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Chief of Army Staff visits Jaipur

Ceneral Bikram Singh, Chief of Army Staff (COAS), accompanied by Bubbles Singh, President Central Army Wives Welfare Association (AWWA), visited HQ South Western Command at Jaipur on June 22-23, 2014. They were received by Lt General Arun Kumar Sahni, GOC-in-C, South Western Command, and Vineeta Sahni, President Regional AWWA, South Western Command, on June 22, 2014.

During his visit, the COAS addressed all officers of the Command. While 400 officers were present in Jaipur, the others were addressed using video conferencing. The COAS complimented them on the professionalism exhibited during various exercises, including those with foreign armies. He reiterated the prevailing external and internal security environment and emphasised the efforts required to overcome



the myriad security challenges. The COAS stated that transformation and modernisation of the armed forces, including induction of state-of-the-art equipment, jointness and development of network centricity were the prerequisites for operational readiness and excellence. He stressed upon the rich military traditions, ethos and the value system and the importance to remain committed and well focused to discharge our onerous responsibilities, while catering for all contingencies.

He further reiterated that Veterans were part of our extended family and it is our sacred duty to look after them. He complimented the Sapta Shakti Command for taking numerous initiatives in this direction. The COAS also visited 61 Cavalry being the Honorary Colonel of the Regiment and interacted with all ranks of the unit. **SP**



Cover:

Article 370 defines the special status of the J&K State in the Union of India and specifies that except for defence, foreign affairs, communications and ancillary matters (as specified in the instrument of accession), the Indian Parliament need concurrence of the State Government for applying all other laws.

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Time to revisit Article 370!

One of the first controversies that erupted after Narendra Modi took over as the Prime Minister was the issue of Article 370. When Jitendra Singh, Minister of State in the Prime Minister's Office (PMO), raked up the issue, all hell broke loose with the Jammu and Kashmir Chief Minister, Omar Abdullah, tweeting that Article 370 was the only constitutional link between J&K and the rest of India and that "long after Modi Government is a distant memory either J&K won't be part of India or Article 370 will still exist."

It is a precarious situation and it remains to be seen how the BJP-led Government is going to deal with it. Prime Minister Modi is scheduled for his first official visit to the Kashmir Valley on July 4 wherein security and other issues (including Article 370) are reportedly going to be discussed.

Article 370 specifies that except for defence, foreign affairs, communications and ancillary matters, the Parliament needs the State Government's concurrence for applying all other laws. Thus the state's residents live under a separate set of laws, including those related to citizenship, ownership of property, and fundamental rights, as compared to other Indians. There has been demand by the BJP and the Rashtriya Swayamsevak Sangh (RSS) for abrogation of Article 370.

We have two comprehensive viewpoints on Article 370, one by General (Retd) V.P. Malik and the other by Lt General (Retd) P.C. Katoch, both giving differing points of view, but the bottomline is the necessity to revisit Article 370. General Malik has said that in the present circumstances, it would be preferable to chip away Article 370, as has been done in the past, instead of rushing for its elimination. General Katoch has a more radical approach stating that it should have been consigned to history as it was a temporary provision.

Another important issue we have in this issue is that of creating a defence industrial base. Vice Admiral (Retd) Anup Singh has outlined how in the last few years, defence needs have been opened up to the private sector and foreign investment, with the aim of restructuring and developing the defence industry, largely untapped by the private sector. In consonance with this thinking, the new government has proposed further liberalisation of foreign direct invest-

ment in defence, going up to 100 per cent. This, indeed, is a forward-looking decision and it is sincerely hoped that India not only gets the best of technologies, but also is able to build its own defence industrial base at the earliest.

In our National Agenda section, we have another interesting piece by Ranjeet Kumar on the new government's foray in nuclear diplomacy by ratifying the India specific safeguard agreement called the additional protocol of the International Atomic Energy Agency. At the same time, France is stepping up its defence and nuclear cooperation with India, while it is awaiting for the Rafale deal to come to a closure. These are big steps being taken by the Narendra Modi Government and would certainly have a bearing on the robustness of the government.

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

Jayant Baranwal
 Publisher & Editor-in-Chief



GENERAL (RETD)
VP. MALIK

Article 370 and its relevance today

The Central Government is also to blame for creating self-induced doubts about Kashmir in and outside the State, not being able to win the hearts and minds of Kashmiri Muslims of the Valley and delaying physical and mental integration of the State with the rest of India.

Elections time in a democracy are sensitive. Controversial issues get raised, and challenged. If that leads to emotional debates, old scars get uncovered and the healing process is further delayed. When the Bharatiya Janata Party (BJP) called for removal of Article 370 in its general election manifesto, there were strong protests from their rivals and in the Jammu and Kashmir (J&K) Valley. Political parties in J&K were quick to take up cudgels with the new NDA Government as this gave them a rabble-raising issue for exploitation in the forthcoming state elections. The main issue now is how to handle Article 370 in the coming years. But before that, it is necessary to understand how Article 370 came about and what its real status is today.

The State of J&K joined India as per the Instrument of Accession signed on October 26, 1947. When the Constitution of India was being framed, the Maharaja of J&K issued a proclamation on November 25, 1949, stating: "That the Constitution of India shortly to be adopted by the Constituent Assembly of India insofar as it is applicable to the State of J&K, govern the constitutional relationship between this state and the contemplated Union of India and shall be enforced in this State by me, my heirs and successors in accordance with the tenor of its provision; that the provisions of the said Constitution shall, as from the date of its commencement, supersede and abrogate all other provisions inconsistent therewith which are at present in force in this State."

This proclamation makes it clear that there were no pre-conditions from the Maharaja of J&K or from Sheikh Abdullah, then Prime Minister, when J&K acceded to India.

Then why was Article 370 added to the Constitution of India? Evidently, Sheikh Abdullah thought about it after November 1949. He was able to convince Pandit Nehru who was known for his idealist and romantic notions about Kashmir and several other tribal border states. Nehru did not want culture and traditions of the people of these states to be disturbed. However, when viewed strategically through hindsight today, that notion has been responsible for the delay in the integration of these states with the rest of India.

Experts justifying Article 370 give two other important reasons: (i) it was politically expedient to establish credibility of secular India wherein a

Muslim majority state could enjoy same status and privileges as the rest of India (thus trashing the 'two nation' theory), and (ii) to avoid international pressure due to the self-inflicted wound of taking the J&K issue to the United Nations which had passed the plebiscite resolution. It would have been difficult to win the plebiscite in J&K-if that was to be held-without the support of Sheikh Abdullah.

In my view, the Government of India made two strategic errors in 1948-49; unnecessarily taking J&K issue to the United Nations in January 1948 when the India-Pakistan war was going in our favour, and including Article 370 in the Constitution despite strong opposition from Dr Ambedkar and some other members of the Constituent Assembly.

Article 370 defined the special status of the J&K State in the Union of India and specified that except for defence, foreign affairs, communications and ancillary matters (as specified in the instrument of accession), the Indian Parliament needed concurrence of the State Government for applying all other laws. The Article was inserted as a 'temporary provision', to be replaced as and when 'the wishes of the people of J&K had been ascertained on the larger issue of merger.' It must be noted, however, that Article 370 notwithstanding, Article 1 of the Indian Constitution made it abundantly clear that J&K was/is an integral part of India.

The J&K State held its first elections along with rest of India in October 1951. Sheikh Abdullah's party won all 75 seats in the assembly. Before working on a J&K Constitution, he negotiated 'The Delhi Agreement 1952' with New Delhi. This Agreement permitted the State to have a distinctive identity under its own Constitution, flag, and nomenclature of its Chief Minister and Head of the State. This agreement also brought the State under limited jurisprudence of the Indian Constitution and appellate jurisdiction of the Supreme Court of India. A provision for taking over governance in the eventuality of breakdown of law and order was discussed but could not be finalized due to difference of opinion.

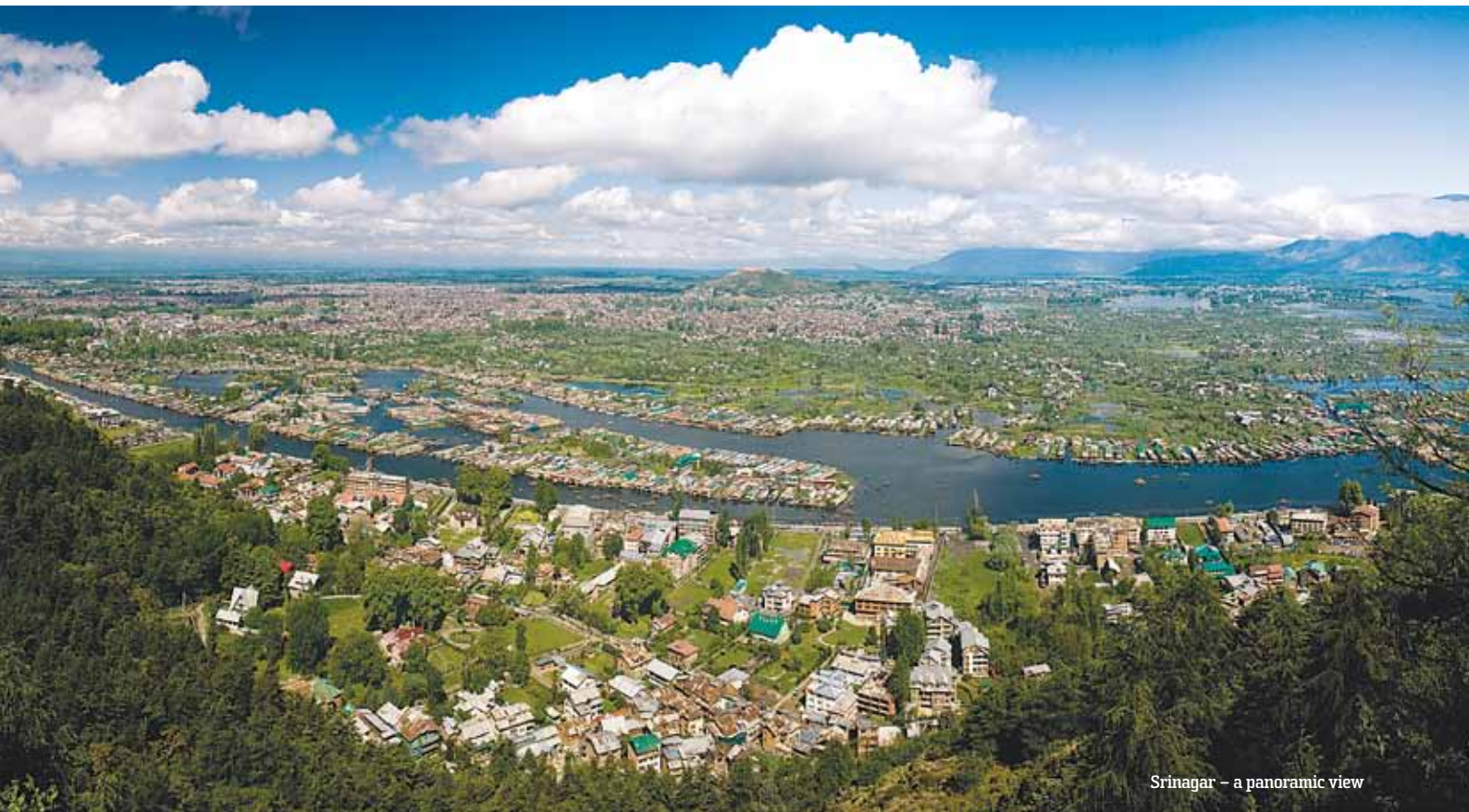
In 1953, Sheikh Abdullah did a volte-face on his relations with India. He attempted to balance greater autonomy for the State and finality of accession with India. This obviously was not acceptable. The Sheikh had to be arrested on charges of 'inciting communal disharmony; fostering hostile feelings towards

India and treasonable correspondence with foreign powers.' These events sowed fresh seeds of alienation among the masses in J&K till he returned to power in 1974.

Meanwhile, in February 1954, the Constituent Assembly of J&K confirmed the legality of its accession to India and the State accepted the new bi-cameral Constitution which became operational on 26 January 1957. It allowed full jurisdiction of the Supreme Court and the Comptroller and Auditor General, thereby further cementing the ties of the State with the Union of India. In terms of Centre-State fiscal relations, the State was brought at par with all other Indian states.

Since then, a series of Presidential Orders have eroded Article 370. In fact, there is virtually no institution of Indian Republic which does not include J&K within its scope and jurisdiction. The only substantial differences from many other states relate to permanent residents and their rights; the non-applicability of emergency provisions on the grounds of

In early 1980s, when I was commanding a brigade in Jammu, nobody in that area felt the need for abrogation of Article 370. In fact, at an opposition parties' conclave in Srinagar in 1982, leaders of national parties, including some which form part of the NDA today, had declared that the special constitutional status of J&K under Article 370 should be preserved and protected in letter and spirit. The abrogation demand is a recent phenomenon; more amongst people of Jammu and Ladakh region. The demand is less due to any restrictions contained in Article 370 and more due to regional polarisation and prejudices which have emerged due to poor governance, communalism and electoral politics in the State. The Central Government is also to blame for creating self-induced doubts about Kashmir in and outside the State, not being able to win the hearts and minds of Kashmiri Muslims of the Valley and delay-



Srinagar – a panoramic view

'internal disturbance' without the consent of the State legislature.

There are two issues which often obfuscate perceptions about J&K and Article 370. The first is related to restriction on citizens from outside the State to buy property in Kashmir. This, however, is not unique to J&K. There are similar provisions for several states which are listed in Article 371 and Articles 371-A to 371-I of the Constitution. The second is about disqualification of women of the State from property rights due to the definition of Permanent Residents given in the State Constitution based on the notifications issued in April 1927 and June 1932 during the Maharaja's rule. There is no direct provision for it in Article 370 and this matter can be easily resolved through civilian activity and judicial interventions.

ing physical and mental integration of the State with the rest of India. The relevance of Article 370 as it exists today is more emotional, less substantive. Irresponsible statements and rabble-rousing debates during elections can do more damage to the situation in J&K. Now that the long drawn counter-insurgency and terrorism campaign is about to end and Pakistan seems to be going down the hill, we should avoid raking up this sensitive issue. In the present circumstances, it would be preferable to chip away Article 370, as has been done in the past, instead of rushing for its elimination. 'Erosion' may be a better policy than 'Abrogation'! **SP**

The writer is former Chief of the Army Staff.



LT GENERAL (RETD)
P.C. KATOCH

Article 370 – consign it to history!



A soldier guards the roadside checkpoint
outside Srinagar International Airport

**Article 370,
included in the
Constitution as
a temporary
provision,
should have
been gradually
abrogated but
this has not
happened in past
67 years**

PHOTOGRAPH: Wikipedia

The media is agog with discussion on Article 370 that had been mentioned by Prime Minister Narendra Modi during General Elections and post formation of the new government, a remark by the PMO had caused the Jammu and Kashmir (J&K) Chief Minister go ballistic to the extent that he had the audacity to say that if Article 370 is repealed, J&K will not remain a part of India – as if J&K is the personal fiefdom of his dynasty. That too when the present Chief Minister's grandfather was arrested for treasonous acts as part of the 'Kashmir Conspiracy Case' is well known, while his father's role is suspect not only in rigging the J&K elections in 1987 (that kick-started insurgency in J&K) but also in orchestrating the massacre and exodus of Kashmiri Pundits from J&K and holidaying in London while Kashmir burned. Thousands of Kashmiri Pundits (estimates ranging from 1,40,000 to 3,50,000) became refugees in their own country living in abject penury ever since. That

similar ethnic cleansing was attempted in Kishtwar region of J&K last year under the present Chief Minister is also too well known, with direct complicity of one of his junior minister overlooked through a face-saving inquiry.

The fact that Article 370 was much ill conceived and was allowed to continue under the facade of being a "secular" democracy is apparent from what this section implies, its main fallout being: one, J&K citizens have dual citizenship; two, J&K national flag is different from the Tricolour; three, J&K Legislative Assembly has term of six years compared to five year term in other states of India; four, therefore it is no crime to insult India's national flag and symbols; five, orders of Supreme Court of India are not valid in J&K; six, Parliament of India may make laws in extremely limited areas of J&K; seven, if a woman of J&K marries a person of any other state of India, she loses citizenship of J&K; eight, in contrast if a woman from J&K marries a Pakistani, the husband (Pakistani) gets citi-

zenship of J&K; nine, RTI does not apply to J&K, RTE is not implemented, the Comptroller and Auditor General of India (CAG) does not apply and Indian laws are not applicable; ten, Sharia law is applicable to women in J&K; eleven; Panchayats have no rights; twelve, minorities (Hindus and Sikhs) have no privileges by way of reservations or otherwise; thirteen, Indian firms cannot invest in J&K so how do you develop the region, and the like. So, it should be clear that even a radical or terrorist from Pakistan that forcibly marries a J&K girl automatically becomes a J&K citizen – something that has been happening for years by design. Additionally, since Pakistan has been infiltrating the rabble across, the incidence of AIDS in J&K has gone up alarming, information of which the state authorities are deliberately hiding but can be verified. Compare all this with Pakistan having changed the demography of PoJK (Pakistan occupied J&K) and China having overwhelmed six million Tibetans by settling seven million Han Chinese in Tibet.

According to two times J&K Governor (1982 and 1989), Jagmohan, the poorest state in India is Bihar, but today Kashmir gets eleven times more Central assistance than Bihar, the plan expenditure [money allocated for development in the Five Year Plan], today it is 100 per cent financed by the Central Government, and between 40 and 45 per cent of the non-plan expenditure (allocations outside the Plan to run the day to day expenses) are met by the Central Government. More importantly, the non-plan expenditure includes the day to day expenses like the salaries of the government employees. More significantly, Jagmohan says, “When I was in Kashmir the first time, I did a lot of developmental work and people forgot about Article 370 and other (political) issues. There was justice, the roads were built, everything was done and people were happy; their attention was diverted from the narrow issues. It is vested interest who keeps this Article 370 and do not allow outside investment to come”. Though Jagmohan did not elaborate further but the fact remains that enormous amount of money flowing in without accountability has led to massive corruption and insurgency is being kept deliberately alive. A 2013 NIA report had revealed that some ₹600 crore have been diverted within India to fund terror in J&K and ₹98 crore were diverted from the J&K Affectees Fund within a single year. Trucks carrying goods from J&K to PoJK are carrying overpriced invoices and the surplus money coming from Pakistan is being given to terrorists through traders. There are business concerns within J&K assisting infiltration of terrorists from Pakistan. Surely the Omar Abdullah Government is aware and complicit in all this. The State Government has also been deliberately making meager allocations to the regions of Ladakh and Jammu. Jagmohan, however, is direct about keeping the feeling in J&K being different, by saying, “It benefits people who want the power like the Abdullah family; they have exploited this Article, not allowing outside people to come to the State. They have thus created their own sheikhdom...this Article 370 does not help anyone, it hampers economic development. It only helps politicians and narrow-minded people who work only for their selfish interest”.

Article 370 was worked out in late 1947 between Sheikh Abdullah, who had by then been appointed Prime Minister of J&K by the Maharaja and Jawaharlal Nehru, who kept the Kashmir portfolio with himself and kept Sardar Patel, the Home Minister, away from his legitimate function. Hence Nehru is answerable to all acts of commission and omission, consequences of which we are suffer-

There is no limitation or restriction on the power of the Parliament to constitutionally repeal any provision of the Constitution, which includes Article 370, subject to judicial review. So, Parliament can invoke Article 368 and repeal Article 370 without the need to take any concurrence of the J&K Legislature.

ing till date as far as J&K is concerned. While Mountbatten persuaded Nehru to take the J&K issue to the UN, Sheikh Abdullah (later arrested in the Kashmir Conspiracy Case) persuaded Nehru to give special status to J&K – both grave strategic oversights. The Pakistanis were on the run and here was no reason to halt the Indian forces to make the enemy vacate whole of J&K. Amusingly, Nehru had then said that Article 370 was a temporary provision and will get eroded over a period of time – but nothing was ever done to repeal it. If that was by design, one can only conjecture. But Nehru could have well done it by design. Why else would Nehru keep the Home Minister Sardar Patel away from the deliberations and enactment of Article 370? Why did Nehru take no action to repeal it over so many years when he himself promised it was a temporary measure? Article 370, included in the Constitution as a temporary provision should have been gradually abrogated but this has not happened in past 67 years.

Then is the issue of repealing of Article 370 and the legality or otherwise about gaining concurrence of State Government by placing it before the Constituent Assembly of J&K, prior to President of India through public notification declaring that this Article will cease to be operative, which is the main plank of Omar Abdullah and subject of the debate. According to J. Sai Deepak, Senior Associate, Litigation Team, at Saikrishna & Associates, writing in Centre Right India on May 28, 2014, the question that needs to be asked is, does the proviso mean that the consent of the State Assembly of J&K as it exists today is a mandatory prerequisite to abolition of Article 370 by the President through a notification? His legal interpretation is that each time the Constitution is amended, the Parliament itself assumes the role of a “Constituent Assembly” since it reconstitutes the Constitution, which applies to J&K’s constitution and its “parliament”/Legislative Assembly as well which is governed by the Constitution of Kashmir, 1957. He points to the importance of this because Article 370 (clause 2) makes a reference to “Constituent Assembly for the purpose of framing the Constitution of the State” i.e. the Assembly as it existed when the Constitution of J&K was being drafted/framed, and not to the State Legislature as it exists today. The crowning alternative J. Sai Deepak provides is that Article 370 can simply be repealed by invoking Article 368, which gives the Power of Parliament to amend the Constitution and procedure; notwithstanding anything in this Constitution, Parliament may in exercise of its constituent power amend by way of addition, variation or repeal any provision of this Constitution in accordance with the procedure laid down in this article. Hence, there is no limitation or restriction on the power of the Parliament to constitutionally repeal any provision of the Constitution, which includes Article 370, subject to judicial review. So, Parliament can invoke Article 368 and repeal Article 370 without the need to take any concurrence of the J&K Legislature.

Whatever the legalities, these surely have been taken into consideration by the new government and logically the issue will be debated in the Parliament at an appropriate time. It is in the interest of India including the people of J&K to repeal Article 370, let the region and the public prosper and integrate with India. The nation certainly cannot be allowed to be kept hostage by the Abdullah dynasty for their own vested interests. **SP**



VICE ADMIRAL (RETD)
ANUP SINGH

Need to develop a defence industrial base

Self-sufficiency or self-reliance are terms that become meaningful only when a competitive and well spread out defence industry is allowed to flourish within the country. Encouraging big players to assume OEM status and win contracts will also prove beneficial in enhancing economies of scale through efficiency of the shop floor.

PHOTOGRAPH: DONS



In its sixth edition since inception, the Defence Procurement Procedure 2013 (DPP 2013) has, for the first time, provided clarity on how indigenisation is to be achieved. However, while the articulation of this long cherished dream of self-reliance is in perfect harmony with idealism, the path towards its accomplishment may not be as easily achievable as the document aims through definition.

Till recently, the business of procurement did not consider the private sector capable of, or “reliable enough”, to deliver requisite hardware in terms of weapon platforms or specialised systems. This led to the business of ‘nominating’ defence PSUs (DPSUs) for such procurements that were intended to be produced indigenously. The risk of attendant time and cost overruns in the case of new technologies was never given forethought and sometimes even quality of the final product was questioned by the customer (the defence services). For decades therefore we have continued to rely on the import option for most capital procurements while the

Indian private sector waits in the wings to capture some (at least some!) opportunity to seriously compete and prove themselves. They feel that they have, so far, not been considered as partners in the business of defence production in India. What, then, is the answer to the business of true indigenisation that could reverse the current import – home-grown ratio of 70:30 to a satisfying 30:70 and will result in conspicuous strategic benefits? Without doubt, the answer lies in determining the components of, and establishing a defence industrial base in India.

First, one needs to understand the full meaning of this construct. When originally coined the term defence industrial base (DIB) drew direct lineage from political science and implied a Government’s industrial assets that directly or indirectly produced hardware for the armed forces. Today’s definition from the US military establishment describes this term as “the worldwide industrial complex that enables research and development, as well as design, production, delivery and mainte-

nance of weapon systems, subsystems, components or parts to meet US military requirements”.

In our case, however, psychologically even now the term is taken to mean its original significance – that of being the Government’s industrial assets or, the public sector including PSUs and ordnance factories. Its genesis lies in the initiation of the state-owned industry in the early 19th century when the East India Company established the Cossipore Gun and Shell Factory. Every ordnance factory that came up thereafter added to the Government’s kitty of defence production network. The chain of defence PSUs that surfaced post-independence, served to strengthen the view that the only network of industries that could be relied upon to support indigenous defence production was the public sector. In other words, the ‘business’ of defence was considered as being the sole responsibility of the Government’s establishments as none else could be relied upon to deliver. This feeling has continued to persist amongst all stakeholders despite details to the contrary in consecutive editions of the DPP. Contents of the latest edition have sought to change this perception and make the private sector an equal partner.

To say that the Indian private sector is capable of contributing to high technology needs of India’s defence forces, would be an understatement. An industry that has taken the world by storm from pharmaceuticals to automobiles and electronics to information technology, imbibing cutting-edge technologies through joint ventures and produce contemporary weapons is certainly not a tall order. To take stock of the national potential for design, development, production and support of defence platforms and equipment, we need to clearly understand capabilities of both, the public and the private sectors in India.

Despite being amongst the top 10 military spenders in the world, India has not progressed in creating a DIB to move towards assured self-reliance. Therefore our annual imports still cost us between five and six billion dollars. There are two primary reasons for this situation. Firstly, one has to remember that we missed the industrial revolution. The other is the total dependence on the public sector for most of our indigenous effort. One has to contrast this situation with other large spenders – in both developed as well as the developing world. In all such countries, large defence industries support national needs and even earn foreign exchange through export of Defence equipment. In India, on the other hand, defence requirements are met primarily through a mix of imports and Government owned facilities (PSUs/ordnance factories).

Each year, we spend between 40 and 42 percent of our total defence budget on equipment purchases/modernisation. Despite the existence of nine DPSUs and 39 ordnance factories, the products from these units meet only about 10 per cent of the total annual modernisation requirement of our defence services. While some of these industries provide a few capital goods, much of their produce includes ammunition and low-end stores. The three types of DPSUs that produce true capital products are HAL; BEL/BDL/ECIL/BHEL, and, the defence shipyards. There too, HAL has been engaged in “licensed” production of aircraft which begins in each project with CKD assembly and gradually moves towards in house production with outsourcing of some components of airframe/avionics from the market. Only some projects have had complete indigenous production of major items like engines, etc.

In the case of DPSUs, true transfer of technology (ToT) is yet to be witnessed in any contract with a foreign principal. Most contracts find only an “industrial arrangement” thus leaving these PSUs at their existing threshold of technology. The case of defence shipyards, however, is better. A bulk of the naval platform is produced with indigenous raw material and build-technology that has been harnessed through five decades of experience. Thus, almost 70 per

cent of a ship by volume is of indigenous content. However, when it comes to value, almost 35 to 45 per cent of the cost of a frigate or destroyer still gets spent on import of propulsion systems, most weapons, some sensors and special equipment.

Though, it must be emphatically stated that the one conspicuous success story in the state-owned sector is that of the conventional and strategic missile arsenal – developed by DRDO and produced by PSUs like the Bharat Dynamics Limited (BDL).

The private sector has mainly been involved in supply of raw materials, semi-finished products, components and spare parts to defence PSUs, ordnance factories, base workshops of Army, base repair depots of Air Force and dockyards of the Navy. Amongst the large private sector defence players are Tatas (TCS, Tata Motors); Larsen & Toubro; Bharat Forge; Godrej; HCL; Kirloskar; Mahindra; Ashok Leyland; Wipro. These are mainly involved in supplying customized software, vehicles, machinery including gensets and propulsion engines (licensed production). None of them have yet entered into weapon – sensor development or specialised engineering items like indigenously developed propulsion systems. Why? Because they haven’t got the opportunity despite having got requisite licenses. Many times the reason points to the chicken and egg paradigm. The Government will trust a private player only on the basis of past expertise or a proven product. The private industry cannot afford to set up an expensive assembly line without orders/assured returns.

Since enunciation of the first industrial policy after independence up until the year 2002, munitions, aircraft and warships were meant to be the exclusive preserve of the public sector. It is only a couple of years ago that the private sector was permitted to enter (bid) areas of military systems/platforms. Yet, in 2005, the Standing Committee on Defence had to record that despite 55 years of independence; procurement of capital equipment remained reliant on imports. Eight years later, the story is no different and the inherent inertia may well keep it that way in the future as well, unless full participation by the private sector is witnessed soon. This is so because despite opening up to the private sector, a level playing field is not perceived by many hopefuls in that sector. Before it comes to tendering in big ticket acquisitions like warships or missile systems, many a times the prerogative of ‘nominating’ DPSUs has (so far) been exercised. This trend neutralises competition and introduces time and cost overruns caused by inadequacies of the system. This monopoly has also meant that the private sector has neither had the incentive nor the opportunity to introduce cutting-edge technologies – whether through ToT tie ups or through their own innovation.

In the case of Naval orders, a few private shipyards like Pipavav, Bharti and ABG have recently entered the business of shipbuilding – but all in the non-weapon category, like offshore patrol vessels (OPVs), Training ships and yard craft. Another industry major, L&T, has established exclusive expertise in submarine construction and in specialised vessel construction and holds promise in warship construction as well. The field of warship construction does not require an assembly line, but only expertise in integration; therefore it is easier for existing commercial shipyards to venture into this field.

An important aspect of neglect of the private industry is that most of the intermediate and component level suppliers fall in the category of medium, small and micro enterprises (MSMEs). Small and medium enterprises play a vital role in the economic development of any country. But in advanced economies they form the upstream chain for supply of parts to the original equipment manufacturers (OEMs). In India, since there are hardly any OEMs of complete weapon systems or platforms, MSMEs have been expanding in

numbers – only as suppliers of components, sub components and spare parts for PSUs, ordnance factories and a few big companies in the private sector itself. It is estimated that there are over 6,000 Indian MSMEs “registered” in this category – destined to supply only subassemblies as per the current trend.

A few large Indian companies have been granted licences for production of weapon systems and associated equipment, but they have rarely had the opportunity of bidding or winning contracts. Overall, the large number of MSMEs and a very few big players ultimately contribute only 10 per cent of the total turnover of the Indian defence industry and an even smaller percentage thereof, for modernisation!

By measure of value, our PSUs have the lowest per capita productivity quotient. As per official statistics in the year 2010-11, this value was assessed at only ₹15 lakh per employee per annum for PSUs/ordnance factories as against ₹30 lakh being the national average for our private industry. In fact some industries like those engaged in electronics and automobiles have posted a near ₹40 lakh per capita figure over the last few years. The start point, therefore, for the public sector to turn around, must be “doubling” of efficiency! And since most of our defence industry (public sector) pertains to the mid to high technology arena, with a little infusion of manufacturing technology and funds, this is not a difficult proposition. The next step must be to lift the private sector from supply of only raw materials/semi-finished products, parts and components, to the status of OEMs—whether through JVs, tie ups or through indigenous development. The third step should be quick and easy grant of industrial licences (a mandatory requirement for defence vendors in India) to encourage new entrants to launch their products into the defence inventory. Currently, vendors lament a near six to 18 months wait for a licence (sometimes even denied after a long wait), followed thereafter by a hiatus of orders which in many cases is almost permanent! If survival of the PSUs/ordnance factories is a fear, perhaps a PPP model can be introduced for some (only some) major procurements over the next decade. But thereafter all must be treated as independent (equal) entities. Hopefully by that time, the PSUs should become as efficient and as technology hungry as their private counterparts. Programmes dedicated to skill upgradation of manpower must be introduced to prepare the large workforce in many PSUs and ordnance factories, for the workshops and products of tomorrow.

The last cap of 26 per cent in FDI in defence production was seen as a ‘negative’ by many in the industry. The upgradation to 49 per cent is encouraging as a step in the right direction for attracting foreign capital and accompanying technology from developed shores. However, many in the private sector feel the FDI cap must have liberal approval procedures. Only then will FDI generate interest in foreign manufacturers and prospective Indian partners. JVs cannot be established without liberal FDI regimes. And the easiest route for imbibing cutting-edge technologies is the FDI route. In fact, there is no harm in escalating FDI limit even beyond 49 per cent, depending upon the item sought to be manufactured, the terms and conditions of the proposed joint venture (if any), and likelihood of export spin offs. There are, of course, voices within the private sector that feel FDI should not be encouraged for defence as it will dilute the Indian boards and make Indian industry too dependent on foreign partners. These voices are in a minority and will get muted by the overwhelming ‘ayes’ for liberal FDI in defence.

The private sector should actually be leveraged as a strategic asset and helped in assuming full partnership (not just 10 per cent stake as at present). After all it is the private sector that has pushed the economy through advanced manufacturing, engineering and

world-class products in information, communication and telecommunication fields apart from becoming a promising manufacturing hub with already a lead in global production of several types of machines. In addition the private sector has made India a leader in IT and ITES domains. This complementarity can become a catalyst for indigenous development in defence related technologies and invite foreign partners’ interest.

At the moment, there is negligible export potential for products made by the defence industry as they are not many items that evoke global interest. Once the private sector develops the experience and harnesses contemporary defence related technologies, these could be used for pushing exports. An automatic spin-off would be a huge job creation potential apart from an organised ancillary/downstream industry. Taiwan and Turkey are conspicuous examples as are developed countries of the West.

The Defence Procurement Procedure was first issued in 2002 to streamline the acquisition process and transform efficiency and transparency of defence acquisitions. It has been revised and amended in several iterations since, the latest being DPP 2013. The best way to realize the true aims of this edition would be to have an “oversight” Board or Commission – comprising of a mix of independent professionals/economists and senior Defence Ministry functionaries – to frequently review/audit and put in place correctives.

Over the last few years, defence needs have been opened to the private sector and foreign investment. The aim has been to bring about a major restructuring and development of the defence industry. Yet, there remains a huge untapped potential of the private sector. Looking at the vast network of defence PSUs and ordnance factories, one would think that their capacity and workforce (nearly 1,80,000 skilled personnel) should be sufficient to cater to most requirements of Indian armed forces. However, capability of DPSUs and ordnance factories has remained insufficient to match the growing demands of technology. The reasons were cited in the opening paragraphs of this article. Despite having missed the industrial revolution, we can still make up by aggressively rejuvenating the public sector through infusion of technology by way of PPP tie ups and JVs. Surely, we are capable of much better outputs and this country deserves the fruits of its true potential – hidden in the private sector as well as in the public sector, and, more importantly in the PPP model! Skill upgradation of the public sectorwork force is very essential. The private sector must be made full and equal partner in the defence industrial base. MSMEs must be encouraged to participate and get active membership of the supply chain for products. Lastly, half the battle will be won if the process of initiation of private players is accelerated and made “market friendly”. Single window clearances for approvals and licences must be introduced to encourage those waiting to obtain industrial and/or weapon manufacturing licences.

Nations accord the highest importance to building a vibrant DIB so that they achieve strategic autonomy through political independence, enjoy the economic advantage in procurements and obviate denial regimes in times of crisis. Self-sufficiency or self-reliance are terms that become meaningful only when a competitive and well spread out defence industry is allowed to flourish within the country. Encouraging big players to assume OEM status and win contracts will also prove beneficial in enhancing economies of scale through efficiency of the shop floor. The answer clearly lies in unleashing the latent and the conspicuous capability quotient of the DIB which must list all public and private sector players capable of contributing to the needs of Indian defence forces. **SP**

The author is a former Flag Officer Commanding-in-Chief, Eastern Naval Command

Welcome move for Indian defence industry

[By **Ranjeet Kumar**]

In accordance with the move to relax FDI norms in defence sector to the maximum limit of 100 per cent, the government has come out with another forward looking decision which will not only boost the private defence industry in India but also expand the base of the manufacturing sector in the country, which is in urgent need of government care. The private sector can now freely manufacture the defence-related systems not exactly meant for use in battleground like the battle tanks, fighter planes, missiles, warships, ammunitions, heavy explosives, etc. In fact, just within the first month of Narendra Modi Government, the Commerce Ministry in consultation with the Defence Ministry has heavily pruned the list of defence items which cannot be manufactured by the private sector. The rest of the weapon platforms, systems and equipments can be produced by the private sector, without requiring any licence. Since the Press Note No.3 issued by the government has not specified the limit of the FDI in these defence related dual use production facilities, the industry watchers have assumed that they can attract 100 per cent FDI in these sectors.

In fact this will largely streamline the industrial licensing process for defence equipment for which permits would not be needed for production. Till now the monopoly for producing these items was retained by the public sector defence undertakings and ordnance factories. Even the soldier's shoes and special garments were required to be sourced by the three services from the ordnance factories which resulted in lack of competition and hence low quality and high price product thrust on the armed forces and its soldiers. Now the ordnance factories will have to compete with the private sector defence industries, producing non-sensitive defence products. Till now the defence items were covered under compulsory licensing under the Industries (Development and Regulation) Act, 1951.

According to the Ministry of Commerce and Industry statement items not included in the list would not require industrial licence for defence purpose. Further, it is clarified that dual-use items, having military as well as civilian applications, other than those specially mentioned in the list, would also not require industrial licence for defence angle.

Since the move would boost manufacturing sector, the industry chambers have widely welcomed the decision. Commenting upon the decision of far reaching significance, A. Didar Singh, General Secretary, Federation of Indian Chambers of Commerce and Industry (FICCI) said, the relaxed norms "will relive Indian defence industry including large number of MSMEs engaged in manufacture of components in synchronising with global supply chains of OEMs, as also benefit manufacturers of dual use item. This will give impetus to Indian Industry to invest in defence R&D, manufacturing and enter into strategic sector to strengthen the indigenous capabilities and march towards self-reliance and greater indigenisation."

The other industry chamber the Confederation of Indian Industry (CII) was equally effusive in its welcoming statement, saying "It is important to maintain a fair balance between addressing genuine security concerns and promoting India's defence industry.

Given the opportunity, this industry has the potential to generate large employment opportunities and provide much needed impetus to India's manufacturing sector leading to its professed goal of self-reliance. Baba N. Kalyani, Chairman, CII National Committee on Defence, said, "We are happy to see that Ministry of Defence has taken cognisance of CII's recommendations to prune the list and keeping it to the bare minimum."

Considering the fact that the Indian armed forces purchase weapons systems and spare parts worth more than \$15 billion from domestic and foreign sources (last year's defence budget was \$38 billion), the Indian defence industry can now hope to bag this huge defence market, a big chunk of which till now was monopolised by



BEL's 2D low level light weight radar

the foreign arms manufacturers. In fact the latest Government decision on relaxing the norms will not only progressively make India self-dependent on defence-related items, but will also help the country become a hub for defence-related spares, as we have seen in the auto sector, which is now playing a very significant role in Indian manufacturing, simply because of the fact that the government encouraged the multinational auto companies to set up their shops in India.

Now, similar policy regime for the defence sector will have a spin-off effect for the other sectors also and will definitely help India to evolve into a major defence exporting country. This will generate such confidence in Indian private defence sector that they can one day hope to manufacture on their own major defence systems in the country. **SP**

The nuclear signal from Modi

[By **Ranjeet Kumar**]

After stoutly opposing the nuclear deal with US six years ago, the BJP-led NDA Government at the centre has made first foray in nuclear diplomacy by ratifying the India specific safeguard agreement called the additional protocol of the International Atomic Energy Agency (IAEA), signaling to the nuclear world that India is not only willing to take forward the nuclear agenda pursued by the previous UPA Government but is ready to reaffirm its commitment to them. The decision silently conveyed to the IAEA in the third week of June 2014 has been made within the first month of the Narendra Modi Government, who interestingly is scheduled to make his first international journey to Brazil in mid-July and later to Japan in late August and to White House in late September where the nuclear agenda will be one of the hot menu on the table.

India's full integration with the international nuclear community has been a subject of debate for long, because of non-adherence with the non-proliferation regimes. However, the latest move by the new Modi Government in India would simply be not enough to open a huge door for Indian nuclear establishment to engage with the nuclear powers of the world. The nuclear powers, eager to invest in India's mega nuclear power projects worth hundred of billions of dollars in coming decades, would like more clarity on India's nuclear liability law and to dispel their concerns they would expect India to also ratify the Convention of Supplementary Compensation for nuclear damage of the IAEA, which India has already signed in October 2010. Though India had signed a civil nuclear cooperation agreement with the US in 2008, which enabled India to enter into nuclear cooperation agreements with many other countries possessing nuclear technology and resources, India still could not enter the hallowed nuclear clubs of the world like the Nuclear Suppliers Group (NSG), the Australia Group, the Wassenaar arrangement, etc. However the green signal given by the one month old Indian Government to ratify the Additional Protocol of the India Specific Safeguards agreement with the International Atomic Energy Agency has the potentials of facilitating Indian entry into the various nuclear clubs. However, in the background of India's ambitions to generate 60,000 MW nuclear power by 2030 and the commitment expressed by the Modi Government in Parliament to pursue the same, this would not be enough. To enable the nuclear power companies of the world to set up nuclear power plants in India, Modi Government will have to clarify its stand on the controversial nuclear liability law. However, the move to ratify the additional protocol has been described as a step in right direction, which the international community must take note of.

The ex-special envoy of the Prime Minister for Disarmament and Non-proliferation Rakesh Sood has, while welcoming the move, said that more initiatives need to be taken, particularly if progress on nuclear issue is to be registered during the Modi's September visit to Washington. However, this move could not have come at a more opportune time as an energy starved India is looking for exponen-

tial rise in energy production to cope with the huge energy demands in future required for an emerging economy. This decision will not only raise the confidence of the International community on India but will also boost the energy security of the country in the long run.

This proposal was under consideration with the Indian Government since last five years, which envisaged the ratification of the additional protocol of the Atomic Energy Agency. This move was made at a time when the Nuclear Suppliers Groups had called a very crucial meeting on June 23. Indian officials expect the NSG members to take note of the Indian decision to ratify the additional protocol of the IAEA. This decision should remove all doubts among the nuclear powers who oppose any cooperation with India in nuclear energy. The adherence to additional protocol will require India to submit the nuclear facilities to the IAEA for nuclear inspection. However, there will be no obligation on India to open its non-safeguarded nuclear facilities for international inspection, which are meant for military purposes. Indian officials contend that the additional protocol will not have any bearing on India's nuclear weapon programme and at the same time

allow more transparency in India's other nuclear facilities which use imported nuclear fuels and equipments. Though the IAEA has model document for such purposes and many non-nuclear weapon state had to adhere to this, India has skillfully negotiated the additional protocol which will not be as intrusive as the IAEA arrangement with other countries. However, the additional protocol will facilitate the easier and regular entry and exit of the IAEA staff and experts to inspect whether the imported nuclear material is being used for authorised purposes. India had already signed a safeguard agreement with the IAEA, which covers over 20 nuclear establishments for open ended inspection by the Agency experts.

Since US and Japanese support to India's nuclear energy program is considered most critical, Modi needs to convince them as he engages with the India friendly Abe and a skeptical Obama in the coming days. Since Japan has been asking India to adhere to the NPT and the US has expressed apprehensions on Indian nuclear liability law, the ratification of the additional protocol of the IAEA will instill confidence on them as far as Indian nuclear civil nuclear energy programme is concerned.

Since India has a very ambitious nuclear energy programme in view of its fast rising energy need, the government has taken a very pragmatic step to remove some of the misconceptions among the nuclear powers regarding India's nuclear ambitions and nuclear energy program. This should encourage the developed nuclear powers to work closely with India in meeting its energy demands, for which India needs to remove all ambiguities. Since India has also signed the Convention of Supplementary compensation on nuclear damage and has not yet ratified, the nuclear giants would now expect India to come clean on this issue also. Only this would repose the confidence of the nuclear companies like Westinghouse, Areva and Hitachi on India to take risks for investing in proposed nuclear power plants in India. **SP**





The French Foreign Minister Laurent Fabius calls on the Prime Minister Narendra Modi in New Delhi. The Union Minister for External Affairs and Overseas Indian Affairs Sushma Swaraj is also seen.

France steps up defence and nuclear cooperation

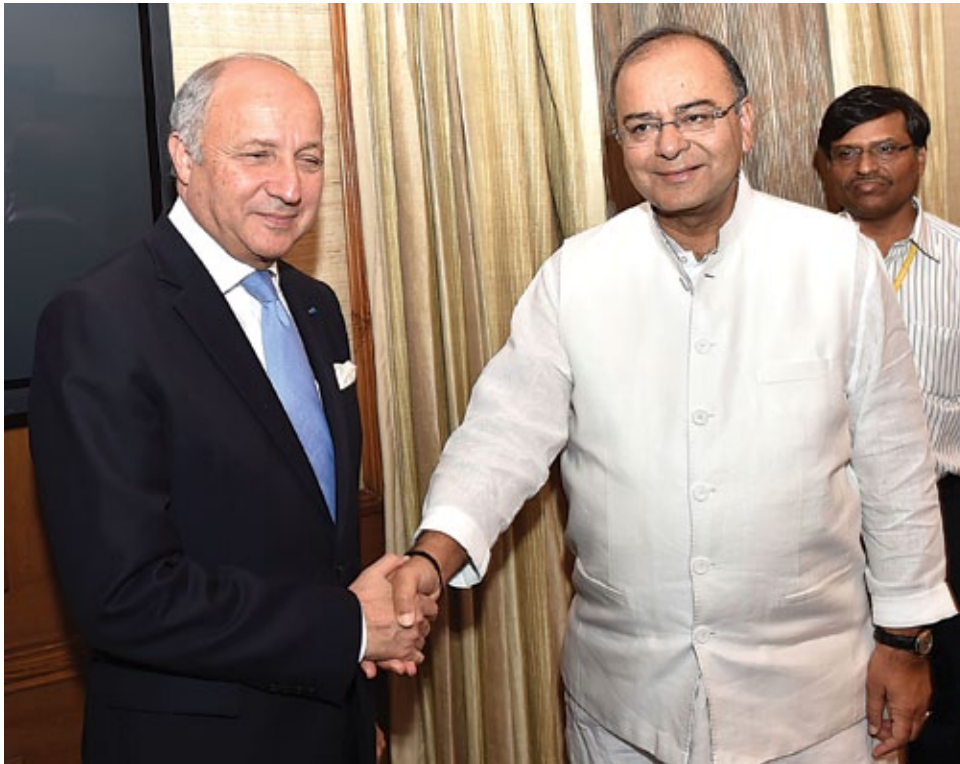
[By Ranjeet Kumar]

With multi-billion dollar deals in the last phases of negotiations in defence and nuclear sectors, France made it a point to become the first European country to dispatch its Foreign Minister Laurent Fabius to India on June 30. He discussed under negotiation deals with Defence and Foreign Affairs Ministers of the one-month-old Narendra Modi Government and to impress them with proposed multibillion-dollar investment plans by Airbus besides promising close cooperation with India in various international forums and support to India for membership of the exclusive nuclear club like the Nuclear Suppliers Group (NSG). Fabius also handed over an invitation from the French President Hollande to Prime Minister Modi to visit Paris as soon as possible and even suggested dates as the last week of September or early October when Modi visits the United States. France wants to strengthen its strategic partnership with India on the two very strong pillars of defence and nuclear cooperation and expects

a concrete decision from India by the time Modi arrives in Paris.

Hence, the visit of French Foreign Minister Fabius focused principally on these major areas of India-France cooperation. In both these sectors France is eagerly waiting for the green signal from the Modi Government. The defence deals alone would be no less than \$25 billion if India goes ahead with the Rafale fighter aircraft, Short-range surface-to-air missile (SRSAM) Maitri and the multi-role tanker transport (MRTT) aircraft Airbus A-330 deal while the under negotiation. Six EPR nuclear reactors in Jaitapur will ensure over \$40 billion deal for the French nuclear equipment manufacturers in the coming decade.

The 126 Rafale medium multi-role combat aircraft (MMRCA) alone will cost anywhere around \$15 to 20 billion. And if the scope of the deal is expanded to include another 66 more aircraft, Dassault Aviation of France will earn a few billion dollars more. The SRSAM cooperation agreement envisages a contract of \$6 billion while the six MRTT Airbus A-330 will cost around \$2 billion. When asked about these deals in the offing, Fabius said, "India is an independent country, wants equipment of the highest quality including transfer of technology so that it can produce on Indian soil. The proposal for the Rafale



The French Foreign Minister Laurent Fabius with Defence Minister Arun Jaitley

meets all these legitimate demands. I am confident of the Rafale deal. This deal will have consequences for next 30 years."

Regarding the MRTT deal, the Airbus Military CEO Domingo Ureña Raso had then reacted over IAF's wish to acquire them: "We are grateful for the confidence shown in our company by the Government of India and the Indian Air Force and we appreciate the detailed and fair appraisal of the competing products which they have conducted. This has been a long and tough competition and we are honoured to have been selected. We are fully committed to the next stage of the negotiations and ultimately to providing the IAF with what is unquestionably the most advanced tanker/transport aircraft flying and certified today."

Besides the MMRCA, the over \$6 billion negotiation for the SRSAM was concluded during the visit of the President Francois Hollande in February 2013. The then Prime Minister Manmohan Singh had commented, "Defence ties were poised to reach a 'qualitatively' new level. This SRSAM project once approved by the government will be co-developed and co-produced in India." Observers point out that since the deal was agreed between the two sovereign governments, the successor government cannot ignore them, especially when the Indian armed forces need them on an urgent basis.

Regarding the nuclear deal, Indian Prime Minister had then said, "We reviewed progress on the Jaitapur Nuclear Power Project and reiterated our commitment to its early implementation as soon as the commercial and technical negotiations, which have made good progress, are completed." When asked about the EPR nuclear reactors proposed to be established in Jaitapur and if the French Government had any issue with India's Nuclear Liability Law, Fabius said, "We have no problem."

If this is really so, this will help India and weaken the stand taken by other nuclear power countries like the United States, Japan and Canada who have expressed reservations on the Liability Law adopted

by the Indian Parliament. However, one French diplomatic source told this writer that the French Areva nuclear power company is confident of the safety aspect of the design of EPR reactors, hence they are not worried about the fears of any accident in the EPR reactor. The French source pointed out that countries like China have expressed confidence on the EPR reactors which are already under execution and likely to become operational by 2016. In India the Areva has entered into a cooperation agreement with NPCIL for setting up six EPR reactors each with 1,650 MW capacity.

However, there are strong concerns in India over the cost of energy production from these reactors. The installation cost of these reactors are said to be the highest among all international nuclear reactors. When asked about the cost-related issues the spokesman of the Indian External Affairs Ministry Sayeed Akbaruddin said, "The experts of Areva and the NPCIL will work out the techno-commercial issues of these EPR reactors".

In fact if the proposed defence and nuclear deals between France and India materialise, the two countries will find themselves woven in very strong strings of strategic partnerships for decades, which will also prove to be a windfall gain to French defence and nuclear companies. France has been strong supporter of India in international bodies and had earlier extended moral support to India after India's Pokhran nuclear explosion in 1998 when India was isolated by the world community led by the United States. France, had been a strong supporter for India's claim to the permanent membership in UN Security Council and both the countries have close cooperation on many other international issues. These aspects will weigh very heavily in favour of France while taking a decision on the multi-billion-dollar defence and nuclear contracts. The UPA Government has taken these defence and nuclear negotiations to such a stage that it will be difficult for the Narendra Modi-Government to back out from the commitments already made. SP

Naval projects to be fast-tracked: Defence Minister

[By Rear Admiral (Retd) Sushil Ramsay]

The Minister of Defence, Arun Jaitley, has assured the Indian Navy that all efforts would be made to ensure its operational preparedness, taking note of the capability shortfall of conventional submarines, ship-borne helicopters, mine countermeasure vessels and other weapons and sensors.

Addressing the first of the two Naval Commanders' Conference for 2014, Jaitley referred to the prevailing security environment in the neighbourhood and complimented the Navy's efforts for working in tandem with a large number of central and state agencies. He stated that the deployment of our assets has been highly effective and needs to be continued to secure the country's economic and maritime interests.

Appreciating the indigenisation efforts of the Indian Navy, Jaitley made a mention of the fact that all 44 naval ships and submarines under construction are being built in Indian shipyards. He stressed that these efforts need to be further strengthened for timely induction of the platforms.

Expressing concern over the "slow pace" of acquisition of weapon systems, he assured that the new government will work towards "expediting" several procurement decisions in the pipeline. He hinted that demand of the armed forces for more funds in the budget was likely to be accepted as the "entire resource of the country, notwithstanding various pressures, has to make available a significant amount for those in defence of the country".

The Navy has several acquisition projects stuck for many years due to slow procurement process, including the ₹6,000-crore 16 multi-role helicopters and the acquisition of torpedoes for the Scorpene submarines. Its tender for acquiring six new submarines under Project-75 India, estimated to cost over ₹1,00,000 crore, is also stuck as the government has to alter a 1999 decision to build all future submarines only indigenously. The Navy is also waiting for final clearance to acquire 16 mine countermeasure vessels from a South Korean firm which has been stuck after complaints were filed against the fairness of the process under the previous government, he said.

With the Navy's growing importance in safeguarding the country's strategic interests from Malacca Strait to the Persian Gulf, as well as projecting combat power overseas, the Narendra Modi Government has promised all help in plugging operational gaps in the maritime force's capabilities.

The regime change at the Centre has augured very well for the Indian Navy. Soon after taking over as the Defence Minister, on June 7, 2014, Arun Jaitley was on board INS Viraat to have a first-hand feel of the Indian Navy and be briefed on its operational status. A week later, the new Prime Minister dedicated to the nation INS Vikramaditya, the largest, the costliest platform which truly symbolises not just the blue water capability and the maritime power, but as a formidable force multiplier in real sense.

Admiral R.K. Dhowan, the Chief of the Naval Staff (CNS), chaired the Conference and addressed the Navy's top leadership in his first Commanders' Conference as CNS. He outlined three inter-related priorities i.e. sustaining combat readiness, building capabilities for the future and addressing human resource challenges. During the conference several important issues including operational readiness, coastal security, maintenance philosophy and quality of refits for ensuring combat effectiveness of platforms, infrastructure development and foreign cooperation initiatives, etc. were deliberated upon.

The CNS said that induction of Vikramaditya with integral fighter aircraft is a substantial boost to the Navy's capabilities and is further poised for a quantum jump with the planned induction of Kolkata (P15A Destroyer) and Kamorta (P 28 ASW Corvette) in the near future.

CNS emphasised that the 'Roadmap for the Navy's expansion and growth would continue to remain anchored on Self-reliance and Indigenisation'.

The Naval Commanders' Conference provide an ideal platform for centrally discussing matters related to combat readiness of the fleet and other operational formations, building capabilities for the future and addressing human resource challenges amongst other. Such Conferences provide a structured mechanism to the political leadership to evaluate the evolving geo-strategic security scenario for the country and to sensitise them over the need for honing the decision making matrices. **SP**



Defence Minister Arun Jaitley received by the naval commanders



Arun Jaitley talks to the press. On his right is Admiral R.K. Dhowan.

Chief of Defence Forces of Thailand calls on General Bikram Singh

General Tanasak Patimapragorn, Chief of Defence Forces Royal Thai Armed Forces, called on General Bikram Singh, Chairman Chief of Staff Committee and the Chief of Army Staff on June 30, 2014 in his office. Important strategic facets of common concern and issues of convergence on security were discussed.

General Tanasak Patimapragorn arrived in India on a four-day visit on June 28. The General was accompanied by a nine member delegation. This visit by the Thailand Chief of Defence Staff assumes special significance in the light of enhanced defence cooperation between the two countries and India's growing relationship with Thailand. The friendship between India and Thailand is based on common ideals and principles, arising from a significant legacy of historic links, common culture, and a shared interest in peace and stability in our region.

The general discussion with Indian authorities covered a wide range of fields including overall security situation, regional issues and steps to further the defence engagement between the two nations. Defence cooperation between the two armed forces has been vibrant, encompassing training, joint exercises and visits by military delegations. The visit by the high powered delegation led



by General Tanasak is bound to cement bilateral relations as Thailand constitutes the strategic bridge between South and South East Asia and is vital in the development of peace and prosperity in the region. It is bound to give impetus to the multifarious increasing defence cooperation activities between two neighbours. **SP**

New Flag Officer C-in-C Southern Naval Command appointed

Vice Admiral Surinder Pal Singh Cheema, PVSM, AVSM, NM has assumed command of Southern Naval Command as its Commander-in-Chief. The Flag Officer prior to assuming the command laid wreath at the War Memorial to offer remembrances to thousands of martyrs who had fought for the country.



The Admiral was commissioned into the Indian Navy on January 1, 1977. He is a graduate of the National Defence Academy, Khadakwasla, The Defence Services Staff College, Wellington and the College of Naval Warfare, Mumbai. A specialist in missiles and gunnery, he spent majority of his time on afloat and operational appointments. He has had the distinction of being the Commanding Officer of five front-line ships—INS Nishank, Mauritius Coast Guard OPV Vigilant, INS Khanjar, INS Trishul and the prestigious aircraft carrier INS Viraat.

His appointments ashore include the Commandant of the Naval Academy and Commanding Officer INS Mandovi. He also has the unique distinction of winning both the Lentaigne (Best Dissertation) and Scudder Medals (first in overall order of merit) while undergoing course at DSSC.

On promotion to the Flag rank in May 2006, he was appointed ACNS, Information Warfare and Operations at IHQ, MoD (Navy). His other flag appointments include the Chief of Staff, Western Naval Command, Flag Officer Commanding Western Fleet, Controller Personnel Services, IHQ MoD (Navy), DCIDS Perspective Planning and Force Development (PP&FD) and DCIDS (DOT). His appointment as the Flag Officer Commanding-in-Chief, Southern Naval Command is a unique distinction being his third Command as C-in-C since being promoted to C-in-C grade on August 31, 2012. Prior to this he has been the Chief of Integrated Defence Staff to the Chairman, Chiefs of Staff Committee as

also the C-in-C of the Strategic Forces Command—a Tri-Services Command responsible for all nuclear forces of the country.

The Officer has excelled and distinguished himself in several operational appointments at sea earning 'Mention in Despatches' for duty in the face of enemy during operations in Sri Lanka. He was also awarded the Nau Sena Medal (Gallantry) when in Command of INS Nishank; AVSM when in Command of INS Viraat and PVSM as the C-in-C, Strategic Forces Command. **SP**

High level meeting between Indian and Sri Lanka Coast Guards

A three-member delegation led by Rear Admiral Ravindra C. Wijegunaratne, the Director General Sri Lanka Coast Guard (SLCG), visited India from June 24-28, 2014, for high level meeting with the Indian Coast Guard (ICG). The Indian delegation was led by Vice Admiral Anurag G. Thapliyal, Director General Indian Coast Guard. The visit was in continuation of the various efforts by the governments of the two countries towards cooperation between the Indian and Sri Lanka Coast Guards and pursuance of the discussions on maritime issues of mutual concern to formulate a cooperative approach.

The establishment of Sri Lanka Coast Guard on March 4, 2010, has been a way forward in meeting the challenges in the new global safety and security regime in this region. The recent visit is very significant in providing a fresh impetus to the existing ties between the two organisations as the meeting is being held in the backdrop of the evolving maritime security situation in the region. The focus of the meeting was on further strengthening the operational level interaction for search and rescue, preservation and protection of maritime environment, revalidating standard operating procedures and communication procedures between the two Coast Guards.

The SLCG delegation also called on the Chief of the Naval Staff, Indian Navy, and the Defence Secretary. During discussions, it was agreed to strengthen the cooperation on evolving collaborative approach, in addressing a spectrum of issues concerning safety and security and further streamlining the procedure for release/repatriation of fishermen. **SP**

193 flight cadets graduate from Dundigal

The morning of June 21, 2014, saw the officer who graduated 39 years ago, come back as Chief Guest to review the combined graduation parade at the Air Force Academy, Dundigal. Air Chief Marshal Arup Raha, Chief of the Air Staff, reviewed the parade of 193 flight cadets belonging to Pilot, Navigation and Ground Duty streams.

Congratulating the passing out course, the Air Chief said, "It is a matter of great honour to review the combined graduation parade and welcome these fine men and women into the Indian Air Force as military leaders and aviators. My congratulations to the officers who have been awarded the President's Commission this morning, an honour which you have earned through hard work and on successful completion of a demanding training curriculum. My felicitations to the six officers of the Indian Navy for earning their coveted 'Wings.'"

The Air Force Academy (AFA), as

a cradle of military aviation, provides a unique environment for joint training of cadets of all branches and forge lifelong bonds of camaraderie, cohesiveness and esprit de corps. With a distinguished training record to its credit, AFA is at the vanguard of a comprehensive upgrade in IAF's training pattern and infrastructure. This Academy has successfully inducted and operationalised the PC-7 Mk II as IAF's basic trainer aircraft and has ushered in an era of modern flying training with high standards of safety and reliability.

The President's Plaque and the Chief of the Air Staff Sword of

Honour for standing first in overall order of merit in Pilot's Course was awarded to Flying Officer Anil Kumar while Flying Officer Durgesh Kumar and Flying Officer Satheesh Kumar were awarded the President's Plaque for standing first in overall order of merit in Ground Duties Branches and Navigation Branch respectively.

Air Chief Marshal Arup Raha also flew a sortie in the basic trainer Pilatus PC-7 MkII aircraft at the Air Force Academy, Dundigal, Hyderabad, on June 20, 2014. **SP**



Akash missile tested in low altitude



Akash missile was successfully test-fired recently in very low altitude near boundary mission from the integrated test range at Balasore, Odisha. This flight trial was last among the validation trials being carried out by Army on the first off production models of Akash supersonic missile.

The supersonic missile intercepted a very small unmanned fast moving Banshee aerial vehicle at 30-metre altitude above sea level proving the system capability against subsonic cruise missile.

The sophisticated multi-function radar with built in features tracked the low flying target continuously throughout its course. Special algorithms/techniques developed by DRDO for overcoming the multiple target reflections coming from the sea worked perfectly in the mission.

With this flight trial, the Indian Army accomplishes all the validation trials on the first off production models and the system is being delivered for induction.

Avinash Chander, Scientific Advisor to Defence Minister, Secretary Department of Defence R&D and Director General, DRDO, said, "While indigenous development, production and induction of Akash is making very significant contribution to India's self-reliance in air defence technologies, Akash also has great export potential."

The trials were supervised by G. Chandramouli, Project Director Akash, and witnessed by Director General Army Air Defence and other senior officials of Army and the Ministry of Defence. **SP**

Northrop Grumman gets \$3.6-billion contract for 25 E-2D Advanced Hawkeye aircraft

The US Navy has awarded Northrop Grumman Corporation a \$3.6-billion fixed price, incentive fee multi-year contract to deliver 25 new E-2D Advanced Hawkeye aircraft, bringing the total number of aircraft on contract to 50.

Developed and produced by Northrop Grumman, the E-2D Advanced Hawkeye is the



world's only aircraft specifically designed as a carrier-based airborne early warning and control (AEW&C) system. With its structurally distinctive design – a rotating rotodome and four vertical stabiliser – the E-2D Advanced Hawkeye provides unprecedented, 360-degree surveillance to the warfighter.

As the only Department of Defense designed, tested and in-production AEW&C platform, the E-2D Advanced Hawkeye has undergone a significant transformation from previous E-2 models, resulting in revolutionary capabilities. This includes the new, more powerful AN/APY-9 radar system, exclusive to the E-2D Advanced Hawkeye, which represents a two-generational leap in radar technology and allows the warfighter to "see" a greater number of targets at much greater distances – as well as new avionics and a glass cockpit.

The Navy's E-2D Advanced Hawkeye programme of record is for 75 aircraft, of which Northrop Grumman has already delivered 13 production aircraft. **SP**

Home Ministry's official Twitter handle

In conformity with drive to ensure transparent and responsive government, the Union Home Minister Rajnath Singh launched @HMOIndia - the official Twitter handle of the Ministry of Home Affairs, Government of India. Rajnath Singh stated that the Twitter handle of the Ministry will let the people know about the important developments taking place. **SP**

Money laundering act

The Union Home Secretary Anil Goswami has called upon law enforcing agencies for greater coordination and effective utilisation of the recent amendment in the Criminal Amendment Act, 2013 and provisions of the Money Laundering Act to crack down upon rampant human-trafficking. Addressing the 18th review meeting of States/UTs Nodal officers on Anti-Human Trafficking in New Delhi, he said the law enforcement response is still not adequate to deal with the menace.

The Home Secretary said optimum use must be made of the Criminal Amendment Act of 2013. "All efforts should be made to generate awareness about this new provision to police personnel through training."

Goswami said India has ratified various international agreements to check human-trafficking including the United Nations Convention on Transnational Organised Crime (UNTOC) and SAARC Convention on Trafficking in Women and Children besides the bilateral mechanism with Bangladesh, as yet human-trafficking is rampant across international borders with Bangladesh and Nepal. "Despite organized gangs of traffickers are involved in cross border trafficking with Bangladesh and Nepal, there are hardly any cases of successful investigation and prosecution which can create a deterrence and fear of law in the minds of the criminals," he said.

He called for more coordination and synergy among various agencies including the border guarding forces, commissions like the National Commission for Women (NCW), National Commission for the Protection of Child Rights (NCPCR) and National Human Rights Commission (NHRC) and the state law enforcing agencies to deal with the menace.

The Union Home Secretary said 100 more Anti-Human Trafficking Units (AHTUs) will be set up across the country during this financial year, taking the total number of AHTUs to 325. Since their establishment in the year 2011, AHTUs have conducted more than 4,000 rescue operations through the country, rescuing 13,742 victims and arresting 7,087 traffickers. **SP**

Meeting on LWE-affected States

A meeting of the Chief Secretaries and the Directors General of Police (DGPs) of 10 left-wing extremism (LWE)-affected States and the Directors General (DsG) of Central Armed Police Forces (CAPFs) was held in New Delhi recently, under the Chairmanship of Rajnath Singh, Union Home Minister.

During the meeting, the performance of different States in counter insurgency measures was discussed. Among other issues, anti-LWE operations, road connectivity and installation of mobile towers were also discussed.

Rajnath Singh stated that the Government will make all efforts to resolve the problem and will do its best in a balanced manner through administrative leadership and political commitment. He stated that the Central Government will respond positively

to the suggestions of the States in overcoming this problem in a coherent and cohesive manner. There will be better coordination between Centre and States through the confidence and commitment of all concerned. He mentioned that the projects relating to road connectivity and telecom connectivity through mobile towers should be taken up on a priority basis.

The Union Home Minister also asked the State Governments to designate their nodal officers for better coordination with the Central Government, and other States on this subject. He added that young, bold and courageous District Magistrates and Superintendents of Police may be posted in initial years of their posting in these areas to provide better local administration and leadership. The surrender and rehabilitation packages may be revised to make it more attractive for the militant and Jan Militia cadres. He said that he is fully convinced that a coordination and concerted approach in this regard will help in finding a solution to the LWE problem.

Earlier, the Union Home Secretary Anil Goswami introduced the subject and subsequently detailed presentations were made by the participants. The Minister of State Kiren Rijiju, the Chief Secretaries and DGPs of LWE affected States (Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Telangana, Uttar Pradesh and West Bengal) and DsG CAPFs attended the meeting. **SP**

Drones in national security

A report from Stimson Center has examined three key issues in the unmanned aerial vehicle (UAV) debate: defence utility, national security, and economics; ethics and law; and export controls and regulatory challenges.

The Stimson report concludes that UAV technologies are here to stay. Used recklessly, UAVs can endanger US interests and diminish regional and global stability. Used wisely, they can help advance US national security interests in the midst of a more robust global commitment to the rule of law.

The debate on the Stimson report identified misconceptions about drones, areas of concern, and also recommended a few ways to advance the drone debate.

The most common drone misconceptions is the belief that most UAVs are weaponised when in reality less than one per cent of the Pentagon's 8,000 drones carry operational weapons at any given time. The majority of US drone missions has been for intelligence, surveillance, and reconnaissance (ISR) purposes.

UAVs are often thought to be cheaper alternatives to manned aircrafts, but some UAVs "carry more sensors than their manned counterparts," which may translate to higher cost for personnel to monitor and process data feeds that do not exist on manned aircrafts.

The Stimson report notes that at times, the higher cost of manned aircrafts reflects greater capability. A manned F-16 fighter jet may have higher costs because it consumes fuel more quickly than an MQ-1 Predator drone, but the F-16's greater speed gives it air-to-air combat abilities that current drones lack. **SP**



L&T forms JV with Thales

L&T Technology Services, a wholly-owned subsidiary of Larsen & Toubro Limited (L&T), has purchased 74 per cent of the equity capital of Thales Software India Pvt. Ltd., the Indian subsidiary of Thales, the global technology leader in aerospace, transportation and defence and security markets. The joint venture (JV) capitalises on the existing strong relationship between the two groups, L&T and Thales, and ensures a long-term partnership in the engineering services domain. Furthermore, the transaction should enable Thales to select this new group as its Indian Offset Partner, resulting in inflow of Offset related revenues in the joint venture.

Dr Keshab Panda, Chief Executive, L&T Technology Services, expressed his confidence in this association: "This Joint Venture represents each organisation's strong commitment to provide cus-

tomers with a single source of best services in avionics industry," he said. "We as an organisation are at an interesting phase of our journey where we are streamlining our expertise and strengthening our knowledge. In such a phase joining hands with Thales adds to our proficiency in the market," he added.

Commenting on the joint venture, Eric Lenseigne, Managing Director of Thales in India, said: "This JV is a reflection of our commitment to India and our objective to strengthen our industrial footprint in the country. In addition, this collaboration with L&T Technology Services brings onboard a seamless integration of all elements and assures our customers quality service and the highest level of long-term, local product support. We are sure that together we would build on our expertise and provide our customers with world-class technology and services." **SP**

HAL inducts over 400 officers

Over 400 management and design trainees – selected through stringent procedures amid lakhs of applicants – have formally been inducted in the Hindustan Aeronautics Limited (HAL) as officers at a convocation programme held on June 21, 2014. Some of them have graduated from NITs, IITs and other premier engineering and management institutes.

Dr R.K. Tyagi, Chairman HAL, urged them to start contributing their mite in the company's progress. "This is a defining moment for the country and you have all the opportunity to make your presence felt in India's defence preparedness", he said. Dr Tyagi called upon them to translate their individual talent into meaningful achievements by being a part of large HAL family.

The trainees belong to 41st batch of HAL and are posted to Korwa, Lucknow, Kanpur, Koraput, Nasik, Hyderabad, Barrackpore and Bengaluru. A comprehensive one-year training programme included industry orientation and management programmes. Eminent speakers from institutions and industries interacted with them. The training also included experimental learning through various activities such as group projects, theatre work, visits to charitable institutions and art classes. **SP**

Airbus Group and Safran join forces in Launcher

Airbus Group and Safran are further strengthening their relationship to propose a new family of competitive, versatile and efficient space launchers, to serve both commercial and institutional needs.

In this context, both companies have agreed to create a 50-50 joint venture, with a key role for each shareholder in their legacy activities especially in France and Germany, combining expertise in the launcher systems from Airbus Group as well as propulsion systems from Safran.

The initiative capitalises on the preparatory activities undertaken during the last two years under the leadership of the European Space Agency (ESA) and the French Space Agency CNES, in line with the guidelines set by the ESA ministerial conference in November 2012. **SP**

Saab and UK Ministry of Defence sign new contract

Defence and security company Saab and the UK Ministry of Defence have signed a three-year contract for a managed training service for British Army Overseas Training Exercises utilising Saab's DTES system. The order amounts to MSEK 200.

Saab's deployable tactical engagement simulator (DTES) system provides the infrastructure, instrumentation and resources to enable force elements to conduct realistic, live, force-on-force training while the movements and combat performance of individuals, vehicles and equipment are tracked and monitored for After Action Review. The UK Ministry of Defence has, after a competitive process, chosen Saab for this solution which is structured for light-role Infantry Battle Groups training. The exercising troops conduct collective training from Platoon level to Brigade HQ. **SP**



Chief Minister of Maharashtra Prithviraj Chauhan and Union Surface Transport Minister Nitin Gadkari felicitated Dr Baba N. Kalyani, CMD, Bharat Forge Ltd with the Majha Sanman Award 2014 at Hotel Palladium in Mumbai on June 26. The award was conferred for his distinguished track record of entrepreneurship that has set extremely high standards of ethical and transparent conduct and for Bharat Forge's contribution towards building 'Brand India'.

PHOTOGRAPH: Bharat Forge



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Robotics in conflict

Historically, militaries makes use of every innovation that has the potential to support military work and the military robot is an innovation that has application in war as well as life-threatening tasks that the military undertakes otherwise too.

Japanese Prime Minister Shinzo Abe has decided to host a “Robot Olympic” in Japan in 2020. Then is a recent report Cornell University, New York, is teaching a robot to understand instructions in its language from various speakers, account for missing information and adapt to the environment led by an Indian scientist; Assistant Professor of Computer Science, Ashutosh Saxena. A defining feature of our time is the continuous advances in computing. Modern computing techniques and applications influence many areas of everyday human life and human endeavour on increasingly more complex, more sophisticated, and intellectually increasingly challenging levels. Artificial intelligence encompasses reasoning, knowledge, planning, learning, communication or language processing, and finally general intelligence that can actually substitute the human brain. However, artificial intelligence that rivals or exceeds human intelligence raises difficult ethical issues, and the potential power of the technology inspires both hopes and fears. Already fears have been expressed in the US that advances in artificial intelligence could lead to mass unemployment with half of US jobs automated within the next decade plus with Google purchasing the London-based start-up DeepMind for £400 million dedicated to developing this technology. Dr Stuart Armstrong from the Future of Humanity Institute at the University of Oxford warns of the risk that computers could take over human jobs at a faster rate than new jobs could be generated, especially in the fields of logistics, administration, insurance underwriting, industry, manufacturing etc. While Google has created an ethics board to look at how to deploy artificial intelligence safely and reduce such risks, the effect would be felt worldwide, what with introduction of Google Glass that allows users to perform searches and ask for help in natural language. Interestingly, DeepMind has been operating largely unnoticed by the wider UK technology scene, although its advances in artificial intelligence have obviously been of interest to the experts—founded in just 2012, DeepMind is Google’s largest European acquisition to date. Regardless of how DeepMind’s expertise will be used, Google’s purchase of the company underscores increasing fears over the impact of technology on employment. Scientists also warn that humans should not assume machines or robots would treat

us favourably, because there is no reason to believe that they would be sympathetic to human system of morality that evolves synchronous to human biology.

Robots are a reality today, performing duties from providing ease and comfort of human beings to military applications for defence and attack. While on one hand prohibitive costs in terms of human lives and financial costs have forced powerful nations replace ‘boots on ground’ with ‘proxy boots on ground’, simultaneously robot armies are in the making. Research being undertaken for turning human beings into robots, or rather zombies doing the bidding of the attacker. Military robots are autonomous or remote-controlled devices designed for military applications, different from robots used for industrial production in that they do not produce things, but interact in warfare like control of missiles and vehicles in order to have unmanned devices that are either tele-operated or find their way, automatically guided by laser beams or GPS satellites. World War II first saw the military application of robots in the form of use of the Goliath mobile landmine by Germans marking a turning point in the history of military robots, as did the Soviet Teletanks that were wireless remotely controlled unmanned tanks. Later, the US MQ-1 Predator drone enabled the Central Intelligence Agency (CIA) to collect intelligence. Existing military robots include guided missiles, military spacecraft, UAVs, unmanned ground vehicles (UGVs), remotely operated vehicles (ROVs), autonomous underwater vehicles (AUVs), smart ammunition, surveillance and navigation (GPS) satellites etc. The ICBM itself is a very large type of rocket with guidance systems. Then missiles are of multiple types and are deployed depending on the type of targets. Armed UAVs are in prolific use.

In 2012, a report in UK’s Mail Online quoted Anatoly Serdyukov, Russian Defence Minister, revealing that Russian arms procurement programme 2011-20 would encompass introduction of super weaponry including weapon development based on new physics principles; directed energy weapons (DEWs), geophysical weapons, wave-energy weapons, genetic weapons, psychotropic/psychophysical weapons and the like. The ‘Zombie Gun’ based on psychotropic principle of ‘mind control’ evoked most frenzy. The insidious design of the Zombie Gun aims to attack the brain cells and central nervous system to either make the recipient perform according to the attackers will

or alternatively turn the victim into a senseless moving object, perhaps behaving like a mad animal. With such a weapon, it would be possible to transmit suggestions and a command directly into the victim's thought process. These guns will use electromagnetic radiation like that found in microwave ovens. Putin reportedly said that such high-tech weapons systems will be comparable in effect to nuclear weapons, but will be more acceptable in terms of political and military ideology. It can be safely assumed that similar weapons would be planned to be productionised in modern armies including China.

Research into electromagnetic weapons has actually been secretly on in the US and Russia since the 1950s. In 2011, western media had announced Russia possessed plasma weapons. Logically, the US was running parallel in the race, if not ahead. At the same time, the overall concept of attacking the nervous system or attacking internal organs is hardly new and has been worked upon continuously. After all that is that not what the nerve gasses did decades back? Nerve gases have been used in conflict situation in the past, as is presently happening in Syria. Incidents have also been hinted in media of low dose microwave weapons having been used for incapacitating recipients temporarily. A high dose microwave weapon on the other hand can kill the eyesight or heart of the victim. Interestingly, some clubs in the US are already offering Zombie Survival Courses where instructors teach how to cope with zombie attacks.



A US Navy Talon 3B robot approaches a claymore land mine on a sand dune during a training exercise

Such courses are designed to teach participants real-world survival techniques necessary to survive a zombie apocalypse. This includes choosing and setting up survival gear, first aid, equipment, firearms selection and group organisation for defence. Going a step further, Kansas has been witness to the first ever Zombie-Proof Condos that have been all been sold out like hot cakes at \$2 million per floor. Consequences of application of psychotropic/psychophysical weapons can range from mass psychological diseases with both lethal and incapacitating outcomes, creation of an obedient mass of humanity through latent violent manipulation of behaviour and consciousness, and even mass ecological accident because of irreversible genetic mutations if infringement at gene level is resorted to.

In 2006, it was announced that India will be pursuing technologies for developing a robotic army. The impetus obviously was the realisation that transnational actors and unconventional forces pose a growing threat when compared to the risk of a traditional inter-state conflict, plus robotic plans announced by other nations

like the Killbots Army planned by the Republic of Korea. Militaries will continue developing robots for their own purposes. Technological advances enable the developers to build new systems for more tasks. UGVs will continue to be progressed. In the US, an unmanned converted Humvee has been driven around at a speed of 56 kmph without deviating from its planned route. Such capability would have multiple applications, saving human costs and lives. Obviously such future platforms would be fitted with cameras and weapons as well. Such smaller robots of the size of a golf cart (Gladiator - carrying a machine gun, rockets and non-lethal weapons) have already been developed that can be controlled by PlayStation video game controller or software plug-ins, allowing semi-automatic and fully autonomous modes. Then is the medial robot 'Bloodhound' (improved version of the 'packbot') which can locate wounded soldiers, checking vital functions and administer morphine. US has already produced a working automated sentry gun and is currently developing it further for commercial and military use. The US Army has also been developing an Autonomous Rotorcraft Sniper System consisting of a remotely operated sniper rifle attached to an unmanned autonomous helicopter intended for use in urban combat or other missions requiring deployment of snipers. In all probability this system is already deployed. Similarly to ground robots, USVs and UAVs are also being researched further incorporating weapons and surveillance devices.

The Chinese military envisions its drone swarms scouting battlefields, guiding missile strikes and overwhelming the enemy defences through sheer numbers. China's military-industrial complex has established wide array of indigenous drones to accomplish these goals. One aim of such large drone fleets would be to expand China's military reach into the Pacific and swarming US carrier groups in the event of conflict. China could possibly be having the largest drone fleets after the US. As per 2012 figures reported in the Guardian quoting the International Institute of Strategic Studies, the US was then operating 6,709 drones compared to 280 by China PLA but that difference in numbers could have narrowed considering the modernisation pace of the PLA and her feverish pitch to bridge asymmetry vis-à-vis the US. Interestingly, the Chinese 'Wing Loong' drone reportedly costs around \$1 million, compared to the US 'Reaper' drone that is in the \$30 million range. Admittedly, technologies and capabilities may vary but the point to note is that you can perhaps buy 25-30 Wing Loong drones for the price of one Reaper but more significantly, the Wing Loong has the same endurance as the Reaper (20 hours), has a range of 4,000 km and packs four hard points for mounting variety of lasers, precision guided bombs.

China already reportedly has 24 x 7 satellite surveillance along the Sino-Indian border. Additionally, India needs to also take into consideration the drone swarms of PLA in the event of conflict. It should also be noted that China successfully flight tested a hypersonic vehicle in January 2014 travelling at a speed five times the speed of sound and aims to attack targets at the speed of Mach 10.

No matter what robotic developments take place, the goal will remain to minimise human losses and increase efficiency. Historically, militaries makes use of every innovation that has the potential to support military work and the military robot is an innovation that has application in war as well as life threatening tasks that the military undertakes otherwise too. We must optimise robotics focusing on R&D to win future conflict situations. Our scientists must call upon their creativity and innovativeness to achieve this goal. With government focus and proper public-private industry partnership in the military-industrial complex the possibilities are endless. How far has India progressed in robotics is not very clear but we need to be very focused on the issue. **SP**

Michael Schumacher's medical files stolen

Confidential medical files reportedly belonging to seven-time Formula 1 world champion Michael Schumacher are being offered 'for sale', it has been warned.

Schumacher's publicist Sabine Kehm says the documents have appeared to have been made available for money but says it remains unclear whether they are genuine or not. However, Ms Kehm says the documents will have been 'stolen' if they are verified as authentic and will press criminal charges to those responsible for the security breach.

"For several days stolen documents and data are being offered for sale. The offerer claims them to be the medical file of Michael Schumacher. "We cannot judge if these documents are authentic. However, the documents are clearly stolen. The theft has been reported."

The contents of any medical files are totally private and confidential and must not be made available to the public. We will therefore, in every single case, press for criminal charges and damages against any publication of the content or reference to the medical file."

The news comes after Schumacher was revealed to have left Grenoble Hospital in France, more than six months on from when a skiing accident left him in an induced coma. He has since been transferred to Lausanne hospital in Switzerland to be closer to his family, though his current condition hasn't been confirmed as his management strive to ensure he can recover away from the public eye.

Schumacher, who retired for a second time at the end of 2012, suffered serious head injuries in the skiing accident on December 29, 2013. **SP**



World Cup security hiccups

Just when the FIFA World Cup in Brazil seemed to be going on smoothly, there were three security breaches that gave organisers some of their most embarrassing moments yet.

Andressa Urach, a former beauty contestant, was frog-marched out of Portugal's training ground by security staff just minutes before Ronaldo and his team took to the pitch. British newspapers last year reported claims from her that Ronaldo, 29, had cheated on his girlfriend Irina Shayk with her. At the time, the Portuguese superstar angrily denied the claims, tweeting that he was "deeply outraged by a situation intended, in vain, to affect my personal life."

Soon after Urach's ejection came news that Brazilian security services had detained a man who sneaked into Argentina's training camp in Belo Horizonte to seek star striker Messi's autograph. The 33-year-old Brazilian, who had received a T-shirt from Messi last week after cleaning his boots, was seen crying as he was led away. He told police he just wanted to get the shirt signed.

Organisers' security woes only got worse when scores of ticketless Chilean fans gatecrashed Rio de Janeiro's Maracana Stadium, breaking through fences in a desperate rush to see their team play Spain. The fans, many wearing Chile's red jersey, shattered a glass door at the media centre, broke fences and partition walls, and swarmed into internal corridors before security guards stopped them. Brazilian authorities arrested 85 people and ordered them to leave the country.

FIFA said none of the intruders had made it into the stands to see their team's stunning 2-0 victory, which put Chile into the second

round and sent defending champions Spain packing. But a security guard said some had found their way into the stands. The incident took place despite the presence of 1,500 security staff at the stadium, plus about 5,000 police on duty in the surrounding area. Afterwards FIFA said it would soon announce new security measures. **SP**

Delhi airport security breached twice in 48 hours

In a recent major security breach at Delhi airport, a middle-aged man managed to gain entry to the airside - the area directly involved in arrival and departure of aircraft - without any authorised pass and reached the tarmac before being caught. He was found hiding in a drain near the runway and was first spotted by a patrol vehicle.

The Central Industrial Security Force (CISF) is yet to find out how the man was able to reach such a sensitive area. "He had a two-year-old entry pass, which suggests he had worked at the airport earlier. We are probing the matter and scanning CCTV footage to ascertain the sequence of events," said a senior CISF official. An inquiry has been ordered, and according to the police the man is mentally unstable.

A couple of days later, another breach occurred wherein a man crossed two layers of security check at the cargo terminal and was stopped at the third checkpoint, next to the airside. In March, a 16-year-old boy had scaled the boundary wall to reach the airside. **SP**

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