Modernisation of Army Aviation

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Brief History

In August 1947, the assets of the erstwhile British 1 Air Observation Post Flight (Air OP), the Auster fixed-wing two seater aircraft, were divided between India and Pakistan. Thus, came into existence the Air OP units, operating the Auster, Krishak and Pushpak two-seater fixed-wing aircraft, as part of the air force in the initial stages of the Air OP growth. The main role of the Air OP was observation and direction of artillery fire.

The 1950s was a period of consolidation for the Indian Army and the Air OP went through a similar phase. The 1960s saw the concept of Air OP squadrons fully established. The wars of 1965 and 1971 found the Air OP at their 'unarmed' best. Modernisation of the army consequent to the debacle in the Indo-China conflict of 1962 and the lessons learnt from the Indo-Pak War of 1965, resulted in many changes in concepts and application of warfare in India. The Air OP was expected to be the eyes in the air for the ground forces and it needed aircraft to match the changed requirement. This resulted in the induction of light helicopters into the Air OP, to gradually replace the vintage Auster and Krishak. Finally, after trials, the French Alloutte III and, subsequently, the high altitude war horse 'Lama' were inducted into service. These two flying machines were rechristened Chetak and Cheetah helicopters subsequently.

The case for raising of the Army Aviation Corps (AAC) dates back to 1963 when then Chief of the Army Staff (COAS) Gen JN Chaudhary, stressed the requirement while discussing the issue with the "Select Body on Aviation"

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headed by Mr JRD Tata. Gen Chaudhary stressed that the helicopter, with the rapid development in its design and ability to carry sophisticated weapons had become a potent factor in the land battle. He further opined that efforts at increasing the firepower and mobility of the army would not be complete without an aviation element comprising light, medium and heavy helicopters organic to it. The "Expert Committee on Aviation" also recommended immediate creation of an "Army Aviation Corps" for the army. It is a sad commentary on our political and bureaucratic apathy towards defence matters that it took 23 years of persistent efforts to finally break from the air force and become an independent corps of the army. The organisation of the Army Aviation Corps sanctioned was nowhere near as envisaged in 1963 and continues to remain so even today, lacking the wherewithal to be a full-fledged AAC. Even though the AAC, the youngest arm of the army, has grown in size and stature since then, including the induction of Hindustan Aeronautics Limited (HAL) manufactured advanced light helicopters (ALH), and given an excellent account of itself in diverse situations, the road to expansion and capability enhancement still remains a long one, to fully meet the synergy and operational requirements of the army in the modern-day battlefield.

Force Structure

Despite the AAC becoming a full-fledged arm of the army in 1986, its growth has been haphazard and the corps continues to be plagued by many infirmities. Foremost amongst these is the opposition of the air force, whenever the question of expansion of the role of army aviation comes up for discussion. Essentially, the opposition relates to turf. The air force wants to continue to hold onto those assets that logically must come under the ambit of the army.

Today, the AAC has the largest number of helicopters amongst the three Services, the majority being of the reconnaissance and observation class (Chetak and Cheetah). Despite this, it has very few helicopters to carry out a number of extremely specialised roles in the tactical battle area. While the induction of the light utility helicopters has commenced, the medium and heavy lift helicopters which form the core of the tactical lift capability continue to be with the air force. Thus, the dependence of the army on the

air force for tactical movements continues to be near total. A similar situation exists with regard to attack helicopter units being part of the air force. Attack helicopters are an integral part of the land battle, wherein mechanised forces fight the battle in conjunction with the attack helicopters. Their optimum employment in such a scenario is not possible in the present set-up. The army's requirement of small fixed-wing aircraft in limited numbers for important roles like command and control, aerial communication hubs, logistics, including casualty evacuation, tactical lift within an army theatre and communication flights is not acceptable to the air force. This, despite the fact that the Indian Navy, the Indian Coast Guard and even central police forces like the Border Security Force have fixed-wing aircraft in their inventories.

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A survey of military aviation organisations, within and outside the country, reveals the inadequacies of our army aviation. At present, army aviation assets are inadequate for the size of the Indian Army and the tasks it is required to perform. The expansion of the AAC is, therefore, imperative. Army aviation should possess a mix of light fixed-wing aircraft, light/medium/heavy helicopters and attack helicopters/gunships for various roles like reconnaissance, surveillance, combat fire support, airborne command posts, combat service support, special operations and logistics.

The operational diversities of the Indian Army, coupled with the variety of terrain, extensive deployment in mountainous and high altitude areas, need for over the crest line observation for reconnaissance by field commanders, direction of artillery fire, casualty evacuation from inaccessible areas and speedy move of commanders to forward posts difficult to access, underline the need for a dedicated reconnaissance and observation flight for every division. Mechanised warfare in the plains and desert terrain requires the integration of the third dimension with mechanised forces by way of attack and scout helicopters. Therefore, all strike corps need dedicated attack helicopter units for the armoured divisions and Reinforced Army Plain Infantry Divisions (RAPIDs). Units equipped with gunships should form part of the pivot corps. With regard to tactical lift capability, each corps, especially in

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the mountains, and the pivot corps should have the capability of lifting and moving up to a company in the tactical battle area. One or more composite units equipped with light and medium lift helicopters fully integrated with our special forces need to be raised for special operations. Depending on the roles and tasks, there may also be a need for surveillance and armed helicopters being grouped with these special composite units.

Army aviation needs to develop organisations that enhance aviation capabilities to support the concepts of operations of field commanders. The force structure should be tailored to meet evolving operational requirements. In addition, aviation organisations should include appropriate maintenance and logistical support elements required to sustain the force. Corps Headquarters should have aviation brigades orbatted to them to provide proper command and control and ensure optimal utilisation of all diverse aviation assets located within the corps. Today, the AAC has 37 reconnaissance and observation flights (Chetak and Cheetah), controlled by 11 Squadron Headquarters, four light utility helicopters (ALH) and an Army Aviation Base commanded by a brigadier.

Employment Philosophy

Future wars will be short notice, short duration and high intensity in a non-linear battlefield, with deeper and wider combat zones and emphasis on depth battles. Transparency of the battlefield will have to be factored in the planning and conduct of operations. The conflict scenarios that could emerge in our context can be summarised as:

- Low intensity conflicts dominated by employment of high technology weapon systems and force multipliers.
- Localised border wars.
- Short duration, high intensity conventional wars.
- Out of area conflicts requiring rapid deployability.

Army aviation, on account of its ability to quickly engage, disengage and regroup in the battle zone, will greatly assist the field force as a force multiplier in achieving its objectives. It also gives additional tactical capability to field

commanders, as their area of influence increases.

Army aviation greatly enhances the commanders' ability to apply four fundamental principles of war – manoeuvre, mass, surprise and economy of force. The primary mission of army aviation is to fight the land battle and support ground operations. Its battlefield leverage is achieved through a combination of reconnaissance, mobility and firepower that is unprecedented in land warfare. Army aviation as the manoeuvre force in the third dimension is the centrepiece of the land force. Reconnaissance, attack, utility and cargo helicopters complemented by light fixed-wing aircraft and support services like the air traffic control and logistics are all required to support the army in its range of military operations.

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Army aviation expands the ground commanders' battlefield principally in space and time by extending the range at which direct fires and observed fires can be concentrated on the enemy, by expanding the reconnaissance and surveillance envelope. Army aviation's greatest contribution to battlefield success is the ability it gives the commander to apply decisive combat power at critical times virtually anywhere on the battlefield. This may be direct fire from aviation manoeuvre units or the insertion of overwhelming infantry forces or artillery fires delivered into combat by air assault. This versatility is the very essence of army aviation.

On the modern battlefield, army aviation, unlike other members of the combined arms team, has the organic flexibility, versatility and assets to fulfill a variety of manoeuvre, close support and close service support roles and functions. These cover the entire spectrum of combined arms operations. Army aviation can accomplish each of these roles – within the limits of its assets and capabilities – during offensive and defensive operations, including special operations. In our "cold start doctrine", such forces can be rapidly deployed to support the initial operations while the other elements continue to build up and deploy.

However, there are two areas of concern which need to be taken care of in order to ensure effective and successful use of army aviation assets

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in the tactical battle area. These are air defence and air space management. Suppression of air defence by defensive measures or a combination of offensive and defensive capabilities would be essential to ensure unhindered employment of the third dimension in support of ground forces. Air space management in the tactical battle area is a very crucial aspect and requires detailed planning and coordination to ensure optimum utilisation of all weapon systems operating in the tactical area.

One of the major challenges facing the armed forces is counter-insurgency operations. While the use of helicopters for these operations has been restricted to troop carriage, logistics, surveillance and casualty evacuation, we have been reluctant to use the gunships/attack helicopters because of collateral damage. This could be of concern in built-up areas, but in remote mountainous terrain and jungles, this option needs to be looked at by the army, and drills evolved accordingly.

The army aviation units, with their unique capabilities, enhance the overall effectiveness of the land forces and tilt the scales on the battlefield. However, the above concept and philosophy will only hold true if the army aviation modernisation is put into effect on priority, irrespective of the objections of the air force.

Modernisation of Army Aviation

Despite 24 years since its formation and break from the air force, army aviation continues to remain a reconnaissance and observation force. The helicopters held in its inventory (Chetak and Cheetah) are vintage and need immediate replacement. The trials for their replacement are in their final stages. The trials initially commenced with three contenders: Eurocopter Fennec AS 550, Augustawestland AW 119 and Kamov. After the winter trials, only the French Eurocopter and Russian Kamov remain in the fray. The replacement of the ageing Cheetah and Chetak helicopters is crucial and needs to commence at the earliest. Any further delay in this programme will have disastrous consequences on security.

In the light utility category, induction of the Hindustan Aeronautics Limited (HAL) manufactured Dhruv (ALH) has commenced. Three units have already been raised and are operational, having been orbatted at the level of corps. In all, seven such units are planned for induction, each having ten helicopters. This gives the capability to the field force commander to move within the tactical battle area up to a company minus force at the critical juncture of the battle. The Dhruv helicopter is an all weather, night capable, twin engine machine with state-of-the-art avionics (cockpit). The availability of this resource will give additional tactical capability to the field commanders in the planning and execution of their operational plans.

In the medium lift category, the air force continues to stonewall all attempts of the army to acquire a suitable helicopter in the 10-12-ton class. At the same time, they are not prepared to let go of the MI 17 helicopters held with them. It is, indeed, unfortunate that despite numerous presentations and communications on the subject (2005-06), even at the level of the Raksha Mantri, no headway has been made. The army even went to the extent of changing the nomenclature from medium lift to tactical battlefield support helicopter, but to no avail. The MI 17 helicopters in this category currently held with the air force are being refurbished for night operations and additional MI 17-IV are being acquired for replacing the ageing MI 8 helicopters. This capability is basically required for intra-theatre move of reserves and equipment, including ammunition and for special operations. HAL is looking at the feasibility of a joint venture with a foreign vendor for a 10-12-ton class multiple purpose utility helicopter, but very little progress has been made in this regard so far. The army needs to pursue this approach more vigorously to acquire this class of helicopters.

Attack Helicopters/Gunships

Today, this is a major and the weakest link in the capability of the AAC. The meagre resources held, two units of attack helicopters, MI 25/MI 35, though under the nominal command of army, are, in fact, manned, controlled and operated by the air force. The ownership of this asset has once again been denied to the army. However, these helicopters of Russian origin, are vintage, though a certain amount of upgrade has been carried out to make them night capable. The trials for their replacement are currently on. In the fray are state-of-the-art modern-day attack helicopters like the American Apache Longbow AH 64D, Russian Ka-50 and MI 28 (Havoc), which are roughly in the same class as the

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Apache, Italian Mangusta and Eurocopters Tiger. All the above are dedicated modern attack helicopters and their induction will result in a quantum jump in the capability, notwithstanding the ownership issues.

In this context, the development of the light combat helicopter (LCH) by HAL is a milestone achievement. The LCH aims to gatecrash the exclusive club of the state-of-the-art light attack helicopters which include Eurocopter's Tiger, Bell's AH 1Z Super Cobra and China's ultra secret Zhisheng 10 (Z-10). The LCH is a derivative of the ALH and the weaponised ALH. The LCH is required to operate at high altitudes, a capability which will be a distinct advantage over the others. Two test flights have been carried out this year and it is likely to enter service by 2014. Army aviation along with the air force has put in its bid for the same.

Armed ALH/Gunships

The armed ALH is already at an advanced stage of development. Trials to test the weapon systems are currently ongoing. While not a typical attack helicopter, it has an array of comparable weapon systems to include the gun, rockets, air-to-air and air-to-ground missiles, along with a modern sighting system and relevant sensors. In addition, army aviation already holds in its inventory the 'Lancer' (Cheetah gunship) capable of firing guns and rockets, a very potent and effective weapon system for counter-insurgency operations.

While we have talked about the main equipment, there is also an urgent requirement to build suitable infrastructure and have it in place to absorb the new equipment and organisations. Support services like airfields, air traffic control, meteorological equipment, maintenance equipment, etc, would also need upgrading and refurbishing. Lastly, the most important facet, the training facilities for the training of aircrew and ground crew, need modernisation. The importance of simulators for this purpose cannot be overemphasised. A modest start was made with the installation of the fixed base Cheetah simulator in 2005 at the Combat Army Aviation School at Nasik. Currently, HAL, in a joint venture with a Canadian firm, has come up with a full motion simulator for training of ALH pilots. Its exploitation is yet to

begin, but simulators are the way forward for future training methods as they are cost and time saving.

With regard to its organisation, army aviation needs to develop organisations that enhance aviation capabilities to support the concepts of operations of field commanders. The force structure should be tailored to meet evolving tactical requirements. The concept of army aviation brigades at command/corps level is an imperative. The present concept of aviation base put in place this year is ill conceived and misplaced and needs to be rectified. In addition, aviation organisations should include appropriate maintenance and logistical support elements required to sustain the force.

Conclusion

Army aviation needs to play a vastly enhanced role in land operations in the coming years. This is only possible if the arm grows, both quantitatively and qualitatively. For dominating the tactical battlespace of the 21st century, the army must go beyond fielding light observation and light utility helicopters and the control of attack helicopters by proxy. The need is to create a dedicated and fully capable AAC. Resistance from the air force will persist, but the army will have to take a firm and unambiguous stand for its legitimate and logical demands. While the modernisation process has commenced, it is woefully slow and needs to be fast tracked. Army aviation is the arm of the future, a force multiplier which can tilt the balance in any future conflict. The growth and modernisation must proceed simultaneously to complement each other and due priority be given by the powers that be. A quote from Alvin Tofler aptly sums up the existing situation "The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn."