

A Critical Gaps in Indian Military Aviation

¹Beno Jones J, ²Anoop Ajith M, ³Madalaimuthu A

¹Assistant Professor, College of Science and Humanities, SRM Institute of Science and Technology, Chennai, benojonj@srmist.edu.in

²Guest Lecturer, Dr. Ambedkar Arts and Science College, Chennai, anoopajith1992@gmail.com

³Assistant Professor, College of Science and Humanities, SRM Institute of Science and Technology, Chennai, madalaia@srmist.edu.in

Abstract

Indian armed forces is considered to be one of the lethal in the world. The modernization of the Indian armed forces is an ongoing process as a large number of weapons are being sourced both from India and Abroad. However due to the ever growing needs and India is the only country that shares a land border with two nuclear armed hostile nations. India cannot afford to have a chinks in its armour. One such arena where India has been lagging behind is the Military Aviation where the majority of the platforms are saddled with obsolescence. Things are progressing both under imported route as well as under Prime Minister's 'Make in India' Programme and Aatmanirbhar Bharat Programme. Poor planning, inefficient procurement procedure and lack of a roadmap called 'Strategic Defence Review' is holding India's modernization programs. The study is aimed at exposing the fault lines briefly which will help to address the problems faced by the nation as a whole. This brief study is aimed at finding the ways and means to develop the scientific and industrial base in our country in order to be self-reliant and according to the 'Atmanirbhar Bharat' vision of India.

Keywords: Make in India, Aatmanirbhar Bharat, Strategic Defence Review, Military Modernization, Military Aviation, Self-Reliance.

INTRODUCTION

In the face of an ever increasing threat that India faces in its western and northern theatres there is a need for both manned and unmanned Reconnaissance and Surveillance helicopters that India requires at the earliest to deal with the threats. The porous nature and the difficult mountainous terrain and inadequate infrastructure that typically characterize India's borders stresses the need to insert more troops and crucial supplies in case of any emergency or to maintain routine activities and necessary troop buildup.

The current fleet of utility helicopters which can also double up for the reconnaissance and surveillance role in the Indian Military has reached the stage of obsolescence and their availability and reliability has become a point a

concern. Though the spouses of the service personnel wanted these old rotary machines replaced with the modern helicopters at the earliest things are progressing at a snail's pace. The situation is so dire that the five pilots died in six months in the armed forces. The Cheetah, Chetak which is the mainstay of the helicopter inventory that the Indian military possess will reach their end of total technical service life in 2022.

The earlier proposed deal with Russia to buy some 200 Ka-226T Helicopters has been gathering dust since the year 2014 because of Countering America's Adversaries Through Sanctions Act (CAATSA) which was imposed on Russia due to Russian invasion of Crimea in the year 2014 and due to the fact that the Russian helicopters is powered by the French Safran Engines and Russia has been unable to obtain

those engines due to those CAATSA sanctions and the deal is heading for cancellation due to the Russian invasion of Ukraine and more sanctions and harsher punishments are expected to be applied on Russia's actions from the international community.

Also the Navy's bid to buy the 111 naval utility helicopters to replace its obsolete chetak helicopters under the strategic partnership model under the 'Aatmanirbharta Programme' is scrapped due to the Defence Public Sector Unit Hindustan Aeronautics Limited (HAL) resolute to be involved in this with its modified Dhruv Helicopters. But the navy is not impressed with HAL's leaving the Navy in a fix which needs urgent replacement of these old helicopters. It is a known fact that about Eighty Percent of the Indian Navy ships continue to operate without a modern helicopter onboard. As a result the air component of the navy is functioning in a sub-optimal mode which may affect its war readiness.

HAL's own indigenous development effort to develop the helicopter called as Light Utility Helicopter (LUH) is gathering steam and both the army and the airforce ordered six helicopters each . after facing delays as some things has to be addressed and some fine-tunings has to made not to mention the covid induced lockdown further delayed the programme which affected the supply chains not only in India but all over the world.

The Indian air force which is responsible for guarding India's airspace is still short of fighter squadrons to maintain a credible deterrent with that of Pakistan and China. Though the force is equipped with the most modern Russian Su-30 MKI and many other aircrafts are undergoing significant upgrade to achieve technological superiority with the adversaries it is still not enough.

The Ministry of Defence which oversees the combat readiness of the armed forces and various procurement programs both Indian and Foreign under various procurement categories through its various departments and arms has made some commendable achievements and failed in other areas miserably as well as it fails to synchronize the Indian Industry and using the global tie-ups as a leverage to develop a credible defence industry that India deserves since its independence

Noteworthy Positive Developments

Despite the grim situation with regard to helicopters which form of bulk of the armed forces inventory. There are some positive developments in other arenas of military aviation as the Indian airforce has inducted the AH-64E Apache and CH-47F Chinook helicopters . These machines have proved to be a game changer and a trustworthy platform for the airforce during the Sino-Indian Standoff 2020 to monitor the enemy's position and also carrying heavy equipment to the forward areas to aid troop movement as well as logistical supply as well in all conditions.

The induction of about nearly 200 Mi-17 V5 helicopters in the armed forces inventory also proved to be a game changer as it displayed adequate capabilities both in the medium lift arena and in disaster management role as well. This helicopter boasts a more modern equipment list and avionics to enable India to fight the 21st century Warfare thus replacing the older fleet of Mi-8 helicopters. HAL also plans to develop the Indian Multi-Role Helicopter Programme similar to the Russian Mi-17 V5 in order to achieve self reliance under the Aatmanirbharta Programme.

Another noteworthy development is India's development of Light Combat Helicopters (LCH) which has been under limited series production for both army and the air force. It has undertaken patrols during the Sino-Indian Standoff as well. Many systems have been developed indigenously in India except for the engines for which the critical components has been sourced from France and the COMPASS suite which acts as an eyes and ears of the system has been developed under collaboration between HAL and an Israeli company Elbit System. But then it still has a long way to go for the series production. The armed forces has to be blamed because both the Indian air force and Indian army wanted the helicopters for different purposes. Indian air force primary purpose for LCH is to shoot down the Unmanned aerial vehicles (UAV) and the Indian army's primary purpose is to have the LCH as an aerial assault platform to provide cover for its ground formations.

The Induction of MH-60R Romeo is a significant capability boost for the Indian Navy . It is a big step forward for the Indian Navy as

many more samples of this has been operated by the US Navy and other navies and supply chain can be ensured till it retires from the service. Also it is a proven platform which will provide a decisive edge for the Indian Navy in case of war. The requirement of these platforms is more than hundred due to the pressing need to deal with the combined threats of China and Pakistan in the Indian Ocean Region and beyond but atleast a small beginning has been made. One thing that India has to bear in mind that the MH-60R Romeo's Original Equipment Manufacturer (OEM) is going to shut the plant after fulfilling the current orders. India needs to order more of these machines to have an edge and also to prevent another C-17 Globemaster like incident where the Indian air force had planned to operate Sixteen C-17 Globemasters but ended up with only eleven as the Original Equipment manufacturer of C-17 Globemaster, Boeing has shut down the plants manufacturing them citing lack of orders because the Indian bureaucracy moved very slow. These helicopters along with the P-8I and the sea guardian drones which is about to be procured will serve as deadly combination to any adversary.

The induction of the Light Combat Aircraft (LCA) Tejas and the orders for the improved version of the LCA Tejas called Tejas Mk1A has been signed. The lucrative order which is considered to be the highest ever order for a Made in India Weapon system which was valued at Rs.47000 crore wont see any structural changes or modifications and instead will include cutting edge systems from United States of America, France and Israel since India has always had a taste for North Atlantic Treaty Organization (NATO) grade weapons and NATO specific standards like STANAG. HAL has rolled out a ambitious delivery schedule, it remains to be seen Will HAL stick to the schedule as HAL has a poor track record in terms of deliveries.

Also India has started to develop its medium weight fighter (MWF) which is considered to be a pure 4.5 Generation plus aircraft with some realistic deadlines. It remains to be seen if those deadlines will be met because MWF is a complete new plane and it must have several prototypes and atleast a minimum of 3000 hours to flight testing to test all its sub-systems and the components and to assess the flight safety systems

Critical Operational Voids

Cheetah/Chetak Replacement

There is a need to replace more than four hundred helicopters of this type. One of the must required ability of these helicopters is that it must be able to takeoff and land in high altitude conditions. These requirements are unique to India as it maintains it's formations and positions in the high altitude like the Siachen Glacier which is considered to be the world's highest battlefield.

The move to replace these helicopters with an imported helicopter goes back to 2004 and it witnessed the participation of global renowned helicopter manufacturers and also the fact that these machines had a high crash rate and low rate of availability. But then it did not materialize due to the faulty evaluation process and flawed acquisition and decision making process. Similar attempts had been made later but then it too didn't take off and the armed forces and the newly formed government in the year 2014 have been forced to come up with a solution to address this. That is to develop 189 Single Engine Light Utility Helicopter (LUH) by HAL and the proposal to buy 200 two engine Ka-226T to fulfill the same role. It is absolutely a no-brainer to opt for both the single engined and two engined helicopters to fulfill the same role and it poses a logistical nightmare to maintain two different kind of helicopters performing the same role as the manpower had to be trained for operating it both on air and on ground as well which will further increase the costs and it is an extra burden for the ballooning revenue expenditure in the defence budget. Russian Ka-226T could not materialize due to the CAATSA sanctions and will never see the light of the day due to the recent Russian actions in Ukraine thereby leading a shortfall of over two hundred helicopters.

The production of the HAL's LUH at its Tumakuru's facility is likely to commence soon. But the track record of HAL in meeting the delivery deadlines is very sluggish. While the airforce specific variant of LUH got its initial operating clearance (IOC) in 2020 and the army specific variant getting the IOC in 2021, the final Operational clearance (FOC) is at least a minimum of two years away. Now that the Cheetah and Chetak will reach their end of total technical service life, operating them beyond

this will put the precious lives of pilots at risk. The only viable option is to phase out all the Chetak and operate HAL Cheetal which is a re-engined version of Cheetah till the time new and more modern LUH has been fielded. But still then the armed forces will have to operate with a shortfall of more than 100 helicopters in a highly disadvantageous situation with respect to China and Pakistan and also onus will be placed on other platforms like Dhruv Advanced Light Helicopter and Mi 17 V-5 and CH-47F Chinook to perform the tasks of the light utility helicopter thereby decreasing their service life and increases the pressure of the pilots which may lead to some pilots quitting the service due to unviable working conditions thereby leading to loss in financial and technical terms and human resource because of the specialized training that they have undergone. The Ministry of Defence (MoD) will be blamed in entirety for this mess.

The inter-service rivalry between the armed forces popularly known as turf wars is also leading to poor helicopter procurement. After the flawed procurement of twenty two Boeing AH-64D Apache by the Indian Air Force, the Army separately moved a file to procure eleven AH-64D Apaches. But then it was scaled down to six due to the budgetary constraints. Indian air force is of the view that whatever flies should be under the ownership of IAF. This led to the initial buy of twenty two apaches by the Indian air force. Even when the AH-64D Apaches are with the IAF the operational control over it rest with the Indian Army. The Indian army wanted exclusive ownership and control of the Apache, and as a result there was a duplicity of training, ground infrastructure and a separate spares support package all led to increase in the costs of the Army's acquisition of Apache Helicopters which was scaled down from eleven to six.

With regarding to the Light Combat Helicopter, the predecessor to the LCH which is called as HAL Rudra a weaponized variant of ALH Dhruv is yet to come out as a fully matured platform. Although HAL has enlisted the services of Swedish Defence Group SAAB to integrate the Defensive aids suite it is yet to achieve the final operational clearance. It shows the clear inability on the part of HAL to develop a ruggedized and a fully mature defence platforms to meet the requirements of the Indian Armed Forces. On February 2013 HAL Rudra achieved its initial operational clearance (IOC)

and the final operational clearance (FOC) should have happened about three or four years later. The FOC still remains a pipe dream. Adding fuel to the fires there was the unavailability of Air launched Anti-Tank Nag missile called as HELINA or Helicopter Launched Nag Missile. The Missile has completed testing in both army and air force configurations in September 2021 and the formal order is still awaited is a clear indication that all is not well with the HELINA and needs some more testing before going for a limited series production. After the limited series production models (LSP) models are successfully tested for both air force and the army the orders for the bulk production will be cleared which is still a minimum of three years away if the order is placed in this quarter. Also India still imports 70 mm rockets from Belgium which is considered to be one of the armaments of both Rudra and LCH. None of the defence public sector units has bothered to indigenize it or to develop a local variant of these even though the numbers required are in bulk. And also another principal armament of the LCH called Mistral air to air missile is being imported from France.

The Induction of Tejas and the orders of Tejas MK1A is a huge step forward and HAL has made sure that the production has been expedited, but does the manpower of HAL is really geared up for the task as it involves testing some systems which is entirely new to India. For example the environment control system for Israel's Active Electronically Controlled Scanned Array (AESA) radar and the same goes for the MWF programme as well as it will have an Indian AESA radar with its associated systems. India has set unrealistic targets with regards to the development of new generation combat aircraft like Advanced Medium Combat Aircraft (AMCA) as some of the systems meant for incorporation like the low-observable technologies in the AMCA will have to be first successfully tested upon a missile like Nirbhay which is clearly undergoing a lot of developmental problems.

India has been witnessing a spate of airspace violations by Pakistan. The induction of about thirty six Rafales is definitely a shot in the arm, but the ground infrastructure has been made in such a way to accommodate about Seventy two Rafales and also Indian Air Force made it clear to the Government of India that it needs a

minimum of Eighty Rafales to achieve technological superiority. It would be a booster shot if India orders another tranche of thirty six Rafales after the election season in India gets over. After the recent Russian Invasion of Ukraine things will progress slowly on the Russian front with regarding to Super Su-30MKI and additional SU-30MKI's and Mig 29 UPG's as Russia is getting isolated from the international financial system.

Though the capital expenditure of defence budget of India is witnessing a moderate increase in each financial year, India has applied brakes on its military modernization drive by introducing a cap on foreign purchases to promote domestic defence industry. Though it is appreciable but the modernization will definitely take a hit as witnessed by the unutilized funds by the army and the air force in the last budget .

Naval Utility Helicopter Programme

The arrival of the MH-60R Romeo helicopter provides a edge to the Indian navy. It still does not solve all the problems that the navy faces in its aviation wing as it does not mitigate it's overall requirement. The deal to buy 111 Naval Light utility was approved by the Defence Ministry under the 'Strategic Partnership' model . The Strategic Partnership model or the SP model in which the Indian private sector vendor have to tie-up with the foreign companies, bid for the tender and the winning vendor along with the foreign company will have to make the bulk of the manufacturing with the considerable indigenous content within India under the 'Make in India' Programme. It is reserved exclusively for the private sector. But the Public sector company intervened with its modified Dhruv ALH which demolishes the entire motive behind the 'Strategic partnership' model. The navy operates Dhruv for onshore operations only not in any offshore operations. Because in off-shore operations technical issues like blade folding within a particular time, stowed dimensions and heavy weight still persists as it will be stored in a tight spaces in a warship which led to the rejection of Dhruv by the Navy.

But then HAL is confident of solving all these outstanding issues on time, it is too late for the Navy as it needed a proven platform yesterday and have no time to wait for all these issues get

resolved as these issues take a minimum of three years to resolve and all the testing that has to be done. In the negative imports list which the Ministry of Defence tabled the option of procuring proven foreign naval utility helicopters has been permanently scrapped in favour of problematic, yet to be tried and tested Dhruv for offshore operations much to the dismay of navy. These kinds of poor planning, sheer incompetence, mismanagement by the Ministry of Defence will only drag on the procurement process thereby severely affecting operational performance. This is not the case that the Navy wanted where it operates its ships without a critical helicopter component will have a major dent and a gap in its operational capability despite the operational necessity.

Way Forward

It is safe to assume that the Ka-226T project is dead and India has to expedite its procurement of 189 LUH's by leaving no stone unturned. Whatever sticking issues which is leading to the delay in LUH programme has to be resolved. And in order to meet the shortfall a two hundred helicopters the re-engined version of cheetah called as Cheetals can be brought in limited numbers by HAL and atleast a minimum of sixty helicopters will have to be sourced from the foreign vendors. And also HAL must tie up with any other foreign vendor to develop next generation variant of HAL's LUH as we cannot fight tomorrow's war with yesterday's weapons. It could be done under the auspices of either under the Indo-Russian military co-operation or under India-USA Defence Technology and Trade Initiative (DTTI) or with any European Vendors preferably France based company because France is the only country which did not sanction India after the Nuclear tests of 1998.

The inter-service rivalry issues which leads to the duplicity of infrastructure will be resolved after the modalities and the protocols of the theatre commands are finalized which is a tedious task and will take a long time to reach fruition as even a developed country like United Kingdom ten years to finalize. The reforms in the Indian Military should have started after the Parliament attacks 2001 or after Mumbai attacks 2008 but instead it started only in the year 2016 and with the recent demise of former Chief of Defence Staff (CDS) General Bipin Rawat and

the successor to the post of CDS remains a mystery. But the appointment of the service personnel in the civilian ranks of the Department of Military Authority is indeed a huge step forward and will foster towards the integration and jointness which will lead to optimal use of financial resources. But still some gray areas remain as to whom report to whom and line of authority within the Ministry of Defence still awaits some clarification.

All of these mess points out to the fact that both the Indian political establishment as well as the bureaucracy has still not been able to grasp the complexities involved in the defence procurement. In order to have a robust defence industry, the civilian industry must be developed first because at the end of the day civilian market outstrips the defence market. Whatever developed for civilian purposes can be utilized as spinoff's in the defence sector and vice versa. Countries such as USA and France have a robust civilian industry. Also the flawed practice of maintaining two different files such as Ministry of Defence (MOD) file and the services file has to be done away with as it causes more damage to India's defence preparedness and its own defence industry. Instead a single file has to be maintained for the procurement.

If there is anything that the recent Russia-Ukraine teaches us it is that one cannot fight wars with imported weapons. India needs to fight the wars with the locally made weapons. In order to maintain parity with the hostile neighbours there needs to be a robust defence industry where the majority of the needs have to be met as hundred percent self-reliance is an impossibility in a globalized world. India will have to be dependent upon foreign imports for some period of time. The government of India must also keep in mind that a long wait for the defence systems cannot be met by the domestic industry alone in the short term. There has to be a proper roadmap spelling out the needs and the ways to meet those needs. India does not have one. In the absence of the clear roadmap chaos, confusion and mismanagement will continue to persist.

Disclosure: I did not receive any funding for this work

Reference

- [1] Ganesh N, Army Wives want Cheetah, Chetak helicopters phased out, India Today, November 2014.
- [2] Banerjee, Ajay, Five Pilots die in Six Months, no decision yet on ageing copter, Tribune, March 2022.
- [3] Bedi Rahul, India's Protracted Saga to acquire Russian Choppers unlikely to materialize in Entirety, The Wire, December 2021.
- [4] Philip Snehash, HAL Choppers gets defence ministry nod in bid to replace Cheetah and Chetak, Kamov Hangs in Balance, The Print, November 2021.
- [5] Group Captain Sachdev AK, Apache and Chinook, Enhancing the effectiveness of the Helicopter Fleet, Indian Defence Review, July 2021.
- [6] Siddiqui Huma, Indian Navy inducts deadly Romeo Helicopters to keep an eye on the enemy movement, Financial Express, July 2021.
- [7] Kumar Chethan, Finally, orders for LCA MK1-A Signed, Times of India, February 2021.
- [8] Thakur Aksheev, HAL Tumakuru Facility to be operational by March 2022, Indian Express, November 2021.
- [9] Peri Dinakar, Army to get indigenous light copter by December 2022, The Hindu, June 2021.
- [10] HAL achieves IOC for Advanced Light Helicopter Mk-IV, Press Trust of India, February 2013.
- [11] Dutta Nayak Amrita, Army, IAF struggle to exhaust capital budget, Defence Minister asks to expedite spending, News18, January 2022.
- [12] Government approves procurement of 111 helicopters worth 21000 crore, Press Trust of India, August 2018.
- [13] Cowshish Amit and Bedi Rahul, As officers secure civilian ranks in the DMA, the military's goal of assimilation moves ahead, The Wire, May 2021.