



SP's



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ONLY FORTNIGHTLY ON **MILITARY AEROSPACE INTERNAL SECURITY**



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In a country like India with limited support from the industry and market, initiating 50 years ago (in 1964) publishing magazines relating to Army, Navy and Aviation sectors without any interruption is a commendable job on the part of SP Guide Publications. By this, SP Guide Publications has established the fact that continuing quality work in any field would result in success. ”

Narendra Modi, Hon'ble Prime Minister of India



While we at SP's cherish our journey started in 1964, founded by our Founder Editor and Founder Publisher Shri S P Baranwal; we do believe that the entry into 51st year and beyond is just a beginning for us. We therefore look forward to constantly evolving and expanding our qualitative efforts during coming years and coming decades.

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HAL-BAeS sign collaboration MoU


The Hindustan Aeronautics Limited (HAL) signed an memorandum of understanding (MoU) with BAe Systems UK recently for Hawk Mk132 upgrade, development of combat Hawk for Indian and export markets and maintenance solutions for supporting Jaguar and Hawk fleet.

T. Suvarna Raju, Chairman and Managing Director of HAL, expressed confidence on success of the proposed collaboration between HAL and BAeS. "It is important that both the teams finalise the scope of Hawk Mk132 Upgrades and other work packages under the MoU agreement at the earliest", he said.

M.N. Shrinath, General Manager (Aircraft), signed the MoU on behalf of HAL, while Steve Timms, Managing Director (Defence Information, Training and Services), signed on behalf of BAeS. Chris Boardman, Managing Director (Military Air & Information), headed the BAeS delegation.



The Hawk Mk.132 is an advanced jet trainer (AJT) with tandem dual seats meant to provide basic, advanced flying and weapons training. The cockpit provides excellent field of view and the aircraft is equipped with inertial navigation/global positioning system, head-up display and hands-on throttle and stick controls.

The aircraft is being produced at HAL under licence from BAeS, and the first aircraft was handed over to IAF in August 2008. Production programme of 42 Hawks to IAF was concluded in 2011-12. Further, second contract was signed between IAF and HAL in July 2010 for supply of 40 Hawk AJTs and associated equipment. HAL has so far produced 25 aircraft and would be producing all the 40 aircraft by 2016-17. 



Cover:

The Modi Government has certainly made a visible change in the operational strategy on the borders. Field commanders have been given free hand to give a befitting response whenever Pakistani border troops violate the ceasefire on the line of control or international border and try to push infiltrators to our side.

Cover images: PIB, IAF

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Achche din... **not in yet**

One year in a five-year term is short for an assessment of performance of any government, more so one which has bequeathed a legacy of issues. The assessment so far for the Narendra Modi Government which came to power one year ago is a 'mixed one', considering the expectations of the people at large.

As we look back, a number of policy issues have been initiated and that the work is in progress. In this issue, we have top former military officials analysing the performance. General V.P. Malik (Retd) credits the present Defence Minister Manohar Parrikar of being a 'determined and fast decision maker'. We must remember that Parikkar who was the Goa Chief Minister was drafted into the Union Cabinet much later as a 'select pick' of Modi. Contrast Modi's and Parikkar's decision making to that of Manmohan Singh and A.K. Antony, the present two incumbents have shown considerable understanding of needs of the armed forces and have taken progressive steps.

General Malik has noted that Parikkar by holding regular meetings has got the acquisition and procurement machinery moving to make up the accumulated deficiencies of weapons and equipment. The Defence Acquisition Council chaired by him has accorded 'Acceptance of Necessity' for procurement projects worth over ₹1,00,000 crore. But he is faced with two major obstacles - lack of budgetary support and the bureaucratic red tape. What then are needed are radical changes in the systems, processes, work culture in the Defence Ministry and that is a seemingly tall order.

The Modi Government has not taken any action on the Naresh Chandra Committee report whose implementation is expected to improve civil-military relations within the Ministry, enable more cohesive decision making and promote inter-service integration and jointmanship.

On the defence industrialisation front, there has been much talk and inducement to persuade foreign original equipment manufacturers to bring the required technology and establish manufacturing partnership in India. The FDI limit has been increased from 26 to 49 per cent, but there is hardly any action on the ground. India is 142nd

in the 'Ease of Doing Business' index. According to our present Defence Procurement Procedure (DPP), it takes anything between 80 and 137 weeks to complete procurement procedure up to placing of orders. There is need to step on the gas.

In another analysis, Lt General V.K. Kapoor (Retd) has pointed out that the procurement procedures and the methodology of induction of new weapons and other systems are flawed and require revolutionary changes. What are the challenges ahead and what must be our capabilities to engage in future threats and challenges need reconsideration and restructuring. All of it should be in light of the likely availability of defence budgets in the future which currently are not even sufficient even to make up the voids and maintain the current force levels let alone modernising the force.

Air Marshal B.K. Pandey (Retd) has pointed out to the inordinate delay in the implementation of the OROP (One Rank, One Pension) scheme which was a part of the pre-poll commitment by Narendra Modi. The Prime Minister this week announced that it would be implemented soon. *Achche din* for the ex-servicemen, to begin with!

Happy reading!

A handwritten signature in blue ink, consisting of several overlapping loops and a long horizontal stroke at the end. The signature is written in a cursive, somewhat stylized manner.

Jayant Baranwal
Publisher & Editor-in-Chief



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GENERAL (RETD)
V.P. MALIK

Modi Government and the armed forces

The Modi Government has certainly made a visible change in the operational strategy on the borders. Field commanders have been given free hand to give a befitting response whenever Pakistani border troops violate the ceasefire on the line of control or international border and try to push infiltrators to our side.

PHOTOGRAPH: PIB



Prime Minister Narendra Modi addressing the officers and jawans of the Indian armed forces at Siachen base camp

When the National Democratic Alliance (NDA) came into power in the Centre on May 26, 2014, the general perception and expectations in the armed forces were that it will follow a proactive policy on the external security front and will be more sympathetic on the welfare issues of the armed forces personnel. The ex-servicemen expected that their long-standing demand of One Rank One Pension would be met in a few months, if not in weeks.

In a couple of my chance meetings with Narendra Modi during his election campaign, I had also requested for his attention to India's defence industry in order to reduce the high level of dependency on imported weapons and equipment, and on construction of War Memorial in New Delhi. He was prompt to include these items in his agenda.

How do I see the performance of the Modi Government on its first anniversary? Have *achche din* come for the armed forces?

During this first year, the government lost con-

siderable time by first giving temporary charge of the Ministry of Defence to Arun Jaitley, already burdened with Finance and two other ministries, and then appointing the present incumbent, Manohar Parrikar.

The Ministry of Defence has a huge range of policy making and implementation responsibilities: employment, upkeep and modernisation of the armed forces, defence research and development, defence acquisitions, procurement and production, welfare of ex-servicemen, and so on. It has a unique organisation and work culture, quite different from any other nation of the world. Since none of our political leaders have much knowledge or experience of military organisations, their functioning and traditions, both ministers lost considerable time in learning the ropes. I feel that Defence Minister Parrikar, who has never been in the Centre earlier, is yet to settle down while engaged in firefighting on issues which get highlighted in the media every day. A major lesson for the political parties, when in opposition, would be to follow the British 'shadow cabinet' system.



Prime Minister Modi addresses the officers, soldiers and air warriors of the Indian armed forces at Leh; Minister for Defence Manohar Parrikar interacting with the troops in Rajouri sector

The Modi Government has certainly made a visible change in the operational strategy on the borders. Field commanders have been given free hand to give a befitting response whenever Pakistani border troops violate the ceasefire on the line of control (LoC) or international border and try to push infiltrators to our side. The Chinese transgression at Chumar and Demchok on the line of actual control (LAC) saw a swift and strong reaction by the Army. It forced the Chinese to withdraw. During Prime Minister's recent visit to China, he has also flagged India's strategic and border related security concerns with China squarely.

Defence Minister Parrikar, unlike his UPA predecessor who was extremely cautious and took no decisions, appears to be a determined and fast decision maker. By holding regular meetings, he has got the acquisition and procurement machinery moving to make up the accumulated deficiencies of weapons and equipment. The Defence Acquisition Council chaired by him has accorded 'Acceptance of Necessity' for procurement projects worth over ₹1,00,000 crore. But he is faced with two major obstacles. These are: (a) lack of budgetary support. The 'capital budget' in last two financial years has been barely sufficient to meet the 'committed liabilities'. Unless the defence budget is enhanced substantially, there is hardly any scope to acquire new equipment. This is also the reason why the raising of the Mountain Strike Corps for the Northern front has been stalled. (b) Most of his efforts to expedite procurement issues continue to face the bureaucratic sloth for which the Defence Ministry is well known. So far, there is no evidence of any fundamental changes made in its systems, processes, work culture in the ministry and its relationship with the armed forces.

On two core (and urgent) issues which deeply impact military organisations, upkeep and their functioning, the Modi Government has taken no action so far. There is no progress on the Naresh Chandra Committee report whose implementation is expected to improve civil-military relations within the Ministry, enable more cohesive decision making, and promote inter-service integration and jointmanship. There has been no attempt to formu-

late and articulate a National Security Strategy, which is an essential guide for the revision of military force levels and doctrines to meet new strategic challenges. There is no progress on the cyber, aerospace and special forces commands.

On the defence industrialisation front, there has been much talk and inducement to persuade foreign original equipment manufacturers to bring the required technology and establish manufacturing partnership in India. The FDI limit has been increased from 26 to 49 per cent. But there is hardly any action on the ground. India is 142nd in the 'Ease of Doing Business' index. According to our present Defence Procurement Procedures (DPP), it takes anything between 80 to 137 weeks to complete procurement procedure up to placing of orders. There is a need to work out a comprehensive strategy and a holistic policy framework for this goal. This cannot be done by the Ministry of Defence alone. In May 2015, the Defence Minister has appointed a committee to undertake a review of the procedures and processes with a view to removing the bottlenecks and making the system more responsive to the needs of the armed forces. This committee is also expected to review the measures necessary to expedite 'Make in India' requirement of defence equipment. In my view, it will not be able to take a holistic view on defence industrialisation because there are many other aspects like land acquisition, environment, tax incentive, etc. involved to set up defence industry.

On the other ex-servicemen welfare issues, the government has given one positive indication. It has stopped the Directorate of Ex-Servicemen Welfare (DESW) from challenging every decision of the Armed Forces Tribunals given in favour of the petitioners in the Supreme Court. But due to inordinate delay on the OROP issue and Defence Minister's continuation with the much cursed DESW and its attitude, he has managed to alienate this clientele further.

Under Modi Government, *achche din* for the armed forces could be on the horizon. These are not in yet. **SP**

The writer is former Chief of the Army Staff.

According to our present DPP, it takes anything between 80 to 137 weeks to complete procurement procedure up to placing of orders.



LT GENERAL
PC. KATOCH (RETD)

One year of defence under Modi Government

The media is agog with TV debates, editorials and articles about the one year of the present government. However, as far as defence of the country is concerned, it is individual news items like 'Make in India', weapon system imports like Rafale, success of Dhanush (product of ToT on which the OFB-DRDO sat for decades), Army getting the Aakash system – the project actually having been conceived in the 1980s and host of contracts being signed as part of capital acquisitions under the defence budget.

The governmental defence-industrial complex headed by the DRDO is set to expand exponentially with some seven technology clusters.

The One Rank, One Pension (OROP) is jokingly being equated with the longest running Bollywood movie *DDLJ (Dilwale Dulhania Le Jayenge)* but that is diminutive in the overall context of defence of India. Yes, we have imported the Globemaster aircraft, big-ticket imports like 36 Rafale fighter aircraft, 15 Chinook and 22 Apache helicopters, 77B Howitzers and the like stand cleared, and deals like sniper rifles, modular bullet-proof jackets, light-weight ballistic helmets with communication gear, hand-launched mini-UAVs and third-generation anti-tank guided missiles are in the offing.

In addition, the governmental defence-industrial complex headed by the DRDO is set to expand exponentially with some seven technology clusters. Consequent to visits by the Prime Minister, many countries are eager to participate in the 'Make in India'. But first, for 'Make in India' to take off in the defence sector, it is imperative that the Defence Procurement Policy (DPP) is streamlined. It is envisaged that under a new policy, at least half of India's total weapon and equipment needs in the next 10 to 12 years (worth more than \$100 billion) could be produced domestically although analysts and military officers are divided about the wisdom of relying so heavily on the local defence industry to meet the military's needs quickly and effectively.

Under the new envisaged policy, the categories of 'Make (Indian)' and 'Buy and Make (Indian)' will be used for about half the weapon purchases, with these categories, tenders going only to domestic industry. But where is the new DPP, which should have been top priority for Ministry of Defence (MoD). It is reported that formulation of the new DPP has been entrusted to a committee comprised of former bureaucrats with one veteran military officer each from the Army, Navy and Air Force. The committee is to see how 'Make in India' can benefit the military. The committee is to submit its report by end June. It is not clear if the committee has any member(s) from the private industry, which should have been essential if we really are to break the logjam of 'Private Industry through DRDO' that has been the bane of indigenous defence production.

The new DPP actually should have been promulgated last year but if the committee working on it does not have private industry

participation, the government would do well to ensure this even if the mandate is extended by one-two months. Second, the vital issue that the Defence Minister must address is reorganising the Higher Defence Organisation. Presently, the military continues to be kept outside the strategic formulation of matters military and national security. We still are without a National Security Strategy (NSS) and a Comprehensive Defence Review (CDR) in absence of which streamlining defence procurement and military modernisation are sacrificed. The vital recommendation of the Kargil Review Committee and the follow-up Group of Ministers (GoP) Report to appoint a Chief of Defence Staff (CDS) has been ignored. Defence has been the most neglected sector in India for the past decade with the military saddled with a dysfunctional and inefficient model at the highest levels of the government. The Defence Secretary is charged with the defence of India, and MoD is not accountable to the military as the Service Headquarters are 'Attached Offices'.

A CDS with full operational powers should be appointed without further delay and HQ IDS completely merged with the MoD. It would be prudent for the government to seriously consider replacing MoD with a Department of Defence headed by the Defence Minister and manned by career military specialists, with civilian cells in Defence Production and Defence Finance. Changes as these would provide a boost to defence preparedness, usher in a Revolution in Military Affairs (RMA), evolve requisite strategies and policies including for national security, response to asymmetric war, defence procurements, R&D, technology acquisition and reorganising the defence-industrial base. Third, the foot soldier has always been the most neglected and does not even have a state-of-the-art personal weapon. This is despite the fact that we have been subjected to asymmetric threats and irregular conflict situation over past several decades.

The foot soldier must be given adequate priority by the MoD. Fourth, the political hierarchy must look at establishing a credible deterrence against proxy wars being waged by our adversaries. Credible deterrence would entail taking the sub-conventional war into the territory of adversaries who are waging proxy war against us. The recent statement that we should use terrorists to fight terrorists is only a small beginning. This needs to be given shape at the national level. Fifth, whatever has happened about a separate pay commission for the forces and having a military representative in the 7th Central Pay Commission? And, lastly comes the military veterans who all governments have never considered more than postscripts. The promised Veterans Commission and National War Memorial appear buried in the same dustbin as the NCTC. The attitude of the DESW towards the veterans as adverse and ECHS facilities remain woefully inadequate. As mentioned above, the only thing running presently is the promise of OROP. **SP**



AIR MARSHAL
B.K. PANDEY (RETD)

The year gone by – Not in vain!

As the Modi Government completed one year in office on May 26, the ongoing celebrations by the Bharatiya Janata Party (BJP) at the national level are being marred by a raging debate on its performance that is being evaluated against the commitments made in its election manifesto.

While the onslaught on the BJP-led government by all the opposition parties combined should have been expected, it is important to understand that in a large nation like India with a diverse political system under a federal structure of governance, collective decision making and problems of mind-boggling complexity that have remained unresolved for decades, 365 days is much too short a period to expect any dramatic turnaround across the board by any government. In any case, producing tangible results that are visible on the ground, is far more difficult and challenging than delivering speeches to win votes. However, what could justifiably be expected is that in the first year of office, the new government enunciate progressive policies for inclusive growth, set the template for the balanced development of all segments of the economy and above all ensure a convincing display of positive intent.

The initial indications of the approach of the NDA government towards the Indian armed forces and as to where they figure in its list of priorities was somewhat disappointing. It began with the appointment of Arun Jaitley, the Minister of Finance, as a part time Minister of Defence. This was particularly incongruous as defence figured high on the list of priorities in BJP's election manifesto. A permanent Minister of Defence was appointed only six months later. The lack of focus of the government of the day on defence was once again revealed in the allocation for defence in the budget for financial year 2015-16 presented by Finance Minister Arun Jaitley who held charge as Defence Minister. The allocation for defence was enhanced by a measly 11 per cent, a figure that was not adequate even to cater for inflation! This was particularly uninspiring for the armed forces as the budgetary allocation for defence did not cater for the inductions of a large number of weapon systems and platforms urgently required for capability building by all the three wings of the armed forces as an integral part of their respective modernisation plans that had been pending for years.

But credit must be given where it is due. Display-

ing the rare ability of out-of-the-box thinking to take on a problem head on when it came to a problem of national security, Prime Minister Modi found a way to break the logjam in the tender for 126 medium multi-role combat aircraft (MMRCA) that had been languishing for eight years and there appeared to be no solution in sight. Both the parties in the deal were not prepared to climb down from their respective positions that had led to a stalemate. Bypassing the stalled tender, the Prime Minister succeeded in arranging a government-to-government transaction for 36 Rafale fighter jets to start with. The Indian Air Force (IAF) needs to induct modern combat aircraft urgently to restore the strength of the combat fleet to the authorised level and regain a respectable level of operational capability.

Earlier on, two months after the BJP Government came into power, the pre-poll promise of speedy decisions on procurement of weapon systems was put into action with the then Defence Minister Arun Jaitley in his very first meeting of the Defence Acquisition Council (DAC) cleared procurements worth over ₹34,000 crore. Similarly, in May this year, the DAC headed by Minister of Defence Manohar Parrikar cleared a number of proposals including the single-vendor offer by Airbus-Tata consortium to replace the IAF's ageing fleet of 56 Avro aircraft and accepted Russia's offer to build 200 light-utility helicopters under the 'Make in India' initiative.

The DAC also cleared acquisition of 145 M777 ultra-light howitzers from the US under a government-to-government deal as during the UPA rule, the tender floated globally for this weapon system had been cancelled five times. But perhaps the most important exercise that the Minister of Defence has undertaken is the revamp of the Defence Procurement Procedure that had acquired a semblance notoriety as under this procedure over the last decade only one deal, i.e. for the Pilatus PC-7 Mk II basic turboprop trainer, had gone through successfully.

The government has the capability to deliver; but will need time. The nation needs to exercise patience. But what has disappointed the ex-armed forces community is the inordinate delay in the implementation of the revised pension scheme which was a part of the pre-poll commitment by the Prime Minister himself. **SP**



The Indian Air Force needs to induct modern combat aircraft urgently to restore the strength of the combat fleet to the authorised level and regain a respectable level of operational capability



LT GENERAL
VK. KAPOOR (RETD)

Progress in the defence sector in the past one year

It is high time that the nation carried out a fresh review of our defence capability in light of the changed global and regional environment and 'nuclearisation' of the region to decide on the overall strength of the armed forces which are even now organised and structured to fight full-scale conventional conflicts on land, sea and air

The present NDA Government was sworn in on May 26, 2014. To appreciate the actions of the government in the past one year in the defence sector we have to go back to check the reality that existed in May 2014 as far as the operational capability of the armed forces is concerned and then assess the policy changes/action taken. Let us start with the Army's operational readiness profile.

It was reported in the media that the former COAS, General V.K. Singh (Retd), had written to the Prime Minister on March 12, 2012, regarding the glaring deficiencies in the army. When the Generals age related controversy was raging this letter was deliberately leaked to the media. However the positive effect was that it revealed the apathy in the then UPA Government and the Ministry of Defence led by an indecisive Defence Minister. It highlighted that the mission reliability of mechanised vehicles was poor, the artillery was obsolete and inadequate, air defence was antiquated, armour was unreliable due to regular barrel accidents caused by mismatch between indigenous barrels and ammunition, night-fighting devices were insufficient, aviation corps helicopters needed urgent replacements, and holdings of all types of missiles, anti-tank and specialised ammunition was critically low. As if this was not enough, we may now add the lack of suitable assault rifles and carbines for the infantry and bullet-proof jackets. The overall list is too long to be counted here but suffice it to say that former Defence Minister Antony's 'lost decade' has left gaping holes in India's defence preparedness.

Similarly the Indian Air Force (IAF) is down to 34 squadrons against 42 authorised. This would dip to 30 squadrons by the end of this decade, as nine squadrons of MiG-21 and MiG-27s retire. Under the circumstances, the IAF is extending the life of many of its older generation fighters.

The state of the Indian Navy is equally dismal as far as their submarine fleet is concerned. With Pakistan acquiring modern submarines, and Chinese submarine strength increasing in overwhelming numbers, expanding India's submarine fleet became an obvious national priority.

While much discussion ensued, as it usually happens in India, the UPA Government did not fully wake up from its slumber. The way we treat our operational

preparedness can be seen by the recent CAG report of 2015 on Ammunition Management covering the period 2008-09 to 2012-13 which was tabled in the Parliament on May 6, 2015. It said that Army units were presently managing with just the 'Bottom Line' or 'Minimum Acceptable Risk Level' (MARL) requirements which averaged to 20 days instead of 40.

In light of the above inheritance what actions has the Modi Government taken to ameliorate the equipment situation in the armed forces? These are given in the succeeding paragraphs.

Re-energising the Ministry of Defence

Prioritisation. Prioritisation of projects was the first step. The Defence Minister found that the bureaucracy in the ministry — both civil and military — was sitting on some 400-odd big and small projects that were critical to the three armed forces. A thorough review revealed that nearly one-third of the 400-odd projects were now irrelevant. So they were discarded. About 50 projects were accelerated since they were of critical importance.

The Minister with his close aids identified critical schemes across the three services that needed immediate funding and implementation. These were put on fast track. The purchase of 50,000 bullet-proof jackets, for instance, was sanctioned on a fast-track basis similarly supply of Extreme High Altitude Clothing (for soldiers posted in Siachen and similar terrain) stuck for more than two years was also sanctioned. The Minister personally intervened and resolved the issue.

Committee for Revising the Defence Procurement Procedure. A 10-member Committee of Experts to suggest amendments to the existing DPP and formulate a new policy framework for defence acquisition has been instituted.

The terms of reference for the committee are interesting: It is mandated to (a) evolve a policy framework to facilitate 'Make in India' in Defence Manufacturing and align the policy evolved with the DPP 2013 and (b) to suggest requisite amendments to DPP 2013 to remove the bottlenecks in the procurement process and also simplify/rationalise various aspects of defence procurements. The Committee, made up of eight non-government and retired government officials and two serving bureaucrats from the Defence Ministry, has been asked to submit

its recommendations within 45 days.

Chief of Defence Staff. As regards the possibility of appointing a Chief of Defence Staff (CDS), an issue that has often kept the three forces divided. The Defence Minister in an interview to Karan Thapar on May 26, 2015, said that he was currently reading the Goldwater-Nichols Act (of the United States) that pushed through sweeping reforms in the American military almost 30 years ago. He said that he is also consulting various experts and people and by about July this year he would have a paper ready for presentation to the Cabinet.

Sanctions in Respect of the Army's Requirements

Light-weight Howitzers. The Army had for long been demanding 155mm/39-calibre light-weight howitzers, which can be airlifted, with a strike range of over 30-km range for the mountains. This government-to-government deal with the BAE Systems of the US, which had been stuck, has finally been cleared by the MoD. How long it takes get them on the ground remains to be seen.

Light Helicopters. On May 13, 2015, the Defence Acquisition Council (DAC) also cleared acquisition of 200 Kamov light utility helicopters (₹3,000 crore).

Mountain Strike Corps. The Mountain Strike Corps sanctioned by the UPA II for the Eastern Theatre will be sized to about 30,000 strong. Due to financial constraints it seems that the plan now is to raise a smaller rapid reaction force to be deployed on the Chinese border. The idea is to create an interventionist force that can operate in the mountains. In the second phase, the Army will likely add air assault capability and special forces if the above plan is approved.

Border Roads. Defence Ministry has approved fast-track road building along the disputed border with China.

Sanctions in Respect of the IAF Requirements

Replacements for Avro. ₹11,929 crore (about \$1.9 billion) Avro replacement deal was sanctioned by the Defence Acquisition Council in May 2015. This deal would be through the Tata-Airbus consortium for delivering replacements for 56 Avros to the IAF.

Apache attack helicopters and Chinook Heavy-lift Helicopters. India is to acquire 22 Boeing AH-64E Apache attack helicopters and 15 CH-47F Chinook heavy-lift helicopters for the IAF, valued at \$2.5 billion. As per media reports, the file is with the Ministry of Finance.

Mid-air Refueller Aircraft. Defence Minister informed the Rajya Sabha in a written reply on May 13, 2015, that the plan to acquire mid-air refueller aircraft for the Indian Air Force from Airbus is still on track.

Life Extension of Fighter Aircraft. IAF is extending the life of two Mirage 2000 squadrons, three MiG-29 squadrons and six Jaguar squadrons for 15-20 years. In March 2015, French vendor, Thales, handed over the first two upgraded Mirage 2000-I fighters in Paris. Over the next 7-10 years, Hindustan Aeronautics Ltd (HAL) will upgrade another 49 Mirage 2000s in Bengaluru for ₹12,100 crore. 69 MiG-29 fighters are being upgraded for \$964 million, an exercise the government says will be completed by 2016.

Induction of Tejas in Indian Air Force. IAF placed order for 20 light combat aircraft (LCA) Tejas, in initial operational clearance (IOC) configuration and 20 more Aircraft in final operational clearance (FOC) configuration. LCA Tejas has already achieved IOC in December 2013 and FOC is likely to be achieved by end of 2015.

Sanctions in Respect of Indian Navy's Requirements

Building of Indigenous Submarines. The Defence Acquisition Council has approved of a proposal to build six conventional diesel electric submarines indigenously; The acceptance of necessity

(AON) cost of the project is ₹18,798 crore (2005 cost). However, the final cost arises through the bidding/negotiation process. DAC has approved constitution of a 'Core Committee' to identify suitable Indian shipyards to bid for construction of six submarines.

Construction of Seven Stealth Frigates and Six Nuclear-powered Submarines Approved. In a major step towards building a formidable blue-water Navy for the future, the Modi Government has cleared the indigenous construction of seven stealth frigates and six nuclear-powered attack submarines. The cost is likely to be about \$16 billion.


India's Defence Acquisition Council clears Minesweeping Vessels. India's defence ministry has cleared a project worth ₹32,000 crore (about \$5.2 billion) for 12 minesweeping vessels to be made in the country during February 2015.

BrahMos for Navy. Six additional BrahMos units for Navy (₹2,700 crore) have been sanctioned by DAC.

Comments and Observations

The above paragraphs do not give a complete picture of the voids and deficiencies in the services. They show some of the major steps underway but they do not reflect or measure accurately the work required to undo the harm done by the previous government who remained sedentary on defence matters for more than a decade. The readers must appreciate that the size of the Indian armed forces is such that 10 years of total neglect have created voids that have had a highly deleterious effect on the capability of the armed forces to deliver victory in future conflicts. Today even if the government wishes to buy ammunition from the world market at short notice, no vendor will be able to meet our requirements in less than a few years in view of the immense quantities required. The same is the case in respect of important equipment such as fighter aircraft, submarines, light observation and surveillance helicopters for the army, other heavier weapons including air defence weapons, small arms such as assault rifles and carbines, and even personal clothing and accoutrement.

No one is impressed by the sanctions given by the Defence Acquisition Council because these sanctions reflect the start of the procurement cycle which is likely to extend up to three years or more and in fact in some cases such as the Rafale MMRCA it has taken nearly a decade already and their arrival will take another few years. In another case involving the assault rifle for the Army which has been in the pipeline for the past five years it is believed that after all the trials the MoD may cancel its 2011 tender for 66,000 multi-calibre assault rifle. Similarly the December 2010 tender to procure 44,618 5.56mm close quarter (CQB) carbines and 33.6 million rounds of ammunition, remains undecided. In the last one year many files may have been cleared but the effect on the ground is unlikely to be visible in the next few years due to the reasons explained above. Acquiring military capability is not about pushing files but making a decisive difference in the fighting capability of the armed forces on the ground. NDA Government so far is merely pushing files which does not impress the armed forces or the people of this country.

Our procurement procedures and the methodology of induction of new weapons and other systems are flawed and require revolutionary changes. Moreover it is high time that the nation carried out a fresh review of our defence capability in light of the changed global and regional environment and 'nuclearisation' of the region to decide on the overall strength of the armed forces which are even now organised and structured to fight full-scale conventional conflicts on land, sea and air. 



REAR ADMIRAL
S. RAMSAY (RETD)

Taking stock of naval acquisition plan

Amalgamation of six nuclear submarines into the beleaguered 30-years submarine force building and modernisation perspective plan and alongside developing the ancillary shore support facilities, infrastructure and the all-inclusive base could truly be a game changer

Past one year has witnessed a positive push forward by the government for the dormant schemes, especially for the sub-surface fleet where the capability gaps are widening, is indeed re-assuring. While the lost time cannot be made-up, it is hoped that the momentum gathering now should bring Maritime Capability Perspective Plan back on track. While the brief résumé in the succeeding paragraphs is by and large based on the recent pronouncements and the approvals of Defence Acquisition Council (DAC). Procurement and acquisition cycles run its own course with imponderable timelines.

Indigenous Aircraft Carriers

In the recent past the Government has accorded sanction for Phase-II for 40,000-tonne IAC-I to be commissioned as INS Vikrant and is currently under construction at Cochin Shipyard Ltd. The project has suffered undue delays, time and cost overruns, is now slated to be inducted by 2018-19 only.

Considering the complexity of design development and construction, systems integration, etc. the gestation period for IAC-II, to be christened as INS Vishal, could well span over 10-12 years. The project is receiving attention at the highest level with a view to ensure that its construction begins by the time Vikrant is rolled out.

During recently concluded Naval Aviation Seminar 2015 on April 30 and May 1, 2015, there were intense deliberations on 'Future Aircraft Carrier and Carrier Borne Operations' with the sole objective of hastening the design development and construction of Vishal. Scott Forney, Senior Vice President, General Atomics, made a comprehensive presentation on emerging technologies for future aircraft carrier and unveiled the powerful and futuristic electromagnetic aircraft launch system (EMALS). After several phases of successful trials ashore, EMALS has been approved for induction on board US Navy's under construction supercarrier USS Gerald Ford. Indian Navy, with the tacit support of the Government, are closely monitoring the development and have shown keen interest for induction of EMALS on IAC II, INS Vishal.

Multi-role Helicopters

After several years of ups and downs, finally the MRH

programme was reduced to a tender for just 16 aircraft which was opened on December 4, 2014, along with an option clause for another eight as immediate replacement for already phased out Seaking 42 and 42A during 1990-91. The final cost negotiations are still in the works with no defined timelines. Even if the contract for 16 S-70B MRH is signed now the deliveries will only materialise from 2018 onwards.

To keep the advanced light helicopter (ALH) of HAL afloat, Indian Navy is also buying 16 ALH despite the unresolved technical issues of wing-folding mechanism and take-off weight.

Naval Multi-role Helicopters

The original plan for acquiring 123 NMRH from the leading global vendors has been recently re-categorised as 'Buy and Make (Indian)'. This is aimed at promoting Indian industry in the aviation sector to tie up with global majors for the technology transfer and joint venture arrangements for the indigenous production of the aircraft. The government has ordered the capacity and capability verification of Indian industry to be cleared for participation in the tendering process. It is learnt that tenders will be put out shortly.

Naval Utility Helicopters

A requirement to procure over 100 Naval Utility Helicopters (NUH) from the leading global manufacturers was identified in the past. This programme was however scrapped last year and the 'Buy and Make (Indian)' categorisation was awarded to it.

Consequent to revised categorisation, several top Indian companies including Tata, Mahindra and Anil Ambani-led Reliance Group have displayed keen interest to participate in the nearly \$1.5 billion NUH programme. A large number of domestic firms have responded to the request for information issued by the government in October 2014. Most of the leading Indian industries, such as Punj Llyod, Bharat Forge, Mahindra Aerospace, Reliance Defence and Aerospace, Tata Advanced Systems and HAL have responded.

European major Airbus, AgustaWestland, Bell Helicopters and Sikorsky, as also Russian Kamov 226 helicopters are reportedly in negotiations with Indian industry to finalise their participation in 'Make in India' initiatives for both NMRH and NUH.



First of Scorpene submarines, Kalvari, undocked; Kavaratti – fourth ship of Project-28 launched at GRSE, Kolkata



US-2i Amphibious Aircraft

Indian Navy has shown interest in acquiring 12 Amphibious Aircraft US-2i built by Japanese firm ShinMaywa. The \$1.65-billion deal is being progressed as part of the Services Capital Acquisition Plan (SCAP) for 2015. Indian Navy requires the aircraft for search and rescue missions, inter-island communication, rapid response duties and reconnaissance of islands.

Project 15B, Guided Missile Destroyers

Approval has been accorded for a follow-on programme of four more guided missile stealth destroyers as Project 15B. The Project 15B ships will retain the same hull form as for its predecessor, Kolkata class and most of its systems. There will be some upgrades, structural changes in the superstructure to improve stealth, better sound and infrared suppression. The displacement of each ship will be approximately 7,000 tonnes, a 200-tonne addition over Kolkata class. Construction of the first of the class, INS Bengaluru, is already well underway.

Project 28, Anti-submarine Warfare Corvettes

The construction of Kamorta class next-generation anti-submarine warfare corvettes under Project 28 at the Garden Reach Shipbuilders & Engineers Ltd (GRSE) is progressing most satisfactorily. All the four corvettes are planned to be handed over to the Indian Navy by 2017. The basic design for Project 28 was specified by the Directorate of Naval Design which was converted into detailed design by GRSE.

Next-generation Missile Corvettes

To augment existing strength of missile corvettes, a brand new project of six stealth next-generation missile vessels (NGMVs) has been approved. The project has been categorised as the 'Buy (Indian)'/ 'Buy and Make (Indian)'. The design and technology specifications are under finalisation. The main envisaged capabilities of the new NGMVs will include stealth features, low radar, acoustic, magnetic and IR signatures, high endurance and credible advanced mine detection and anti-air capabilities.

Mines Countermeasures Vessels (MCMVs)

The Defence Acquisition Council has recently given the go-ahead to Goa Shipyard Limited for the construction of all eight MCMVs with the option of additional ships. The project is to replace 12 ageing Pondicherry and Karwar class minesweepers by 2020. Indian Navy requires at least 24 MCMVs to clear mines laid by enemy warships and aircraft to blockade harbours during war.

Project 75-I – Conventional AIP Submarines

With a view to re-visit the dormant Project 75-I, a high-level MoD committee had conducted a survey of Indian shipyards, both in public and private sectors including MDL, GRSE, Hindustan Shipyard Ltd., GSL, L&T, ABG Shipyard and Pipavav Shipyard to build six next-generation submarines with Air Independent Propulsion (AIP) System by 2022. Reportedly, the Committee has shortlisted L&T and Pipavav Defence & Offshore Engineering Company, in which the Anil Ambani Group firm Reliance Infrastructure has recently acquired management control. The tender under 'Buy and Make (Indian)' categorisation will be issued for transfer of technology with leading foreign collaborators and substantial manufacturing in India.

The Project 75-I submarines are expected to be bigger than the 1800-tonne Scorpene class currently under construction at MDL, Mumbai. The AIP systems will enable greater underwater endurance besides incorporating stealth, land-attack missiles capability and other technological advancements.

Nuclear Submarines

Recently, the Cabinet Committee on Security has approved plans for the indigenous development and construction of six nuclear-powered submarines. Arihant, India's first indigenously designed and constructed nuclear submarine currently undergoing sea trials is expected to join the fleet by the end of the year.

The plan to add six nuclear submarines is a modification of government's decision taken last year for Project 75-I. This initiative is an amalgamation of six nuclear submarines into 30 years submarine force building and modernisation perspective plan approved by the government way back in 1999, which includes six Scorpene class diesel-electric submarines and refurbishment and upgrading of the Sishumar and Sindhughosh class submarines.

Conclusion

The recent review of the dormant schemes of Indian Navy's MCPP by the government re-emphasises the imperatives for a stronger and rejuvenated Indian Navy to assume its strategic roles which is due to India's immense geographic advantage in the Indian Ocean. Tweaking the MCPP of Indian Navy by infusing newer initiatives of 'Make in India' to promote greater indigenisation, already a strong USP of Indian Navy, across the board for all ongoing projects and behoves well for much needed rejuvenation of Indian Navy. Amalgamation of six nuclear submarines into the beleaguered 30 years submarine force building and modernisation perspective plan and alongside developing the ancillary shore support facilities, infrastructure and the all-inclusive base could truly be a game changer. **SP**

Germany – Wooing India for subs and fighters

[By Ranjeet Kumar]

Lobbying for the submarine acquisition programme under P-75I of the Indian Navy has begun in a serious note with the visit of German Defence Minister Ursula von der Leyen to New Delhi and Mumbai from May 26 to 28, 2015. The request for proposal under the P-75I programme for acquisition of six submarines was released in October last, after years of deliberations in the Ministry of Defence (MoD). The German Defence Minister had extensive interaction with the Indian Defence Minister Manohar Parrikar and later the Prime Minister Narendra Modi on the issue of defence and security cooperation. Her visit will be followed by the visit of German Chancellor Angela Merkel in October during which the Chancellor is also expected to raise the issue of acquiring submarines from Germany. India has already acquired four HDW submarines, two and half decades ago and is working perfectly according to Navy sources.

During the later 1980s the Indian Navy was provided the two Type-209 HDW submarines in running condition and two were assembled later in the Mazagon Dock. There was option of assembling two more, but the German HDW also met the fate of the Swedish Bofors and cancelled the option of manufacturing two more in Indian shipyard. There were allegations of illicit transaction against the HDW and the then government in late 1980s cancelled the execution of the rest of the deal. There were talks of seven per cent kickbacks in ₹420-crore deal for four HDW submarines and the company was blacklisted by the Indian Government.

Later the German company got the reprieve from the Delhi High Court and is now once again free to join the race for six submarines under the P-75I programme.

The official release issued by the Ministry of Defence spokesman on the Indo-German talks has given a scant idea of the conversations but sources said that the two sides discussed the Indian plan to domestically manufacture six advanced submarines with foreign collaboration in an Indian shipyard under the 'Make in India' plan. The German Defence Minister Ursula referred to the 'Make in India' plan and offered to support this initiative in the field of submarines. She described the two countries as natural partners. Interestingly under the 'Make in India' plan the Ursula also proposed the manufacture of European fighter in India in collaboration with any Indian partner. Since the mission MMRCA (medium multi-role combat aircraft) is only partially accomplished with only 36 of the 126 aircrafts ordered from France, Germany has offered India to transfer of technology and know-how to make the Typhoons in India. Indian Air Force is in the dire need of acquiring around 10 fighter squadrons and will soon have to make a choice.

Regarding submarines, it will not be easy for Indian MoD to take

decision in favour of the Germans as there are others also in fray including the Russian Amur, the Spanish Navantia, the French DCN and even the Japanese Soryu submarine manufacturer may also be asked to join the race.

Sources said that Indian Shipyard Mazagon Dock had gained good experience of assembling the German submarines, but this time the government is seriously considering the issue of utilising the private sector shipyards. The government-to-government route adopted for acquiring the French Rafales may also be considered as the Indian Navy submarine strength has gone down at precarious low level and needs urgent augmentation of the fleet. The diesel submarine strength has come down to 13 and one nuclear-powered submarine INS Chakra is on a 10-year lease. Another Indian nuclear-powered submarine is under sea trial and may join the Indian Navy by the end of the year.

According to sources the Germans have offered their most advanced, recently out of the design table, the Type-216 submarines to India. The basic design of this submarine is based on Type-214, which is double hulled with two decks and includes a fuel cell, Permasyn motor and Lithium ion batteries. This submarine is also equipped with air independent propulsion technology, which the Indian Navy wants to have in all its future diesel submarines.

The submarine has a displacement of 4,000 tonnes and has a range of 19,300 km at 10 knots while its maximum speed is 20 knots. It has endurance of 80 days and has 6 x 21 torpedo tubes and can accommodate 18 torpedoes or anti-ship missiles. The sub has vertical launch system. Since this design is not yet proven, the Indian

Navy may ask for Type-214 submarines.

After hardselling the German military hardware in New Delhi during meeting with the top political brass in New Delhi the German Defence Minister flew in to Mumbai where she visited Western Naval Command Headquarters and met the Flag Officer Commanding-in-Chief Vice Admiral S.P. Singh Cheema and also visited the Indian Naval Ship Mumbai.

Trying to show the closeness between India and Germany on security issues Ursula had said, while addressing a meeting of Observer Research Foundation in New Delhi, "Prime Minister Modi made the case for international enterprises to set up shops in India and for closer collaboration with the German economy. But our focus today is not only on economic collaboration today it is also in security policy."

Later commenting on German Defence Minister's visit to India, the German Ambassador Michael Steiner said, "Her visit was a further boost for our strategic partnership at all levels. In October Chancellor Angela Merkel will visit India for the next round of inter-governmental consultations." The Germans are expected one again to push the case for German subs and fighters to be made in India in late October. **SP**



Dr Ursula von der Leyen with Narendra Modi



LT GENERAL
PC. KATOCH (RETD)

Hunt on for assault rifles

What the hierarchy needs to acknowledge is that in this age of sub-conventional and irregular warfare, the foot soldier must not be neglected. It has been said that during past several years that for the price of a mere squadron of tanks, the entire infantry can be armed to the teeth.

PHOTOGRAPH: Wikipedia



Indian Army Elite 9 Para Commandos with IMI Tavor TAR-21

As prelude to Prime Minister Narendra Modi's visit to China, Chinese Premier Li Keqiang in an interview to an Indian monthly magazine said that a growing China-India relationship is related to the welfare of the 2.5 billion Chinese and Indians and crucial to the peace and prosperity of Asia and the world at large. He expressed hope that Prime Minister Modi's visit will deepen strategic and cooperative partnership and serve inclusive development of both our countries. He expressed hope in achieving dynamic balance and sustainable growth in bilateral trade between the two countries. He mentioned that China's overseas investment in the next five years

will reach \$500 billion and 'Make in India' initiative and other programmes rolled out by India promises deeper practical cooperation, China already having decided to set up two industrial parks in India. As for China's proposed 'One Belt, One Road' initiative, he mentioned the Bangladesh-China-India-Myanmar Economic Corridor (BCIM) initiative, while saying China is open to India's views and suggestions regarding the 'One Belt, One Road' initiative.

For the foot soldier, the most important object is his personal weapon. In this context, the quest of the Indian Army for a state-of-the-art assault rifle has been long and continuing. The media has recently reported that a four-year hunt for a new-generation



5.56 x 30mm JVPC and Insas Rifle with 40mm UBCL; A soldier with an assault rifle

assault rifle may get extended as the global tender floated in 2011 for new-generation assault rifles with interchangeable barrels for conventional warfare and counter-insurgency operations is likely to be scrapped. Though the cancellation is not confirmed, other options are being looked at.

Provision of new generation assault rifles for the 382 infantry battalions had been termed 'Priority I' project to address the festering neglect of the infantry and the void of a state-of-the-art assault rifle. Foreign firms like Colt (US), Beretta (Italy), Sig Sauer (Europe), Ceska (Czech) and Israel Weapon Industries (IWI) had participated in the trials for the double-barrel rifles; 5.56 x 45mm primary barrel for conventional warfare and 7.62 x 39mm secondary barrel for counter-terror operations. At the time of floating the tender in 2011, much was said about why an assault rifle with interchangeable barrels was being sought but this obviously was a conscience decision taken by the Army, which had approval of the Ministry of Defence (MoD).

The plan was to go for direct acquisition of 65,000 of these new-generation assault rifles at an estimated cost of around ₹4,850 crore, to equip the 120 infantry battalions deployed on the western and eastern fronts. The Ordnance Factory Board (OFB) was to then subsequently manufacture over 1,13,000 such rifles after getting transfer of technology (ToT) from the foreign vendor or go for joint venture (JV). The new-generation rifle was to weigh around 3.5 kg with advanced night-vision, holographic reflex sights, laser designators, detachable under-barrel grenade launchers and the like.

The foot soldier generally is forgotten in the race of big-ticket weapon systems; fighter aircraft, helicopters, ships, tanks, missiles, artillery and the like. If the direct procurement of 65,000 new-generation assault rifles is being scrapped, it is not the first time that the infantry will be suffering such setback. In 1980, 17 x 5.56mm assault rifles from 11 countries were imported by the MoD, aim being to equip 3 x parachute commando battalions and 3 x parachute battalions (latter part of the Parachute Brigade), funds for which had been reserved in the Sixth Army Plan. The Army completed comprehensive trials in 1980 in accordance with the trial directive issued by Army Headquarters. However, the case went into cold storage. It emerged that an anonymous letter was received by the then Defence Minister alleging \$10,000 had been paid to place a particular rifle at the top. Then, in 1985, the MoD floated a query as to why the AK-74

assault rifles had not been tried out. The Army replied that these 17 weapons were imported by MoD without reference to the Army and the AK-74 in any case was of 5.45mm bore whereas the entire Indian Army was planning to be switch to 5.56mm assault rifles. In this war of red tape, the Sixth Army Plan lapsed and so did the funds for the six battalions that were to be equipped.

So, seven years after the trials of these imported rifles were completed in 1980, the parachute commando and parachute units went to Sri Lanka under the IPKF carrying the unwieldy 7.62 SLR rifles to battle the LTTE armed with AK-47 assault rifles. It is later that the Indian Army would import one lakh AK-47 rifles (then costing only \$300 apiece) and give some 100 per infantry battalion in the IPKF. Meanwhile the above-mentioned 17 x 5.56mm imported rifles were handed over to the DRDO-OFB to develop an indigenous version, and after 15 excruciating years emerged the 5.56 INSAS which was nowhere close to the top 10 assault rifles of the same category available globally. Frankly, the DRDO-OFB should have gone in for an AK 47 with a matching night sight, which with double strapped filled magazines gives enough firepower to the soldier.

Even today, soldiers guarding the frontline on Siachen Glacier keep a loaded AK-47 next to the personal issue INSAS because there is no guarantee that the latter would not jam at the critical fleeting moment. Since we failed to indigenously produce a state-of-the-art assault rifle and other small arms, even the PMF, CAPF (BSE, CRPE, ITBP), SPG and even special units like Force 1 and Greyhounds resorted to imports. The Army Special Forces and parachute units imported 5.56mm Tavor assault rifles and similarly the MARCOS and Garud too went in for imported small arms.

While the procurement of the new-generation rifle is uncertain, the makers of the Kalashnikov have recently announced that they would be setting up an AK-47 factory in India this year in conjunction with an India company (name withheld), and that they plan to produce 50,000 assault rifles per year. What the hierarchy needs to acknowledge is that in this age of sub-conventional and irregular warfare, the foot soldier must not be neglected. It has been said past several years that for the price of a mere squadron of tanks, the entire infantry can be armed to the teeth. Considering the present and future asymmetric threat, it is not only the infantry but all foot soldiers, especially of the security sector, that need to be equipped with state-of-the-art assault rifles with night-fighting capability. **SP**

Parrikar asks shipyards to compress delivery schedules of warships

The Defence Minister Manohar Parrikar has asked shipyards, both public and private, to compress delivery schedules of warships and other platforms for the Navy and Coast Guard. Addressing the Naval Commanders' Conference in New Delhi, Parrikar said in the last one year the modernisation plan of the Navy has gained significant momentum with induction of several new platforms.

The Minister expressed satisfaction with the impetus being imparted towards indigenous development of naval capabilities. He said each commissioning of a ship or launch of a submarine built in India is a proud moment for everyone and the nation as a whole. Parrikar said all 48 ships and submarines presently on order for the Navy are being constructed in Indian shipyards, which is in keeping with the Prime Minister's 'Make in India' vision. **SP**



Naval Commanders' Conference concludes

The first edition of this year's biannual Naval Commanders' Conference was conducted at New Delhi from May 25-28, 2015. Chief of the Naval Staff Admiral R.K. Dhowan chaired the conference and addressed the Navy's top leadership on myriad issues including enhancing operational readiness of the commands, infrastructure development, human resources management, coastal security, cyber security in the Indian Navy and foreign cooperation initiatives, amongst others.

Emphasising that combat readiness of the fleet and other operational formations is of prime importance and focused efforts, as hitherto, are required at all levels to ensure sustained growth of the Navy into a formidable multidimensional force, the Admiral complimented all ranks of the Navy in maintaining a high tempo of operations during the last six months, including the response shown during the fresh water crisis in the Maldives and evacuation of people of various nationalities from Yemen.

The indigenisation programme of the Navy was discussed and the CNS stressed that indigenisation of platforms, weapons, sensors and equipment, through DRDO, public and private sectors as also through in-house efforts, should remain an area of focus. He emphasised that the "Roadmap for the Navy's expansion and growth would continue to remain anchored on self-reliance and indigenisation". He also urged the naval designers and technical officers to work in close coordination with DRDO so as to develop niche technologies for the future Navy.

During the course of the conference, the CNS released the Maritime Infrastructure Perspective Plan (2015-27) and reviewed progress of various infrastructure projects that are in the pipeline and shall contribute towards capacity building. The need to adopt sustainable green technologies, recycling and waste management to reduce carbon footprint of our bases, in pursuance of the energy goals of our country as also to have 'zero carbon footprint' were also stressed by the CNS. An integrated roadmap and action plan to develop ecologically sustainable infrastructure was also released by the CNS. Plans for conduct of International Fleet Review and induction plan for Scorpene submarines were also reviewed by the CNS.

Consolidation and strengthening of the rapidly expanding aviation arm of the Navy was discussed. Deliberations were also held on infrastructure and manning requirements for new induction aircraft, including unmanned aerial vehicles and enhancement of surveillance in our area of interest.

The CNS reviewed the 'Coastal Security Construct' and was satisfied with the steady progress made in strengthening the coastal security apparatus, viz. induction of FICs, ISVs and NC3 I project. He asserted the need to remain ever vigilant and focused towards our coastal security responsibilities, through proactive coordination with other maritime agencies and coastal states. Deliberations were also held to strengthen 'Cyber Security in the Indian Navy'. **SP**

Raksha Mantri visits Siachen Glacier



The Raksha Mantri Manohar Parrikar visited the Siachen Glacier recently and was accompanied by General Dalbir Singh, Chief of Army Staff. They were received at the Siachen Glacier Base Camp by Army Commander Northern Command and General Officer Commanding Fire and Fury Corps.

The Raksha Mantri carried out an aerial survey of the Siachen Glacier and on reaching the Siachen Base Camp laid a floral wreath paying tribute to the martyrs at the Siachen War memorial. He addressed the troops and applauded their efforts for the defence of the country's frozen frontier and placing the call of duty above all.

The Raksha Mantri thereafter arrived at Leh and interacted with soldiers at the Rinchen Auditorium. He was briefed on the prevailing military situation along the borders of Ladakh. **SP**

G.S. Reddy, new Scientific Advisor to Raksha Mantri

Dr G. Satheesh Reddy is one of the renowned experts in navigation and avionics technologies. He joined DRDO in 1986 and led the conceptualisation, design, development and productionisation of inertial sensors, navigation schemes, algorithms & systems, calibration methodologies, sensor models, simulation along with development of satellite navigation receivers and hybrid navigation systems. Under his leadership, advanced products and varieties of avionics systems have been produced and successfully flight tested in strategic programmes of the country. As Project Director, Dr Reddy led the design and development of ring laser gyro-based INS system, MEMS-based INS system, sea-guard reference system and ship navigation system strengthening the country's self-reliance in high accuracy and long-range navigation and also successfully developed a 1,000-kg class guided bomb.

As Director RCI, he led the development of avionics technologies in critical areas of inertial systems, embedded computers, control, real time software and simulation, power supplies, RPF seekers, antennae, flight instrumentation for various defence programmes - Agni A1, A2, A3, A4, A5, Prithvi, Dhanush, Astra, Akash, underwater missiles, BrahMos, Nirbhay, Helina, Nag, MRSAM, Programme AD - PDV interceptor, two-stage ship launched target, AAD and other defence programmes. Dr Reddy spearheaded a number of technology development, mission mode, S&T projects delivering variety of systems to multiple projects in different capacities. He led the development and production of GPS+GLONASS+GAGAN on Module (G3OM) receiver and System on Chip (SoC) bringing in quantum jump in miniaturisation of onboard avionics. He also led the development of IIR Seeker for anti-tank and long range BMD applications and played a crucial role in development of high accuracy accelerometers for the long-range precision navigation.

Dr Reddy graduated in Electronics and Communication Engineering from JNTU, Anantapur, and received his MS and Doctorate from JNTU, Hyderabad. He is a Fellow of various Academies and Institutes like the Indian National Academy of Engineering, Royal Institute of Navigation, London, Royal Aeronautical Society, London and a Senior Member of many other professional/scientific bodies in the country and abroad. He has been awarded Full Member Diploma and inducted as a Foreign Member of the Academy of Navigation & Motion Control, Russia, and is an Associate Fellow of American Institute of Aeronautics & Astronautics, USA (AFAIAA). In recognition of his distinguished contributions, Computer Society of India conferred on him the Honorary Fellowship (HFCSI). He is also an Honorary Member of ACDOS and a National Member of IFAC Austria.

Dr Reddy is a recipient of several prestigious awards which includes the Indian Science Congress Association Homi J. Bhabha Memorial Award, DRDO Young Scientist Award, Agni Award for Excellence in Self-Reliance, DRDO Scientist of the Year Award, etc. He is a Member of the Governing Council/Academic Senate of reputed academic institutes. **SP**



S. Christopher appointed new DG, DRDO

The Government of India also appointed Dr S. Christopher, Distinguished Scientist & Programme Director (AEW&C) and Director, Centre for Air-Borne Systems, DRDO as Secretary, Department of Defence Research and Development-cum-Director General, DRDO for period of two years from the date of taking over charge.

Dr Christopher obtained his BE (Hons) in Electronics & Communication Engineering from University of Madras and M.Tech. in Microwaves and Radar Engineering from IIT, Kharagpur. He joined IIT, Madras, as Project Associate and carried out research in Microwave Antenna Design and Near-field Measurement Techniques. He obtained PhD in Antennae and Measurement Techniques from IIT, Madras.

Dr Christopher worked for the Bharat Electronics, Ghaziabad, as Senior Engineer and later joined LRDE as Scientist-'D' and rose to Scientist 'G'. He led a team to create the automated planar near field measurement facility at LRDE for the first time in the country. He was Project Director for LCA MMR and led the team for designing and developing slotted array technology, which was used for several airborne and missile projects including export to Poland. He was also Project Director for ASP project and also for development of the Maritime Patrol Airborne Radar, Super Vision 2000, for the Indian Navy.

Dr Christopher joined the Centre for Air-Borne Systems (CABS) in 2004 and assumed charge as Programme Director for the Airborne Early Warning and Control (AEW&C) programme. He was appointed Director, CABS, in addition to his responsibility as Programme Director (AEW&C). He was elevated to the rank of Distinguished Scientist in 2012.

Dr Christopher is a Fellow of the National Academy of Engineers (FNAE), Aeronautical Society of India (AeSI) and the Institution of Electronics & Telecommunication Engineers (IETE). He is a member of SEE, IEEE and is a recipient of many awards including Scientist of the Year Award in 1998. **SP**



India and Vietnam sign defence cooperation

India and Vietnam signed a joint vision statement on defence cooperation for the period 2015-20 here on May 26. The statement was signed by the Defence Minister Manohar Parrikar and the Vietnamese Minister for National Defence General Phung Quang Thanh at the end of the delegation level talks in New Delhi.

A memorandum of understanding on cooperation between the Coast Guards of the two countries was also signed in the presence of the two Defence Ministers. The Vietnamese Defence Minister was on a three-day official visit to the country at the invitation of Parrikar. At the delegation level talks, the two sides discussed wide-ranging issues concerning defence cooperation, including cooperation in the area of maritime security. Both sides reiterated their commitment to further enhancing the ongoing defence engagements between the two sides for mutual benefit. **SP**

Ashok Kumar Gupta is Secretary (Defence Production)



Ashok Kumar Gupta (1981 batch Tamil Nadu cadre) who was Special Secretary in the Department of Defence Production has taken over as the new Secretary (Defence Production), succeeding G. Mohan Kumar. Gupta is a post-graduate in public administration from Syracuse University (USA) and an M.Phil degree holder in defence and strategic studies from Madras University.

He has worked in various capacities in different ministries and departments including Health and Family Welfare, Defence, Industry and Commerce, Small Scale Industries, Urban Development, Personnel and Shipping. **SP**

G. Mohan Kumar takes over as the new Defence Secretary



G. Mohan Kumar has taken charge on May 25 as the new Defence Secretary, succeeding R.K. Mathur. Belonging to the 1979 batch of IAS, Odisha cadre, Mohan Kumar is a post-graduate in chemistry and an MBA from UK. He has worked in various ministries and departments including Steel, Water Resources, Rural Development, Fisheries, Export Development and VAT Administration. **SP**

PHOTOGRAPHS: PIB, Indian Navy

Indo-Singapore bilateral naval exercise SIMBEX held

The Indian Navy's Eastern Fleet under the command of Rear Admiral Ajendra Bahadur Singh, Flag Officer Commanding Eastern Fleet, is on an operational deployment to South Indian Ocean and South China Sea. As a part of this deployment, INS Satpura, indigenously-built guided missile stealth frigate, commanded by Captain Hari Krishnan and INS Kamorta, the latest and indigenous anti-submarine warfare corvette, commanded by Commander Manoj Kumar Jha had arrived at Singapore on May 18, 2015. These ships participated in IMDEX-15 and also the bilateral naval exercise SIMBEX-15 with Singapore Navy from May 23-26, 2015.

Operational interaction between Indian Navy and RSN commenced with ASW training exercises in 1994, which has grown steadily over the past 20 years. The operational interaction was formalised as an annual bilateral exercise 'SIMBEX' in 1999. Since its inception, SIMBEX has grown in tactical and operational complexity. It has transcended the traditional emphasis on ASW to more complex maritime exercises, involving various facets of Naval operations such as Air Defence, Air and Surface Practice Firing, Maritime Security and Search and Rescue. SIMBEX-14 was conducted from May 22-28, 2014, off Port Blair in which RSN ships Valour and Independence participated, while Indian Navy was represented by guided missile corvettes Karmuk, Kuthar and maritime patrol aircraft Dornier. This year Indian Navy is represented by INS Satpura with integral helicopter, INS Kamorta and long-range maritime reconnaissance anti-submarine (LRMRASW) aircraft P-8I. **SP**

Appointment of Assistant Chief of Naval Staff (Air)

Rear Admiral Philipose G Pynumootil, took over as Assistant Chief of Naval staff (Air) on promotion. An alumnus of the Lawrence School, Lovedale and the National Defence Academy (67th course), he was commissioned in the Indian Navy on January 1, 1986.

A rotary wing pilot qualified on Sea King 42 B/C and Alouette helicopters, he has served as Flight Commander INS Delhi, Senior Pilot - Marine Commando Flight & INAS 330, and commanded the carrier borne ASW Sea King Squadron, INAS 330. He was also the commissioning Commanding Officer of the Naval Air Station, INS Shikra. A former Instrument Rating Examiner on Sea Kings, the officer has flown extensively during Operation Pawan, Sri Lanka and Operation Restore Hope, Somalia. Prior to taking over his current appointment, he served as the Principal Director of Aircraft Acquisition.

The Flag officer has commanded the 1241 RE corvette, INS Nashak, the missile corvette INS Kirpan and the Guided Missile Frigate INS Brahmaputra, besides doing a tenure as Executive Officer of the Guided Missile Destroyer INS Delhi. The officer was awarded the Nao Sena Medal for his tenure in command of INS Brahmaputra.

The Flag Officer has undergone the Staff Course at the DSSC, Wellington, Tamil Nadu and the Higher Air Command Course at the College of Air Warfare, Hyderabad. He is a post graduate in Defence Studies and holds an M Phil (Strategic Studies). He is an alumnus of the Royal College of Defence Studies, London and attained an MA (International Relations) from Kings College, London. **SP**





AIR MARSHAL
B.K. PANDEY (RETD)

Highways – A force multiplier for the IAF

Early morning on Thursday, May 21, this year, the Indian Air Force (IAF) carried out a successful trial landing by a Gwalior-based Mirage 2000 combat aircraft on a highway in the state of Uttar Pradesh. Part of the eight-lane highway that connects Greater Noida to Agra, also known as the Yamuna Expressway, was cordoned off for the fighter aircraft to land. While there has been a case in the past of an emergency landing on a highway by a small single-engine aircraft from a civil flying club in India following loss of power on the engine, this was the first time that a fully serviceable fighter aircraft of the IAF has carried out such an exercise and not without a specific purpose. The aim of the exercise was to validate the concept of using a highway as an emergency landing strip for military aircraft.

The use of highways as emergency landing strips for military aircraft as a concept is not new. In fact, this concept was developed during the World War II in Germany where the highways called 'autobahns' were used for landing fighter aircraft. This practice did not remain confined to Germany but spread across Europe into Sweden, Finland and Switzerland. On the other side of the Iron Curtain, this practice was adopted by Russia, Czechoslovakia, Poland. Other countries where parts of highways are designed and marked for use by military aircraft during an emergency are Israel, North Korea, South Korea, Taiwan, Singapore and Australia.

Even in the neighbourhood in Pakistan, there are two highways (or Motorways as these are referred to there), namely M-1 connecting Peshawar to Islamabad, and M-2 running between Islamabad and Lahore that have two 9,000-foot-long stretch on each of the highways designated for recovery of military aircraft during war. Beginning 15 years ago, Pakistan Air Force has carried out training exercises involving landing on the designated strips on the highways by the F-7P and Mirage III fighter aircraft, C-130 Hercules tactical transport aircraft and Super Mushak trainer aircraft. The breakthrough by the IAF in its effort to adopt the international practice of developing infrastructure and the capability to use highways for limited operations by military aircraft in an emergency, has evidently not been achieved too early. However, it is better late than never!

An efficiently managed model wherein designated landing strips on highways in the proximity of operational airbases are available during war will have a force multiplier effect.

A full-scale war would normally begin with aerial action called Counter Air Operations that are meant to degrade the capability of the enemy to launch air operations. Counter Air Operations consist

of sorties undertaken by deep strike combat aircraft whose primary targets are the runways at military airfields in enemy territory and of course aircraft on the ground as well as other associated infrastructure that support air operations. Since the runways at most if not all of the IAF airfields are vulnerable to similar action by the enemy air force, IAF aircraft that are airborne for missions may find that the runway is suddenly not available for use as it would have been punctured by craters on account of bombing by enemy aircraft. It is under these circumstances that alternative landing sites on highways in the vicinity of the operating bases could save the day for the IAF.

Modern military transport aircraft such as the C-130 Hercules or even the C-295 from Airbus Defence and Space that the IAF is to acquire shortly, are capable of operating from runways of restricted length and even from semi-prepared surfaces that are not classified as regular runways. For such aircraft, landing and take-off from highways do not pose any problems as far as the operating surface is concerned. However, combat aircraft, especially those that come in the high performance category, require landing strips of standard length to operate safely.

Also, for any military aircraft to operate from highways, there are certain prerequisites. It needs to be understood that during war, the requirement to recover an aircraft on an alternative runway, particularly a fighter aircraft, would arise on short notice. This would be an emergency situation as a combat aircraft returning from a mission

would generally be low on fuel and would not be able to remain airborne for long. It is necessary for the organisation therefore to have a well defined, equipped and responsive system in place to activate the designated strip on the highway to facilitate recovery of aircraft in difficulty or distress. This would involve traffic control measures on the highway where the aircraft is to land, availability of fire fighting and medical evacuation facilities as well as at least a make-shift Air Traffic Control. Besides, the segments of a highway designated for use as a runway ought to have removable median or divider and ought not to be lined with trees or other obstructions such as lamp posts. During war therefore airbases would have to be specifically tasked to be prepared to activate the landing strip on the highway at practically a moment's notice. A military aircraft cannot be expected to land on a highway with normal traffic flowing. The consequences of such a landing would quite obviously be disastrous.

An efficiently managed model wherein designated landing strips on highways in the proximity of operational airbases are available during war will have a force multiplier effect. **SP**



India chooses Russian Helicopters' Ka-226T

In May 2015, India's Defence Acquisition Council (DAC) approved a major raft of deals on a non-tender basis for its armed forces, which included the Ka-226T light helicopter made by Russian Helicopters (part of state corporation Rostec). Russian Helicopters is awaiting official communication from the Indian side regarding the deal.

The DAC's decision does not mean that a contract will be concluded immediately. Rosoboronexport, in partnership with Russian Helicopters, will, on the Russian side, enact the contract for the delivery of helicopters under the 'Make in India' programme, and the helicopters will be produced by Russian Helicopters' Kumertau Aviation Production Enterprise.

"The light multi-role Ka-226T performed well in tests carried out in India and is the optimum choice for India's armed forces," said Russian Helicopters CEO Alexander Mikheev. "The contract envisages the construction of a record number of Ka-226T helicopters, and will require considerable work and collaboration with Indian industry. It is important to note that Kumertau Aviation Production Enterprise will be crucial in fulfilling this order, as it will play the main role in enacting this project."

The Ka-226T light helicopter, designed by the Kamov Design Bureau (a Russian Helicopters company) was certified in Russia in March this year. It had previously participated successfully in the light utility helicopter tender announced by India's Defence Min-



istry to renew its fleet of light helicopters, announced in 2003 and withdrawn last year. Tests on the Ka-226T amid India's mountainous terrain and hot climate enabled it to demonstrate its considerable advantages over the competition produced by western companies.

The modern multi-role Ka-226T helicopter, like its predecessor the Ka-226, is produced by Kumertau Aviation Production Enterprise, which boasts unique experience in producing helicopters designed by the Kamov Design Bureau. For example, Kumertau Aviation Production Enterprise produces the world-renowned Ka-32 helicopter. **SP**

Air Chief Marshal Arup Raha's US visit

Air Chief Marshal Arup Raha, Chairman Chiefs of Staff Committee and Chief of the Air Staff, returned after a five-day visit to the United States of America.



During his visit, the Air Chief Marshal Raha held meetings with General Mark Anthony Welsh III, Chief of Staff, US Air Force. He also had discussions with Heidi Grant, Deputy Under Secretary of the Air Force, International Affairs.

As part of his programme, the Air Chief visited the USAF Headquarters at Pentagon and Hurlburt AF Base in Florida. While at Nellis AF Base Nevada, he held discussions pertaining to the Red Flag Exercise at the US Air Force Warfare Center. On the final leg of his tour he interacted with PACOM Commanders and also visited the memorial of the Pearl Harbour attack of World War II fame where USS Arizona was sunk.

The visit was aimed at fostering goodwill and enhancing bilateral relations between

the two Air Forces. **SP**

Appointment of Vice Chief of the Air Staff

Air Marshal Birender Singh Dhanoa AVSM YSM VM took over as the Vice Chief of the Air Staff (VCAS) on June 1, 2015. He was commissioned in the IAF in June 1978 as a fighter pilot. He is an alumnus of Rashtriya Indian Military College, the National Defence Academy and the Defence Services Staff College, Wellington.

Air Marshal Dhanoa is a qualified flying instructor and has flown various types of fighter aircraft in his distinguished career. During the Kargil Operations, he commanded a fighter squadron and himself flew numerous night strike missions in the mountainous terrain.

He has the distinction of having held a number of the important operational appointments including Station Commander of a fighter base and leader of an Indian Military Training Team abroad. He has also served as Chief Instructor (Air) at



the Defence Services Staff College, Wellington, Assistant Chief of the Air Staff (Intelligence) at Air Headquarters and Senior Air Staff Officer of two operational Commands. Prior to being appointed as Vice Chief of the Air Staff, the Air Marshal was the Air Officer Commanding-in-Chief of the South Western Air Command.

In recognition for his meritorious services, he was awarded Yudh Seva Medal (YSM), Vayusena Medal (VM) in 1999, and Ati Vishisht Seva Medal (AVSM) in 2015 by the President of India.

Air Marshal Dhanoa has taken over as Vice Chief of the Air Staff from Air Marshal Ravi Kant Sharma PVSM AVSM VM ADC, who relinquished the office on May 31, 2015, after 40 years of glorious service in the IAF. **SP**

Air Marshal Ravinder Kumar Dhir assumes charge as SWAC AOC-in-C

Air Marshal Ravinder Kumar Dhir took over the charge as Air Officer Commanding-in-Chief (AOC-in-C) of South Western Air Command (SWAC) on June 1, 2015. **SP**



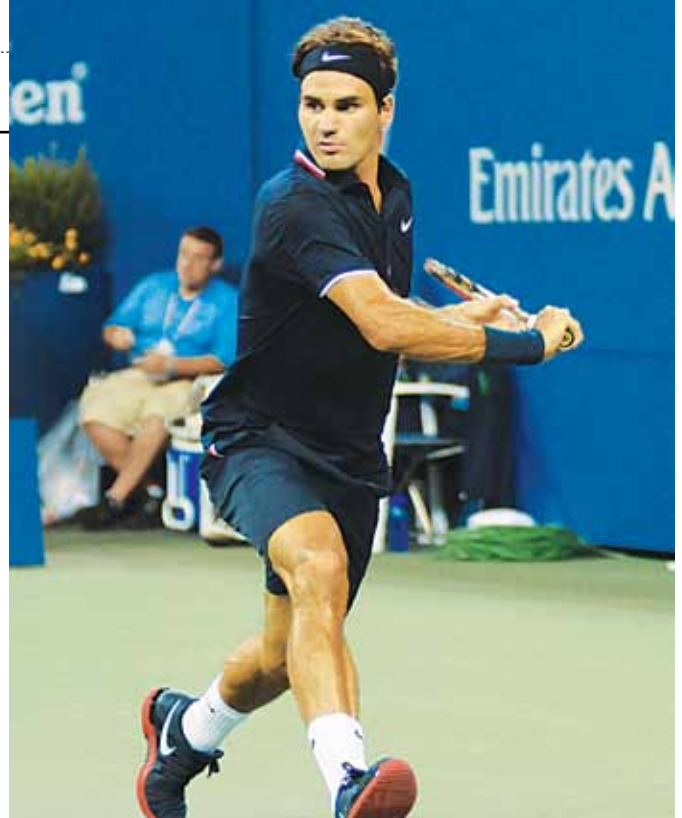
Roger Federer upset with fan barging onto centre court

Tennis ace Roger Federer was upset when a young fan dashed onto the centre court at Roland Garros and took a selfie, after Federer's first round match win at the French Open. The youth climbed from the stands and came on to the court. While taking a selfie he put his hand on the shoulder of the 17-time Grand Slam champion.

Angered by the intrusion, Federer later said the security lapse should not have happened on the Philippe Chatrier court. "I'm not happy about it. Obviously not one second I'm happy about it."

"It's true for all players that you have to feel safe when we play, feel safe on the courts," Federer said. "It shouldn't happen too often. It's happened twice in two days." Earlier, several young fans approached him during practice and the security team did not react.

The incident also brought to mind the April 1993 attack on then-No. 1 ranked tennis player Monica Seles, who was stabbed in the back during a tournament in Germany. **SP**



World's largest naval base breached – sailor killed



A civilian approaching the USS Mahan, a US Navy destroyer at the world's largest naval base, took a weapon from a sailor who was standing watch and used it to shoot and kill another sailor who was trying to help his embattled colleague, Navy officials said recently.

Navy security forces then killed the suspect, who was authorised to be on Naval Station Norfolk in Virginia and did not bring his own weapon on base, according to Captain Robert Clark, the base's Commanding Officer. The identities of the civilian and the sailor who were killed have not been released.

No other injuries were reported from the encounter on the USS Mahan, a guided-missile destroyer. It wasn't immediately clear why the civilian approached the ship or if he ever had access to it previously.

PHOTOGRAPHS: Wikipedia

The shooting comes months after a September incident at the Washington Navy Yard, in which a gunman — identified as a contractor and former Navy reservist — killed 12 civilian workers before being shot to death. **SP**

Serious lapses uncovered in Hillary Clinton's e-mail accounts

A group of hackers, IT bloggers, and systems analysts have uncovered serious lapses in security of clintonemail.com, the domain under which Hillary Clinton established multiple private e-mail accounts when she was Secretary of State, according to data shared with Fox News.

The findings call into question Clinton's confident declaration, at a hastily arranged news conference in New York recently, that "there were no security breaches" in her use of a private server. One prominent figure in the hacker community, bolstered by long experience in the US intelligence community, has undertaken to build a virtual 'replica' of Clinton's server configuration in a cyberlab, and has begun testing it with tools designed to probe security defences. This individual has shared details of the Clinton system not disclosed publicly but legally obtainable.

Among other things, outside experts have managed to trace the most recent location of Clinton's server – something she did not specify during her news conference and a subject of much speculation, as the server's physical placement would provide early clues about whether the data stored on it was adequately secured against compromise by private-sector hackers and foreign intelligence services.

Fox News had reported that, with the aid of software named Maltego, experts had established that the server is up and running, receiving connectivity to the Internet through an Atlanta-based firm called Internap Network Services Corporation. **SP**



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