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# DEFENCE & SECURITY ALERT

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## HELICOPTERS

## INDIA'S IMMEDIATE REQUIREMENTS



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We endeavour to sound **ALERTS** and create **AWARENESS** about the myriad dimensions and manifestations of **DEFENCE** and **SECURITY** in India and around the world.



**The power of a King lies in his mighty arms...**

Security of the citizens at peace time is very important because State is the only saviour of the men and women who get affected only because of the negligence of the State.

- Chanakya

# DSA IS AS MUCH YOURS, AS IT IS OURS!



**M**ankind's curiosity with flight took centuries of effort before it became a reality, little more than a century ago. Since then the ability to fly, to control flight, and to send manmade objects into space has proceeded at a pace that is truly astonishing. It is astounding how rapidly human beings have overcome the barriers of flight, and demonstrated mastery over various modes of flying machines. In all of human evolution, no other field has been won over so rapidly and to the extent that it has. In terms of research and development as well, more energies are invested in all types of flight than possibly in any other field.

The human ability to fly covers all aspects, from the original piston engined multi-cylinder engines to the latest rockets that take astronauts to the space station. Humans have studied and built all types of flying machines, but there is one category that came to be invented even after rockets, and which even defies

nature's principles of flight. Which is of course the multi-utility and versatile helicopter! A unique machine in every sense of the term and a great human invention; as the helicopter has served mankind far in excess of its recognition.

A slow, relatively, lumbering helicopter is the best friend that a soldier has. Ask anyone who has been isolated, in need of help, and the first whirring sounds of the rotating blades send the sinking adrenalin into a rush. Such is its versatility that it can land in any open space without needing even ground, and take off from the same rough patch. The helicopter works in steamy humid jungles, hot dry deserts and the chilled Siachen Glacier as well. In fact, one of India's helicopters was recently recovered from Siachen after lying almost belly up from about a year! Tribute to army aviators who trekked to the location and got it started up again.

India has, in fact, taken helicopters where they'd never been before, or where not even thought capable of. Since Operation Meghdoot

began in 1984 to dominate the Saltoro Range, and secure Siachen Glacier, the mainstay supplies and rescue had been the helicopter. Initially, it was the diminutive Cheetah, and now, the Indian made Dhruv Advanced Light Helicopter. In that sense, India hasn't done that bad in terms of developing an indigenous helicopter. But it can do a lot more, and with a wider scope of activities.

The helicopter has more civilian applications than simply military ones. Before the advent of drones, it was essential to crowd control in most countries of the world. In fact, it is still in use by police forces for various uses. As a search and rescue transport, there is nothing to beat the helicopter. And, then there is always the role as an air ambulance. For all of this to be developed in India, it must open up its helicopter making industry to the private sector too. They will be able to bring in some skills that are not always available with the state sector. For the applications are also not limited to government but across the spectrum.

**Manvendra Singh**





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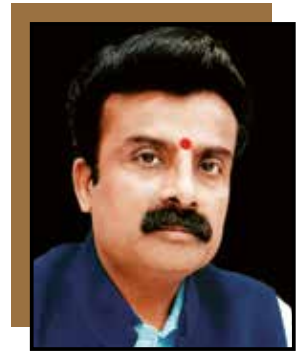
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# MAXIMISING SECURITY HELICOPTER COMMAND



**T**he dynamics of transportation, both military and civilian, have undergone a sea-change since rotary-wing vehicles, known as helicopters, made their debut at around the middle of World War II. More and more helicopters are being used both for direct aerial combat as well as for transportation of men and material propelled by an increasing density of road traffic; congestion at existing airfields, and, as in the case with India, where road transportation is stymied by the difficulties of road and bridge construction in the high Himalayan battlefields. At rapid pace, the feasibility (and necessity) of using unmanned drone rotary winged vehicles from the very heavy lift to miniscule eyes-in-the-sky surveillance platforms is being demonstrated.

This edition of DSA is dedicated to this very important machine which is to play a very vital role in the Indian military arsenal in the years to come given that it is about to be inducted in the hundreds. India is at the tipping point of ending the use of superannuated platforms like the Cheetah and Chetak workhorses and is preparing to induct the modern versions.

Primarily, helicopters are more widely used by the defence forces in India than in the civil arena. The role of helicopters is multi-dimensional and though it is under the total control of the military services, it is the Services that operate the helicopters in the many humanitarian and disaster relief operations given the seasonal depredations that visit the nation cyclically.

There is a growing demand for helicopters, both manned and drones, from not just the armed forces but also the large number of paramilitary / Central Armed Police Forces. The time is appropriate to resurrect a concept that was intended to optimise the use of military assets even while creating a commonality quotient that will improve national security in a holistic manner.

It is acknowledged that each Service has a peculiar requirement dictated by the element in which it operates (the naval versions in particular). Yet, there is scope for creating a common pool of facilities for planning acquisitions in a manner in which the multiplicity of types of helicopters does not become a logistical nightmare. Similarly, a commonality in training and logistics facilities could improve the cost-effectiveness of the entire fleet. One thing is amply clear that the business of building helicopters (we have the indigenously designed and developed Dhruv helicopter and its armed version, the Rudra) will soon have enough orders at hand to make investments in plant and machinery an attractive long-term prospect.

A Helicopter Command mandated to produce a list of contenders for acquisition within a short time-frame should have representatives of all end users so that all requirements are assessed and collated on the basis of common features. On the basis of this list, common training and maintenance and repair facilities can be envisaged and created. This Helicopter Command will also be mandated to strengthen the indigenous research and development infrastructure as well as expanding the involvement of the private sector medium and small scale manufacturers for spare parts and ancillaries.

The core feature of the suggested Helicopter Command is the creation of an ecosystem that will reduce costly multiplicity and at the same time, set up the infrastructure for a self-sustaining helicopter industry that will cater to both the military and the civilian sectors.

I am sure if the Helicopter Command is created, it will be a great value addition to the defence and security forces. This edition, dear reader, is one of its own kind to know and understand the importance of helicopters in national security which has been visualised by our esteemed contributors.

Jai Hind!

**Pawan Agrawal**  
 CEO - DSA



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# WHY ATTACK HELICOPTERS FOR THE ARMY

With the induction of such modern and technology-driven weapon systems, the army will need to plan and work out appropriate employment philosophies, training and maintenance procedures suitable to the Indian environment to exploit the full potential of these battle winning machines in the future.

**T**he Vietnam War also referred to as the 'Helicopters War' formed the test bed for validating the concepts of Air Mobility and Assault. The helicopter was universally employed for various missions including attack, air assault, aerial resupply, reconnaissance and command and control, the most common being transportation of troops / stores as utility or cargo helicopters. The actual integration of assault and armed helicopters evolved during the Vietnam War, leading to the concept of organic tactical mobility and dedicated attack helicopters. Presently, attack helicopters are an integral part of land, sea and air operations of modern militaries, with their ever increasing employment in sub-conventional conflicts (counter-insurgency and counter-terrorist operations) the world over.

## Force Multiplier

The attack helicopter is a force multiplier which can transcend the limits of surface friction and due to its speed, agility and firepower can operate with stealth and impunity to destroy enemy forces. They have a well-defined concept of operations and tactics to enable their effective employment in the Tactical Battle Area (TBA). Its forte is to fly 'Nape of the Earth' below enemy radar levels, aided by the gamut of electro-optical devices and duly protected by electronic warfare suites and armour plating. This, to a large extent, reduces the vulnerability of the attack helicopter in the TBA, especially when operating in close coordination and in conjunction with ground forces. It will be pertinent to note that attack helicopters operate in a battlefield environment as part of an all arms team for optimum effect and not in isolation as happened in the first Iraq War with disastrous consequences for the Apaches.

## Background

The case for inclusion of attack helicopters to be part and parcel of the army dates back to 1963 when Gen J N Chaudhary, the then COAS, stressed the requirement for a separate air wing for the army. He emphasised that efforts at

The platform includes **weapons, radars and electronic warfare suites** which constitute **the most vital part of an attack helicopter**





increasing the fire power and mobility of the army would not be complete without an integral aviation element comprising light, medium, heavy as well as armed / attack helicopters. While the Army Aviation Corps came into existence in November 1986, it was only in October 2012 that after vacillating for decades, the previous UPA government took the important call on the crucial issue of the ownership and operations of attack helicopters.

The MoD directive issued clearly stipulated that the entire attack helicopter fleet will be owned, operated and maintained by the army. Though late in coming, the decision was a welcome step, as it was expected to have a major impact on war fighting in the TBA. This lethal weapon system as part of army's inventory is expected to greatly enhance its capability, making it a battle winning factor in any future conflict.

### Misperception

As a consequence of this decision, it was assumed that the 22 Apache AH-64E Guardian attack helicopters being procured from the US by the air force, were to be part of Army Aviation Corps inventory. This assumption was based on the basic premise that the two units of MI-25 / MI-35 attack helicopters presently held with the air force and being replaced with Apaches were army assets and were also operationally controlled by the army — in fact, a few Army Aviation Corps pilots are also posted to these units. It, therefore, came as a complete surprise to the army when the previous government reneged on its earlier order, thereby, defying operational logic and stated that the 22 Apaches being acquired would remain with the air force due to the acquisition process having been already set in motion. The army's suggestion and recommendation to the government to share these assets 50:50 did not make any headway due to objections by air force.



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*American Soldiers are dropped off by US Army helicopters to join South Vietnamese ground troops to advance in an attack on a Viet Cong camp, 18 miles north of Tay Ninh, northwest of Saigon near the Cambodian border, in March 1965 during the Vietnam War.*



### Strike Corps Gets Apaches

However, it is to the credit of the then government that keeping in mind the operational requirements of the army, it gave an in principle approval for 39 Apaches for its Strike Corps. It is in this background that the current approval for the army to acquire Apache helicopters needs to be viewed. The Defence Acquisition Council (DAC) had initially cleared the acquisition of 11 Apaches under the repeat order option clause, which was subsequently reduced to six numbers probably due to financial constraints. This, indeed, is a very positive development as neither trials nor any new contract negotiations are required

to be done in this case, thereby ensuring a smooth induction process hopefully. The army is moving ahead full steam to ensure that the required process is finished in time and that the most technologically advanced and lethal attack helicopter in the world forms part of its inventory in the near future. The project also includes weapons, radars and electronic warfare suites which constitute the most vital part of an attack helicopter.

### Army Logic

The primary mission of Army Aviation is to fight the land battle and support ground operations, with the helicopters operating in the TBA

as part of combined arms teams, thereby, expanding the ground commander's battlefield in space and time. Its battlefield leverage is achieved through a combination of reconnaissance, mobility and fire power that is unprecedented in land warfare. Its 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, in the form of direct fire from aviation manoeuvre units (attack / armed helicopters) or insertion of overwhelming ground forces at the point of decision (utility / lift helicopters) facilitating 'Effects Based Operations'.







*Rudra – India's fighting Advanced Light Helicopter.*

The assets required for the above manoeuvre, the attack and assault helicopters must be at the beck and call of the field force commander and also piloted by men in olive green who fully understand the ground situation. This ensures the optimum utilisation of a crucial battle winning resource. This has been the basic rationale on which the army's case for ownership of these assets has been built.

Unlike the air force, the Army Aviation units and helicopters are located closer to their operational areas and along with the formations they are affiliated to, especially at the Corps level. During war, these units will require to operate from forward 'Composite Aviation Bases', catering for security, maintenance, fuelling and arming facilities. The employment philosophy dictates the need to develop organisations that enhance aviation capabilities to support the concept of operations of field commanders and be tailored to meet the evolving operational requirements — hence, the concept of Aviation Brigades with each Corps and not Bases as in the case of air force.

### **Cold Start**

With the Indian Army's Doctrine of 'Cold Start' or the 'Proactive Strategy' as the government would like to call it, which is Pak-centric, restructuring

as per reports, Pakistan has also acquired the Chinese Z 10 state-of-art attack helicopter, which has only recently been inducted into the Chinese Army Aviation.

## **The Light Combat Helicopter** with its high altitude capability will be a **force multiplier**

has been done of the Holding / Pivot Corps as 'first responder' to enable quick and immediate action within 48-72 hours by using the integral assets at the Corps level. For this, the resources required (including attack helicopters), must be at the beck and call of the field force commander — the present arrangement of these assets ownership with the air force and operational control with army is not an operationally sound arrangement. In fact, both our adversaries, China and Pakistan, have a very potent attack helicopter inventory in the air arm of their respective armies. The Pakistan Army Aviation has the MI-25 / MI-35 and Huey Cobras attack helicopters –

### **Army Inventory**

The army is already in the process of inducting the armed version of the Advanced Light Helicopter (ALH) called 'Rudra' developed by the HAL with four units already operational and another under raising. Though not a typical attack helicopter, it has an array of comparable weapon systems to include guns, rockets, air-to-air, and air-to-ground missiles (ATGM). The 'Rudra' units are to form part of the Holding / Pivot Corps making available a formidable offensive punch to the field force commander. Further, the Light Combat Helicopter (LCH) developed by the HAL is expected to be a milestone achievement. The LCH aims to gate crash the exclusive



*Apache Helicopter.*


club of the state-of-art light attack helicopters, which includes erstwhile Eurocopter's Tiger, Bell's AH 1Z Super Cobra and China's Zhisheng 10 (Z-10).

The LCH is a derivative of the ALH and the 'Rudra' and is being designed to fit into an anti-infantry and anti-armour role with capability to operate at high altitudes (16,000 feet), a distinct advantage over other attack helicopters – the helicopter is expected to enter service this year. The LCH units will be the main punch of the manoeuvre force commander and will be inducted into the Army Aviation Corps and operate in support of ground forces both in the plains and mountains – during the Kargil War, the only attack helicopters held, the MI-25 / MI-35 were not capable of operating at high altitudes, where most of the conflict was concentrated. While initial clearance for five LCH for the army and 10 for the air force has already been given by the government, the overall requirement projected for the army is much larger.

As brought out earlier, the project for induction of six Apaches along with weapons and support equipment is already on fast track and the delivery process is likely to commence after the induction of 22 Apaches for the air force is completed – these are already under development at Boeing facility in Mesa, Arizona.

### **Close Air Support**

The primary role of the attack helicopters the world over is to support and fight the land battle in the tactical domain. The employment of attack helicopters fully integrated with Army Aviation units and fighting alongside and above the infantry also gives a new meaning to close air support in the TBA and brings into focus the distinct role of attack and armed helicopters. In Afghanistan, the troops on the ground have been more comfortable with the intimate support provided by attack / armed helicopters in their operations, due to the visibility, proximity and response time factors.

In the near future, the army's air arm, the Army Aviation Corps, will boast of formidable attack / armed helicopter inventory from the 'Rudra' armed helicopter to the state-of-art attack helicopters like the Apache and the LCH. While the Apache with its state-of-art technology and weapon systems will be a game changer in the Strike Corps operations, the LCH with its high altitude capability, will be a force multiplier and a weapon of decision in any future conflict in the mountains. Keeping in mind the role and employment philosophy of attack helicopters, there is no doubt that in case of a future conflict, the 22 Apaches with the air force would also be available to support the land forces operations, for this is their primary role. With the induction of such modern and technology-driven weapon systems, the army will need to plan and work out appropriate employment philosophies, training and maintenance procedures suitable to the Indian environment to exploit the full potential of these battle winning machines in the future. 





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NALSAR University of Law established by Act 34 of 1998 is engaged in teaching and promoting research in law and allied disciplines. In recognition of its academic standards National Assessment and Accreditation Council (NAAC) awarded it 'A' grade (A+ as per new grading system) with a score of 3.60 out of 4.00 which is the highest amongst all National Law Universities. NALSAR has also been accorded with the status of Category-I under UGC (Categorization of Universities (only) for Grant of Graded Autonomy) Regulations, 2018.

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There is an acute shortage of legal and managerial professionals in aerospace and defence sectors around

the world and India is no exception to this. NALSAR's initiative crystallizes an academic-industry partnership in the domain of Aerospace, Defence and Maritime Laws which makes the programme first of its kind not only in India but also in this part of the world.

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**Admission Procedure:** Direct Admission subject to fulfillment of the eligibility criteria for the said courses. **The Online portal for submitting the Application Form for admission shall be open from April 29, 2019 to July 1, 2019 on [www.dde.nalsar.ac.in](http://www.dde.nalsar.ac.in)**

**Note:** The University reserves the right to modify/revise the course curriculum and the fee structure from time to time.



# DIGITAL DISRUPTORS

It will be the responsibility of the government to come out with clearer guidelines on the i) technology aspects of a drone i.e. the procurement procedures, capability of in-house manufacturing, the import guidelines for the embedded chips (since the chips are not reportedly developed in India), security clearance on the software and hardware used, etc.

If walking is a natural trait of the human being, flying has always been a natural coveted hankering for him. And, perhaps this urge to fly, to go places and to reach out for the faraway distances, has resulted in men embarking on the adventurous hot pursuit of racing towards places not easily treaded by foot. It is this urge to 'reach' places that a human being cannot enter, that an Unmanned Aerial Vehicle (UAV), though pretty small, actually satisfies.

An Unmanned Aerial Vehicle (UAV) or "drone" is a flying object that does not carry a human operator, uses aerodynamic forces to provide the vehicle movement and can fly autonomously piloted remotely, normally carrying a payload and is expendable (i.e. can be carried or disposed easily). Director General of Civil Aviation (DGCA) describes a Remotely Piloted Aircraft (RPA) as an autonomous aircraft and model aircraft operated without a pilot from a remote pilot station. Unlike a





helicopter, the essential ingredient or the significant feature of a drone is that it is too small, weighing normally a few kgs, is always remotely operated, never carries any human being, not even a heavy payload and can be assembled or carried easily.

Helicopters in their present format, have evolved over the years, over decades to be precise, to what they look like and are capable of today. Starting from the earlier Chinese top, powered by a spring as a method to lift meteorological instruments invented during the middle of 18th century, helicopters have really seen vast improvements to come to their present day use. *Much has been discussed about helicopters, elsewhere in this issue. Hence, now let us discuss the smaller versions.*



### Regulating Drones

Drones are essentially mini helicopters or unmanned ones, or chip-based, remotely operated, flying objects, most often used today in civilian, military and other purposes including as toys and games for children. If they fly for a few feet or at a slow speed inside a room or a closed premises; they may aptly be called toys or entertainment and fun gadgets. But, when they have the capability of carrying recording devices (audio and video, as well), of being controlled by a remote battery operated system a few metres away or are capable of flying hundreds of feet above and at speeds ranging up to 40 km per hour or even higher, then starts the real issue of regulations, control and monitoring. With so much capability, they cease to be toys and can often be used, misused or abused for any purposes other than the simple fun of making an object fly.

Drones, as they are popular today, were introduced during the First World War days in a very limited way and later developed by many nations mainly the US, Israel and others. India is considered to be a major user of drones with a substantial consumer market for it. Now, more formally known as unmanned aerial vehicles (UAV) or unmanned aircraft systems (UAS), they serve as a flying robot that are remotely controlled and flying autonomously through software-controlled flight plans in their embedded systems, working in conjunction with on-board sensors and GPS (Global Positioning System).

### Civilian Uses

Drones, nowadays, have lots of civilian uses besides military and defence deployments. Police often deploy



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drones for the purpose of surveillance during a huge rally, or a big human gathering like the recent Kumbh Mela and more recently in many election rallies and other similar meetings where police cannot move faster and monitor the crowds, penetrating inside the gathering. Military and defence related organisations often deploy drones for surveillance, data gathering,

**Information security professionals** are waiting to see what shape **the digital data privacy** will take



India's drones.

etc. Missiles, which are themselves the combat weapons and dropped, are not called drones and do not generally, come under the category of UAVs.

### Versatility

Effectively deployed and fitted with communication devices and GPS, drones in these places are used to capture video recordings and transmit them live to the earth stations, so that the controlling agencies like the police keep monitoring the mobs and crowds with minute details of what even any specific individual is doing in such huge gatherings of thousands and lakhs. Besides, simple and cheaper varieties of drones are put to use by photographers to capture the photos in meetings and conferences where the photographer cannot physically move to every corner of the venue. Drones have become so common that video photographers acquire drone cameras for use in functions for as low as ₹25,000 to ₹30,000. Many universities in India have included the drone technology and the software related to it, as part of their curriculum too.

### Ramayana Connect

Interestingly, drones or small flying objects or mini helicopters capable of carrying just one or two passengers, have been discussed in very ancient Indian epics like Ramayana too which relates to the Treta Yug (i.e. much earlier than the Mahabharata period which is the next Yug namely Dwapara Yug), wherein Ravana, the ruler of Sri Lanka is reported to have deployed a small helicopter for flying Sita to his island. In fact, mythologically, Ravana is credited to be among the earliest to have owned a private aerodrome and used the science (or technology) of flying objects.

### Security Concerns

Having said all this, now the question of regulation for UAVs comes. Though the civilian, military and entertainment values are really interesting and certainly useful, government has to take care of the security concerns and guard against the misuse too. Is it not the duty of a ruler to take care of the safety and security of the citizens, as enshrined right from the days of Mahabharata, as stated in the Vidhura neeti?

What are the security concerns in a drone? Imagine you are sitting in the open terrace of your multi-storied house, or relaxing on an evening in the sit-out balcony of the ninth or tenth floor of a residential complex and a small object whooshes, jeers or even hisses past you for a few seconds. And, vanishes fast. Does it not invade your privacy? What, if the object has taken a photo or a video of your sitting there and transmitted the same to its ground station? Are we not entitled to our own privacy, especially after the historic verdict of Supreme Court in the much acclaimed Justice K.S. Puttaswamy (Retd) vs Union of India case (W.P. Civil 494 of 2012), delivered on 24 August 2017, in which the apex court stated that the right to privacy is protected as a fundamental constitutional right. Privacy has always been a salient feature, a right of every individual in any developed society and to give the due credit, was it not Chanakya, who said in his administrative treatise "Arthashastra" that one should keep the secrets to oneself and the value of confidentiality is supreme, especially for a ruler?

### Exhaustive Guidelines

Earlier, there was no specific Act or guidelines governing the civilian use of drones in India. It is laudable (though delayed) that the DGCA has now come out with exhaustive guidelines governing the use of Remotely Piloted Aircraft Systems, vide DGCA notification Air Transport Series X Part I, Issue No.1, F. No. 05-13/2014-AED Vol. IV dated 27 August 2018, effective from 1 December 2018. As per these Civil Aviation Requirements (CAR), a Civil RPA (Remotely Piloted Aircraft) is categorised in accordance with the maximum take-off weight (including payload), as five types namely; (i) Nano: Less than or equal to 250 grams; (ii) Micro: Greater than 250 grams and less than or equal to 2 kg; (iii) Small: Greater than 2 kg and less than or equal to 25 kg; (iv) Medium: Greater than 25 kg and less than or



equal to 150 kg; (v) Large : Greater than 150 kg. The guidelines stipulate that a UIN (Unique Identification Number) is necessary for deploying any RPA in India except in the case of a Nano model cited above. Digital Sky Platform with its link available in the Homepage of DGCA website is the entity empowered with regard to implementation of the guidelines like an online application, obtaining an Unmanned Aircraft Operator Permit etc. The UIN should be engraved in the drone in a fire resistance plate in the drone itself. Separate guidelines are given for the RPAs deployed by Intelligence agencies like NTRO etc.

### Aviation Matrix

The Civil Aviation Requirements (CAR) also stipulate guidelines like taking up with the local police officials at least 24 hours before any deployment, flying near airports and other critical areas, minimum training requirements for operating, maintenance of logs, etc. Though the issue of privacy is not covered extensively or clearly, the CAR does state that RPA shall not be flown in a manner to cause danger to any person or property and the RPA operator / remote pilot shall ensure that privacy norms of any entity are not compromised in any manner

## Clearer guidelines **on powers of the local police** to criminally **prosecute the offender**


and that mere giving permission or a UIN does not absolve the operator of his responsibility of compliance with any other regulatory requirement including, we may safely assume, the privacy rights of individuals too.

### Data / Personal Privacy

With emerging focus on data privacy and information security in a networked world, and the way information is stored, transmitted, handled or retrieved assuming more and more importance, it is interesting how the information about a drone itself and the data gathered by it, including its usages are going to be viewed in the days to come. With the Data Privacy Act in India (draft of which has already been placed in public domain in August 2018 itself), likely to be passed when the next Parliament is in place, information security professionals are waiting to see what shape the digital data privacy will take with so much invasion (and even onslaught?) into individual privacy in any public place

through CCTV surveillance, drone surveillance, and all such forms of information harvest.

### Logistical Aspects

It will be the responsibility of the government to come out with clearer guidelines on the (i) technology aspects of a drone i.e. the procurement procedures, capability of in-house manufacturing, the import guidelines for the embedded chips (since the chips are not reportedly developed in India), security clearance on the software and hardware used; (ii) legal aspects of deployment especially on the 'capability' of a drone to invade privacy, powers of the local police to criminally prosecute the offender, preservation and usage of the digital data so collected (i.e. the Right to be Forgotten or withdrawn in the context of the Personal Data Protection Bill 2018 cited above); and (iii) the social aspects of usage of drones focussing on the awareness initiatives on network safety, digital security and other factors. 



# IRRITATING BIFURCATION OF OWNERSHIP

In 2015, the government announced that the Ka-226 would be inducted through the G2G route. It's been four years since but there has been negligible forward action for the 200 helicopters to come via this route — 60 direct import, 40 assembled in HAL through imported kits and the last 100 made in India.

**T**he adrenalin rush induced by the Indian Air Force strike at Balakot on 26 February 2019 and the Pakistani response through its air force a day later on 27 February seems to be ebbing; discussions are back to elections and party politics but lingering in the shadows is the concern of strategic thinkers on the state of equipment of our

armed forces — a discussion that had hogged the limelight prior to 'Pulwama' and 'Balakot.' It is time that these are brought back to the front burner since progressive national development is premised on a nation's hard power capability; hard power provides deterrence and adequate deterrence prevents war. A war at this stage of India's development would be disastrous for its economic progress and hence, it is imperative that the

depleting state of the nation's hard power capability be arrested and built up to the required levels. This requires monies — lots of it, and though it is a Catch-22 situation as economic development of the masses is first priority, there is no escape from this. While a lot of attention has been paid, and rightly so, to the acquisition needs of fighter aircraft to arrest the depleting IAF squadron strength, there are other elements that



*Indian Navy chopper 'Chetak' doing some maneuvers before a rescue demonstration off Gateway of India on Indian Navy Day.*



need equal focus too. This essay discusses the state of the rotary wing of the IAF, which would be analysed through four segments. The sub-division into the segments is based on their roles — Light Utility Helicopters, Medium Lift Helicopters (MLH), Heavy Lift and attack / armed helicopters.

### Light Utility Helicopters

The IAF is sitting pretty with numbers in this segment, but with machines that fall into the category of 'obsolescent.' The Chetak / Cheetah fleet has done, and is still doing, yeoman service to the nation. While one sees them in action in Humanitarian Assistance and Disaster Relief (HADR) operations during floods and other natural calamities, one forgets the fact that they constitute 100 per cent of the basic rotary training fleet. They are indispensable since they turn rookie cadets into frontline helicopter pilots who then see action in all border areas flying more modern and demanding machines. Additionally, Chetaks are used for training rotary wing helicopter instructors at the Flying Instructors School. Recently,

does increase is the unserviceability quotient during operations but it is ensured that no flight critical item falls in the bracket.

The IAF and Army had moved the case for replacing the Chetak / Cheetah fleet, with Army Aviation as the lead Service, almost 15 years back, but the project has had many false starts till the Eurocopter Fennec and Russian Kamov Ka-226T got short listed. In 2015, the government announced that the Ka-226 would be inducted through the G2G route. It's been four years since but there has been negligible forward action for the 200 helicopters to come via this route — 60 direct import, 40 assembled in HAL through imported kits and the last 100 made in India. However, there are another 200 that the Services and the civil sector are vying for and these are supposed to be the Light Utility Helicopter being made by HAL. Since there is already so much delay in the Ka-226T project, it would be worth evaluating whether HAL could expedite its LUH and be tasked for the complete order of 400; the Services have waited so long and



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The government finally decided that **the ownership and command and control of Medium Lift Helicopters** would stay with the IAF while **future acquisitions** of attack helicopters would be done **by the Army**

there have been some accidents involving these helicopters and, understandably, a view is gathering roots that they are dangerously past their technical life. This is not so, as no aircraft is allowed to fly beyond its technical life, or get airborne with any equipment that is life expired. What

if a couple of more years wait results in a truly Made in India product coming out, it would be in national interests and avoid multiplicity of helicopter types too. Meanwhile, the HAL designed Cheetah (Cheetah with ALH Dhruv engines) has proved to be a success in the ultra-high

altitude helipads of Siachen; since the airframe is new (not overhauled) their performance is indeed praise worthy – and just goes to prove that if HAL is committed to a task, it can perform, just like its Dhruv, which has come of age but can still be improved further with respect to its lingering reliability issues.

### Medium Lift Helicopters (MLH)

The Russian Mi-17 variants are the work horses of the IAF, and one would not be wrong in saying, of the nation as a whole. They have been flogged no end in air maintenance of the army all across the northern borders, Army-IAF and international exercises, HADR missions and in aid to civil power. It would be fair to say that there are areas in our country where elections cannot take place but for the round the clock flying done by the MLH fleet for transporting officials, ballot boxes, police and para-military troops for election duties; in fact, as one reads this piece, this aspect would be all too evident to all!



Indian Air Force Mil Mi-26.

### Heavy Lift

The venerable Mi-26, with its 20 tonne payload capability, has bid good bye after very meritorious service. Besides strategic tasks for the DRDO, which have not been publicised much, the Mi-26 was instrumental in positioning the road building assets of the Border Roads Organisation as it went about building connectivity in the northern borders, especially in the Northeast. In comes the Chinook as a replacement, with its 12 tonne and three underslung hook capabilities. What it lacks in payload capability vis-à-vis the Mi-26 it makes up with its manoeuvrability – this would permit it to go into narrow valleys of the Northeast, which the Mi-26 could not do. With the renewed governmental thrust given to road building in the border areas, the Chinook will come in very handy. Additionally, the positioning of armament and army stores as close as possible to the battle area, like the newly acquired M-777 howitzer which it can under sling, would be a boon to the ground force's

combat capability. Which brings the discussion to the contentious issue of the ownership and utilisation of helicopters, especially the MLH and attack / armed rotary wing assets.

### Attack / Armed Helicopters

Anti-tank guided missile equipped Chetaks were the first armed helicopters to enter IAF inventory in 1977 followed by the Mi-25 / 35 gunships in the '80s; they were owned by the IAF and serviced and flown by IAF crew. During exercises, and when operations were ordered, the command would shift to the army formation to which they were attached. The Commanding Officer of the attack helicopter squadron would have his annual assessment report written by the army formation commander and the IAF Station Commander where the Squadron was based. Ever since 1984, when Army Aviation Corps was set-up, this arrangement, and the ownership of the MLH fleet too, has been a bone of contention between the two Services.

### Persisting Irritant

Many a committee was set-up to resolve the issue and in 2012, the government finally decided that the ownership and command and control of Medium Lift Helicopters would stay with the IAF while future acquisitions of attack helicopters would be done by the army. This implied that the Mi-25 / 35 and the 22 Apache helicopters that had been ordered would continue to function under the earlier arrangement while subsequent acquisitions would be by the army. Later, in 2017, the army was permitted to order six Apache attack helicopters, something that defies operational logic and appears to be a 'trial' of some sorts — either it should have been a full operational entity with the required numbers or nothing at all, with these six also allotted to the IAF – because, though the financial outgo would be from the army budget, it eventually flows out from the scarce national exchequer.



*Operation Rahat (2013) was one of the biggest civilian rescue operations ever carried out in the world.*

### Light Combat Helicopter

The Light Combat Helicopter (LCH) is next on the acquisition plate. It has the same engines, transmission train and rotors as the ALH Dhruv, but is much lighter as it is truly a two man attack helicopter rather than an armed one which the Mk 3 and Mk4 versions of the ALH are – the ALH Weapon System Integration variant. Having been associated in the initial design phase of the ALH Dhruv, this author can state with conviction that knowing the power that the rigid rotor system of the LCH generates, it would be a true world beater in its class. This has been shown during its high altitude trials where it has demonstrated its capability of armament delivery at 15,000 ft AMSL, something that was sorely lacking during the Kargil conflict. The LCH would be acquired by the IAF for its Combat Search and Rescue role as well as for special operations while the Army Aviation would get it for the classic ground attack role.

### Turf War

The moot point generating much heat is whether this sort of bifurcation is workable in our operational scenario.

## India can actually offer itself to be a regional **Humanitarian Assistance and Disaster Relief (HADR)** provider

It is easy to pass an opinion, but it will not be attempted as it just muddies the discussions further. Suffice to say that as the government has taken a decision, it should be given a fair chance and a review done after a reasonable implementation period. In the present times, where finance is a big crunch, inter-Service wrangling to further one's parochial interests is not conducive to national aims — the guiding principle should be one of bringing to bear all operational capabilities of a weapon system to the task at hand, irrespective of which Service owns it. Anything that is sub-optimal would be doing great dis-service to the nation's substantial rotary wing power.

### Potent Force

The IAF's rotary wing power is impressive in the punch it can deliver in peace and in war. With its Mi-17 fleet of almost 250 machines, India

can actually offer itself to be a regional HADR provider. This needs to be seen in the overall aircraft inventory context as the IAF's fixed wing airlift capacity is massive with eleven C-17 Globemasters, ten odd Il-76 and many scores of An-32. Since a C-17 can transport an Apache in its internal hold, India's HADR arm can be extended to help almost all countries in the neighbourhood even with very short notice. The rotary wing component has become an inalienable part of India's military diplomacy, the soft power element in its external international relations and the hard power constituent in its deterrence posture vis-à-vis its adversaries. Finance will always be a constraint in a developing nation's overall agenda, but certain elements of the rotary wing fleet need to be given focussed attention lest they lose their potency. It is a call that cannot wait any longer. **DSA**



# PLAGUED BY DUPLICATION OF COMMAND

The current status is that IAF is all set to receive 22 Apaches in the near future and the army six of them thereafter. The future may see some more Apaches demanded by the two Services but IAF may not get any more. So, if that is the case, does it make sense to have the two Services have same type of an extremely expensive and sophisticated helicopter in small numbers with the attendant duplicated costs of training, maintenance and equipment? Or, is some consolidation model possible wherein all Apaches on order and any future acquisitions can be fused into a single, more practical dispensation?



**T**he helicopter has been present in the battlefield since the 1930s. Its first appearance there was as a casualty evacuation platform and its slow speed envelope, high vulnerability, low survivability and poor manoeuvrability discouraged any thought then of offensive roles; “attack helicopter” would have been an oxymoron. However, incremental experiences gained through World War II, Vietnam, Korea and Iraq et al on the one hand, and technological advances on the other, have slowly turned the helicopter into a versatile platform on the battlefield. Its ability to vertically dominate the land battle offers the field commander the self-evident advantage of “high ground” for recce and surveillance roles while incessant improvements in performance have rendered it more and more suitable for expanded roles. To casualty evacuation have been added attack, anti-tank, suppression of enemy air defences, reconnaissance and observation, airlift of troops and cargo resupply and fire-fighting. In the context of the battlefield, the helicopter has remained tethered to the ground forces by an umbilical connection while definitionally, by dint of using the medium of the air for locomotion, it is a sub-set of air power. As its battlefield role

repertoire distended, the desire of the ground forces commander to have these assets ‘under command’ grew with understandable resistance from the air power pundits who invoked indivisibility of air power as a tenet that cannot be infringed. The ‘attack helicopter’ — as the most offensive of helicopter roles — has been at the leading edge of this debate. This article examines attack helicopters in the Indian context, especially in view of exorbitant prices and low projected acquisition numbers.

### Multiple Roles

Starting from life-saving (casualty evacuation) rather than life threatening, offensive roles, the helicopter evolved as a platform with progressively more and more aggressive and offensive roles in the battlefield. Through World War II, the Indo-China War, the Malayan Emergency, deployment for counter-insurgency in Cyprus, Brunei and Malaysia and the Korean conflict, the helicopter had its roles refined with technological advances supporting their empowerment.

The jet engine had bloomed into the turbine engine; the first turbine powered helicopter design flew in 1951 while the first production helicopter — French Alouette — appeared in 1955 (and flew extensively in India as Chetak and Cheetah). Materials used



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in construction became lighter and cheaper, wider range of fuels became available, engine size and weight reduced and transmission design problems became less difficult to surmount.

### Airborne Artillery

As design developed and power-to-weight ratios increased, military thinking intuitively found attractive the idea of mounting helicopters with weapon systems — so as to empower the field commander with firepower in the third dimension to assist his manoeuvre. Interestingly, it was the US Navy that made the first attempt to weaponise a helicopter in 1950, mounting machine guns on a

The **Vietnam War** served to instate the helicopter as an **indispensable and versatile combat platform**





*US Navy Sailors prepare to man the rails on the flight deck of the Nimitz-class aircraft carrier USS George Washington.*

Sikorsky HO3S-1. The recoil of the gun nearly tore off the sides of the fuselage but the ingenuity of the idea set the path for weaponisation of the helicopter as a combat platform. The French made extensive use of helicopters in Algeria starting 1954, arming them with machine guns, rocket pods and air-to-ground missiles against ground targets. The 1950s and 1960s produced several significant types of helicopters; the Vietnam War has a significant place in the history of military helicopters. In 1966, Bell Model 209 won the contract for the Advanced Aerial Fire Support System for the air mobile helicopters; it first flew as

the AH1 Cobra in October 1966 and its first production model rolled out in 1967. It deserves a special mention in the annals of military helicopter evolution in as much as it was termed as a “gunship” and marked that point in the history of the helicopter at which design moved away from the generalised use of helicopters as an airborne platform towards becoming a task-oriented combat platform and acquiring nuances of specialisation.

### **Evolutionary Crucible**

The arrival of the AH1 Cobra in Vietnam was a notable event; it could carry guns, grenade

launchers, rockets and missiles, and proved to be very effective. The Vietnam War served to instate the helicopter as an indispensable and versatile combat platform. Even after US’ withdrawal from South East Asia, the Cold War sustained helicopter development — one motivation was the seemingly ever-imminent massive showdown in Central Europe, and the other, the rivalry in regional conflicts. The US experience in Vietnam led to the perceived need for considerable armament on board helicopters; guns and cannons, rockets, air-to-surface missiles and even air-to-air missiles were added to helicopter





*AH-64 Apache attack helicopter.*

armament — thus rendering them into combat aircraft with add-on or built-in stub wings and hard points.

### **Vietnam Experience**

Vietnam served to highlight the need for increased speed, manoeuvrability, agility and survivability for helicopters and led to the development of the AH-56 Cheyenne which would have been a helicopter pilot's dream machine but for the fact that it was too expensive to mass produce — even for the US Army. The toned down consummation of that dream — the AH-64 which first flew in 1975 and was named Apache in 1981, is perhaps the most significant of helicopters that flew as combat platforms; it continues to provide excellent service around the world even today. According to one account of the Gulf Wars, the Apache was responsible for destroying 837 tanks / tracked vehicles, 501 wheeled ones, 66 bunkers, 12 helicopters on ground, 10 fighter aircraft on ground, 120 artillery sites and 42 SAM / AA

sites. The combat philosophy of the Apache was also imbibed into some other helicopter types although high costs and immense complexity kept proliferation to a handful.

The Cobra and the Apache represented the US' lead in the area of combat helicopters over USSR. However, the appearance of the Mi-24 variants (commencing 1973) reduced this lead to a negligible level. Mi-24 variants included guns, missiles and rockets, and one version even carried up to 8 troops on board. The Soviet entry into Afghanistan in 1979 provided another significant arena for the helicopter. The Mi-8 and the Mi-24 were the main protagonists in the bloody battle between the mujahideen

and the Soviet troops. The Soviet tactic was to insert reinforced rifle battalions deep behind enemy lines using Mi-8s being provided fire support by Mi-24s.

### **Stinger Antidote**

The introduction of the shoulder-fired Stinger missiles via the Pakistani conduit reduced the fearsomeness of this combination somewhat and led to the incorporation of measures by US to counter heat seeking missiles. The Mi-24 evolved into the export / upgrade variants Mi-25 / 35 (IAF is a user) and the experience with them convinced the Soviet military of the need for specialised helicopters. As a result, the Ka-50 and the Mi-28 were born in 1982. These types had design

**Indian Army** assertions found fruition in **a controversial compromise document** called the **Army-Air Force Joint Implementation Instruction 1986**

features closer to the US philosophy and indeed, the Mi-28 was similar to the Apache in many ways.

### **IAF Inventory**

The foregoing section sets the context to mull over the Indian attack helicopter inventories. India has had Chetaks since the 1960s and used it with French AS-11B1 Anti-Tank Guided Missiles (ATGMs) although accuracy and kill statistics were unimpressive. The IAF got its first attack helicopter — the Mi-25 — in 1983 while the upgraded version, Mi-35 was inducted in 1990. The Cold War scenarios of war in Europe envisaged massive and mobile mechanised formations sweeping across large swathes of territory in advances against the enemy. Land force commanders

influenced doctrine on both sides for attack helicopters to be placed under command so that they could move along with the moving formations and not have to be demanded from an air force. The Cold War did not heat up enough for these tenets to be validated but many land commanders were persuaded of the merit of having attack helicopters under command.

### **Controversial Compromise**

The debate infused the Indian scenario also where, ab initio, the IAF was the primary owner of all helicopters — attack or otherwise. Indian Army assertions found fruition in a controversial compromise document called the Army-Air Force Joint Implementation Instruction 1986, which bifurcated the responsibilities of the two services

in relation to the attack and anti-tank helicopters of the IAF. While operations and training were to be overseen by the army, administration remained under the purview of the IAF. The mutually unsatisfactory arrangement failed to meet single Service demands and has kept the attack helicopter ownership debate smouldering. As a replacement for the IAF Mi-25 / 35 fleet, Boeing's AH-64D Apache met all ASRs (Air Staff Requirements) while the Russian Mil Mi-28 failed some of the requirements during the field trials held by IAF. Twenty-two Apaches were ordered for around \$1.4 billion for the IAF. The simmering debate about ownership of attack helicopters reached a precipitation point during March 2015 with the Defence Minister announcing that the ownership of future inductions of attack helicopters will vest with the army. Six more Apaches have been ordered for the army based on the options clause of the 22 Apache deal for the IAF. However, these will be delivered after the IAF receives its 22 helicopters.

### **Unresolved Conflict**

Meanwhile, the tussle between the IAF and the Army continues with IAF insisting it is the professional service to operate attack helicopters and invoking indivisibility of air power to argue against piecemeal deployment of attack helicopters while the army contends that attack helicopters are better grouped with its strike formations. While addressing the army's annual press conference, the Chief of the Army Staff General Rawat reportedly said that the two Services are reaching a consensus on what will be role of the Apaches. While asserting that it is a "tank killer", he added that it needs to be grouped with the army's strike formations and will provide necessary support for mechanised columns. The IAF accepts that but avers that it can carry out that role while retaining attack





*Hindustan Aeronautics's weaponised Rudra Advanced Light Helicopter (the Mk. IV Army version of "Rudra") has received initial operational clearance.*

## The Rudra is expected to carry out these roles at **high altitude**; no other country makes **attack helicopters for high altitude** operations as **foreseeable in the Indian context**

helicopters in its inventory. The debate does not look like it will be resolved in the near future; the possibility of a governmental intercession to reach a final concept (howsoever, unpalatable to one or both of the single services) cannot be ruled out.

### Contention Prevails

The current status is that IAF is all set to receive 22 Apaches in the near future and the army six of them thereafter. The future may see some more Apaches demanded by the two Services but IAF may not get any more. So, if that is the case, does it make sense to have the two Services have same type of an extremely expensive and sophisticated

helicopter in small numbers with the attendant duplicated costs of training, maintenance and equipment? Or, is some consolidation model possible wherein all Apaches on order and any future acquisitions can be fused into a single, more practical dispensation? These questions need to be addressed at a national level, rising above single Service wants, and meeting Joint Service needs, especially as indigenous production of helicopters for offensive roles gets underway and more and more helicopters are available.

### Indigenous Rudra

The first Rudra ALH Mk-IV was handed over to the army in 2013; it is the weaponised version of

the Advanced Light Helicopter (Dhruv) designed and developed by Hindustan Aeronautics Limited (HAL) to meet the requirements of Indian Army and Air Force. It is a 5.8 tonne machine that can carry out anti-tank, fire support, armed reconnaissance and surveillance and escort roles as it can carry a 20 mm turret gun, 70 mm rocket system, ATGMS and air-to-air missiles. It is also expected to be able to carry out these roles at high altitude; no other country makes attack helicopters for high altitude operations as foreseeable in the Indian context. Rudras would become available as attack helicopters (albeit not as brawny as the Apache) and need to be inducted in a manner that optimises their use. However, the urgency of consolidating attack helicopters for their optimum utilisation is unlikely to be gratified soon; possibly that might happen when the Services reach agreement on a Chief of Defence Staff and the conduct of theatre operations. **DSA**





# NEEDED BY THE HUNDRED

With the large fleet of Mi 17s, the current status of helicopters for the IAF is expected to turn comfortable with arrival of modern transport, attack, and heavy lift helicopters from Russia and USA and from the Hindustan Aeronautics Ltd (HAL) which will be inducted in the current 2019-21 acquisition programme.

**W**orld over the need and importance of helicopters for the armed forces, the coast guard and the border security (BSF) has increased, and also in India as helicopters have transitioned from forward aerial observer and transportation platforms to become versatile attack platforms. Though military helicopters are expensive and require specialised maintenance and are challenging to operate in different terrain and inclement weather like on the Saichen glacier, the Indian armed forces know that they need a mix of light and heavy helicopters. The armed forces compete for the limited resources from the nation's defence budget which is around 1.4 per cent of the GDP. Hence, priority for helicopter modernisation has been given to the Indian Air Force.

India's helicopter journey began when the Indian Air Force and the Indian Navy began flying Bell G2/3s and

then flew in Sikorsky S-55 helicopters in the late 1950s. However, the air force's choice fell on the 7.5 tonne Mi-4s in the 1960s and then the upgraded Mi-8s in large numbers from the Soviet Union, India's largest defence supplier. The MI-4s were phased out slowly when Mi-8s were inducted into the IAF in 1972. They arrived in Mumbai in crates from the erstwhile USSR where they were assembled and test-flown to their first unit in Assam, and the IAF took over their maintenance. Thousands of Indian Army, Navy and Air Force pilots have been trained to fly helicopters.

## **Multipurpose Mi-8s**

The air force successfully flew the MI-8 platforms for flood relief, military operations in India and for UN peacekeeping missions abroad and for VVIP movements in the IAF

Communication squadron. The IAF has the distinction to have flown many VIPs including Pope John Paul II and Prime Minister Margaret Thatcher during the CHOGM retreat at Goa, and Indian Prime Ministers in the MI-8s.

## **Controversial Augusta Westlands**

In 2010, after trials and complicated and controversial changes in QRs, the MOD and IAF selected and ordered 12 AW-101 VIP Augusta Westland 15 tonne three engine helicopters from Finmeccanica of Italy to replace the Mi-8 VIP helicopters in preference to the Sikorsky S-82s for ₹3,500 crore. Three machines were supplied in 2013 and remain idle at Palam as further supply is mired in a long drawn out corruption case.

**Priority for helicopter modernisation** has been given to the **Indian Air Force**

## Light Variety

From the late 1960s to date, all the three Services have been flying the 2.5 tonne French TM 332 2B2 engine light utility Aérospatiale Alouette III as the Chetak and lighter SA3158B Lama as Cheetah for high altitudes. During its production life of 2000 machines by Hindustan Aeronautics Ltd (HAL), the helicopter has seen modifications for the three services as safe and popular rotorcraft for aerial observation, photography, air sea rescue, liaison, transport and training. With the arrival of INS Vikrant in 1961, the navy needed an SAR helicopter and even today the Alouette is the mainstay for operations at sea. After the commissioning of INS Nilgiri in 1973, the Medium Range Anti-Submarine Torpedo Carrying Helicopter (MATCH) version of the Alouette with MK 44 torpedoes and depth charges took over and has given over 46 years' service awaiting replacements. The IAF has 77 Chetaks and 17 Cheetahs while the Army Aviation Corps formed in the late 1980s has more.

From 1984 with MBB help for design, HAL developed the 5.5 tonne Advanced Light Helicopter (ALH-DHRUV) with twin Shakti engine, as a multi-role, multi-mission new generation helicopter. To date, over 240 Dhruvs have been produced with orders for 100 more in skid and wheeled versions for service with the IAF, Navy, the Coast Guard and the Indian Army. The Dhruv was certified for military operations by the Centre for Military Airworthiness Certification (CEMILAC) and civil operations by the Directorate General of Civil Aviation (DGCA), and has seen limited exports. The navy could operate Dhruvs for service ashore as the rotor blades were not foldable to fit in ship's hangars and initial ALHs had vibration problems. HAL has recently fitted out the ALH with rockets, a 12.7mm soft gun mount and Helina anti-tank missiles for the army for trials as the RUDRA, and is making a Light Combat Helicopter (LCH) for the IAF. The



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government has cleared a proposal worth around ₹8,000 crore to acquire 32 Dhruv Advanced Light Helicopters (ALH) with crystal foldable rotor blades to boost the maritime capabilities of the Indian Navy and the Coast Guard. It is undergoing trials.



*Dhruv Helicopter.*



*Russian military Ka 52 Alligator Attack Helicopter.*

### **Refurbished Mi-17s**

Since 1987, the Indian Air Force smoothly transitioned from Mi-8 helicopters to its successor the 80 Mi-17 and then 140 Mi-17V5s which is a success story. More than 50 changes were made to the Mi-8 and Mi-17 including installing a new glass cockpit to the new Mi-17V5 design. The cruise and maximum speed has been increased by 10 per cent as well as significantly increased flight automation. Mi-17s looks similar to the Mi-8 but the helicopter is fully modified to operate in humid and tropical Indian conditions for a wide range of tasks from light attack, patrol, search and rescue operations. Mi-17V5 has a complex KNEI navigation and electronic display and four multi-function displays, which replaces dashboards

and greatly facilitates the work of the crew. The cockpit complex also significantly simplifies pre-flight checks of the helicopter with information from all sensors fused on a single monitor screen. This showed when a Mi-17V5 with crew of six operated on 27 February morning a day after the Balakot attack when Pakistan Air Force sent up 24 planes in a counter attack. However, the MI-17-V5 crashed near Srinagar at Budgam after take-off and the Board of Inquiry findings are awaited.

With the large fleet of Mi 17s, the current status of helicopters for the IAF is expected to turn comfortable with arrival of modern transport, attack, and heavy lift helicopters from Russia and USA and from the

Hindustan Aeronautics Ltd (HAL) which will be inducted in the current 2019-21 acquisition programme. On 25 March 2019, the Chief of Air Staff, Air Chief Marshal BS Dhanoa formally inducted four of the fifteen CH 47 F(I)- Chinook heavy lift helicopters ordered in September 2015 from Boeing into its inventory at Air Force Station, Chandigarh. The acquisition is a leap towards modernisation of the IAF Force's helicopter fleet and is customised to suit IAF's requirements and can under sling the 155mm BAE light howitzers inducted by India's Artillery to heights on the India-China and Pakistan border for the army. The Chinooks have a fully integrated digital cockpit management system, advanced cargo handling capabilities and an electronic warfare suite with links to



the Phalcon AWACs. The Ministry of Defence (MOD) had concurrently signed the deal for a total of \$3 billion for purchase of 22 Apache attack helicopters also from Boeing, which will be a battlefield game changer as it has laser attack capability for AGM 114 Hellfire missiles, and Hydra rockets and a 30mm 230 chain cannon. The first helicopter is likely to be handed over to India in 2020 and will replace / augment three aging attack Mi-35 squadrons and three Mi-26 heavy lift helicopters. India has transferred three Mi-35s to the Afghan National Air Force it is reported. The army has put in a bid for its own inventory of 39 Apaches, and DAC has accepted order for nine it is reported.

Navies operate helicopters off ships decks and oil rigs for mobility of personnel and anti-ship and anti-submarine operations with missiles and torpedoes and they are often the 'Commander's first choice'. Today, Indian Navy's large warships operate helicopters as integral to the ship's capability, and for attack and target location for long range missiles like the BrahMos and Klub. Navy's remaining fleet of 25 aging Seaking Mk 42B for ASW and MK 42C for Commando / Marcos and 20 Kamov-28 ASW and Kamov-31 airborne early warning (AEW) helicopters operating from the large ships are awaiting replacement with new multi-role helicopters.

226T helicopter was displayed with the state-of-the-art avionics suite, at Aero India 2019 in Bangalore as Hindustan Aeronautics Ltd (HAL) and Rosoboron export and Russia's ROSTEC have signed a joint venture. The naval LUH needs ability to fly in aggressive conditions of the marine environment for search and rescue, transport missions day and night in standard and adverse weather conditions. The army order is for 133 reconnaissance and surveillance helicopters and 64 for the IAF. They will replace obsolescent Alouette light helicopters. The Ka-226 has a coaxial rotor system and can carry six in the helicopter and can be fitted with different modules, of specialised equipment. HAL also displayed its own mock-up of a LUH and a multi-role helicopter at Aero India which is possibly holding up the Ka-226 order.

A case in point is that, had **Indian Navy possessed a Landing Platform Dock (LPD)** with helicopters, it could have assisted **Sri Lanka** in treating the many injured in the massive **22 April 2019 Easter Sunday attacks**


### Army / Navy Requirements

Whether it is for logistics and mobility to get troops and weapons into inaccessible areas and to small advanced landing grounds (ALGs), where airstrips do not exist, or to get the wounded out, aid to the civil power, search and rescue (SAR) and casualty evacuation or flood relief (CASEVAC), helicopters are the choice. In large armies attack and other helicopters are now composite in Corps and Divisions to swiftly attack enemy positions with less risk, and the Indian Army is bidding to take over the control of attack helicopters from the IAF post the Kargil experience as the Army Aviation Corps (AAC) has proved its capability to fly and maintain machines in all conditions and high altitudes of Siachen.

The navy direly needs at least 24 multi-role 10 tonne helicopters for the Shivalik class frigates which cannot house the 14 tonne Sea Kings and the choice is between the Sikrosky Lockheed MH-60 Seahawk cleared by the US Congress and the Airbus 550 C3 Fennec offering. Indian Navy also needs 114 LUHs to replace the Alouettes which has been cleared by the Defence Acquisition Council (DAC) but they are still to be ordered, along with requirement of Army's high altitude LUHs to replace the long line of Chetaks and Cheetahs (Lamas).

### Russian Kamovs

In the running for LUHs order is the naval ship borne version of Ka-226T which has a blade folding system of the main rotor. A mock-up model of the light 3.6 tonne Ka-

Large navies operate 25,000 tonne helicopter carriers which are most suited for landing operations to soften the beachhead for troops to land, and have proved to be very useful for Humanitarian Assistance and Disaster Relief (HADR) operations in peace. A case in point is that, had Indian Navy possessed a Landing Platform Dock (LPD) with helicopters, it could have assisted Sri Lanka in treating the many injured off Colombo in the massive 22 April 2019 Easter Sunday attacks, as the navy did in the 2004 Tsunami. The benefits and lessons of 2004 led to the Request for Proposal (RFP) for four LPDs in the strategic partnership route. The RFP has been replied by Larsen & Toubro Ltd (L&T) and Navantia of Spain and Reliance Defence and Naval Group of France two years ago, but the bids have not been opened. When ordered the composite order will include helicopters. Oil rigs and coasts are also best patrolled by helicopters. Leasing of helicopters is now a route used by some armed forces as requirements vary. 



# INDIA'S CRITICAL REQUIREMENT

Based on application, utility, budget, other resources and techno-commercial constraints, the specific types of helicopters are essential requirement and top priority for India. Further requirement can be planned now or can be considered for manufacturing in India under Make-in-India programme.

It is very interesting to know that development of concept of helicopter and vertical flight was from China around 400 BC. Chinese children have played with a bamboo flying toy. This bamboo-copter is spun by rolling a stick attached to a rotor. Spinning creates lift and the

toy flies when released. In 18th and 19th century, western scientists developed flying machine based on similar concept like the Chinese toy. This is how the idea of helicopter was triggered and led to development with lot of design changes sometime around 1930. Helicopter was used in World War II mainly for

observation, transport, medical supply, evacuation and rescue operations apart from bombing purpose. Development of turbine shaft engine provided a viable power plant in first half of 20th century and was a critical factor in helicopter development. The availability of light weight turbo shaft engine in the 2nd

half of the 20th century led to the development of larger, faster and higher performance helicopters.

Hindustan Aeronautics Ltd, the Defence Public Sector Undertaking, started manufacturing helicopters from 1962 and first helicopter was delivered in 1965. However, licenced agreement was signed in 1970 and several hundred helicopters have been manufactured till date. HAL division is backed with strong R&D.

### Utility Helicopters

Helicopters are used now-a-days for several utility services apart from large requirement in military applications. Most areas where helicopters are used are transportation of people and cargo, construction, fire-fighting, search and rescue, tourism, medical transport, air ambulance, law enforcement, agriculture, news and media, aerial observation in the event of earthquake, flood, cyclone, reflection semiology, or recreation, entertainment like film shooting, aerial photography, carry load to long cables called as aerial cranes, disaster management, aerial survey, spraying pesticides in large farms, movement of workers and parts quickly of oil companies to remote drilling sites located in sea, movement of super-rich and VVIP people, ministers, etc. Helicopters are used where no fixed wing planes can land or with very narrow landing space or no air strip available. Applications of utility services are growing fast and with large population, requirement of helicopters is growing exponentially. Tourism in India is also growing and there are many who can afford a helicopter ride now-adays.

### Military Helicopters

India has long borders with Pakistan and China and most of it is mountainous terrain. (1) Himalaya range covers major portion of our border with Nepal, China, Bhutan; (2) Karakoram and Pir Panjal range facing Pakistan and China; (3) Eastern mountain range (extension of Himalaya range). Helicopters are not only useful but essential in such terrain.

In view of big gap between demand and supply of helicopters, and requirement of helicopters for various applications as mentioned above as well as preparedness in the likely event of war simultaneously with two neighbours, India's need for helicopters is top priority. Type of helicopter differs with various applications and the procurement cost. In view of limited resources and various techno-commercial constraints, India needs to strike a right balance. Another factor is production of helicopters is much less compared to fixed-wing planes all over the world. Compared to fixed-wing aircraft helicopter differs in principle as follows. Helicopter is aircraft with one or more power driven horizontal propeller or rotors that enable it to take off and land vertically, to move in any direction, or to remain stationary in the air.

### Braving Nature

High mountains and thick jungle is an ideal combination for very strong turbulence, low air density, and very tricky take off position. Many helicopters have been downed because they are hit by this unexpected force of nature. The helicopter that would work best in this environment has to be one that has extremely strong thrust



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in comparison to its load weight. The undisputed best helicopter to operate in such environment is the French SA315B Lama (renamed Cheetah by India). Lama is one of the few purpose built helicopters for such environment. Till date it holds unbroken record of over 12,000 meters in continuous stream of vertical lifting auto-rotation.

Jungle mountain warfare is really tricky as the enemy is really hard to be detected due to the view often obstructed by local animals, trees, hills and combination of all these. Therefore, modern avionics is highly essential in the above mentioned obstructions. One of the modern helicopters with modern avionics is AH-64 Apache which is regarded as hunter killer to hunt down the hostile forces creeping in the jungle. The Apache can

**The helicopter** that would work best in this **environment** has to be one that has extremely **strong thrust in comparison to its load weight**



**Chinook**  
is now one  
of the **most  
modern  
heavy lift  
choppers**  
in the world



easily evade the enemy fire. The ability to engage from a far distance with missile always offers a good advantage.

There are also other types of helicopters like Eurocopter Tiger, MI 28 Havoc. Apache was used extensively in Afghanistan for jungle mountain warfare over Hindukush, Tora Bora region. Other helicopters were used in limited numbers.

### Basic Requirements

India has recently entered into contract to purchase 22 Apache AH64D and 15 Chinook helicopters. However, the helicopters procurement has limitation and constraints of resources and budget. Much higher number of helicopters is required considering long mountainous terrain, number of copters required for training, few

may be under maintenance. Few may get damaged during service due to unforeseen circumstances. Lots of essential spares are also required to be in stock. India needs to take every contingency into consideration for phase wise production. The helicopters required for civilian purpose for various sectors as described above are separate and required in much larger quantity and that is a separate ballgame.

The Apache AH 64D Longbow helicopters are one of the most advanced multi-role combat helicopters, featuring all-weather and night-fighting features, ability to track up to 128 targets in less than a minute and engage with 16, besides stealth characteristics, advanced sensors and beyond visual range missiles.

### Threat Perception

India recently faced tension at Doklam and tragedy at Pulwama through instigation from across the border. The person who claimed the responsibility of Pulwama attack was to be declared as the most wanted terrorist. However, this resolution was blocked by using veto by India's neighbour. Hence, such attacks in future cannot be ruled out. This is apart from infiltration of terrorists with arms and ammunition into India through systematic cover provided by their army from across the border. India has 3,323 km border with Pakistan and has varied terrain and distinct geographical features. Similarly, India-China border is 3,380 km, Bangladesh 4,097 km, and Nepal 1,578 km. All these borders do vary in terrain and geography from



urban area to desert and mountain terrain. India-China border is mostly hilly terrain and cold to very cold atmosphere.

Doklam is strategically located close to Siliguri Corridor, which connects mainland India with its northeastern region. The Siliguri Corridor, also called as Chicken's Neck, is a vulnerable point for India. While India-Tibet trade flourished along the Siliguri Corridor and Chumbi Valley, Doklam had very little significance. Even during British rule, Doklam did not have much importance. However, China has been beefing up its military presence in the Chumbi Valley; where Chinese are at great disadvantage because they are at very low ground level being in valley whereas Indian and Bhutanese troops are on a higher ground around valley and hence, at advantage.

This is also the reason, Indian security establishment suspect Chinese's deep interest in Doklam which would give them commanding view of and easy access to both the Chumbi Valley and the Siliguri Corridor.

India has never invaded any country in last several thousand years. However, India, being a victim by both neighbours', needs to be ready to defend attack simultaneously by two countries in the event of war.

### Inventory

Apart from high end latest 5th generation fighters, there is a great need for helicopters considering India's terrain and logistics difficulties in material, troop movements as well as for defence utility. Hence, type of helicopter will vary based on need, terrain, utility, purpose, etc. Sikorsky UH-60 Black Hawks heavily modified for quieter operations, employing Stealth technology to be less visible to radar were used by Navy Seals of US during the raid on the compound of Osama bin Laden in May 2011.

### Apache Characteristics

The stealthy, versatile chopper is designed for all kinds of missions. Equipped with laser and infrared systems for all weather, day-night operability, the Apache fires the Hellfire missiles, besides its arsenal of 70 mm rockets and automatic cannon. The Apache will be the first pure attack helicopter in India's possession. While the Russian origin Mi 35 has been operated for years and is now on the verge of phasing out, it was an assault chopper that was designed to carry troops into heavily defended territories. The two pilot Apache is a dedicated attack chopper that experts believe will be a 'game changer' in the tactical battle scenario.

### Chinook Profile

The iconic twin rotor chopper is a battle proven machine that has flown countless missions into war zones from Vietnam to Afghanistan and Iraq. While the original Chinook first flew in 1962,

it has undergone several upgrades and is now one of the most modern heavy-lift choppers in the world. The massive helicopter can carry 9.6 tonnes of cargo, including heavy machinery, artillery guns and even light armoured vehicles to high altitude. Suited for mountain operations, the Chinook is highly maneuverable and can get in and out of tight valleys. Its missions range from ferrying troops to disaster relief operations.

### General Information

Following are some models of helicopters popular for their utility and applications:

**Robinson R-22:** The Best-Selling, Low-Cost Helicopter.

**Mil Mi-26:** The Largest Series Production Helicopter.


**Northrop-Grumman MQ-8:** The First Operational Autonomous Helicopter.

**Eurocopter X3:** The World's Fastest Helicopter.

### My Own Exposure

Author has already visited the places like Nathula Pass, Lachung in Sikkim which are quite close to China border, Dawki (Meghalaya) near Bangladesh border, Jaisalmer desert camps (near to Pakistan border) and is aware of how difficult the terrain is.

Based on application, utility, budget, other resources and techno-commercial constraints, the specific types of helicopters are essential requirement and top priority for India. Further requirement can be planned now or can be considered for manufacturing in India under Make-in-India programme.

Airplanes rules the skies, but helicopters tackle the most versatile, and often, most dangerous tasks. Helicopter has hardly any substitute that can be compensated by any other type of plane and hence, helicopter has its unique place and importance in several sectors apart from Defence establishment. 





# NEED TO REVAMP INDIA'S FOREIGN POLICY

In the crucible of political evolution, it harvested the low hanging fruit of the experiences and ideals that emerged from the Russian Revolution (social justice), the French Revolution (liberty, equality and fraternity), the American Revolution (fundamental rights) and even the Irish history which was the victim, like India, of the British Raj's first use of the Two-Nation Theory based on religion to divide and plague its former subjects for daring to break away from Metropolitan Britain.



## "India's foreign policy was born in the cradle of colonialism".

**T**o this was added the garnish of the truly Indian concepts of satyagraha, ahimsa and Panchsheel or the five principles of peaceful coexistence for a template of foreign policy for a nation that was grappling with the consequences of World War II. That war left behind a residue of two Super Powers between which India sought to steer the new-born nation-State by the adoption of a foreign policy based on non-alignment.

India's ideal of seeking to resolve all major issues with its neighbours based on the principles of peaceful coexistence and bilateral dialogue has not borne results given the intractability of negotiation with China to find an acceptable boundary between Himalayan India and the China-controlled Tibetan flatlands. Our exertions so far remain to defend, inadequately, an ephemeral "Line of

Actual Control" which is breached with impunity every time China decides to make India look like a paper tiger. A quick look at the map of the region shows the vast chasm between India's claim line in the Aksai Chin area and the so-called Line of Actual Control. Scores of kilometers of land has been assimilated into the Chinese mainland leaving out any hopes of negotiating via media except a Chinese imposed solution which does not seem to accept the permanence of the Line of Actual Control.

That Nepal has disentangled itself from the Indian sphere of influence and Pakistan and China have created a joint fortress to conduct a proxy war against India by using Islamist fundamentalist terrorists; and Sri Lanka and Maldives should invite Chinese presence is a measure of the efficacy of India's foreign policy. Bhutan is the next Chinese target. Our periphery is crumbling.



**PAWAN AGRAWAL**

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## Geopolitics has dramatically changed the **global political landscape**



*Saudi Crown Prince's Asia trip showcases checkbook diplomacy.*

Geopolitics has dramatically changed the global political landscape. When the Soviet Union disappeared, non-aligned India was confronted with the Herculean effort to build bridges to the lone surviving Super Power, the US. Since India attained Independence in 1947, this was a major test for Indian diplomacy and its foreign policy bedrock. Events have underscored the need for an evolutionary foreign policy with a clearly laid down (even if not publically stated) national objectives ensuring territorial integrity in the face of a policy of salaami slicing by our adversaries.

If we analyse the global scenario and the manner in which the foreign policies of nearly all 193 members of the United Nations have evolved over the past seven decades, we see a paradigm shift in the foreign policies of most of the countries. None of the European, Middle Eastern, Central Asian countries or even US and Russia has the same foreign policy which they had few decades earlier. There have been changes as per the environment around them as well as changes of others' views towards their country. But it is so unfortunate for us

to see that we are unable to keep an eagle's eye on the changing scenarios and after effects on us and our people.

It is high time now for India to revamp the entire foreign policy establishment at the earliest considering the threats and challenges to us in many manners which are affecting our national security, social security and much more. I personally feel that if now we do not revamp our foreign policy, then we will lapse into being a secondary nation vis-à-vis China which is currently engaged in a massive expansion of its dual-use civil-military infrastructure blatantly and arrogantly through the disputed Pakistan-occupied Kashmir.

Merely refusing to attend the China-sponsored Belt and Road Initiative (BRI) conclaves will not stop the project from becoming a reality. Even as views for a more "pro-active" foreign policy (especially in relation to the entrenched China-Pak proxy war machine against India), the full implications of Prime Minister Modi's remark that if we had the Rafale aircraft in operational service

with the Indian Air Force, "things could have been different", have not been fully analysed. How much more would it have contributed to a stated national objective? Till such time as the national objective is enunciated, the efficacy of the repeatability of such an operation remains in doubt. Will it deter and negate the Pak-China 'hybrid war' against India?

The attack on Pakistan's terror factory in Balakot and the simultaneous military operations along the border with Myanmar against China-sponsored anti-India terrorists hint at a likely change in foreign policy. However, while it did evoke "shock and awe", much depends on whether such operations are repeatable and the expertise displayed in their execution is not allowed to relapse into inertia.

After the recent air strike by India on the base camps of terrorists in Pakistan, the entire world has stood with India which proves the might of India and the same was also seen in the UNSC. China had to use its veto power to oppose the resolution to declare Masood Azhar as

a global terrorist. These two instances are good enough to illustrate how the changes in our foreign policy can bring about a change in the thought process of the leaders concerned in other nations which might be developed or developing. So, we can imagine that when we start revamping our foreign policy, there could be some who oppose certain elements of that policy but then we need to be prepared to face such opposition and I am sure that once we start doing this, many nations will not only support us whole heartedly but will stand by us.

Today, it is the biggest need of the hour to modify and revamp our foreign policy at the earliest, otherwise, we will keep on retaliating against sporadic Pakistan and China assisted terrorist events but will not be able to find a concrete solution to the problems of our old foreign policies. As of now, the entire world is affected with terrorism and India could lead the world as a crusader against terrorists and terrorism. The entire world has well accepted this fact and they are looking on us as how we are going ahead with





Today, it is the **biggest need** of the hour to modify and **revamp our foreign policy** at the earliest

our agenda against terrorism and how we are maintaining our cordial relations with not only our neighbours but the entire world and show a progressive way to the world for a peaceful earth.

It needs to be understood that the appreciation of India's action against terrorists stems from the resolute manner in which India's military strength was deployed. It is this kind of strength and the manner in which it was used that attracts global appreciation.

In my view, to start with, we need to incorporate the following steps within our foreign policy format:

- Clear foreign policy on the economic and business relations with China; find ways and means to balance trade with Beijing.
- Clear views on both the Line of Control in Jammu and Kashmir and the Line of Actual Control with

China and optimum deployment of our security forces.

- A very clear policy framework to deal with the Pakistan-China proxy war.
- Discontinue all our exchange programmes with Pakistan.
- Reduction of visas to Pakistan nationals by Indian embassy in Pakistan.
- Reduction in the import of oil and natural gas from Middle East by replacement with solar, wind and other renewable energy projects.
- Clear policy with Sri Lanka, Nepal, Maldives and Bangladesh to exploit the growing realisation that Chinese infrastructure projects tend to create a destabilising factor in the host country.
- Strengthening and balancing of our diplomatic relations with US and Russia.

- Cooperation with South East Asian countries like Malaysia, Thailand, Vietnam and Indonesia and even Taiwan, Australia and New Zealand for mutual benefits.
- Strong presence in the United Nation Security Council.
- "Look East" must not overshadow "Look West" if the Indo-Pacific fulcrum is to be truly effective.

I think this a golden chance; we just have to wait for few months when we have the next elected government which must give a very serious and sincere thought to plan the revamping of India's foreign policy. We have already sacrificed a lot because of our current foreign policy and we must revamp it at the earliest for a golden and progressive India which is yet to be seen by its people and the world. 





# MADRASSAS INGRAINED WORLDWIDE

Identifying the source of *jihad* ideology, as taught in the Salafi madrassas in the West, as well as in other countries around the world, may not prevent every possible terrorist attack, but it would certainly help provide strong indicators (i.e. connect the dots) between the Islamic indoctrination of young boys and men, and future terror attacks.

## Parental Connivance

On 23 March 2019, the DailyMail.com<sup>1</sup> reported the findings of a previously secret UK Home Office study. Entitled Terrorism fears as 3,000 UK children a year go to ‘jihad’ schools in Pakistan, the chilling report reveals that young boys in Pakistani madrassas are taught a ‘glorified version of *jihad*,’ and that parents often send their sons to these madrassas during the summer holidays.

The Daily Mail article also stated that officials in the UK fear attending these madrassas increases the risk of radicalisation (toward *jihad*), while citing the example that two of the four known, 07 July 2005<sup>2</sup> London bombers, had also enrolled in such a madrassa before launching their attack, which killed 52 people and injured at least 770 more.

According to the report, more than 3,000 British children (almost exclusively boys) are being enrolled in these Islamic schools in Pakistan each summer. Interestingly, this is not really a new problem. As revealed in an October 2001<sup>3</sup> interview with Ambassador Richard Holbrook, the practice of sending young boys to study in Salafi<sup>4</sup> madrassas is common throughout the Islamic world, and has been a common practice long before the 11 September 2001 attacks on the World Trade Center in New York City which brought the reality of *jihad* to the West.

### During the same October 2001 interview, Ambassador Holbrook stated:

“I think that one of the tragedies of this story is that the Saudi Arabians exported their problem

by financing the schools, the madrassas, all through the Islamic world. I saw this in Uzbekistan a few years after Uzbekistan got out of the Soviet Union, became an independent state in cities like Tashkent and Samarkand, where the Saudis were funding these schools teaching Koranic studies and creating a class of people for whom education was simply the Holy Book, the Koran.”

## Saudi Connection

On 15 November 2001,<sup>5</sup> Frontline released a detailed analysis of the global problem with fundamentalist (Salafi) madrassas entitled Saudi Time Bomb? In the Introduction, readers are informed that the Frontline programme will chronicle:

“[H]ow these madrassas grew into the thousands during the ten-year Afghan War against the Soviets... and how – because of the nature of that war – the madrassas, most notably in Pakistan, became training centers for *jihad*.”

“They were recruiting, organising schools which used Islamic ideology as a way of creating a very efficient guerrilla army,” says Vali Nasr,<sup>6</sup> an authority on Islamic fundamentalism. “You have the whole rise, if you would, of Islamic West Points.”

## Indian Scenario

On 13 May 2016,<sup>7</sup> the co-author (Haney) discussed the threat posed by Salafi madrassas in the Indian sub-continent (Afghanistan, Pakistan, India, Bangladesh and Myanmar) during an interview on Secure Freedom Radio, hosted by Frank Gaffney of the Center for Security Policy.



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1. <https://www.dailymail.co.uk/news/article-6842855/Terrorism-fears-3-000-UK-children-year-jihadi-schools-Pakistan.html>  
 2. [http://news.bbc.co.uk/2/shared/spl/hi/uk/05/london\\_blasts/what\\_happened/html/](http://news.bbc.co.uk/2/shared/spl/hi/uk/05/london_blasts/what_happened/html/) 3. <https://www.pbs.org/wgbh/pages/frontline/shows/saudi/interviews/holbrooke.html> 4. <http://www.aei.org/publication/terrorism-tactics-and-transformation-the-west-vs-the-salafi-jihadi-movement/> 5. <https://www.pbs.org/wgbh/pages/frontline/shows/saudi/etc/synopsis.html> 6. <https://www.pbs.org/wgbh/pages/frontline/shows/saudi/interviews/nasr.html> 7. <https://www.centerforsecuritypolicy.org/2016/05/31/see-something-say-nothing-sfr-sits-down-with-dhs-whistleblower-phil-haney/>



## During the interview, the following was stated by Haney:

"Tablighi Jamaat is an organisation with between seventy-five and a hundred and twenty-five million members. Outside of America, it's known as the Army of Darkness. It originated in the 1860s and very soon, they found out that they had an identical ideology as Wahhabi Saudis. And so, they formed an alliance. That is why you constantly hear about Saudis funding madrassas, schools, in places like Pakistan, India, and Bangladesh. That is essentially the Deobandi movement, the branch of Islam that originated out of the Asian subcontinent."

On 12 June 2016,<sup>8</sup> Haney also joined SiriusXM host Stephen K. Bannon for a special edition of Breitbart News Sunday. This interview was conducted during the first evening after the early-morning shootings by Omar Mateen<sup>9</sup> at the Pulse Nightclub in Orlando, Florida, which killed 49 people and injured at least 53 more.

"According to its website, the Islamic Center of Ft. Pierce – where Omar Mir Seddique Mateen regularly attended (according to the imam, Shafeeq ur-Rahman); he confirmed that [it] was the mosque... Mateen attended."

## American Spores

"[In turn], the Islamic Center of Ft. Pierce is directly linked to an organisation called the Sharia Board of America." Haney explained that Sharia means "Islamic law," and said the Sharia Board of America is, in turn, a "direct division of an organisation called Rahmat-e-Alam," whose name means "Mercy to the World," [and that] Rahmat-e-Alam is directly affiliated with the Darul



Tablighi Jamaat.

More troubling (perplexing) that **the US government** would **eliminate information (about a Tablighi case)** out of its **terror threat database**

8. <https://www.breitbart.com/radio/2016/06/12/philip-haney-orlando-shooting-remarkably-similar-san-bernardino-theres-lot-overlap-two-networks/> 9. <https://www.cnn.com/2016/06/12/domestic-terrorism-leaves-scores-dead-injured-at-orlando-nightclub.html>





## The Deoband Movement

The global Deoband Islamic movement, which was founded<sup>21</sup> as an Islamic revival movement in Deoband, India in 1867, has several major branches, including Jaish-e-Mohammed,<sup>22</sup> Jamiat Ulema-e-Hind,<sup>23</sup> Jamiat Ulema-e-Islam,<sup>24</sup> Tablighi Jamaat,<sup>25</sup> and the Taliban itself.

Also, many members of these Deoband groups are now affiliated with Al Qaeda of the Indian Subcontinent (AQIS<sup>26</sup>), which is a coalition of Salafi Islamic Jihad groups<sup>27</sup> from Afghanistan, Pakistan, India, Bangladesh and Myanmar. The groups are called to abide by the 20-page AQIS *Code of Conduct*<sup>28</sup> (i.e. conduct according to Sharia).

And, although their leaders deny any promotion of radical (*Jihad*) ideology, the publicly-funded Deoband Darul Uloom Haqqania<sup>29</sup> (DUH) madrassa in the Khyber Pakhtunkhwa<sup>30</sup> region of western Pakistan (near the border with Afghanistan), the Deoband Jamia Binoria<sup>31</sup> madrassa complex in Karachi, and the Deoband Jamiatul Uloom Ul Islamia<sup>32</sup> madrassa in Azad Kashmir were cited as sources of particular concern in the *Daily Mail* report.

The leaders of all three of these Deoband-linked madrassas continue to insist that extremism is not part of their Islamic teaching. However, the DUH madrassa, also known

Uloom Chicago,<sup>10</sup> which [is] “a madrassa...that teaches young boys to memorise the Koran.”

Bottom line, Salafi madrassas are not solely a problem in India,<sup>11</sup> Indonesia,<sup>12</sup> Pakistan, South Africa,<sup>13</sup> Uzbekistan,<sup>14</sup> the UK,<sup>15</sup> sub-Saharan Africa,<sup>16</sup> or America,<sup>17</sup> but also in virtually every place in the world where Islam is well-established, or is in the process of becoming established.

## British Myopia

In the previous mention of the *Daily Mail* article, it was learned that exposing young boys to Salafi

Islamic ideology has some UK government officials fearful that these British-Pakistani citizens may return to the UK with a heightened affinity and inclination toward participating in terrorist (*jihad*) activities.

For example, Mohammad Sidique Khan<sup>18</sup> and Shehzad Tanweer,<sup>19</sup> British-born sons of Pakistani immigrants, both attended Deoband madrassa courses in Pakistan. A year later, on 07 July 2005, they helped conduct the bus bombings which killed and injured hundreds of people in downtown London.<sup>20</sup>

10. <https://www.darululoomonline.org/> 11. <https://www.aljazeera.com/news/2015/07/indian-state-derecognises-madrassa-education-150702141231360.html> 12. [https://www.jstor.org/stable/23750964?seq=1#page\\_scan\\_tab\\_contents](https://www.jstor.org/stable/23750964?seq=1#page_scan_tab_contents) 13. <https://www.jstor.org/stable/j.ctv80cdjn> 14. <https://eurasianet.org/uzbekistan-hopes-islamic-education-is-the-antidote-to-extremism> 15. <https://www.express.co.uk/news/uk/657212/Dewsbury-madrassa-radical-Islam> 16. <https://www.pri.org/stories/2014-11-05/madrassas-africa-educating-or-indoctrinating> 17. <http://www.danielpipes.org/4441/a-madrassa-grows-in-brooklyn> 18. <https://www.counterextremism.com/extremists/mohammad-sidique-khan> 19. <https://www.counterextremism.com/extremists/shehzad-tanweer> 20. <https://www.britannica.com/event/London-bombings-of-2005> 21. <http://www.oxfordislamicstudies.com/article/opr/t125/e522> 22. <https://www.aljazeera.com/news/2019/02/profile-jaish-muhammad-190215061851082.html> 23. <https://www.jamiatulama.in/> 24. <https://www.globalsecurity.org/military/world/pakistan/jui.htm> 25. <https://www.theguardian.com/commentisfree/belief/2009/sep/08/religion-islam-tablighi-jamaat> 26. <https://www.counterextremism.com/threat/al-qaeda-indian-subcontinent-aqis> 27. <http://www.soufangroup.com/intelbrief-al-qaeda-in-the-indian-subcontinent-the-nucleus-of-jihad-in-south-asia/> 28. [https://azelin.files.wordpress.com/2017/06/al-qacc84\\_idah-in-the-indian-subcontinent-22code-of-conduct22-en.pdf](https://azelin.files.wordpress.com/2017/06/al-qacc84_idah-in-the-indian-subcontinent-22code-of-conduct22-en.pdf) 29. <https://www.rferl.org/a/pakistan-jihad-university-haqqania-government-funding-haq-taliban-omar/29092748.html> 30. <https://www.britannica.com/place/Khyber-Pakhtunkhwa> 31. <http://binoria.org/> 32. <http://jamiatuluton.org/>



DUH madrasa's Chief Maulana Hamid ul Haq.

the '*University of Jihad*' includes an impressive roster of former students such as Asim Umar,<sup>33</sup> Emir of AQIS, and Mullah Omar,<sup>34</sup> a former leader of the Taliban, who received an honorary doctorate from DUH.

### Semantics Over 'Talib'

Also, when questioned about the school's sympathy toward the Taliban, the DUH madrasa's Chief Maulana Hamid ul Haq<sup>35</sup> (*aka* 'The Father of the Taliban,' who was stabbed to death<sup>36</sup> on 02 November 2018, in Rawalpindi), stated that all students at his madrasa were referred to as 'taliban.'

Technically, this is correct – since 'Taliban' is simply the plural form of the Pashto word<sup>37</sup> for student (Talib). Incidentally, the word for tulip (the flower) is derived from this same word (Talib), because tulip flowers were thought to look similar to the turbans worn by Islamic scholars

and students (the 'Talibs') in the part of Asia where tulips originally came from.

### Denial

Meanwhile, according to the *Daily Mail* article, an official from the Jamia Binoria denied any involvement in *jihad* extremism, while adding that British students no longer attend the madrasa. Haji Bostan<sup>38</sup> of Dewsbury, West Yorkshire, the British founder of the Jamiatul Uloom Ul Islamia madrasa, also denied that there were any ties to terrorism, while also adding that British students do not even enroll at the madrasa.

However, the truth is that virtually all members of the intertwined and closely affiliated Deoband groups discussed above will attend a madrasa at some point during their life. A small number of these taliban (students) will focus on academics and

Sharia law, and will go on to become imams in local mosques, while some will leave the madrasa to become Islamic missionaries in countries around the world, but many others will travel to conflict areas (sometimes very far away from their homes) to participate in the global *jihad*.

### Funding

Although the agenda of indoctrination and the Islamic curriculum in these Salafi madrassas often goes unnoticed, they still pose a very dangerous threat. Parents in the UK (as well as in America and other countries around the world) are using the guise of summer holidays in their homeland to cover up enrolling their children in one of the estimated 20,000 madrassas in Pakistan, which, incredibly, may also receive financial support – including possible inadvertent funding through taxes – directly from Britain.

33. <https://www.trackingterrorism.org/group/maulana-asim-umar-al-qaeda-indian-subcontinent-aqis-individual-profile>

34. <https://www.bbc.com/news/world-asia-47519157> 35. <https://www.youtube.com/watch?v=5GGwZE1RUrU>

36. <https://www.rferl.org/a/pakistani-cleric-maulana-samiul-haq-aka-the-father-of-the-taliban-has-been-reported-killed-/29579407.html> 37. <https://www.urbandictionary.com/define.php?term=Taliban> 38. <https://www.thenews.com.pk/print/354768-tableeghi-jamaat-in-britain-splits-into-two-factions>





Maulana Sami Ul-Haq, Father Of The Taliban.

In other cases (as in America), young boys are taken completely out of the public school system, and are sent instead to a local madrassa, where they memorise the Quran (earning the title of *Hafiz* = ‘Guardian’ or ‘Memoriser’), which then qualifies<sup>39</sup> them to attend higher-level courses, where they study to become either an imam, or a teacher of Islamic Sharia and the Hadith.

### Madrassas In America, Too

As alluded to earlier in this article, there are significant parallels between America’s experience with the Tablighi Jamaat networks and what has been unfolding in the UK. For this reason, it remains all the more troubling (perplexing) that the US government would deliberately and intentionally destroy a Tablighi Jamaat-centered case and eliminate information out of its terror threat database.

However, as described in the book *See Something, Say Nothing*<sup>40</sup>, this is exactly what happened<sup>41</sup> under President Barack Obama in the Summer of 2012. As a result, members of Tablighi Jamaat were essentially granted a pass from most security agencies in the West. As of today (April of 2019), this situation has still not been remedied.

Meanwhile, as the Tablighi Jamaat movement maintains a foothold in American mosques, while possibly sheltering imams and Salafi leaders with known or potential ties to terrorism, the global coalition of Deoband-linked organisations is also generating a great deal of new-found momentum within the boundaries of the Indian subcontinent. This coalition, which became clearly visible in 2014, and is known as AQIS (as discussed above), has quickly become a new


center of gravity<sup>42</sup> for the Salafi, pro-*jiḥad*, pro-Sharia Global Islamic Movement.<sup>43</sup>

### AQIS Ignored

Western specialists are largely ignoring the threat, focussing instead on Arabic-speaking Muslim Brotherhood-linked groups<sup>44</sup> like ISIS and Hamas, for example. This has created a blind spot in the big picture view of counter-terrorism analysts in the West, which should now include macro-organisations like AQIS that are operating mainly in Pashto / Urdu-speaking countries — which, in combination, have five to ten times more active Salafi *jiḥad* groups than all the rest of the world combined.

There’s a clear parallel between what is happening in the UK, and what is happening in America (and, in other English-speaking countries around the world).

It’s not a coincidence that the European headquarters of Tablighi Jamaat is in Saville Town, Dewsbury, England,<sup>45</sup> or that one of the largest Tablighi Jamaat mosques in Europe (and, thus, the West) — which is known as the Markazi Masjid,<sup>46</sup> aka the Central Mosque, the Dewsbury Markaz, or Darul Ulum — is also located in London.<sup>47</sup>

Identifying the source of *jiḥad* ideology, as taught in the Salafi madrassas in the West, as well as in other countries around the world, may not prevent every possible terrorist attack, but it would certainly help provide strong indicators (i.e. connect the dots) between the Islamic indoctrination of young boys and men, and future terror attacks. 

39. <https://islamqa.info/en/answers/14035/the-advantages-of-the-hafiz-in-this-world-and-in-the-hereafter> 40. <http://www.garykah.com/seesosayno.html> 41. <https://pjmedia.com/blog/deobandi-roots-of-san-bernardino-jihad> 42. <https://www.youtube.com/watch?v=z34c72xsw4Y> 43. <http://web.stanford.edu/group/mappingmilitants/cgi-bin/maps/view/islamic-state> 44. <https://www.investigativeproject.org/7734/report-muslim-brotherhood-linked-terror-group> 45. <https://www.pewforum.org/2010/09/15/muslim-networks-and-movements-in-western-europe-tablighi-jamaat/> 46. <https://www.telegraph.co.uk/news/1526793/Army-of-darkness.html> 47. <https://tablighijamaat.wordpress.com/2008/05/13/worldwide-tablighi-markaz-address/>





# BUY MORE OF ALL TYPES

Compared to the Russian Mi-26, the payload and passenger carrying capacity of the Chinook is around 50 per cent. Thus, the enhancement in the effective heavy-lift capability of the IAF with 15 Chinooks is not really proportionate to the number of this platform being inducted. As the IAF needs to be prepared for a simultaneous conflict on two fronts, it will need to induct at least another 15 Chinooks to build up a more credible heavy-lift capability.



terrorist on a convoy of the Central Reserve Police Force in which 44 Indian soldiers were martyred.

### **Pak Futile Reprisal**

The day following the air strike mission against Balakot, there was an aerial intrusion into Indian air space by around 30 jet fighters of the Pakistan Air Force (PAF) and in the ensuing battle in the air, both the IAF and the PAF lost one fighter aircraft each. The national and also, the international media were ablaze with coverage of the confrontation between the combat aircraft of the IAF and the PAF. While there was much excitement within the nation about the stellar role the combat fleet of the IAF played, an important message that emanated from the episode was that the IAF was still operating platforms of vintage such as the MiG-21 Bison against the more modern and more capable F-16 Block 50, a product from Lockheed Martin of the United States. It was clear from the episode that the IAF needed to modernise its combat fleet urgently. Unfortunately, efforts by the IAF to induct fourth-generation combat aircraft initiated in the year 2000 have not been successful. Even the expeditious step taken by Prime Minister Narendra Modi to buy 36 Rafale jets off-the-shelf from Dassault Aviation of France has become an issue of ugly political slugfest casting an ominous shadow on its induction itself and impinging on the efforts to restore the operational edge of the IAF over its adversaries.

### **Transport / Helicopters Neglected**

While the erosion of combat capability due to the rapid depletion in the strength of fighter aircraft on the inventory of the IAF has been an area of major concern and focus of the IAF and understandably so, it has tended to overshadow the transport and the rotary-wing fleets. Unfortunately, in the IAF, the transport and helicopter



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fleets are accorded lower degree of importance in comparison with the combat fleet from the point of view of overall operational capability. Consequently, in formulating plans for modernisation, the transport and helicopter fleets are placed much lower in the list of priorities.

### **Vertical Envelopment**

While the transport fleet supplements the operational capability of the Indian armed forces over long range, the helicopter fleet provides the much needed logistic support and communication facility over shorter distances, in difficult mountainous terrain and snowbound regions which cannot be accessed by fixed-wing aircraft as their operations are runway bound. The helicopter, on the other hand, can operate even from semi-prepared helipads. In situations where no helipads are available, the helicopter can offload or pick up passengers while hovering close to the ground. A helicopter is also endowed the capability to pick up heavy loads such as artillery guns while hovering at the location without landing and transport it under-slung to the location required for operational deployment. For missions within the

**F**ebruary 26 this year was indeed a Red Letter Day for the nation and particularly so for the Indian Air Force (IAF) as it was for the first time in nearly half a century after the Indo-Pak War of 1971, that a fleet of 12 IAF Mirage 2000 combat aircraft crossed the international border and undertook an audacious air strike mission to decimate a major terrorist training camp along with the infrastructure located in Balakot in Khyber Pakhtunkhwa province. The air strike mission was undertaken in response to a dastardly act by way of a suicidal attack by a Pakistan-sponsored



country or inside enemy territory, Special Forces depend primarily on a helicopter fleet equipped with accessories with the required attributes to operate at ultra-low levels both by day and night. Undoubtedly, the capability of the helicopter fleet to enhance the mobility and the operational potential of particularly the ground forces is unmatched. The IAF, therefore, needs to accord the right degree of priority to programmes for upgrade and modernisation of its assets in the regime of rotary-wing platforms.

### Heavy-Lift Capability

The first true heavy-lift helicopter the IAF acquired were two twin-engine Mi-26 from Russia in 1986 followed by two more in 1989. Given the size of the Indian armed forces and the significant heavy-lift capability required, this fleet was totally inadequate. Having lost one in a crash in 2010, the IAF was left with three of these machines. As of 2018, only one of the three is operational considerably degrading whatever heavy-lift capability the IAF had. Restoring operational status of the two Mi-26 helicopters, currently non-operational, will require an extensive as well as expensive overhaul programme and does not appear to be a feasible

option. Besides, given the serious maintenance issues that the IAF has been facing, it would rather not waste time, effort and resources on this rotary wing platform.

### Chinook Bought

To rebuild the totally degraded heavy-lift capability, the IAF, through a global tender, selected the twin-rotor CH-47E Chinook. An order for 15 of these heavy-lift helicopters was placed out of which, the first four have been delivered at the end of March this year and the remaining 11 are to follow suit. IAF personnel including pilots, engineers and technicians are under training in America. Compared to the Mi-26, the payload and passenger carrying capacity of the Chinook is around 50 per cent. Thus, the enhancement in the effective heavy-lift capability of the IAF with 15 Chinooks is not really proportionate to the number of this platform being inducted. Besides, as the IAF needs to be prepared for a simultaneous conflict on two fronts, it will need to induct at least another 15 Chinooks to build up a more credible heavy-lift capability. One feature of the Chinook that offers significant advantage over the Mi-26 is the fact that the former can be loaded into

the C-17 Globemaster III strategic airlift aircraft with the IAF and can be transported over long distances and even to international destinations to undertake disaster relief or other tasks as required.

### Medium-Lift Capability

The Indian Army and the IAF are reasonably well-equipped in respect of medium-lift capability in the rotary wing regime with the Mi-17, Mi-17 IV and the Mi-17 V5 variants. While the Mi-8 has been retired from service, the IAF has progressively built up its fleet strength of the Mi-17 to 228 which is regarded as adequate to meet with tasks on hand.

### Combat Helicopters

With fixed-wing platforms dedicated to undertaking strike missions deep into enemy territory, the responsibility of providing close air support to surface forces is now falling increasingly in the domain of combat helicopters. Currently, the IAF has just 20 Mi-35 attack helicopters which were inducted in 1990 and are due to be retired from service very soon. Its predecessor, the Mi-25 that was inducted into the IAF commencing in 1983, has already been retired from service. To close the large gap in capability, the IAF has taken a very small step to address the deficiency in this fleet by contracting for 22 AH-64E Apache Attack Helicopters from Boeing that are expected to begin arriving in September this year.

### Not Enough

Given the demands of a two-front war, a fleet of just 22 Apaches will be most inadequate. The IAF has clearly two options before it – either to order more Apaches or induct in large numbers, the Light Combat Helicopters (LCH) designed, developed and manufactured by HAL. The Rudra, which is the weaponised version of the Advanced Light Helicopter, once again designed, developed and manufactured by HAL, though less



*Dassault Aviation.*





*Kamov-226T Helicopter.*

capable than the LCH, is the other option available. The Indian armed forces have so far placed firm orders for a total of 30 LCH. The immediate requirement of LCH for the two Services has been assessed as 65 for the IAF and 115 for the Indian Army. With passage of time, these numbers would only grow. The capability of the Indian aerospace industry to deliver this platform in the numbers and in the timeframe required by the Indian armed forces will perhaps be the most critical factor and possibly, a serious impediment in the effort by the organisation to build up the LCH fleet to the levels required.

### Light Helicopters

In this category, the IAF has on its inventory a fleet of 83 indigenous Advanced Light Helicopter (ALH) Dhruv with 28 on order which includes eight of the weaponised version called Rudra. The Indian Army has 145 of this platform with 119 more on order. In the Light Utility Helicopters (LUH) category, the IAF inducted the Alouette series of platforms procured as early as in the 1960s from SudAviation of France, renamed later as Eurocopter and

now, is known as Airbus Helicopters. The different variants of this rotary-wing platform namely the Chetak, the Cheetah and the Cheetal, all have been manufactured under licence by HAL at Bengaluru. As the fleet of LUH in the IAF has reached the end of its total technical life, efforts were made

contra-rotating main rotor system that dispenses with the need for a tail rotor. The agreement involved production of the platform in India through a Russian-Indian joint venture involving Rostec, Rosoboron export, Russian Helicopters and HAL. The plan is to build a new factory

While the **foundation stone for the new Kamov factory** was laid on 03 January 2016, the **final contract is yet to be concluded**

through a global tender to procure new platforms from a foreign vendor of repute in which the AS 550 C3 Fennec from Eurocopter was identified as the preferred platform. Unfortunately, efforts in this direction have run aground.

### Russian Kamovs

Finally, at the end of 2015, Prime Minister Narendra Modi finalised a preliminary agreement on a direct deal with Russia for the supply of 200 Kamov Ka-226T, a twin-engine, light multi-role helicopter with a co-axial,

of HAL in Tumakuru, a small town 90 km north of Bengaluru. This was envisaged as the first major programme under Prime Minister Modi's Make-in-India scheme. While the foundation stone for the new factory was laid on 03 January 2016, the final contract is yet to be concluded. With the establishment of this new manufacturing facility, the ever growing requirement of Light Helicopters for not only the Indian armed forces, but also of civilian agencies in India as well as of foreign markets can be met. **DSA**

# TEMPLATE FOR MILITARY INDUSTRIAL COMPLEX

Sometimes a platform ready for operating in one environment will be an overkill to operate in another. If we buy a common system, there is also a danger of nationwide grounding. With a country as big as India, it might mean paralysing its defence capabilities. Putting all eggs into one basket when you are a global player is not the best idea. The voice of the users should also be taken into account because they are the ones who will use the equipment daily and have the expertise to define whether a common platform will be suitable for their job.

India is looking to buy many helicopters for various branches of its armed forces which raise potential problems connected with proceeding with the tenders most optimally.

There are many traps along the road, and in the end, the whole burden will be as always thrown on the shoulders of the taxpayers. The critical factor is to do it the right way in the first place and move on as India has a lot of areas in its

armed forces that need attention. In some areas, the popular saying could be even expanded into “do it once, do it right and do it quickly.”

## No One Right Way

There are many ways of going forward with large tenders, but it is hard to present a golden rule which will work in most cases. Each country has its military and industry conditioning's which tend to shape the local market. It is much easier

to put some light on inappropriate methods of handling critical projects like army tenders. Looking from a broader perspective, one of the essential factors is timing. Many tenders have started way too late and take too much time which in the end leads to further degradation of the force. Sometimes, it can happen the opposite way. Early start doesn't necessarily mean an effective ending. As trivial as it might sound, balance is as always the key.



## Threat Of Dependence

The second threat of a tender is the fact that if a nation doesn't have a robust domestic industry, each selection will be connected with a sometimes 20 or even 30 years-long relationship with a foreign government. This, in turn, puts the buyer in a somehow inferior position as its future will be dependent on those relationships. It also sets the nation into the sphere of influence and possibly might be a way of pulling into an alliance that might not be the best solution. These are sometimes small steps not visible at first glance, but with time the ties become so tight that we might end in a corner. India has an enormous asset at hand that is not available to other nations. Its sheer size, the magnitude of yearly growth, population and geography give India leverage which can be used to overcome the above mentioned threats. India is becoming a global power and should be aware of that fact and use it for its benefits. Each acquisition agreement can be so arranged that it will secure the nation's interests in the long term.

Those threats influence the strategy and connect it with the tactics and tasks that will be then executed by the troops which will be equipped with specific tools accompanied by appropriate training. This is a chain which cannot be broken as each piece depends on every other of its links. When preparing for a tender, we have to take into account our strategy and tactics used to accomplish our goals as this shows us the tools which will be needed. Here comes the tricky part. If we prepare the whole process from top to bottom, the voice of the users might be not strong enough or even omitted as not heard. Soldiers are soldiers. They are supposed to accomplish the given task with the equipment at hand, but we have to ask ourselves if they could do the job faster or better if they would have other equipment? One can compare it to buying tools for a craftsman by a committee equipped only with theoretical, outdated or biased knowledge. It is clear that the whole process should be based on two paths which at some point should align and be connected and



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The most **optimal path** would be to buy a base solution and pack it with locally made and **tailored additional equipment**

This tendency is already clearly visible in the fighter procurement and propositions made by various bidders. One should further expand this trend and gain as much as possible based on the mentioned assets India has at hand.

## Users And Capabilities

When a country shapes its defence strategy, the first step is to identify the threats that it will have to deal with in the near and long term.

that the soldiers should have a loud voice in the entire process because, in the end, they will have to use the tools which the taxpayer will provide them. Multi-national exercises allow the soldiers to have a close look at the equipment used by partners, compare it with their systems and thanks to those invaluable talks with foreign partners to gain information unreachable for the decision-makers.

## Quantity Vs. Quality

We live in a world that is speeding up each day. It means that the equipment is getting more and more sophisticated. This, in turn, leads to multi-role capabilities that effectively allow us to cut costs as we can obtain a smaller number of weapons to do the same job as the previous generation had done with much more significant numbers. This is a very tempting trend especially when we are dealing with inferior enemies who have only basic armament. However, what happens if we will have to face a near-peer competitor? Will the small number of weapons be able to accomplish the task in the long term? What with the normal attrition which always happens in prolonged combat? How long can a small but very sophisticated force continue to fight? Will we be able to sustain it in top-notch condition during war campaigns? Will the nation be ready to do it without foreign assistance? We have to remember that today's tenders end up with large packages of maintenance and logistics services. Can we be sure that those will be





*The first two Indian Air Force Mirage 2000s to be upgraded were handled by the Dassault Flight Centre at Istres air base in France.*

honoured during a full-scale war? Even if they will, can we be confident that there will always be a smooth path to obtain that help or maybe the enemy will try to influence those lines or obstruct them to gain some advantage? These are just a few of the questions that need to be answered before making crucial decisions.

### **Sometimes Old Is Gold**

Sometimes it is better to have an older platform that will not be as packed with electronics as the latest models, but in a critical situation, a handy technician will be able to fix it on the spot with the tools available

onboard. This doesn't mean that we should buy outdated solutions. The practical path would be to use robust and proven machines that we know can sustain in the long term in all conditions and pack them with modern additional equipment. If the electronics fails, we still have our robust basic platform which can fulfill some of the tasks. The whole situation can be somehow compared to cars. If our old but trusty car brakes, we can fix an easy thing on the side road or even ignore the warning and move on. For instance, if an EGR valve is stuck, it won't break down the car, and we will still drive to our destination. In

a modern, packed with electronics machine, the onboard computer will tell us to pull aside, or even it will switch off the engine as the EGR is not working. This simple example, maybe not perfect, might illustrate how the modern military equipment works. When you land a modern fighter aircraft, it also shows errors that should be fixed and sometimes to sustain a high mission rate, it is better not to shut the engine down and turn the computers off and instead do a hot turnaround and start another mission immediately. To sum this paragraph up, technology is helpful, but as always the right balance is crucial.

### Capabilities Vs. Finances

If we buy military equipment, we obtain specific capabilities which will allow us to accomplish certain tasks. Sometimes some of those capabilities can cost much money and might not be decisive to the overall projected war effort. They might be useful in some rare case scenarios which can be very important but are not very likely to happen. It might be very tempting to secure the nation for most of the threats, and this is probably the idea that the marketing teams will try to sell to the buyer. It would be wise to take into account that instead of buying a “Swiss knife”, it might sometimes be more cost-effective and long-term sustainable to purchase machines with maybe a bit smaller capabilities but perhaps in greater quantity or with a possible upgrade path. Again, there has to be some balance which will allow us to get the job done. In the end, it’s all that counts.

### Creating Available Solutions

Sometimes the global players can’t provide off the shelf solutions needed by the buyer. This means costly integration efforts as was observed with the

league. Source code availability and special clearances can and should be negotiated if there is a quick path for locally made integration of valuable assets that will boost the capabilities of the equipment. Furthermore,

India should do what it takes to **jump-start its industry** based on the transfer of technology and knowledge obtained in the **current biddings**

Rafale for India project. Looking from a broader perspective, the most optimal path would be to buy a base solution and pack it with locally made and tailored additional equipment. This path might not be available for small countries, but as mentioned earlier India plays in the major

India should look ahead and try to obtain an allowance for future selling of those packages and their integration. This part might be especially tricky as it cuts a huge chunk of the producers’ cake but in more and more competitive market, companies tend to agree for more.



*A French Navy Rafale on a modification line at Bordeaux. Dassault is preparing to adjust the production rate at this site, once India confirms a contract for 36 aircraft to be built there.*





*'Indian' Dhruv Advanced Light Helicopter gets Italian makeover.*

The popular saying could be even expanded into **"do it once, do it right and do it quickly."**

### **Difficult Self-defence**

If we think about helicopters, we have to take into account that they might be worth millions of dollars and can be easily destroyed with a single ground-to-air missile carried by a single soldier and shot from a hidden location. This was possible in non-linear conflicts with partisan forces and will be probably even more possible in full-scale engagements. These types of threats will, of course, be only an addition to full-blown air defence systems that a near-peer competitor will have at his hand. This makes helicopters very hard to be safeguarded on the modern battlefield. Due to the geography of India, they play a vital role in sustaining control of various parts of the country. Therefore,

providing enough high-quality self-defence systems for the helicopters should be a critical factor in assessing the potential offers.

### **Analytics Needed**

We have to take into account that currently used platforms are probably in its last iterations. There is only a certain amount of refinements that can be put into a 40 or 50-year-old project. There are already ongoing trials of new types of helicopters, and this factor should also be taken into account. Is it worth to buy a fading platform in vast quantities or maybe one should consider a gradual process which could take into account a future change to a newer system? This is a complicated question, but it might

be easier to answer if we look closely at the region and take into account what the possible adversaries are planning to do. Adding them to the equation allows us to make a more balanced decision which will allow for a more flexible and possibly more effective force. It might be easy to start an arms race, but one has to answer itself if the nation can handle it. Furthermore, we have to think about the possible reaction of the adversary who knows that he is losing the equipment race? Will he agree to drop his position or attack in the last feasible moment?

### **Military Industrial Complex**

The currently ongoing tenders should be viewed not as another modernisation programme but as the last and also as the first step. India should do what it takes to jump-start its industry based on the transfer of technology and knowledge obtained in the current biddings. This, in turn, should allow in a time frame of 20 or 30 years





*Helicopters Assembly Lines.*


to build own industries capable of producing at least some of the assets that currently are bought from foreign partners. With its missile systems and the recent achievement of destroying a satellite, India has shown that it can develop very sophisticated solutions based on the capabilities and knowledge of its scientists and industry. This trend should be widened and integrated into other departments of the defence industry including the helicopters.

### **Branches-wide Integration**

The one size fits all trend is very tempting but as the F-35 example shows us it might not be the best solution. Of course, it allows significant cuts in training costs, sustainment, parts, additional equipment and so on but there are specific tasks that need more

specialised equipment, and the common platform might not be suitable. No matter what some analyst will say and how loud they will shout, an F-35 will never appropriately take over the job of an A-10 and the ground troops will always prefer the “Warthog” coming to the rescue. We also have to take into account that sometimes a platform ready for operating in one environment will be an overkill to operate in another. If we buy a common system, there is also a danger of nationwide grounding. With a country as big as India, it might mean paralysing its defence capabilities. Putting all eggs into one basket when you are a global player is not the best idea no matter what the salesman will say about the reliability of the offered platform. Going back to one of the previous paragraphs, the voice of the users

should also be taken into account because they are the ones who will use the equipment daily and have the expertise to define whether a common platform will be suitable for their job.

India is at a critical stage of its development. The decisions, currently made, will shape the future of the country, and armament acquisitions might help to accelerate the whole process or slow it down. We may not like it but the path is clear, and in many cases, the technology and knowledge obtained in military contracts penetrate the civilian market boosting its growth. Therefore, the current tenders should not be treated only as modernisation effort for the army and burden for the taxpayer but should also be used to push India forward. 

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