

SP's



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

Narendra Modi, Hon'ble Prime Minister of India



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

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Reliance Infrastructure acquires Pipavav Defence

In the biggest deal in the defence sector in India, Reliance Infrastructure Limited announced the acquisition of Pipavav Defence and Offshore Engineering Company Limited. In a big strategic move, Reliance Infrastructure, along with its wholly owned subsidiary Reliance Defence Systems Private Limited, will acquire from the promoters of Pipavav Defence equity shares representing approximately 18 per cent shareholding in the company at a price of ₹63 per share, aggregating ₹819 crore.

Subsequent to the acquisition, Reliance Defence Systems is making an open offer to acquire 26 per cent shares from the public shareholders, at a price of ₹66 per share. The existing promoters of Pipavav Defence will retain a minority stake with two non-executive Board seats. Anil D. Ambani, Chairman, Reliance Group, will become Chairman of the Company.

Anil Ambani said "This is a unique opportunity for Reliance Group to participate in Prime Minister Narendra Modi's 'Make in India' programme for the high growth defence sector."

Nikhil Gandhi, the founder promoter and Chairman of Pipavav Defence and SKIL, stated, "I look forward to supporting Reliance to realise the goal of creating India's foremost defence company, with an emphasis on the 'Make in India' programme initiated by the Prime Minister of India." 

In a brief interaction with SP's M.A.I., Rajesh K. Dhingra, President, Reliance Defence & Aerospace said that Reliance Defence and Aerospace is pursuing the two helicopter programmes for Indian Army and Indian Navy for which they have submitted RFI responses. "We are also pursuing multiple ship and submarines building programmes along with opportunities in land systems and UAVs," he further added.



Cover:

The 10th edition of Aero India that began on February 18 with the Prime Minister making a strong pitch to end India's dependence on defence imports. Aero India had over 300 foreign firms vying with each other to align with the government's 'Make in India' campaign as they eye the burgeoning multibillion-dollar Indian defence market.

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Inadequate budgetary allocations!

While it is fairly understood that defence acquisitions take time and cost the exchequer immensely, one needs to see the fine print of the budgetary allocation for defence in the Union Budget. The Finance Minister, Arun Jaitley, has effected a modest increase in the allocation for defence, up about 7.5 per cent from last year and prima facie it appears to be a natural progression of hike. If the pending defence equipment deals have to be cleared in 2015-16, this increase is grossly inadequate.

The budgetary allocation for defence has gone up from ₹2,29,000 crore to ₹2,46,727 crore. The percentage of GDP for defence continues to hover around 1.75 per cent, which certainly is not a good figure if India has not only to cope with the challenges of national security but also emerge as a regional military power.

Though Jaitley stated that "Modernisation of the armed forces is critical to enable them to play their role effectively in the defence of India's strategic interests" the budget does not seem to reflect that statement. The Indian Air Force (IAF) gets ₹31,481 crore and if the Rafale deal is through, the first instalment payment comes to about 10 per cent (₹15,000 crore).

Besides the delayed 'mother of all deals' (MMRCA), the IAF urgently requires platforms that include 38 Pilatus PC-7Mk II basic trainer aircraft (the Defence Acquisition Council [DAC] has given its approval for the same); 22 Apache AH-64E attack helicopters and 15 Chinook CH-47F heavy-lift helicopters both from Boeing; a C-130J Super Hercules from Lockheed Martin to replace the one lost in an accident last year and six Airbus A330 MRTT flight refuelling aircraft, all totalling to ₹30,000 crore. There is no provisioning for these deals and the figures speak for themselves.

The fate of the other two services is also the same. The Indian Army, the largest among the three services, has a capital budgetary allocation of only ₹21,574 crore while the service has major commitments on its hands. It has commenced the raising of a Mountain Strike Corps which will impose an annual financial burden of ₹9,200 crore. The Indian Army is also acquiring M777 artillery guns from the US, a contract that would entail a commitment for ₹5,000 crore.

Hopefully, the NDA Government will not ignore the imperatives of national security and despite the seemingly inadequate budget-

ary support to the Indian armed forces in the current financial year, the government will muster the resources to ensure that the modernisation effort of the Indian armed forces is not undermined.

Meanwhile, giving a push to the 'Make in India' initiative, the DAC has approved three major projects—acquiring 38 additional Pilatus trainers and allowing the Hindustan Aeronautics Limited (HAL) to indigenously manufacture the turbo trainer aircraft. It also approved manufacture of mine countermeasure vessels in Goa with a foreign collaboration and another decision was to acquire a C-130J Super Hercules aircraft to replace the crashed aircraft.

In this issue, we have comprehensive coverage of Aero India 2015 which had clear focus of 'Make in India' for the defence sector. The 10th edition, which attracted close to 600 exhibitors from India and overseas, did not see any breakthrough deals, but sure enough there were rumblings of increased investment in indigenous defence production. The Prime Minister has made an exhaustive speech about self-reliance and technological breakthroughs.

Happy reading !

Jayant Baranwal
Publisher & Editor-in-Chief

Defence Budget 2015-16

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

The Finance Minister has announced a defence budget of ₹2,46,727 crore for FY 2015-16. This announcement has come in the backdrop of a few other defence-related news items:

- During Aero India 2015 Defence Minister Manohar Parrikar admitted that the defence procurement policy needed to be streamlined in order to facilitate 'Make in India' in defence sector. Why this glitch still remains despite the Prime Minister's call for 'Make in India' on August 15, 2014, raises questions especially when global arms majors are so very keen to respond to the Prime Minister's call.
- The Defence Minister recently informed the Parliament that the Army, Navy and Air Force have placed orders ₹83,858 crore during fiscals 2011 to 2014 for procuring arms, weapons and other defence-related systems (Air Force: ₹55,406 crore; Navy: ₹25,454 crore; and Army: ₹2,998 crore through foreign firms). But then these are statistics that are hardly reassuring considering the state of modernisation of our armed forces and the defence-industrial complex.
- Defence Minister also said 144 companies have been issued licences and letters of intent for manufacture of military hardware in the last 14 years, and 29 joint ventures and FDI proposals have been approved. Again hardly reassuring considering the state of modernisation of our armed forces and the defence-industrial complex.
- Government has approved ₹8,300 crore for OROP in the FY 2014-15 defence budget and the scheme is reportedly under implementation. This will fulfill a long-standing promise and would help reduce or negate surrender of funds in the current fiscal, which as per inside sources in end 2014 was estimated at about ₹12,000 crore.

Coming to the announcement of the defence budget of ₹2,46,727 crore (\$40 billion) for FY 2015-16 against Revised Estimates of ₹2,22,370 crore for the year 2014-15, the increase is ₹24,357 crore or 10.9 per cent from the Revised Estimates and ₹17,727 crore or 7.74 per cent from the Budget Estimate of ₹2,29,000 crore announced in July 2014 by the same Finance Minister. Unfortunately, the announcement of ₹2,46,727 crore as defence budget for FY 2015-16 will not amount to much considering the fall in the value of the rupee against the US dollar vis-à-vis continuous rise in prices of arms and weapon systems that are imported. Yes 'Make in India' will eventually catch up but the long gestation period cannot be ignored and in the interim and the pathetic state of armed forces modernization too cannot be ignored in the face of mounting threats to national security. When General Charles de Gaulle became President of France in 1959, France was militarily not very strong. Though France was member of NATO, the Commander-in-Chief of the NATO forces was even prohibited from revealing to national authorities like the French President, which bases in their own countries housed the Alliance's nuclear weapons. What de Gaulle ensured was that the defence budget of France was to ensure defence allocations remained greater than 2 per cent and touching

5 per cent of the GDP, resulting in France emerging as a militarily strong nuclear power. That trend has continued with the current French military expenditure standing at 5.4 per cent of the GDP. In India, though the Long-Term Integrated Procurement Plan (LTIPP) is based on a hypothetical 3 per cent of GDP, defence allocations have never really touched that mark. Even post the Kargil conflict and public exposure to massive equipment shortages in the Army, the one time high 1999-2000 defence budget allocation was made at 2.41 per cent of the GDP. However, there has been a downslide since then, not to talk of the thousands of crores of rupees that were surrendered by MoD annually barring an odd year when budgetary allocations were fully utilized.

In actual terms, the small increase in the defence budget for the next fiscal is grossly inadequate for required modernisation of the armed forces considering that as per government's own admission 50 per cent of military equipment held by the three services is obsolete. In addition, there are critical shortages of arms and even ammunition are existing particularly in the Army, the fact is that then COAS General V.K. Singh's leaked letter to then Prime Minister Manmohan Singh has made little difference beyond temporary media furore about the source of the leak; the border infrastructure is grossly inadequate with progress at snail's pace – some 30 strategic road and 14 strategic rail projects are pending; there was no money in the present fiscal for the Mountain Strike Corps which needs ₹64,000 crore over seven years in addition to about an overall ₹25,000 crore required for infrastructure to support the Mountain Strike Corps; major acquisitions and pending payments include 126 medium multi-role combat aircraft (MMRCA), 197 light helicopters, 145 ultra-light howitzers, 15 Apache attack helicopters and 22 CH-47F Chinook medium-lift helicopters, C-17 heavy-lift aircraft and frigates and submarines, and; budgetary support required for capacity building in intelligence, surveillance and target acquisition and for network-centric warfare.

The close interrelation between economy and security of any country is an accepted fact. Both need to be fine-tuned. The rising threats particularly from China and Pakistan too need to be taken into account. We need to take a cue from the record \$42 billion of Japan in face of Chinese aggressive posture – that we too face. Logically India should have a defence budget of 3 per cent or more of the GDP for next few years. Sure, India can become a global manufacturing hub for arms and defence equipment but as mentioned above what of the interim period. The bottom line is that an allocation of ₹2,46,727 crore for FY 2015-16 is disappointing and does not augur well for the government's commitment to defence modernisation. The 'India First' commitment of the present government is unquestionable but how is the defence budget allocated and how is the LTIPP chalked out in absence of a National Security Strategy, without defining National Security Objectives and without a Comprehensive Defence Review? This vital anomaly in India's defence setup cannot be resolved unless the higher defence structures of India are remodeled and military professionals brought into the MoD and the defence industrial complex. Unfortunately, the government has made no move in this direction yet. **SP**

Defence Budget 2015-16: Hope or despair

[By Air Marshal B.K. Pandey (Retd)]

The budget for the financial year 2015-16 presented on February 28, 2015, by the Union Minister of Finance, Arun Jaitley, not only to the Parliament but to the nation as well, has drawn reactions from different quarters that is being described as “mixed”. Some experts and analysts believe that this year’s budget, the second by the NDA Government since coming to power at the Centre, is a progressive one that will boost economic growth, make India an investment destination for the world, enter an era of ‘Make in India’ open up opportunities for the nation to better integrate with the global economy as well as boost rate of growth of the national economy to 8.5 per cent. However, there are others largely from the opposition, who believe that this budget is heavily weighted in favour of the corporate sector and in fact can be regarded more of an anti-people budget. This belief is strengthened by the fact that allocation for a number of social welfare schemes have been cut substantially, service tax enhanced and air travel made more expensive, a step that could impinge on the growth of the Indian airline industry that has been engaged in an endless battle for survival. Unlike in the past, this budget is indeed devoid of ‘goodies’ for the middle and lower middle class who are unlikely to be enthused by the ethereal national objectives that the Finance Minister has been aiming to achieve by the exercise.

As for the focus of the NDA Government on national security, the allocation for the Ministry of Defence for financial year 2015-16 stands at ₹2,46,727 crore as against an allocation of ₹2,29,000 crore made last year. The increase in the allocation for the Ministry of Defence this year is a mere 7.5 per cent as against a 12.4 per cent in the last year’s budget over the previous year. The increase this year when viewed against the revised estimates of last year that was ₹2,22,370 crore, would be around 10.9 per cent. However, as a percentage of GDP, the allocation for defence continues to hover around 1.75 per cent, a figure that has been generally regarded as grossly inadequate for the nation to cope with the challenges to national security as also to emerge as a regional military power.

During his presentation of the budget in the Parliament, the Finance Minister devoted just two to three minutes on the allocation for defence. In his brief coverage of this segment, he did go on to state that “Modernisation of the armed forces is critical to enable them to play their role effectively in the defence of India’s strategic interests.” While this may have sounded encouraging to those affected by allocation for defence in the national budget to begin with, a deeper analysis of the exercise by the Finance Minister reveals otherwise and is unlikely to elevate spirits in the Indian armed forces. The enhancement in the allocation for defence of ₹25,328 crore from the revised estimate of last year to a large extent, will be neutralised by the high annual inflation rate that could be in the region of six to seven per cent and the decline in the value of the Indian rupee against the US dollar as well as the routine escalation in the price of military hardware in the global market. A 7.5 per cent enhancement in the allocation for defence this year therefore is unlikely to be sufficient to finance the several procurement projects that been kept on hold for several years.

What is of particular interest to the Indian armed forces is the allocation for capital expenditure which is utilized for financing military hardware. This year, although the IAF has been allocated a sum of ₹31,481 crore that constitutes the largest share amongst the three services, in view of the high value procurements in the pipeline related to urgently required equipment, this sum may turn out to be totally inadequate. In case the ₹1,50,000 crore contract for 126 of the medium multi-role combat aircraft (MMRCA) is signed during this financial year, the government would have to shell out ₹15,000 crore as the first installment at the time of signing the contract. There are a number of other contracts in the pipeline for the IAF to urgently required platforms that include 38 Pilatus PC-7Mk II basic trainer aircraft from Switzerland, 22 Apache AH-64E attack helicopters and 15 Chinook CH-47F heavy-lift helicopters both from Boeing, a C-130J Super Hercules from Lockheed Martin to replace the one lost in an accident last year and six Airbus A330 MRTT flight refuelling aircraft, all totalling to ₹30,000 crore. The IAF is already in the process of inducting more of the Mi-17V5 medium-lift helicopters ordered earlier from Russia as well and will have to pay up front for the Su-30MKI, the advanced light helicopters and additional Hawk 132 advanced jet trainer aircraft being manufactured by the Hindustan Aeronautics Limited (HAL). The IAF will also have to pay for the development of the light utility helicopter, the intermediate jet trainer and unmanned aerial vehicles (UAV) to the Indian aerospace industry. With all these commitments on hand, the allocation under capital budget for the IAF would clearly be inadequate.

The Indian Army, the largest among the three services, has a capital budgetary allocation of only ₹21,574 crore while the service has major commitments on its hands. It has commenced the raising of a Mountain Strike Corps which will impose an annual financial burden of ₹9,200 crore for the next seven years. The Indian Army is also acquiring M777 artillery guns from the US, a contract that would entail a commitment for ₹5,000 crore. Similarly, the Indian Navy that has a major role towards maritime security so vital for economic growth of the nation, has been allocated a capital budget of ₹23,910 crore, higher than that allocated for the Indian Army.

Apart from the induction of aerial platforms, tanks and artillery, the Indian armed forces will require to procure support equipment by way of radars as well as improve their command and control systems, upgrade intelligence, surveillance and target acquisition capabilities through induction of modern equipment to operate effectively in a network-centric environment with high degree of cyber security.

When the NDA Government came to power in May 2014, the Indian armed forces were looking forward to a respite from the paralysis in decision making that the system had been afflicted with in the last decade. The initial impression is that the latest budget is a depressing indication that the situation for the Indian armed forces has not actually changed for the better. Hopefully, the NDA Government will not ignore the imperatives of national security and despite the seemingly inadequate budgetary support to the Indian armed forces in the current financial year, the government will muster the resources to ensure that the modernisation effort of the Indian armed forces is not undermined. **SP**

Defence: The lacklustre budget



Minister for Finance Arun Jaitley departs his office in North Block to Parliament House to present the General Budget 2015-16. Also in the photo are Minister of State for Finance Jayant Sinha along with senior officials of the Ministry of Finance.

[By **Ranjeet Kumar**]

With a list of weapon systems and platforms piling up over the years and even decades, and plans to deploy thousands of more battle ready mountain troops on the Sino-Indian border, the very nominal increase in Indian defence budget has dampened the spirits in defence and strategic circles. The observers are of the view that in view of the emerging strategic challenge from China and ongoing military tension with Pakistan the government should have come out with a game changer budget to provide for matching responses. But the provisions for the armed forces of ₹2,46,727 crore unveiled in the 2015-16 annual budget will only meet the pay and allowances of the over 1.2 million forces deployed on the varied, difficult and far-flung locations. This is only a meagre 7.7 per cent raise

over the previous year's (2014-15) budget of ₹2,29,000 crore.

There seems to be an overwhelming consensus among the observers that this year's defence budget has dashed the hopes of a major push of armed forces modernisation by equipping them with latest armouries. Even the much talked about and promised One Rank, One Pension for the retired soldiers found no mention in the defence budget as Finance Minister Arun Jaitley later complained that this has been because the Ministry of Defence (MoD) and armed forces headquarters have not been able to reach any consensus on the formula. According to defence expert Alok Bansal, "Only ₹94,588 crore has been earmarked for capital expenditure, which entails procurement of equipment, armament and platforms. This amount is almost the same as was earmarked in the last year's budget, although it is over 15 per cent increase over the revised estimates of ₹81,965 crore. This may not significantly augment the defence

acquisitions, although he talked of boosting the defence sector and self-sufficiency by facilitating quick and transparent decisions in the purchase of defence equipment.”

Under the ₹94,588 crore provision for capital expenditure the Army share has been fixed to about ₹26,300 crore, the Air Force share as ₹33,000 crore while the Navy has been provided ₹33,000 crore. Though the Army is the largest force among the three services, the provision is the lowest, probably because they are less dependent on capital intensive systems, while the Air Force and Navy has been given a larger slice of the capital expenditure to cater to their bulk demands.

According to Bansal the bulk of increase in the budget is under the revenue head and will be spent on salaries and other recurring expenditure. In fact since the defence pensions have been segregated from the main defence budget but presented in the annual budget under the head of the Defence Ministry goes to defence pensions. This year's defence pensions expenditures has been fixed as ₹54,500 crore which is in addition to the ₹2,46,727 crore provided for in the defence budget. If both are taken together the total expenditure under the Defence Ministry head will go up to ₹3,01,227 crore and the international think tanks like SIPRI tend to calculate these two expenditures under the defence budget. However, they forget that

Rafale fighter aircraft



the majority of the defence expenditure under the defence heads go for maintaining the daily living costs of the soldiers and the bulk of the provision under the capital expenditure (which is ₹94,588 crore in the year 2015-16) is spent on servicing and debt repayment of the weapon systems acquired in previous years.

Even this provision in last year's (2014-15) capital budget was not fully spent and MoD had to return to the Finance Ministry as evident from the revised estimates that was slashed by ₹12,623 crore to take care of the revenue expenditure to maintain the three services. In fact this has been the case over the years. The MoD is not able to fully spend the grants under the capital expenditure and by the end of March every year, the MoD usually has to return the unspent money. During the previous NDA regime, there was a provision that the unspent amount will be rolled over and added to the capital expenditure in the next year's defence budget, as the defence purchases runs into billions of dollars and the unspent money can be spent on the initial payments of the weapons systems. The NDA regime will once again have to reintroduce this roll-over concept to create

a defence purchase fund. During the UPA regime of ten years, the MoD initially under Pranab Mukherjee and then under A.K. Antony dithered on major decisions on defence purchases on many pretexts. Though the UPA regime did acquire many defence platforms from the United States under the foreign military sales (FMS) programme, tendered weapon systems remained out of bound for the three services. For example, the UPA has left undecided many big-ticket deals like the \$15-20 billion MMRC deal, the multibillion howitzers, the air refuellers, the ultra-light helicopters, etc. Now the NDA regime, once again in power, will have to decide on these defence equipments. Besides, the MoD have to take care of the acquisition process and fast-tracking of the soldier modernisation programme, the diesel submarine acquisition programme, the aircraft carriers development programme, etc. The government has also come out with an order for six nuclear submarines, for which huge funds are to be allocated to enable the Indian Navy to at least meet halfway the 24 submarine induction programme by the end of 2030.

During the UPA regime, Antony sat on many defence acquisition projects and even cancelled the projects under implementation like the VVIP helicopters and the ultra-light helicopters programme, which almost reached on final stage of contract negotiations. If the current Minister Manohar Parrikar works on the promises of quick and transparent decision making process, his ministry would be expected to immediately clear many pending deals like the helicopters (ultra-light, heavy-lift, attack, etc) and the mother of all deals the MMRC Rafale, the howitzer guns, the air refuellers, all of which needs most urgent attention of the MoD and if so, the government would have to provide additional funds to meet the demands of initial contract implementations.

To meet the requisite demands of the forces, the government will in fact have to provide over three per cent of the GDP of the country for the defence sector, but this year's defence budget has just catered for annual maintenance of the equipments previously acquired and the upkeep of the soldiers, which is just 1.75 per cent of the GDP of the country, where as countries like China and Pakistan spend much more than the Indian share of total GDP. This leads to operational gaps in the combat preparedness of the armed forces. India used to spend more than 3 per cent on defence in the aftermath of 1962 China war till the decade of the 1980s, and then the defence expenditure as a share of GDP sharply declined and it has hovered below 2 per cent, going back to the era of the 1950s. Obviously the 1962 China military humiliation gave a jolt to the Indian defence establishment.

The Kargil conflict of 1999 also led to a lot of soul-searching among security czars of the country, but it seems, the government is yet to learn appropriate lessons from the shock treatments from the neighbours. Though the Finance Minister Arun Jaitley claimed that the NDA Government has been both transparent and quick in making defence equipment related purchase decisions, in order to keep our defence forces ready for any eventuality, his ministry has made provisions adequately for the armed forces. Jaitley asserted in Parliament while presenting the budget, "Defence of every square inch of our motherland comes before any thing else. So far, we have been overdependent on imports, with its attendant unwelcome spinoffs." Stressing on 'Make In India' policy, Jaitley said, "Our government has already permitted FDI in defence so that Indian controlled entities also become manufacturers of defence equipments, not only for us, but for export." This is a dream for every concerned Indian citizen. **SP**

Push to 'Make in India'

[By Ranjeet Kumar]

The Defence Acquisition Council (DAC), headed by the Defence Minister Manohar Parrikar, took three major decisions on February 28 that is expected to give a big push to the 'Make in India' programme of the Prime Minister, Narendra Modi.

The DAC approved additional purchase of 38 Pilatus trainers from Switzerland for induction in the Indian Air Force (IAF) while 68 Hindustan Turbo Trainer (HTT-40) would be manufactured by the Hindustan Aeronautics Limited (HAL). The second approval was to indigenously manufacture with foreign collaboration a dozen mine countermeasure vessels (MCMVs). The programme worth ₹32,000 crore would be manufactured at the Goa Shipyard Ltd with foreign collaboration. The third decision pertained to acquisition of one C-130J Super Hercules aircraft worth ₹533 crore, to replace the one that crashed last year.

However, the much anticipated decision on Shin-Maywa (US-2i) amphibian aircraft deal has been kept pending, while the Ministry of Defence (MoD) will hold more discussions with the Japanese manufacturers.

Furthering the 'Make in India' initiative, Parrikar has tasked HAL to supply rest of the required trainer aircraft to IAF, which acquired 75 Pilatus from Switzerland in 2013 at a cost of ₹2,896 crore, besides the 38 order purchase now under the option clause at a cost of around ₹1,450 crore. The MoD has thus accepted the long-standing offer of HAL to let them make the trainer aircraft for rookie pilots of the IAF. Earlier, the IAF had complained to the MoD that they would not like HAL manufactured trainers, giving reasons that they were going to be less advanced and more expensive. But Parrikar has worked on a compromise formula to allow HAL to produce 68 HTT-40 aircraft.

The then IAF Chief N.A.K. Browne wanted the MoD to order another 106 of the Pilatus trainers. The IAF contention was that having two types of trainers, If HTT-40 is also inducted, would be a cumbersome job to maintain as it would entail duplication in spares, maintenance and separate facility and trained staff. The IAF had projected an initial demand of 181 such trainers from Switzerland.

The MoD has decided to place enough orders with HAL to make the HTT-40 commercially viable. The final number of the trainers to be ordered may be increased as the IAF and the Indian Navy would be requiring them for a long period of time. The MoD has decided to monitor this indigenous project to bring them to fruition.

The IAF used to train its ab initio pilots on the HPT-32 which were phased out in December 2012, after a series of accidents, questioning the airworthiness of the trainers. On the occasion of its induction ceremony in Dundigul, Hyderabad, on May 31, 2013, the then Air Chief N.A.K. Browne had said, "This trainer will provide a solid foundation to our ab initio trainees as they understand the nuances of basic flying and go on to facilitate a seamless transition, into full-fledged operational flying for all streams. This will be an important milestone in our transformation journey." Praising the Pilatus, the Air Chief then said, "PC-7 also incorporates exceptional safety features which would ensure that, while our young cadets

learn the complex skills of military aviation, the safety of the aircraft as well as the aircrew is ensured. In addition, having an extremely good endurance in excess of four hours as well as the availability of a good margin of error, which is essential in training flying, makes it an ideal platform for the task."

This 'Make in India' initiative will give a boost to indigenous manufacturing programmes of the MoD including naval warships.

The Indian Navy has been demanding for a long time induction of at least a dozen mine countermeasure vessels (MCMV) as it is down to nine vessels now. With the DAC approval, there is going to be a scouting for a foreign partner for the Goa Shipyard to manufacture the MCMVs, valued at ₹32,000 crore. Earlier the MoD had negotiated for MCMVs after receiving offers from abroad, but the MoD under A.K. Antony had scrapped the global



HAL's HTT-40

tender after allegations of corruption. The fresh process would now begin to look for an international partner. This would be in the 'Buy and Make' category acquisition under the DPP and the Goa Shipyard Ltd would manufacture the ships under transfer of technology.

However, the much anticipated and talked about deal in strategic circles, the decision to acquire 12 amphibious airplanes US-2i from ShinMaywa worth \$1.3 billion has been deferred once again. This was slated to be first strategic sale of a defence platform by the Japanese company to India. However, government sources said that a final decision could be taken soon as the Navy seriously wants them to safeguard the remote islands of Andaman and Nicobar and Lakshadweep. Besides, the Indian Navy, the Indian Coast Guard is also interested in acquiring five of them from Japan initially. Since the Indian Government wants to manufacture them in India, demand in large numbers may arise from the Indian Navy which has a huge responsibility to safeguard the island territories of the country, situated in the Indian Ocean. **SP**

The new Defence Procurement Procedure

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

India's Defence Procurement Procedure (DPP) has been reviewed annually for the past several years and there has been much fanfare every time a new one was issued. But the fact remains that there has been no change from importing 70 per cent of our defence requirements that shows the sorry state of R&D, indigenisation and government focus on matters military. The fact remains that any country that imports 70 per cent of defence requirements can hardly be militarily strong. That the Ministry of Defence (MoD) under A.K. Anthony as Defence Minister remained inert and brought military preparedness to 1962 levels, government websites acknowledge that the 30 per cent defence equipment produced indigenously is largely substandard.

With the change of government and new Defence Minister, expectations are in the air of changes that would alter this pathetic state especially with Prime Minister Narendra Modi's call of 'Make in India'. There is need to examine what changes to the DPP are warranted to bring us out from the current glut. On December 31, 2014, Defence Minister Manohar Parrikar had told media that government is open to reviewing all cases of blacklisted defence firms on merit and that the ban on Tatra trucks has been partially lifted. This was apparently based on the new DPP draft under preparation that after going through further procedures was to go to the Union Cabinet for approval. The new policy is expected to outline measured steps instead of outright blacklisting firms, steps to be taken for various offences, if committed.

The new DPP will also allow foreign defence firms to legally hire agents. The Minister had expressed hope that the final draft policy will be out in a month-and-a-half which will lay thrust on development of domestic defence industry and faster acquisition process. Subsequently on January 31, 2015, the Defence Minister has called for more autonomy to be given in decision making to DPSUs and OFBs for better performance. Addressing the Consultative Committee attached to MoD, Defence Minister Parrikar said MoD would be bringing about major changes in the DPP and the Defence Production Policy to provide greater autonomy to the DPSUs and OFB units (there are nine DPSUs and 41 Ordnance Factories) for their expansion, diversification and enable them take decisions to improve serviceability of platforms available to the armed forces. He said the 'Make in India' procedure in defence needs further improvement and that defence industry in India is a unique with services as the only customer.

Interestingly, participating MPs wanted to know: whether Government has drawn up a clear road map to reduce defence imports.

Some felt there was a concerted campaign to denigrate the public sector and to promote the private sector; unlike consumer products, the design and development of defence product has long gestation and should be appreciated in that light. They expressed the view that the private sector must be promoted in a big way, but not at the cost of the public sector. What needs to be understood here is that our defence sector has remained defunct because we have simply not let the private sector come up in this sphere. Are we going to overlook that in the past 50 years, our defence industry with DRDO at the apex has not developed a single platform or defence equipment in the laid down timeframe? The Tejas taking 30 years and 5.56 INSAS taking 15 years are just two examples. Did they have less autonomy when numerous projects were undertaken, and are still being undertaken, without reference to the user and in many cases even without 'official' knowledge of the government; unofficial knowl-

edge was always there with Joint Secretaries of the Department of Defence Production (DoDP) on various boards of the DRDO, DPSUs and OFs. Would this change simply because a MoD bureaucrat now heads DRDO? The question also is that are we looking at defence equipment 'through' DRDO-DPSUs-OFs or is there is parallel opening to the private sector and much more importantly has the division been clearly defined (who is to make what) based on a long-term road map to bridge the 70 per cent imports and improving the 30 per cent indigenously produced content?

We need to acknowledge capabilities of the private sector because our objective of self-reliance will remain elusive unless the private sector is duly integrated and its potential fully harnessed to build a viable indigenous defence industrial base. The government has to create an environment wherein the private sector feels assured of just business opportunities, level playing ground and fair play. Enlarging the DRDO empire would amount to playing into the hands of the arms mafia that very much is alive and kicking. Is there any justification for the DRDO empire producing thousands of products that are available/should be handled by civil (not private defence) industry? And finally, the Defence Minister must understand that without user integration this whole exercise of transforming the defence industrial complex will remain incomplete. Parrikar acknowledged in the Consultative Committee meeting that the sole customer is India's defence industry, the services. So why are services not part of the design, planning, policy and decision making in the DRDO empire? Why services officers are not posted at all these levels? Why has the MoD not been restructured likewise? In absence of such essential changes we would not be doing much different from past decades because defence is specialised business, not just business. **SP**



AH-64 Apache attack helicopter

ate an environment wherein the private sector feels assured of just business opportunities, level playing ground and fair play. Enlarging the DRDO empire would amount to playing into the hands of the arms mafia that very much is alive and kicking. Is there any justification for the DRDO empire producing thousands of products that are available/should be handled by civil (not private defence) industry? And finally, the Defence Minister must understand that without user integration this whole exercise of transforming the defence industrial complex will remain incomplete. Parrikar acknowledged in the Consultative Committee meeting that the sole customer is India's defence industry, the services. So why are services not part of the design, planning, policy and decision making in the DRDO empire? Why services officers are not posted at all these levels? Why has the MoD not been restructured likewise? In absence of such essential changes we would not be doing much different from past decades because defence is specialised business, not just business. **SP**

Sri Lanka-India: China still in the room



Prime Minister Narendra Modi and the President of the Democratic Socialist Republic of Sri Lanka Maithripala Sirisena addressing the media, during the Joint Press Interaction in New Delhi on February 16, 2015

[By **Ranjeet Kumar**]

By announcing nuclear deal with Sri Lanka, India has made a significant move to checkmate China in the Indian Ocean but China has also not failed to make a counter move to ensure that President Maithripala Sirisena makes China his second international destination in the coming months. During the visit of the newly elected President Sirisena to India from February 15 to 18, 2015, his first foreign jaunt after assuming his responsibilities, India made all efforts to woo the island leader with a civil nuclear cooperation agreement besides the decision to expand maritime security cooperation with Sri Lanka. Though India and Sri Lanka had more than a decade ago agreed to initiate a formal defence cooperation agreement, but this still

remains in limbo. Probably when Prime Minister Narendra Modi visits Colombo by March end, the defence relations might be formalised. Meanwhile India has to rest content with a statement by Prime Minister Modi, "President and I also agreed to expand our defence and security cooperation. We welcomed the progress in our maritime security cooperation, including in the trilateral format with Maldives."

However, India should not be in celebratory mood. Like an astute politician President Sirisena has not missed the chance to gladly accept the Chinese Government invite to attend the annual Boao economic forum meeting. China has invested a lot of political and financial muscle in the island nation as part of its maritime silk road strategy with an aim to make the tiny country the lynchpin in its Indian Ocean policy. Hence, President Sirisena would be wooed

with double vigour when he meets the Chinese President Xi Jinping in the Great Hall of the People, in Beijing.

Interestingly, for the first time in India-Sri Lanka relations, the current summit level engagement has not evoked emotive and violent reactions from the Tamil political parties of India, who spare no chance to castigate the Sri Lankan Government on its anti-Tamil attitude and remind the Indian Government to desist from helping the Sri Lankan Government in any form. Even the Sri Lankan armed forces officers who often visit India to attend to some defence course have been forced to go back after political pressures of the Tamil parties and government.

However, with the dethronement of a powerful dictator like Mahinda Rajapaksa and coming to the centre stage of a political leader who talks of reconciliation with the Tamils of his country and who has indicated that he will have a balanced foreign policy with India and China there are expectations in Indian strategic circles of transparent relations between the two nations. Sirisena has indicated that he will not become a pawn in the Chinese chess game being played on the board of Indian Ocean, there are also hopes of a clarity in the Sri Lankan maritime security policy and also that they will not allow China to take strategic advantage of their presence on the Island nation on the excuse of infrastructure development projects. India has sought assurance on this count.

One must wait for the results of the visit of President Sirisena to China before pronouncing judgement on his distinct inclinations towards India. Though Sirisena had made a lot of well meaning statements after his interactions with Modi, by calling his visit a remarkable milestone in taking the relations to a greater height, Sirisena also expressed satisfaction that the visit had borne very fruitful results.

The issue of fishermen continues to be most emotive in India-Sri Lanka relations as millions of Indians depend for their livelihood on the maritime area between India and the island nation. Indian fishermen are accused of trespassing into Sri Lankan waters. Hence Prime Minister Modi had to publicly tell Sirisena that a solution must be found by the fishermen's associations of both countries as it affected the livelihood in both countries.

It is reported that Modi raised the issue of 13th amendment of the Sri Lankan Constitution for devolution of powers to the Tamils. India on its part has initiated many schemes for the well-being of beleaguered Tamil population by providing funds for 50,000 flats in the Tamil areas. India has been engaging with the previous Rajapaksa Government to take care of the Tamils, but he was turning a blind eye to the ground situation in the Tamil areas. The new Sirisena Government looks amenable to India's suggestions for revival of faith among Tamil population towards the new government.

Also, with the new political signals from the Sirisena Government ground has been prepared for India and Sri Lanka to engage more deeply in the defence, nuclear and other strategic areas. Though the agreement on civil nuclear cooperation has more of a symbolic value than any substantive offer like the building of a nuclear power plant, it has attracted worldwide attention. "The bilateral agreement on civil nuclear cooperation is yet another demonstration of our mutual trust," according to Modi.

However, the civil nuclear cooperation only talks of facilitating cooperation in the transfer and exchange of knowledge and expertise, sharing of resources, capacity building and training of personnel in peaceful uses of nuclear energy including use of radioisotopes, nuclear safety, radiation safety, nuclear security, radioactive waste management and nuclear and radiological disaster mitigation and environmental protection.

In spite of nuclear cooperation agreement not being of substantive nature, Sri Lankan President would try to sell this deal as a big

achievement for them in his country, who are considered a novice in nuclear technology. President Sirisena has perhaps realised the necessity of taking note of India's security concerns, hence there has been indications from the Sri Lankan Government to review the \$1.4-billion Colombo project. Earlier China had taken advantage of India's passive attitude towards the island when India sat on the Sri Lankan Government proposal to build the Hambantota port. China lost no opportunity to complete this project in time and has now bagged another similar port project, the foundation stone for which was laid last year when President Xi Jinping had visited Colombo, immediately after New Delhi.



However, Prime Minister Modi would be balancing Xi's visit to Colombo with his first in 27 years after the visit of the then Prime Minister Rajiv Gandhi in 1987. The new Sirisena Government has provided an opportunity to India to engage more deeply with the maritime neighbour and create an environment of trust between the two nations. At the moment China still seems to be a big elephant present in the Indo-Sri Lankan tent, where China found a vacant space to move in because of the domestic and external factors created both by Sri Lanka and India.

Reacting cautiously on the Sirisena visit to India and the signing of the civil nuclear cooperation agreement, China said, "We want to develop strategic cooperative partnership with India for peace and prosperity and want the same with Sri Lanka." India's ties with Sri Lanka was adversely affected when its previous government allowed the Chinese to expand its footprint in the country by building ports, highways and participating in other infrastructure projects. **SP**

Salvaging Rafale deal

The French Defence Minister has offered a fresh proposal to resolve the issue of medium multi-role combat aircraft (MMRCA) for which Dassault Aviation's Rafale had been selected. The Indian Ministry of Defence (MoD) has assured to look into that.

Since Prime Minister Narendra Modi is visiting Paris in April it would be difficult for India to scuttle the deal without any solid ground. The only excuse can be the life-cycle cost of Rafale which is much more than the Eurofighter.

This issue was brought to the notice of the then UPA Government and the opposition BJP leader Yashwant Sinha had sent a written memo to the MoD regarding the high life-cycle cost of the plane. Dassault Aviation seems to have assured the MoD to take care of this cost by perhaps reducing the initial cost of the plane. Now that the same NDA is in power they are trying to address this issue. **SP**

– Ranjeet Kumar



The French Defence Minister Jean Yves Le Drian calling Minister for Defence Manohar Parrikar in New Delhi

Terma and Tata team up for development centre



The partnership between Tata Advanced Systems Ltd. and Terma includes establishment of a Development Centre for design and development of Combat Management Systems and collaboration on surface surveillance radars.

Steen Lyneskjold, Senior Vice President, Terma Defense & Security, headed a Terma delegation to South Asia's biggest airshow, India's biannual Aero India 2015. Terma used the show to cement its India partnerships. In partnership with Terma, TASL has established a Development Centre in India, for design and development of combat management systems (CMS). The TASL/Terma partnership has been empanelled for Indian Navy CMS projects.

TASL has also partnered with Terma for the Indian Navy's first 'Buy & Make (Indian)' programme, the surface surveillance radar (SSR) project. Currently the two companies are also exploring other areas of collaboration.

"India is an important market for Terma, where India's new 'Make in India' philosophy is well catered to by Terma's strategic vision for global partnerships, and we are

proud of our close partnership with TASL" states Anupam Narain Mathur, Managing Director, Terma India. **SP**

HAL hands over BrahMos missile integrated Su-30 to IAF

HAL handed over the first BrahMos missile integrated Su-30 to IAF in an exclusive event at Aero India 2015. "This is a proud moment for HAL. The successfully completion of the first Su-30 aircraft integrated with BrahMos missile shows the synergy between DRDO, HAL and IAF. We are hopeful of rolling out the second aircraft in a record time," said T. Suvarna Raju, Chairman, HAL. S.K. Misra, CEO & MD, Aerospace Pvt Ltd, was present on the occasion.

The flight clearance certificate was handed over by Dr K. Tamilmani, distinguished scientist and DG (Aero) to Air Marshal S.B.P. Sinha, Deputy Chief of Air Staff. The aircraft acceptance certificate was handed over by A.M. Raja Kannu, DG (AQA) to Air Marshal Sukhchain Singh.

This unique programme was taken up as an indigenous challenge by HAL's Nasik



division in 2010. The team overcame several difficulties due to limited design data of Su-30MKI and received approval in January 2011 and order for integration was obtained from BAPL on techno-commercial merits against OEM in January 2014. **SP**

BAE Systems awarded Hawk support contract by HAL

BAE Systems has secured a five-year contract worth GBP 18.5 million to provide the Hindustan Aeronautics Limited (HAL) a comprehensive package comprising ground support equipment, spares, support and training for the Hawk Mk132 advanced jet trainer. This is in support of HAL's plans to establish a dedicated repair & overhaul facility for the aircraft in advance of a major servicing milestone anticipated in 2016.

The agreement was signed at Aero India 2015 between Wing Commander Benjamin (Retd), General Manager – Overhaul Division, HAL, and Steve Timms, Managing Director, Defence Information, Training and Services, Military Air & Information, BAE Systems, in the presence of HAL's Managing Director, Bengaluru Complex Naresh Babu and Chris Boardman, Managing Director, Military Air & Information, BAE Systems.

Steve Timms, Managing Director, Defence Information, Training and Services, said: "This agreement deepens our partnering commitment to HAL and further develops HAL's in-country capabilities that are helping to deliver an enhanced training capability to the Indian Air Force and the Indian Navy." **SP**



AIR MARSHAL
B.K. PANDEY (RETD)

Tejas without manuals?

On January 17, 2015, in a quiet ceremony at the Hindustan Aeronautics Limited (HAL), away from media glare, the first indigenously-built light combat aircraft (LCA) Tejas Series Production 1 (SP-1) was formally handed over to Air Chief Marshal Arup Raha, Chief of the Air Staff, Indian Air Force (IAF) by Manohar Parrikar, the Minister of Defence.

While this event is generally being seen as flagging a major milestone in the 32-year-long and arduous journey of the LCA Tejas programme, a somewhat disconcerting feature of the occasion as reported a month later by NDTV news channel on February 16, was that the Tejas SP-1 was handed over to the IAF without the associated training and maintenance manuals. This is despite the fact that the Tejas SP-1 had successfully completed its maiden flight in October 2014. To any professional dealing with sophisticated and high technology equipment more so in the regime of aviation military or civil, this situation would be regarded as completely bizarre and totally unacceptable. This is also symbolic of the prevailing work culture in the India aerospace major. In fact, unhappy at this lapse, the Defence Minister has cracked the whip and stipulated a deadline for providing the manuals.

The LCA Tejas programme is unique in other ways too. To catalogue some of the milestones of the Tejas programme, the first LCA Technology Demonstrator 1 (TD-1) undertook its maiden flight in January 2001 followed by the LCA TD-2 taking to the air soon after in June 2002. However, approval for Limited Series Production (LSP) of 20 aircraft for the IAF was accorded by the government only in 2006.

The LCA Tejas Mk-I is a rare example of a combat aircraft under development being accorded initial operational clearance (IOC) twice. The first time that the Tejas Mk-I received IOC was in January 2011 by which time the LSP-5 had been successfully tested. The second time the LCA Tejas Mk-I was given IOC (referred to as IOC 2) was in March 2013. This apparently became necessary as the IAF was not quite satisfied. It regarded the operational status

of the platform as incomplete and hence declined to quite accept IOC granted in January 2011. However, after IOC 2, the IAF has now placed an order for 20 aircraft in IOC configuration. As per the initial estimates, with a rate of production of eight aircraft per year, HAL will take five years to complete delivery against the initial order of 20 aircraft. But there are reservations in some quarters about HAL being able to maintain a rate of production at eight platforms per year. HAL has indicated plans to step up the rate of production to 16 aircraft per year. However, given the track record of HAL, the possibility of achieving this would be somewhat remote. Right now the focus ought to be on achieving final operational clearance (FOC) which is planned for the end of this year. The rate at which the project has been moving so far, HAL may not be able to meet with this target date for FOC.

While the IAF is moving ahead to raise the first squadron of LCA Tejas Mk-I aircraft at Air Force Station, Sulur near Coimbatore, non-availability of training and maintenance manuals could seriously undermine flight safety. While experienced test pilots have been test flying the Tejas without training manuals so far, this state of affairs would not be acceptable with pilots of relatively much lower levels of experience, skill and maturity. The explanation offered by the original equipment manufacturer (OEM) is that the manuals used by the test pilots and HAL engineers were overloaded with far too much of technical information which pilots and technicians in the newly raised squadron would not require. As such, the manuals, both technical and flight, were being redone (or "tweaked" to quote the OEM) to suit the requirements of both flying and technical personnel manning operational squadrons. This justification for not handing over the manuals along with the Tejas SP-1, is hardly convincing.

Thanks to the low rate of production anticipated, hopefully the OEM will be able to provide the required training and maintenance manuals before the young technicians and pilots in the very first squadron catapult the Tejas into the sky! **SP**



While the IAF is moving ahead to raise the first squadron of LCA Tejas Mk-I aircraft at Air Force Station, Sulur near Coimbatore, non-availability of training and maintenance manuals could seriously undermine flight safety.

'Make in India' fever at Aero India 2015



Prime Minister Narendra Modi viewing the flying display of aircraft at Aero India 2015; in front of LCA Tejas aircraft and visiting the stalls at Aero India.

[By R. Chandrakanth]

Asia's premier air show, 'Aero India' came to a close on February 22 with the event turning into a carnival with about three lakh people descending on the venue at Yelahanka Air Force Station. This year's airshow also witnessed a few anxious moments when two pilots of Red Bulls aerobatic team of the Czech Republic had a miraculous escape on the second day after their aircraft touched wings in mid-air while doing stunts.

Though there were no mega deal announcements (Aero India is unlike Farnborough, Paris or Dubai airshows), the focus this time was clearly the Prime Minister Narendra Modi's 'Make in India' pitch.

The 10th edition of the biennial five-day event that began on February 18 with the Prime Minister making a strong pitch to end India's dependence on defence imports. Aero India had over 300 foreign firms vying with each other to align with the government's 'Make in India' campaign as they eye the burgeoning multibillion-dollar Indian defence market. There were 295 Indian and 328 foreign companies showcasing their products and solutions.

Seven of the 11 foreign military aircraft on display were American – two F-15C Eagles, two F-16C Fighting Falcons, one Boeing KC-135 tanker, one C-17 Globemaster III and a P-8A Poseidon maritime surveillance aircraft. The US with 64 companies had the biggest presence at the event, in which 33 other countries took part. France

was the second biggest participant with 58 companies, followed by the UK with 48, Russia with 41, Israel with 25 and Germany with 17, the organisers said.

Prime Minister Narendra Modi promised a conducive environment for manufacturers, including a discrimination-free tax system, and asked foreign firms not to be just "sellers" but "strategic partners". Inaugurating the show he said, while the country needs to increase its defence preparedness and modernise its forces due to security challenges that were well known, it should aim to manufacture 70 per cent of military hardware domestically in the next five years and remove the tag of being number one importer of defence equipment.

Stressing that developing domestic defence industry "is at the heart of the 'Make in India' programme", he said, "we will build an industry that will have room for everyone – public sector, private sector and foreign firms. From sellers, foreign firms must turn into strategic partners. We need their technology, skills, systems integration and manufacturing strength."

He said the foreign players can use India as part of their global supply chain and India's frugal but sophisticated manufacturing and engineering services sectors can help reduce costs. Also India can be a base for export to third countries, especially because of its growing defence partnerships in Asia and beyond. He said the government was reforming defence procurement policies and procedures. "There would be a clear preference for equipment manufactured in

India. Our procurement procedures will ensure simplicity, accountability and speedy decision making.”

Modi noted that his government has raised the permitted level of foreign direct investment to 49 per cent and this can go higher, if the project brings state-of-the-art technology. “We have permitted investments up to 24 per cent by foreign institutional investments. And, there is no longer a need to have a single Indian investor with at least a 51 per cent stake. Industrial licensing requirements have been eliminated for a number of items. Where it is needed, the process has been simplified.

“We have to equip ourselves for the needs of the future, where technology will play a major role. As a nation of one billion people, we also have huge requirements for managing internal security,” he said.

Modi pointed out that in India, the defence industry in the government sector alone employs nearly 2,00,000 workers and thousands of engineers and scientists. They produce an output of nearly \$7 billion annually and also supports a very large pool of small and medium enterprises.

Noting that India imports up to 60 per cent in defence sector, he said there are studies that show that even a 20 to 25 per cent reduction in imports could directly create an additional 1,00,000 to 1,20,000 highly skilled jobs in India. “If we could raise the percentage of domestic procurement from 40 per cent to 70 per cent in the next five years, we would double the output in our defence industry,” he said.

A strong defence industry can boost investment, expand manufacturing, support enterprise, raise the technology level and increase economic growth in the country, the Prime Minister said.

Modi said his government had made export policies clearer, simpler and predictable. “But we will also abide by the highest standards of export controls and international responsibility. We will expand our exports, but we will ensure that our equipment and technology do not fall into the wrong hands. India’s record in this area has been impeccable and it will remain so,” he said.

Talking about offsets system, he said this was a crucial instrument to develop and upgrade Indian defence industry. “We have introduced significant reforms in our offsets policy. I am acutely aware that it still needs a lot of improvements. We will pursue them in consultation with domestic industry and our foreign partners,” he said adding that he wants offsets policy not as a means to export low-end products, but to acquire state-of-the-art technology and skills in core areas of priority.

Modi also spoke about involving country’s scientists, soldiers, academia, industry and independent experts more closely in research and development.

Government’s support for research and development is essential for defence sector and, it should also be accompanied by a degree of assurance on purchase, he said.

“We are introducing a scheme to provide up to 80 per cent of funding from the government for development of a prototype in India. And, we are also launching a Technology Development Fund. For too long, our research and development has been confined to government laboratories,” he said.

The highpoint of the show was that a number of Indian companies tied up with foreign OEMs to jointly manufacture several solutions in India itself. **SP**

No Plan B on MMRCA

[By **R. Chandrakanth**]

The Chief of Air Staff, Air Chief Marshal, Arup Raha has said that even while the contracting committee, one of the four subcommittees going through the 126 medium multi-role combat aircraft (MMRCA) deal, is looking at issues of the selected L1 vendor Dassault Aviation (Rafale), there is ‘No Plan B’.

Addressing media persons at Aero India 2015, the Air Chief repeated what the Minister of Defence, Manohar Parikkar had said that the government would await the report of the contract negotiating committee to submit its report before taking any decision. “It is important that we get the MMRCA at the earliest.”

Stating that obsolescence has hit the Indian Air Force, the Air Chief said there has been a considerable drawdown of the combat force. While, we have had midlife upgrades on aircraft and improved operational availability of aircraft, there is need to replace legacy aircraft and this had been indicated in the long-term perspective plan. “We need to build up to 42 fighter squadrons



for which we have to have the MMRCA, the FGFA (fifth-generation fighter aircraft) and the AMCA (advanced medium combat aircraft) in the next four to five years.”

The IAF is phasing out MiG-21 which has outlived its life and some of the fleet of MiG-27. The induction plan in the IAF has been four squadrons of light combat aircraft (LCA Tejas), starting with two squadrons

first, depending upon the production rate of the Hindustan Aeronautics Limited. “The LCA has lagged behind, but we now have reached somepoint.” The final operational clearance is expected end December 2015.

The series production 1, 2 and 3 of LCA Tejas, he said, were different from one another in terms of design and features. It would be on SP3 that the design and features would be frozen. There is need for 20 aircraft for the first squadron, but a beginning could be made with four aircraft.

As regards inducting additional Su-30MKI aircraft, he said that they were two different aircraft and that one could not replace the other. To a question on upgrades to Jaguar, the Air Chief clarified that IAF is working with BAE Systems for product support and that upgrades would be in the form of autopilot, new engines, avionics, etc. It still has operational life.

Asked about induction of unmanned combat aerial vehicles, the Air Chief mentioned that it was working with Defence Research Development Organisation on this and expected results soon. **SP**



Rafale fighter soaring in the skies

'Make in India', separate policy for defence

[By **R. Chandrakanth**]

The Union Minister of Defence, Manohar Parrikar categorically stated that the government 'has not finalised positively or negatively' the French medium multi-role combat aircraft (MMRCA) - Rafale. The deal, he said, presently is with the commercial negotiation committee (CNC) and that he has asked for a final report which is likely to be submitted next month.

Addressing a press conference after the inauguration of the 10th edition of Aero India International Airshow, Parrikar said: "let the CNC complete the process." The MMRCA project is to acquire 126 French Rafale aircraft. According to media reports there are issues between Dassault and the Hindustan Aeronautics Limited (HAL) on matters of 'ownership' of 108 Rafale aircraft which the latter should manufacture if the deal comes through. There are also issues of price.

Parrikar clarified that the delay in the decision-making process on the MMRCA had not affected the operational capability of the Indian Air Force. "We have improved availability of the existing fleet." The downtime of an aircraft going for repairs and maintenance has been brought down. Asked whether the MoD would go for Su-MKI aircraft in the interim, he said "I will not be discussing my strategy with the media."

HAL asked to accelerate production

Appreciating HAL on the helicopters it had produced (Dhruv, Rudra, etc), he said HAL however had to accelerate its production from the current 20/30 units to more. "I am impressing upon HAL to improve their production rate. The helicopter industry is growing fast. We have a combined requirement of 388 and we have opened it up for 'Make in India'. Besides, there was growing demand from the civilian market."

There were two routes to meet the market requirement, HAL locat-

ing a manufacturing line in one of its many locations and the other opening it up to the private sector.

Make in India - Separate policy

Parrikar said the government has been thinking of coming out with a separate policy for defence sector on 'Make in India'. "We have been in discussions on whether 'Make in India' should be outside the defence production procedure (DPP) and we will take a call soon on that." The policy changes would be notified in April/May this year. In the next five years, we would like to have nearly 75 per cent of defence production under 'Make in India'.

The DPP itself needed clarity, he said and mentioned how there was confusion with regard to 'Buy in India' (which needed 30 per cent Indian composition); 'Buy and Make in India' (50 per cent). "The 50 per cent is not well defined." Even offsets the government was going through the document and major changes are expected soon. The policy will include small and medium enterprises in a substantial way.

Aero India stays in Bengaluru

Scotching rumours that the next edition of Aero India would be either held in Goa (his home state) or in Surat (home state of the Prime Minister), Parrikar said it would be held in Bengaluru as 'it is the apt place for the job'. However, there was need to expand the area and make it more convenient.

Stating that this edition had attracted considerable interest, he said the exhibition area had gone up from 1.25 lakh sq m to 2.50 lakh sq m; the number of Indian companies had shot up from 156 to 295 and foreign from 212 to 328; foreign delegations from 78 to 109; number of countries from 31 to 49; and number of aircraft from 63 to 72. "Interest in the defence sector has gone up tremendously and we expect the results of the business deals in the near future." **SP**

Israel pavilion displays top-notch technologies

SIBAT – the International Defense Cooperation Directorate of the Israel Ministry of Defense (IMOD) – presented various top-notch military and civil aviation technologies at the Israel National Pavilion. Air defence and airborne ISR technologies for the military sector – and avionics, communications, and airport technologies for the civilian market are the highlights.

According to Brig General Mishel Ben Baruch (Retd), Director of SIBAT, “Israel is strengthening its ties and expanding technological collaboration with India, a country with exceptional R&D capabilities. In the military field, Israel and India share common threats. The technological cooperation between the two countries significantly benefits both, enabling us to better counter these threats – with Israel ready to share its experience and operationally-proven, cutting-edge technologies with India.”

He continued, “India has an



immense civil aviation market, which includes numerous airports. Israeli companies participating in the pavilion look forward to presenting their solutions, which are contributing substantially to global air safety and efficient management of airport”.

The Israel National Pavilion displayed a wide range of technologies designed for both military and civilian markets. In the military field, solutions for the escalating defence and intelligence challenges – including air defence technologies for all layers; intelligence technologies, communications, and surveillance solutions, providing accurate, real time, intelligence pictures; solutions that make munitions significantly more accurate; unmanned devices, and others. In the area of civilian aviation, a variety of avionics and airport solutions will be showcased, whose main purpose is the enhancement of aviation security and airport efficiency. **SP**

HAL hands over 75th Hawk aircraft to Indian Air Force

The Hindustan Aeronautics Limited (HAL) handed over 75th Hawk aircraft to the Indian Air Force (IAF) at a function held at HAL Pavilion during Aero India 2015. T. Suvarna Raju, Chairman, HAL, said: “We have absorbed the Hawk technology completely and will be able to support the project for next 40 years.”

The aircraft is currently being produced at HAL under licence from BAES, UK and the first aircraft was handed over to IAF in August 2008. Air Marshal Ramesh Rai, AOC-in-C, Training Command, said Hawk has been of great service to IAF and has flown over 70,000 hrs.

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

The Aircraft has the capabilities to be used as a ground attack aircraft or for air defence. The Hawk AJT has excellent flying characteristics with good stability and can be flown at night in addition to performing a wide range of aerobatic manoeuvres. The aircraft can accommodate a wide variety of external stores. The aircraft has 7 hard points to carry external stores with a possible 12 types of combinations to carry the stores.



Production programme of 42 Hawks to IAF was concluded in 2011-12. Further, the second contract was signed between IAF and HAL on July 23, 2010, for supply of 40 Hawk AJT and associated equipment. HAL has so far produced 21 aircraft and would be producing all the 40 aircraft by 2016-17. **SP**

Safran's main mission is 'Advantage India'

[By **R. Chandrakanth**]

Safran is the leading supplier of aircraft engines, landing gear and carbon brakes for airlines operating in India and neighbouring countries, and plays a full-fledged role in the development of air transport in the country. Safran activities have quickly evolved to include strong local partnerships with Indian aviation industry based on joint developments, production and support licences for airplane, helicopter and rocket engines landing gear, navigation systems, as well as the associated support services.

Today, Safran has four facilities dedicated to products and services for fixed- and rotary-wing aircraft:

- Safran Engineering Services India (SESI) in Bengaluru provides end-to-end engineering services to global and local customers. It embodies Safran's proven expertise in aerostructures, electrical and mechanical systems, electronics and software.
- Snecma HAL Aerospace Pvt. Ltd. (SHAe) is an equal joint venture between Snecma and the Hindustan Aeronautics Ltd. (HAL), created in 2005. It manufactures high-tech components for CFM56 aircraft engines in Bengaluru.
- CFM Training Centre close to Hyderabad airport provides maintenance training for ground crews from airlines operating CFM56 engines. It can provide training for up to 500 maintenance technicians and engineers a year. It also offers training to engineers from helicopter operators using Arriel engines manufactured by Turbomeca.
- Turbomeca India Engines Pvt. Ltd, Safran's helicopter engine support centre in Bengaluru, provides support services for its own engines to its Indian customers. Its main partners are HAL and Pawan Hans Helicopters Ltd. Turbomeca is the first helicopter engine supplier to HAL.
- Snecma (Safran) and Max Aerospace signed an agreement last year to create a joint venture called Max Aero Engines Private Limited (MAEPL), which will offer aircraft engine maintenance, repair and overhaul (MRO) services for M53 engines in India.

Safran provides multiple solutions for the Indian aerospace sector: Over 700 CFM56/Leap engines sold to almost all

major Indian airlines; more than 1,400 Indian military airplanes and helicopters are powered and/or equipped by Safran; nearly 700 inertial navigation systems have been supplied by Sagem for Indian armed forces; and Messier-Bugatti-Dowty holds a 100 per cent share of the domestic market for wheels and carbon brakes on A320 and Boeing 787.

A trusted partner to Indian defence industry

Safran has been a supplier to the Indian armed forces since the 1950s, providing engines and/or equipment for combat aircraft, including Jaguar, Mirage 2000 fighters fleets, Hawk trainers, HAL Dhruv, Cheetah, etc. In early 2012, the consortium "Rafale International" (Snecma, a Safran company, is one of the three key partners in the consortium) started exclusive negotiations with the Indian Government to supply 126 Rafale multi-role fighters equipped with several Safran technologies including the engine, landing gear, wiring, inertial navigation system. Safran, through its company Sagem, also provides a wide range of avionics (inertial navigation systems, flight control systems and autopilots) and optronics systems for a number of combat platforms including aircrafts, submarines, artillery systems and tanks. Almost the entire Indian Air Force fleet is equipped with Sigma 95N navigation systems as a result of a long-standing partnership with HAL. Significantly, this navigation system has also been selected for the first prototypes of the MALE drone being developed by India. The New Delhi-based subsidiary Sagem Services India Pvt. Ltd. provides maintenance and customer support for these systems and equipment.

Equipping Indian armed forces with a spectrum of technology

Safran has provided aircraft technology for most of the Indian armed forced airplanes and helicopters like Jaguar, Mirage 2000, Su-30, Hawk, MiG-29K, Cheetah Helicopter and its variants. The Dhruv helicopter and its variants are powered by the 'Shakti' engine which was jointly made by Turbomeca (Safran) and HAL. Sigma 30 Inertial Navigation System has been designed for artillery applications. The Sigma 40 Navigation System is used on Indian naval vessels. Sagem is a leading producer of FADEC (Full

Authority Digital Engine Control) systems, a critical component in aircraft like the Rafale, the A320 and Boeing 737.

Advancing biometric security in India

Morpho (Safran) makes trace and detection equipment and is a leader in biometric technology and identity management and identification systems like (AFIS) automated fingerprint identification systems and face recognition solutions. Safran also operates the largest smartcard manufacturing facility in Asia which produces more than one million smartcards per day for a variety of applications. About 80 per cent of all Morpho's smart cards are produced in India. A leader in biometric technology, Morpho (Safran), is one of the key partners in India's Aadhaar project under the Unique Identification Authority of India (UIDAI).

Main mission: Advantage India

Safran has been working closely with India to ensure the protection of both people and infrastructures, by providing ultra-modern, foolproof security solutions, especially for air travel, defence, law enforcement and commercial establishments. With the new government and budget that focuses on need for significant investment in the defence sector, including from the Indian private sector, deserves encouragement.

The 12 per cent boost in the budget spending has opened the defence industry to foreign investment in a way like never before. Safran India is also widening its horizon to mark the recently launched 'Make in India' campaign by the Prime Minister Narendra Modi. Stronger onus on engineering and R&T will be the way forward for Safran India. The recent signing of collaborations with the Foundation for Innovation & Technology Transfer (IIT, Delhi) and Society for Innovation & Development (IISC, Bengaluru) will help Safran to initiate research and development in the field of advanced avionics systems for the development of next-generation aerospace technologies in India. India's growth is at the heart of Safran's strategy and it continues to strengthen its presence in India, working hand in hand with its local partners to shape the future of India's aerospace, defence and security industries. Safran's main mission is 'Advantage India'. **SP**

Rockwell Collins next-gen avionics solutions for India's military aviation

[By Jim Walker]

As a leader in avionics products and systems, Rockwell Collins is strongly positioned to provide India civil and military operators with a host of new and upgraded avionics for a wide assortment of fixed-wing aircraft and helicopter applications, as well as the rapidly growing market for 'smarter' unmanned aerial vehicles (UAVs).

The needs for enhanced situational awareness, interoperability, reduced crew workload and enhanced levels of flight safety for India's defence forces are constantly increasing.

Today, thousands of fixed- and rotary-wing aircraft around the world are flying with Rockwell Collins avionics products. Our components and systems are helping these crews fly better and safer missions. And, whether it's a new installation or a retrofit programme, each of our products is backed by our unmatched global product support and training network.



KC-390 flightdeck

Rockwell Collins' Athena integrated flight control and navigation systems for UAVs are miniaturised, lightweight and highly reliable. They provide control for INS, GPS and air data, attitude, heading and reference. Available in low-cost, redundant configurations, these systems enable autonomous operations and are proven with more than 1 million flight hours in combat theatres. Used on both manned and unmanned aircraft, these systems are moving towards obtaining commercial certification.

Next-generation avionics for new and retrofit applications

While we are gaining a leadership role in UAV avionics and systems, our foundation is strongly set in our business, commercial and military avionics solutions. Our unique approach and open system architecture enable our avionics to be used across many platforms, providing commonality and cost savings to our customers.

For example, our new-generation Pro Line Fusion integrated avionics system offers customers the opportunity to leverage the best in commercial and business aviation technology for military aircraft applications. Pro Line Fusion is now being featured on multiple business aircraft as well as the Brazilian Air Force's KC-390 and the AW 609 tilt rotor.

Pro Line Fusion's architectural flexibility enables a versatile, role-adaptable aircraft to serve both military and commercial customers. **SP**

Jim Walker is Vice President and Managing Director, Asia Pacific region, Rockwell Collins

Turbomeca strengthening partnerships in India

Turbomeca, the exclusive helicopter engine manufacturer from the Safran Group, is focused on the Indian market wherein both military and civil helicopter demand is growing. It has a strong partnership with the Hindustan Aeronautics Limited (HAL) and will be expanding the same, even while looking at partnerships with the private sector.

Talking to *SP's M.A.I.*, Philippe Couteaux, Vice President and General Manager of Turbomeca, said there were many programmes that the company was involved in with HAL. The light combat helicopter (LCH) of HAL which is entering service by the end of 2015 would be powered by Ardeniden 1H1 engines. Similarly it would be powering the light utility helicopter (LUH) programme of the HAL which has plans of producing about 60 to 65 helicopters in a year.

Turbomeca, he said, has been in a relationship of 50 years. The first engine for



Ardiden 1H1 engine



Light utility helicopter

HAL was the Artouste IIIB turbine installed in the Alouette III (known as Chetak) and Lama (Cheetah). It also powers the Dhruv, advanced light helicopter. Turbomeca has over 250 Shakti engines. The Ardeniden 1U/Shakti1U on the LUH allows the helicopter to fly at 6,500 m (20,000 feet).

The company, he said, had recently been signed by Airbus Helicopters to focus on one engine type for its X4 programme. Airbus Helicopters required more power and have lower fuel consumption and Turbomeca's Arrano provided that. "It provides 10 per cent more power." The programme is under development and would be entering service by 2018.

Turbomeca is a world leader in helicopter engines and has about 10 per cent (6,000 employees) of the Safran group as also in terms of revenues. It has the largest range of engines from 400 hp to the RTM322 with 2,270 shp for the military market. **SP**

Kalyani Group joint venture with Rafael Advanced Defense Systems

Kalyani Group and Rafael Advanced Defense Systems Ltd. today announced the formation of a joint venture company in India (51:49). The initiative is in line with the 'Make in India' policy of the government, and will enable the development and production of high-end technology systems within the country. This will include a wide range of technologies and systems, like missile technology, remote weapon systems and advanced armour solutions.

Baba Kalyani, Chairman & MD, said, "Kalyani Group has been at the forefront in initialising the 'Make in India' campaign. As part of this campaign we aim to develop and produce high-end technology systems and expand the defence industry base in our country. We believe in the vision of 'Make in India' and our proposed joint venture with Rafael is a step in this direction."

Brig. Gen (Retd), Itzhak Gat, Chairman, Rafael, said, "Rafael has been an active participant in the Indian defence market for the past few years. We have always endeavoured to contribute to the modernisation of the Indian armed forces. As part of our global strategy, we form alliances to develop military applications based on our proprietary technologies and in Kalyani Group we see a lot of synergy and opportunities for growth in new markets and especially in India which is strategic market for us."

Amit Kalyani, Executive Director, said, "Kalyani Group is committed to invest in developing advanced frontier technologies. The partnership with Rafael is our endeavour to develop advanced



missiles and remote weapon system capabilities within India."

Vice Admiral (Retd), Yadida Yaari, CEO, Rafael, said, "We see Kalyani Group as an ideal partner for expanding our business opportunities in India. We have supported and will continue to support the Indian Ministry of Defence in gaining technological superiority to technological excellence. Rafael is well aware of the 'Make in India' policy, and the JV with Kalyani Group is a firm commitment in that direction." **SP**

Snecma and HAL joint venture for new production facility In India

Snecma, a leading manufacturer of aircraft engines, and the Hindustan Aeronautics Ltd. (HAL), a leading aerospace manufacturer, signed a memorandum of understanding (MoU) on January 28, 2015, in Bengaluru to explore establishing a joint venture in India for the production of aero-engine parts.

The MoU was signed by Bruno Durand, Vice President for Industrial Operations & Supply Chain of Snecma, and Arunachalam Muthukumaraswami, General Manager of the Engine Division of HAL.

The proposed joint venture will initially focus on the manufacture of high-tech parts for the Dassault Rafale's Snecma M88 engine, then subsequently contribute to other major aerospace projects of HAL & Snecma, in India and worldwide. Spanning over 30,000 square metres, the proposed joint venture's new plant is expected

to benefit from substantial investment by the two partners, providing it with state-of-the-art machinery and equipment.

This agreement marks a major step forward in the long-standing collaboration between Snecma and HAL. The proposed joint venture will further broaden the scope of the excellent relations established over the past 60 years between Safran affiliates and the Indian aerospace industry. For example, Snecma manufactures the M53 engines powering the Mirage 2000H 'Vajra' fighters operated by the Indian Air Force.

"This new partnership clearly reflects the close relationship established over

many years between Snecma, our parent Safran and the Indian aerospace industry," said Pierre Fabre, Chairman and CEO of Snecma. "We are strongly committed to contributing to the 'Make in India' policy, based on ambitious partnerships and extensive direct investments. This new venture is further proof that we are actively strengthening our existing ties with HAL."

Safran has been operating in India for over 60 years. The group employs more than 2,600 highly skilled employees in the country with an average annual workforce growth of 30 per cent in the last decade. Safran operates in India across its three core businesses:

delivering effective expertise to the country's growing aerospace industry, along with leading edge navigation and optronics equipment for the defence sector, and biometrics solution for the security market.

Over the decades of association, Safran's activities have evolved to include strong local partnerships with Indian military aviation industry based on joint developments, production and support licences for airplane, helicopter and rocket engines, landing gear, navigation systems, as well as the associated support services. **SP**



Military programmes can be adapted as per India's needs: Spanish Defence Minister



*On a second visit to India in less than three years time, **Pedro Morenes, Spanish Defence Minister**, is on a mission to strengthen defence relations between the two countries. In a brief interaction with **SP's M.A.I.**, Morenes has underscored the capabilities of the two countries and how mutual exchange would benefit both.*

SP's M.A.I. (SP's): What is the key constituent to enrich the defence relations between the two countries?

Pedro Morenes (Morenes): We share common objectives, particularly when it comes to dealing with terrorism. The threat of terrorism is real and is affecting the world. We look forward to sharing key issues, creating confidence and trust and sharing intelligence to fight the menace of terrorism. With geopolitical issues affecting the two nations, we should constitute a joint group comprising key officers and train them with this objective. The relations between military personnel last longer and we can leverage that. It will be important to share military knowledge as we have similar threats. India has a vast mountain range and it has built good capabilities and Spain has also similar capabilities. We can jointly work on that.

India has important programmes in the domain of maritime and arms and Spain can help with its industry and enter into knowledge cooperation, as per requirements of the Indian Government. It can be covered under the government to government umbrella. The Indian Government has a guarantee of the Spanish Government, that's the general scheme.

SP's: Compared to your last visit, how do you find the business environment under the new government?

Morenes: It is a new frontier and I see new enthusiasm. The idea

is to do something constructive, development is really important. There is a lot of visible enthusiasm with the new government. The 'Make in India' initiative is welcome and we are keen on contributing to this strategic plan. We are familiar with this concept as we have had the same view not very long ago. We have a rich culture to share too. Overall India is a lively country.

SP's: Do you foresee any joint developments with India?

Morenes: We are running a joint programme with the Navy. The shipyards' military needs fit well with our capabilities. We can have common development for India and programmes can be adapted as per India's needs in the field of military, cyber and outer space.

Then there are high-technologies with dual use capabilities that can cover many needs in aircraft and radar and communication. We have good examples of cooperation – Navantia with L&T. We have the C295 programme and the platform can be manufactured here. We feel that government to government is the best way of furthering relationship and defence agreements being sensitive, they are better protected with government to government interactions. We believe in India as partners for the present and the future. SP

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