Scorpion incorporates a number of improvements based on target customer feedback as well as results from the extensive flight test programme. The programme has accumulated more than 800 flight hours in both test and real-world operational settings.

The company also announced Garmin as the avionics provider for the enhanced Scorpion. This avionics platform is based on the advanced G3000 integrated flight deck and is optimised for rigorous military operations. The newly configured G3000 avionics system features a large, high-definition display complemented by two high-definition touch-screen controllers and provides more mission capability in the forward cockpit position, additional navigation capability in the rear cockpit position and overall weight savings for improved performance as a multi-mission aircraft.

The first production conforming Scorpion will start a robust flight test programme, working closely with the US Air Force on the first of its kind airworthiness assessment of

a non-Department of Defense military aircraft design. The Scorpion is very versatile in terms of mission flexibility with its centre payload bay, six hard points, high dash speeds and extended endurance and loiter time at cruise speeds. **SP**

DRDO successfully flight tests Smart Anti-Airfield Weapon

The Defence and Research Development Organisation (DRDO) successfully flight tested the Smart Anti-Airfield Weapon (SAAW), from an Indian Air Force (IAF) aircraft. SAAW, an indigenously designed and developed 120-kg class smart weapon, developed by DRDO, is capable of engaging ground targets with high precision up to a range of 100 km. The lightweight high precision guided bomb is one of the world-class weapon systems.

The captive and release trials were tracked by radar and telemetry ground stations at ITR during the entire duration of the flight. The performance of all systems were satisfactory with mission objectives achieved.

Secretary, Department of Defence (R&D) & Chairman, DRDO, Dr S. Christopher, congratulated DRDO and the IAF teams for the successful mission. **SP**

Reaper drones: Delivery of the second system and order of the fourth

The French Direction Générale pour l'Armement (DGA) ordered a fourth MALE (medium altitude, long endurance) Reaper unmanned aircraft system. The 2014-19 Military Planning Act (LPM) provides that the air force will have by 2019 four complete systems, each comprising three unmanned aircraft. The order of this fourth system of Reaper drones thus allows the ministry to meet the objectives of this Act. Delivery will take place in 2019.

The second system has been approved by the DGA. Two drones were delivered on December 31 in Niamey. The third drone will soon arrive at Cognac airbase, where it will be used in particular for the training of personnel of the 1/33 Belfort squadron which operates France's MALE drones.

On arrival, the French Air Force and the DGA will conduct a test campaign to validate the Reaper system's air-transportability onboard French transport aircraft, mainly the A400M, as well as technical conditions for its operation in the electromagnetic environment of Cognac airbase, and more generally the territory of metropolitan France. **SP**



Thales to equip the French Forces with Spy'Ranger mini-reconnaissance UAVs



Thales's latest-generation Spy'Ranger mini-surveillance and reconnaissance unmanned aerial vehicle (UAV) has been chosen by the French Defence Procurement Agency (DGA) to equip the French forces. Up to 70 mini-UAV reconnaissance systems (SMDR) will be made available from 2018.

The armed forces require real-time access to ever more reliable imagery. Spy'Ranger will provide them with a decisive tactical advantage by offering the capacity to observe day or night, for long periods of time and at a distance of up to 30 km.

Each system consists of three mini-UAVs, a ground segment and the associated

technical support. Starting in 2018, Thales will provide French forces up to 210 mini-reconnaissance UAVs.

The Spy'Ranger is the new 'eye in the sky' for the combined arms tactical group, able to be operated in a stand-alone mode or connected to a C4I system.

The Spy'Ranger is specifically tailored to the needs of the armed forces, as well as to those of essential operators.

The Spy'Ranger, developed by Thales in collaboration with several French SMEs, is a mini-UAV designed and manufactured in France. **SP**

Six times more Kochav UAVs next year

The Israeli Air Force (IAF) UAV squadron that operates the Kochav (Hermes 900) UAV will multiply the number of Hermes 900 UAVs that it operates by six during the coming year. "The Kochav will revolutionise the world of UAVs", stated Lt Colonel Daniel, the Squadron Commander. "The platform is a base for many operational technological abilities that will be integrated and immigrate from manned to unmanned platforms".

On July 15, 2014, during operation "Protective Edge" over the Gaza strip, the UAV took off for its first operational mission in the IAF. Its mission was part of a process that ended with an air strike that destroyed terror infrastructure. The Kochav gathered hundreds of flight hours



throughout the campaign and performed its mission more than 100 times with an extremely high success rate.

Following operation "Protective Edge", the Kochav was officially integrated in the IAF and since then the squadron has grown steadily. "We are widely occupied with the technological capabilities of UAVs", shared Lt Colonel Daniel. "We are proceeding steadily and we recently broke the aircraft's endurance record and reached a number of hours that even the manufacturer couldn't reach".

Clearly, most of the interesting details regarding the aircraft are classified. But we can say that it consists of a technological quantum leap that provides the IAF with new capabilities and allows it to operate in very long ranges. The Kochav has a capacity of a 350-kg and is designed to be able to carry a number of payloads on hardpoints under its wings. Its endurance abilities allow it to perform very lengthy, long range missions during a single sortie. **SP**

India evolving as a global hub in defence manufacturing



Defence Minister Manohar Parrikar visited Defence Research and Development Organisation's (DRDO) Dr A.P.J. Abdul Kalam Missile Complex during his visit to Hyderabad on January 16, 2017. He visited the integration centre at Research Centre Imarat (RCI) and reviewed ongoing missile technologies and related programmes. Dr S. Christopher, Secretary, Department of

Defence Research and Development and Chairman DRDO, along with Dr G. Satheesh Reddy, Scientific Advisor to the Defence Minister and Director General, Missiles and Strategic Systems, briefed the Defence Minister on various technological developments.

Defence Minister Parrikar congratulated all DRDO, scientists for the recent successful missions including smart anti-airfield weapon, long-range ballistic missiles Agni-V and Agni-IV, guided Pinaka and Astra. He complimented the missile complex for indigenising various technology products and strengthening the defence industrial base in the country.

The Defence Minister said, "There is lot of knowledge and infrastructure base with the DRDO and the same needs to be tapped by the MSME and private industries which in turn will lead towards the establishment of a self-reliant defence industrial ecosystem in our country. Today, the industries are significantly contributing in the realisation of various defence products with the know-how provided by the DRDO and few of them have even graduated as lead integrators. The partnership between the DRDO and industries is transforming our country into a global defence manufacturing hub. This synergy has provided the much-needed thrust for exporting our defence products globally. We are taking necessary initiatives in this direction and I am sure that our state-of-the-art missiles and weapon systems will garner the much-needed interest in the global markets and generate foreign exchange." **SP**

BAE Systems names Nik Khanna Managing Director for India

BAE Systems has announced the appointment of Nik Khanna as the Managing Director of its India operations with effect from February 1, 2017.

Nik joins the company from Raytheon where as Country President he led business development, marketing and strategy in India for the last four years. Prior to this he was Associate Vice President at The Cohen Group. Nik has also served as Aerospace & Defence Director at the US-India Business Council.



Nik will steer the company towards achieving its vision and ambition for India, building on the company's track-record of sharing its knowledge, skills and technology in air, land, sea, cyber and advanced electronics with Indian industry.

Nik takes charge shortly after the company was awarded a contract from the US Department of Defense to provide 145 M777 ultra-lightweight howitzers to the Indian Army through a Foreign Military Sale between the US and Indian Governments. BAE Systems' flagship air programme in India - the Hawk advanced jet trainer, in association with the Hindustan Aeronautics Limited, is also well placed for the future.

Based in New Delhi, Nik will join the BAE Systems India Board, chaired by Deepak Parekh, Chairman of HDFC Ltd, and will lead the Company's growth strategy anchored in a focus on 'Make-in-India'. The company will continue to expand and strengthen its partnerships with domestic industry. It has recently selected Mahindra as business partner for the in-country assembly, integration and test facility for the

M777 ultra lightweight howitzer making India a fundamental part of the M777 production line.

Alan Garwood, Group Business Development Director, BAE Systems Plc, said: "Nik's experience and in-country relationships will strengthen our ability to capitalise on growth opportunities in this strategically important market."

Nik commented: "BAE Systems holds a pre-eminent position in the industry and I look forward to contributing to the company's continued growth and development in India." **SP**

RUAG acquires cyber security specialist Clearswift

The RUAG Defence division is acquiring the British Cyber Security specialist Clearswift. With this acquisition, RUAG is making a significant investment in the expansion and long-term development of its cyber security business. Clearswift's leading products will be a significant addition to the RUAG Defence Cyber Security business unit. As previously announced, the business unit will be headed by cyber security expert Dietmar Thelen as of January 1, 2017.

"The acquisition of Clearswift ideally complements our existing portfolio of products and services. By combining our expertise in network defence with Clearswift's data loss prevention and gateway solutions we will further boost our efforts to make RUAG Defence one of the leading cyber security specialists", emphasises Dr. Markus A. Zoller, CEO of the RUAG Defence division. "We are aiming to become a principal solution and service provider for organisations of all sizes and across all verticals, including local and national government organisations, financial institutions and critical infrastructure providers. Clearswift's global partner network and customer base in conjunction with its analyst-recognised solutions will play a key role in the growth of the RUAG Defence cyber security business unit." **SP**

US Army flies 'hoverbike' prototype



Army researchers and industry partners fly a prototype rectangular-shaped quadcopter during a visit from US DOD officials to Aberdeen Proving Ground, Maryland

The Army Research Laboratory and industry partners demonstrated the flying capabilities of a unique rectangular-shaped quadcopter during a visit from the Department of Defense officials January 10, 2017.

Dr William Roper, Director of the Strategic Capabilities Office at the Office of the Secretary of Defense, and members of his staff visited the Aberdeen Proving Ground laboratory to see the joint tactical aerial resupply vehicle (JTARV).

Also known as the 'hoverbike,' the vehicle may one day make it possible for soldiers on the battlefield to order resupply and then receive those supplies rapidly.

During the visit, Roper told laboratory officials that he is concerned about adapting future technology advances. He said he wants to figure out how to get people to "see something that's coming on the shelf, immediately identify the use, determine if it's good enough for rock and roll, get it into the field, but in a way that allows us to keep one-upping it."

Researchers envision a future JTARV flying low to the ground or at thousands of feet at speeds of 96 km per hour or more. "Anywhere on the battlefield, soldiers can potentially get resupplied in less than 30 minutes," said Tim Vong, Associate Chief of ARL's Protection Division. He likened the concept to 'Amazon on the battlefield.' "We want to have options like that," Vong said. While the current prototype is electric, researchers are looking at a hybrid propulsion system that could dramatically increase range.

"We're exploring increasing payload capacity to 800 pounds and extending the range up to 200 km," Vong said. "We're also looking to integrate advanced intelligent navigation and mission planning. We're looking to end up with a modular, stable platform that can be used for even more dynamic and challenging missions."

The laboratory began exploring the JTARV concept in the summer of 2014. They identified a manufacturer, Malloy Aeronautics, and a systems integrator, SURVICE, entered into a contract and moved quickly from concept to full-scale prototypes.

The JTARV is now a joint effort with the Marine Corps, led by Army researchers, at the Army Armament Research, Development and Engineering Center (ARDEC) at Picatinny Arsenal, New Jersey; however, the Army Research Laboratory researchers still serve as subject matter experts on aeromechanics, assessment, analysis, propulsion, intelligence and controls and materials and structures.

"The project is successful because we went from concept development to engineering evaluation in collaboration with all various government agencies and industry," explained Ernesto Garcia Lopez, ARDEC. "The demo we saw was a unique opportunity for us to show a seamless transition between one army organisation and another army organisation and having the industry along the whole time," he said.

In addition to other industry, government and academic partners, the JTARV project is teaming with the Office of Naval Research. Researchers hope to demonstrate full autonomy in the near future, Vong said. "I think the visit was a great success. It gave us an opportunity to showcase to Dr Roper ideas and also the progress we've been making in exploiting commercial UAS technologies," Vong said.

The ARL is part of the ARDEC, which has the mission to provide innovative research, development and engineering to produce capabilities that provide decisive overmatch to the army against the complexities of the current and future operating environments in support of the joint war-fighter and the nation. RDECOM is a major subordinate command of the US Army Materiel Command. SP

Trooper held for hacking Kareena Kapoor-Khan's income tax account, filing declaration

A 26-year-old fan's dream to talk to actor Kareena Kapoor-Khan has landed him behind bars as the cyber police arrested him for hacking into the star's income tax account and filing her declaration.

The accused, Manish Tiwari, is a paramilitary trooper posted in Chhattisgarh. The police said that last August, while searching for the actor's mobile number on the Internet, Tiwari stumbled upon her PAN details. He then hacked into the actor's income tax account and uploaded her declaration form for 2016-17.

When Kareena's chartered accountant (CA) Prakash Thakkar found out that she had already filed the declaration, he became suspicious. A team, led by Joint Commissioner of Police (Crime) Sanjay Saxena tracked down Tiwari to Chhattisgarh recently and brought him to Mumbai city. SP



Wimbledon champion Petra Kvitova attacked



On December 20, the two-time Wimbledon champion Petra Kvitova said she is "fortunate to be alive" after being injured in a potentially career-threatening knife attack at her home. Kvitova, 26, underwent surgery for severe lacerations to all four fingers on her left hand — her playing hand. The incident, described as a burglary, happened in Prostějov, Czech Republic.

Kvitova is ranked 11th in the world and has won a career total of 19 titles, including Grand Slam victories at Wimbledon in 2011 and 2014.

It is understood she allowed someone posing as a utilities man access to her apartment and while defending herself in a struggle, suffered the injuries to her hand. The intruder is believed to have then run away and is being sought by police.

Kvitova said: "Thank you for all your heart-warming messages. As you may have already heard, today I was attacked in my apartment by an individual with a knife. In my attempt to defend myself, I was badly injured on my left hand.

"I am shaken, but fortunate to be alive. The injury is severe and I will need to see specialists, but if you know anything about me I am strong and I will fight this. Thank you all again for your love and support and now I would appreciate some privacy while I focus on my recovery." SP

US veteran arrested in Florida airport shooting

An US Army veteran, who complained that the government was controlling his mind, drew a gun from his checked luggage on arrival at the Fort Lauderdale Airport and opened fire in the baggage claim area, killing five people and wounding eight, authorities said.

He was taken into custody after throwing his empty weapon down and lying spread-eagle on the ground, one witness said.

The gunman was identified as 26-year-old Esteban Santiago of Anchorage, Alaska, who served in Iraq with the National Guard but was demoted and discharged last year for unsatisfactory performance. His brother said he had been receiving psychological treatment recently.

Santiago, who is in custody, will face federal charges. The gunman was arrested unharmed, with no shots fired by law enforcement officers, and was being questioned by the Federal Bureau of Investigation (FBI), Sheriff Scott Israel said. The airport was shut down, with incoming flights diverted and outgoing flights held on the ground. SP

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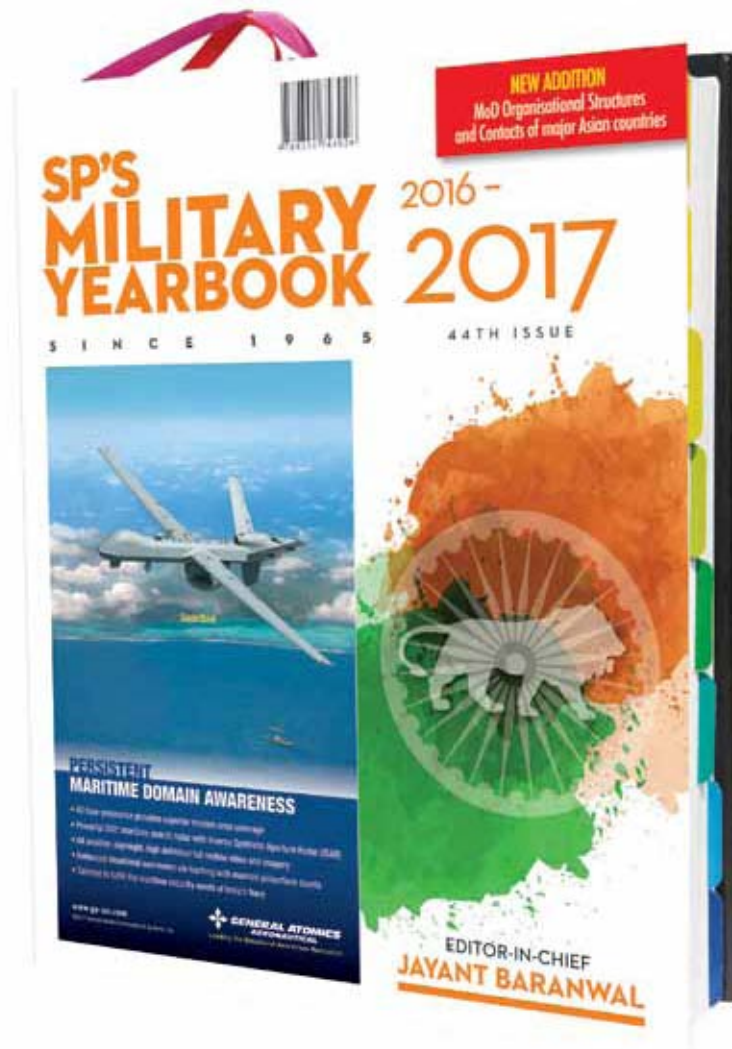
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