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BW BUSINESSWORLD

Sun, 07 June 2020

‘DRDO must find a way of building a suitable fighter engine’

“Increasing Chinese technological capability is an outcome of their sustained efforts in R&D. The IAF is working closely with DRDO and others to close the gap on these technological asymmetries”

By Manish Kumar Jha

Recently, the Indian Air Force (IAF) resurrected its squadron No. 18 Flying Bullets with the formal induction of the first Light Combat Aircraft (LCA) Mk-1 in Final Operational Clearance (FOC) variant. The squadron will be getting 83 such aircraft over the next few years. However, as IAF seeks to modernise its squadrons and fleets, several challenges remain. In an exclusive interaction with BW Businessworld’s Manish Kumar Jha, Chief of the Air Staff Air Marshall R.K.S. Bhadauria talks about the critical steps IAF is taking as well as the thrust on R&D in aerospace:

IIs there any plan to cut IAF’s budget due to economic constraints? What platforms are being prioritised for induction? How will IAF meet its modernisation and security goals given the budgetary constraints?

Pending the receipt of revised budget estimates, we are targeting savings of 20-25 per cent in revenue expenditure as the first step. On capital expenditure, our highest priority lies with the contract for 83 LCA Mk-1A. Additionally, we are in the process of prioritising our critical requirements, weapons and technologies like air-to-air missiles, air-to-ground precision weapons, networking, data linking, etc. We are working towards industry critical capabilities and minimising the impact of budget constraints on modernisation.

Our vision of Atmanirbhar Bharat (self-reliant India) in defence is not going to be realized if we continue to allot just 6 per cent or so of our defence budget to DRDO. China, for instance, spends about 15-20 per cent of its defence budget on R&D. As IAF chief, how do you look at such an anomaly? What do you suggest we can do to address such gaps?

The outlay for DRDO has been increasing every year and is based on projections by DRDO itself. The DRDO plans its future R&D based on a technology development roadmap worked out in consultation with the services and its own assessments. I have no doubt that there is a strong case to enhance indigenous R&D by DRDO in niche technologies. Defence PSUs and the private sector need to increase their emphasis on R&D. R&D is fundamental to successful indigenisation, suitable product development and import substitution. The first step should be to focus the available budget on high prioritisation of niche technological areas.

The Medium Multi Role Combat Aircraft (MMRC) 2.0 is all about building a complex aerospace ecosystem, leveraging full-scale ToT with leading foreign OEMs. Why do we intend to delay projects of national importance in security and defence?

All major platform procurements where the numbers required are high will be Made in India be it Tejas Mk-IA, Tejas Mk-II, MRFA or AMCA. The MRFA programme will be fully Make in India and will significantly benefit future Indian projects by infusing cutting edge technologies into the domestic industry. After receiving initial responses to the RFI and having detailed discussions with all vendors the SOC is under finalization. In order to suitably energise and support the development of a complex aerospace ecosystem, I strongly feel all the projects have a big role to play. Therefore, our major focus on 83 LCA followed by LCA Mk-II and AMCA is parallel to MMRCA 2.0, as you put it.

You recently said India will need 450 fighter jets in a decade. India has own fighter jets — LCA Tejas MK-1a while 4th Gen concept Tejas Mk-2 and 5th generation AMCA are on drawing board. And, keeping HAL's sporadic delivery in mind, the first squadron of MK-1a is expected in 2025. How are we going to achieve the strength of 42 squadrons?

Involvement of the defence PSUs, private sector and MSMEs effectively by putting in place modern production facilities would be essential to ramp up delivery of fighter aircraft and other platforms and systems. The key to increase in numbers lies in successful and rapid establishment of a comprehensive aviation ecosystem.

It is estimated that more than a thousand engines are required for the fighter jets under ambitious projects like Tejas variants and futuristic AMCA. The IAF has spoken of indigenously built engines which have not taken off. Why don't we leverage our partnership with friendly countries and make these engines in India?

Design and manufacture of a modern fighter jet engine is a highly complex, expensive and niche capability. The Kaveri project has not succeeded in delivering an engine for fighter aircraft and IAF is not insisting on this indigenous engine. The DRDO must find a way of building a suitable fighter engine in partnership and this is the initial path to success of future aircraft programmes.

Directed energy or lasers are the weapons of the future for fighter aircraft— manned and unmanned. How are we placed with regard to R&D in this area?

Directed energy or lasers are important technologies for IAF's future platforms and weapon systems. We are looking at this capability and are supporting measures to develop such key enabling technologies.

China is building stealth jets like J20 and 31 in large numbers, developing jet engines and helping Pakistan build up its air strength. Will the gap with China grow wider in aerospace superiority in the coming years?

Technological asymmetry does not remain constant and varies in different spheres with the advantage shifting depending on development and procurements. Increasing Chinese technological capability is an outcome of their sustained efforts in R&D. The IAF is working closely with DRDO and others to close the gap on these technological asymmetries. A progressive increase and improvement in our combat aircraft force enablers, sensors, weapons and network centric operations capability should help us address our assessed threats in the future. Indigenisation of R&D and production is the key for our future capacity building.

http://www.businessworld.in/article/-DRDO-Must-Find-A-Way-Of-Building-A-Suitable-Fighter-Engine-/06-06-2020-194474/

BW BUSINESSWORLD

Sun, 07 June 2020

Reforms or just a rejig?

The slew of announcements made by FM Sitharaman is intended more as policy tweaks rather than radical reforms to encourage 'Make in India' in defence

By Manish Kumar Jha

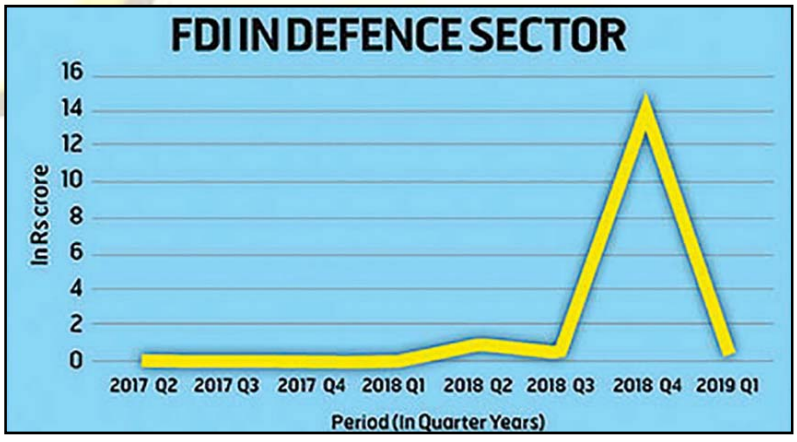
On May 16, the penultimate day of announcements over five days that unveiled the various measures as part of the Rs 20 lakh crore package to revive the Covid-stricken economy as well as to make India atmanirbhar (self-reliant), Finance Minister Nirmala Sitharaman created quite a buzz when she reeled out a series of action points to bolster Make in India in defence.

The measures, which ranged from raising foreign direct investment in defence via automatic route from 49 per cent to 74 per cent and corporatisation of Ordnance Factories Board (OFB) to having a separate provisioning for domestic capital procurement in defence budgets and banning import of certain weapons and platforms, seemed to address quite a few longstanding demands of the sector. Or so it appeared. The markets too cheered the announcements with shares of companies with a defence play surging between 5-10 per cent.

PRODUCTION TARGETS AND ACHIEVEMENTS

YEAR	TARGET	ACHIEVMENT	% OF SHORTFALL
2013-14	382	163	57
2014-15	693	251	64
2015-16	580	194	67
2016-17	576	249	57
2017-18	446	220	51

CAG Reort 2019 (Ordnance Factories)



The big question, however, is: are these announcements mere policy tweaks or new reforms to boost self-reliance in defence? Do they address the fundamental issue of capability building for the Indian armed forces? There has been a long-standing demand for 100 per cent FDI in defence. The latest announcement only partially fulfils it. Even then, there is no guarantee that FDI inflows in defence, which totaled $8.82 million for the period April 2000 to December 2019 – the lowest among all sectors as per the list compiled by the Department for Promotion of Industry and Internal Trade of India — would rise dramatically.

Similarly, corporatisation of OFB, although a step in the right direction, does not really mean an overhaul. What really does look like making a material difference is the announcement on separate provisioning for domestic capital procurement in the defence budget — it will surely force some of our compulsive import-loving technology hyperbuyer to look within. As far as these announcements go, sceptics might argue that the draft Defence Procurement Procedure (DDP) 2020, which has been put out in the public domain for comments, also contains all the major changes announced so far.

No hint of new reforms

What do the stakeholders have to say then? Jayant Patil, Chairman, SIDM & Whole-time Director & Senior Executive VP, L&T Defence says, “The package had a good amount of inputs on defence. There is a specific budget being carved out. We don’t know when it will get done. But once it is done it will be very significant. We import nearly 70 per cent of our needs. Some new announcements indicate that money will be found. Some of existing contracts are coming to light. We are all clear that a change can be made. The indications we are not getting are that of new reforms.” He goes on to add that so far there is no money in defence, and if there is no money, there is no business and no R&D.

The money issue that Patil refers to is contained in the announcement on separate provisioning for domestic capital procurement in the defence budget every year. “There has been a lot of movement on the policy side but of course there has not been much movement on the Indian buying side. It is indicated that there will be money found, not sure when. Those who understand the DPP have it quite easy,” says Patil.

The other key policy announcements are the time-bound defence procurement process and faster decision making for which Project Management Unit (PMU) will be set up to support contract management; realistic setting of General Staff Qualitative Requirements (GSQR) of weapons/platforms and overhaul of the trial and testing procedures. Besides, import of certain weapons and platforms is not going to be allowed and these can only be purchased locally.

Corporatisation of OFB

Corporatisation of OFB is a welcome step as it will bring more professional oversight, functional and financial autonomy and accountability to the 41 factories, 13 ordnance R&D centres and nine ordnance institutes of learning under OFB. Despite the modernisation drive lately with computerised numerical control (CNC) and modern machines, manpower and output have remained an area of concern. The diffused responsibility for quality assurance and quality control between OFB and Directorate General Quality Control (DGQA) has not helped matters.

Besides structural changes in management, joint ventures for technology infusion and better coordination with DRDO, OFB also needs to improve autonomy, accountability and efficiency in ordinance supplies. Factories are given production targets by OFB in consultation with the defence forces. Yet, production has consistently fallen short of targets. For instance, the factories were able to meet production targets for only 49 per cent of items in 2017-18.

Says Maj. Gen. Shashi Asthana, who interacted closely with ordnance factories (OF) during his 40 years with the Indian Army: “With corporatization, they (OFs) will have to compete with other corporate entities. Also, labour reforms are the need of the hour. I was into logistics as well and I noted that manpower was being wasted. No country in the world has become a major power with only the government’s efforts. Private sector is of utmost importance.”

Liberalised FDI regime

On the face of it, increase in the FDI limit in defence to 74 per cent under automatic route is welcome and will help the sector in garnering fresh investment and technology, according to Patil, who also heads the defence industry lobby SIDM. The change seems to be in line with the new category of Buy (Global - Manufacture in India) under DPP that mandates buying only the minimum necessary quantity from abroad and making the rest in India. While the policy fine print needs to be seen for additional conditions, if any, it is expected that the OEMs will make the best use of the liberalised regime to expand their India footprint.

The previous FDI policy had proved to be a no-show. In the last five years, when the FDI limit in defence was raised to 49 per cent from 26 percent through the automatic route in 2014, the defence sector attracted FDI of only Rs 1812 crore (see chart). Says Patil: “If there are no investments, there will be no business. So how will there be any R&D? Without R&D nothing will happen.”

Defence Secretary Ajay Kumar, however, has a different take on the FDI numbers. “Only companies which require licence under the Industrial Act need government approval for bringing

FDI and that too, only if the FDI exceeds 49 per cent. Other defence and aerospace companies do not require approval for bringing in FDI. Therefore, complete information on FDI flows in defence and aerospace is not available," he told Businessworld during an earlier interaction. The cumulative FDI in the defence and aerospace sectors, he says, has exceeded Rs 3,134 crore so far. "Out of this, 34 companies in the defence and aerospace sectors have reported FDI of over Rs 1,812 crore since 2014," he had said.

Despite the automatic route, security clearance will still be required. The increase in FDI limit to 74 per cent through the automatic route is, however, inconsistent with the proposed DPP 2020 provisions, whereby the definition of 'Indian vendors' requires entities to be owned and controlled by resident Indian citizens. With amendments being made to the FDI regulations, one expects the same should be reflected even in draft DPP 2020.

Time-bound procurement and overhaul of the trial and testing procedures is another welcome announcement. What remains to be seen though is whether there would be any changes in what has been unveiled in the draft DPP 2020 or whether the FM's announcement only sought to recapture what has been proposed under DPP 2020.

Steps taken in the national interest towards bolstering 'Make in India' are also appreciated. Ban on imports of specified defence platforms and indigenisation of spares will help build a strong domestic industry. However, this shall only be possible if the government shows seriousness in implementation of these reforms. The Ministry of Defence must place orders on Indian industry with the same trust as the defence PSUs. Further, subsidiaries of foreign companies should be treated as Indian industry as they will be instrumental in 'value addition/indigenisation in India' and building economies of scale for Indian products to find way in global supply chain.

Now all eyes are on the increasingly important office of Department of Military Affairs (DMA) which is tasked with releasing the list of products banned for import as it will largely shape up the tendering process for tomorrow. The MoD's guidance on FDI conditions as well as notifications to accommodate the suggested changes to the draft DPP 2020 are also awaited.

At the DEF Expo 2020, Modi announced the formulation of Long-term Integrated Perspective Plan (LTIPP) for 15 years – that is up 2035. Another version of LTIPP is called Technology Perspective and Capability Roadmap (TPCR). TPCR 2018 is an improvement over the last one. But all together it does project the realistic approach as the system flaw and delays in procurement and indigenous development make such efforts theoretical.

DRDO overlooked again

Amid big bang defence announcements, DRDO, on which the burden of building capability in defence rests, is often overlooked. Despite the government's monopoly over defence R&D, DRDO has done some commendable jobs – India's indigenous missile and radar technology along with home-grown LCA Tejas and its variants Mk-1 and Mk-2 stand out. But with a meagre outlay of 6 per cent of the total defence budget, or about Rs 19,000 crore, DRDO is pretty much constrained. China has been spending about 15-20 per cent on R&D. The result is there to see in terms of capability gaps.

Says Air Marshal Shirish Deo, Vice Chief, IAF (retd.) referring to money issues: "There is no revenue right now. There is a very distinct category of goods now. General development will take place here. Now we have to make systems here to prove our worth. Every company outside is worried about the bottom line. The companies will invest here, provided there are no strict policies. Some research is definitely needed. China, for example, took failure in their stride. R&D is not possible in the best form when we are afraid of failure. There has to be a passion for engineering."

So how will India become self-reliant? We only need to look at India's space and atomic energy sectors, which have become world-class thanks to private sector participation and a budget that is 10-15 per cent of the total defence budget. What's needed is a predictable policy and regulatory environment for the defence sector and turning DRDO into many functional and autonomous centres of excellence. No sooner, we will be proud of Indian Space Research Organization ISRO does. Indigenization is the key responsibility of Department of Military Affairs (DMA), headed by

CDS General Rawat while determining indigenous feasibility is the job of DRDO, and budget oversight is with MoD. Together, it is time to call for the capability roadmap.
http://www.businessworld.in/article/Reforms-Or-Just-A-Rejig-/06-06-2020-194472/

Mon, 08 June 2020

Fifth Generation Fighter Aircraft (FGFA): India, time to get the act right

By Anil Chopra

The Indian government just cleared the development of the twin engine deck-based fighter (TEDBF) for the Indian Navy. The development phase is expected to cost between Rs 7,000 and Rs 8,000 crore. First flight is tasked to be done in six years. Indigenisation is clearly the focus, and rightly so. Meanwhile, just last year the air combat between Indian Air Force's (IAF) MiG-21 Bison and Pakistan Air Force's (PAF) F-16, had brought the debate of IAF modernisation back in focus.

IAF is down to an all-time low of 30 fighter squadrons vis-a-vis the authorised 42. The 36 Rafale aircraft to induct shortly are of fourth generation plus class. The US Air Force (USAF) has had a fifth generation aircraft in F-22 Raptor since it formally entered service in December 2005. The USAF and many of their friendly air forces across have inducted the variants of the latest fifth generation fighter the F-35 Lightning II. Home grown fifth generation fighters have also been inducted by Russia and China.

There are others who are already developing the next generation fighters. In fact the sixth generation fighters are on the drawing boards of the leading aerospace countries and individual technologies are being developed and tested in laboratories.

IAF is in the process of initiating to buy 114 new fighters which will still be of the fourth generation plus class. The logical next step for the world's fourth largest air force, IAF is to develop or procure a fifth generation fighter. India's venture to develop its Fifth Generation Fighter Aircraft (FGFA) jointly with Russia ran aground because of cost and technical differences.

Where must India go from here is the question?

Air dominance and air superiority aircraft

The one who controls the air and space controls the planet. Aerospace craft will aim to seize control establishing dominance/supremacy over the enemy's assets. Even if aerospace supremacy cannot be established, a "degree of dominance" in the airspace bubble in a given area and given time-space without prohibitive interference by opposing air forces will be desired. Air superiority fighter aircraft are meant for entering and seizing control of enemy airspace.

They operate under the control/co-ordination of Early Warning and Control satellites and aircraft with increased Artificial intelligence (AI). Aircraft like the US Navy's F-14 and USAF's F-15 were built to achieve air superiority from the design and development stage. Both later had multi-role variants. Soviets/Russians developed MiG-29 and Su-27 around the same time. Eurofighter Typhoon and Dassault Rafale though multi-role fighters but both have air-superiority

missions. F-22 Raptor, Su-30 variants, Su-35, Chinese J-11 and J-15 are also air-superiority aircraft.

4.5 generation fighters

For some time the world has been classifying the fighter aircraft based on capabilities and technologies. Most modern air forces possess fourth generation fighters which strengthened the trend towards multirole configurations. Concept of 'Energy-Maneuverability' impacted aircraft designs that required performing 'fast transients' – quick changes in speed, altitude, and direction – as opposed to relying mostly on high speed. It called for small lightweight aircraft with higher thrust-weight ratio. The F-16, MiG-29 and Mirage-2000 evolved. Fly-By-Wire (FBW) flight controls became possible due advances in computers and system integration, and this allowed relaxed static stability flight and in turn agility.

Analog systems began to be replaced by digital flight control systems in the late 1980s. Likewise, Full Authority Digital Engine Controls (FADEC) to electronically manage power-plant performance was introduced. Both allowed carefree maneuvering by the pilot. Pulse-Doppler fire-control-radars added Look-down/shoot-down capability. Head-up displays (HUD), hands-on-throttle-and-stick (HOTAS) controls, and multi-function displays (MFD) allowed better situational awareness and quicker reactions. Composite materials like bonded aluminum honeycomb structures and graphite epoxy laminate skins helped reduce aircraft weight. Improved maintenance design and procedures reduced aircraft turnaround time between missions and generated more sorties.

Another novel technology was stealth using special "low-observable" materials and aircraft design techniques to reduce detect-ability by the enemy's sensors, particularly radars. The first real stealth designs were Lockheed F-117 Nighthawk attack aircraft in 1983 and the Northrop Grumman B-2 Spirit in 1989. Military budget cuts after the Cold War, and high funding requirements of the fifth generation fighter, resulted in a term called the 4.5th generation fighters during 1990s to 2005. This sub-generation saw advanced digital avionics, newer aerospace materials, modest signature reduction, and highly integrated systems and weapons.

These fighters operated in a network-centric environment. Key technologies introduced included BVR air-to-air missiles (AAM); GPS-guided weapons, solid-state phased-array radars, helmet-mounted sights (HMDS), and improved secure, jamming-resistant data-links. A degree of super-cruise ability (supersonic without afterburner) was introduced. Stealth characteristics focused on front-aspect radar cross section (RCS) reduction through limited shaping techniques.

Eurofighter Typhoon, Dassault Rafale and Saab JAS 39 Gripen were in this category. Many fourth generation aircraft were also upgraded with new technologies. Su-30MKI and Su-35 featured thrust vectoring engine nozzles to enhance maneuvering. Most of them are still being produced and evolving. It is quite possible that they may continue in production alongside fifth-generation fighters due to the expense of developing the advanced levels of technology. 4.5 generation fighter aircraft are now expected to have AESA radar, high capacity data-link, enhanced avionics, and ability to deploy advanced armaments.

Fifth generation fighters

Fifth generation fighter aircraft are the latest jet fighters encompassing the most advanced features. These aircraft are designed from the start to operate in a network-centric combat environment, and to feature extremely low, all-aspect, multi-spectral signatures employing advanced materials and shaping techniques. They have multifunction AESA radars with high-bandwidth low-probability of intercept.

Infrared Search and Track (IRST) and other sensors are fused in for Situational Awareness and to constantly track all targets of interest around the aircraft 360 degree bubble. Avionics suites rely on extensive use of very high-speed integrated circuit (VHSIC) technology and high-speed data buses. Integration of all the elements could provide fifth-generation fighters with a "first-look, first-shot, first-kill capability". In addition to its high resistance to ECM, they can function as a "mini-AWACS". Integrated electronic warfare system, integrated communications, navigation, and

identification (CNI), centralized “vehicle health monitoring”, fibre-optic data-transmission, and stealth are important features.

Maneuver performance is enhanced by thrust-vectoring, which also helps reduce takeoff and landing distances. Super-cruise is inbuilt. Layout and internal structures minimize RCS over a broad bandwidth of frequencies. To maintain low signature primary weapons are carried in internal weapon bays. Stealth technology is advanced to where it can be employed without a trade-off with aerodynamics performance. Signature-reduction techniques include special shaping approaches, thermoplastic materials, extensive structural use of advanced composites, conformal sensors, heat-resistant coatings, low-observable wire meshes to cover intake and cooling vents, heat ablating tiles on the exhaust troughs and coating internal and external metal areas with radar-absorbent materials and paints.

These aircraft are very expensive. F-22 costs around US$150 million. Lockheed Martin F-35 Lightening II fighters will cost on average US$ 90 million due to large scale production. Other fifth-generation fighter development projects include Russia’s Sukhoi PAK FA; a variant of the same was to have been India’s Fifth-Generation Fighter-Aircraft (FGFA).

India is also developing the Advanced Medium Combat Aircraft (AMCA). China’s fifth generation fighter Chengdu J-20 is flying since January 2011 and may be deployed by 2019. The Shenyang J-31 first flew in October 2012. Japan is also exploring technical feasibility to produce fifth-generation fighters. Turkish TAI TFX is being developed with BAE Systems. These aircraft will operate in a ‘Combat Cloud’ along with future UAVs. Japanese next-generation fighter would be based on the concept of aircraft informed, intelligent and instantaneous. Japan already conducted the first flight of the Mitsubishi X-2 Shinshin test-bed aircraft for this project. The Mikoyan MiG-41 is another next-generation jet fighter interceptor under development.

France and Germany announced they would jointly develop a new combat aircraft to replace the Eurofighter, Tornado and Rafale. It is likely to be a twin-seat “system of systems” aircraft acting as a combat platform as well as controlling UCAV’s. The UK is committing to a next generation fighter program to potentially replace the Eurofighter Typhoon post-2030, however, the Eurofighter Typhoon has since had its intended service life extended to around 2040. Some Chinese publications are talking of a sixth generation aircraft. Referred to as Huolong (Fire Dragon). But as on date China has serious limitations on radar, avionics, and engine technologies.

Evolving other technologies

Today technologies are offering enhanced capabilities that are driving operational employment and tactics. Artificial Intelligence (AI), smart structures, and hybrid systems will dictate the future. Demand for streaming high-quality data requires bandwidth, which involves innovating sensor/processing systems.

Mission computer systems and network-centric payload processing units enable onboard data fusion prior to sending to digital links. Thermally efficient, high-performance computing onboard the aircraft is essential. Next-generation avionics would be smaller, more efficient and capable of operating under extreme conditions. Gallium Nitride (GaN) is a semiconductor material that is more efficient, easier to cool, and improves reliability for radars. Any system must be designed with aim for maintaining a competitive advantage in an austere budget environment.

The Passive Aero-elastic Tailored (PAT), a uniquely designed composite wing will be lighter, more structurally efficient and have flexibility compared to conventional wings. This wing will maximise structural efficiency, reduce weight and conserve fuel. Hypersonic cruise, fuel cell technologies, hybrid sensors, improved human-machine interface using data analytics and bio-mimicry, combination of materials, apertures and radio frequencies that ensure survival in enemy territory are under development.

Things will be built faster, better and more affordably, using 3D printing yet ensuring quality and safety standards. Additive 3D manufacture creates a world with spare parts on demand, faster maintenance and repairs, more effective electronics, and customized weapons. The development of a hypersonic aircraft would forever change ability to respond to conflict. Nano-materials will

control sizes, shapes and compositions, and significantly reduce weight yet create stronger structures for air and spacecraft, yet drive down costs.

Next generation American fighter

US Air Force (USAF) and US Navy (USN) have been defining their own requirements of a sixth generation fighter. Currently, the United States has two projects. The US Air Force's 'Penetrating Counter-Air', a long long-range stealth fighter to escort stealth bombers. The USN is pursuing a similar program called the Next Generation Air Dominance, to complement the smaller Lockheed F-35. The timelines for aircraft in development like the F/A-XX program are now around 2030–2035. So far, Boeing, Lockheed-Martin, and Northrop-Grumman have unveiled sixth-generation concepts.

US DoD began the sixth generation fighter quest in October 2012. DARPA began a study to try to bridge the USAF and USN concepts. Next-generation fighter efforts will initially be led by DARPA under the "Air Dominance Initiative" to develop prototype X-plane. USAF has announced that it will pursue "a network of integrated systems disaggregated across multiple platforms" rather than a "sixth generation fighter" in its Air Superiority 2030 plan. Dubbed the "Next Generation Tactical Aircraft"/"Next Gen TACAIR", the USAF seeks a fighter with "enhanced capabilities in areas such as reach, persistence, survivability, net-centricity, situational awareness, human-system integration and weapons effects.

The future system will have to counter adversaries equipped with next generation advanced electronic attack, sophisticated integrated air defense systems, passive detection, integrated self-protection, directed energy weapons (DEW), and cyber attack capabilities. It must be able to operate in the anti access/anti-denial environment that will exist in the 2030–50 timeframe. USAF and USN have a common approach on the engine using the Adaptive Versatile Engine Technology for longer ranges and higher performance. The newer engines could vary their bypass ratios for optimum efficiency at any speed or altitude. That would give an aircraft a much greater range, faster acceleration, and greater subsonic cruise efficiency. The engine companies involved are General electric (GE) and Pratt & Whitney (P&W).

USAF intends to follow a path of risk reduction by prototyping, technology demonstration, and systems engineering work before creation of an aircraft actually starts. The sixth-generation strike capability is not as just an aircraft, but a system of systems including communications, space capabilities, standoff, and stand-in options. USAF fighter maybe larger and more resembling a bomber than a small, maneuverable traditional fighter.

Fighter significantly larger can rely on enhanced sensors, signature control, networked situational awareness, and very-long-range weapons to complete engagements before being detected or tracked. Larger planes would have greater range that would enable them to be stationed further from a combat zone, have greater radar and IR detection capabilities, and carry bigger and longer-range missiles. It would include stealth against low or very high frequency radars like those of the S-400 missile system, which would mean an airframe with no vertical stabilisers. Lockheed Martin's Skunk Works division has revealed a conceptual next-generation fighter design which calls for greater speed, range, stealth and self-healing structures. Northrop Grumman is looking at a supersonic tailless jet.

Other sixth generation programmes

France and Germany have awarded a Joint Concept Study (JCS) contract to Dassault Aviation and Airbus for the Future Combat Air System (FCAS) programme. The baseline concept is an optionally manned Next Generation Fighter (NGF), and a System of Systems approach with associated next generation services. The BAE Systems Tempest is a proposed stealth fighter aircraft concept to be designed and manufactured in the United Kingdom for the Royal Air Force (RAF).

It is being developed by a consortium consisting of the UK Ministry of Defence, BAE Systems, Rolls-Royce, Leonardo and MBDA, and is intended to enter service from 2035 replacing the Eurofighter Typhoon. Approximately $2.66 billion will be spent by the British government on the

project by 2025. BAE Systems is planning to approach India for collaboration for the design and manufacture of the Tempest. Tempest could be optionally manned and have swarming technology to control drones. It will incorporate AI deep learning and possess DEWs. Tempest will feature an adaptive cycle engine and virtual cockpit shown on a pilot's helmet-mounted display.

China is still evolving its J-20 and J-31. Some Chinese sixth generation aircraft (J-XX) are referred to as Huolong (Fire Dragon). But as on date China has serious limitations on radar, avionics, and engine technologies. China planned to field it in the 2025-2030 time frame. In Russia, work is on for its sixth generation aircraft Mikoyan MiG-41. Japan's Mitsubishi F-3 sixth-generation fighter would be based on the concept of aircraft informed, intelligent and instantaneous, technologies for which are under testing on the Mitsubishi X-2 Shinshin test-bed aircraft.

Given the enormous expenses and effort devoted to working out the kinks in the fifth-generation, the Sixth-generation fighter programs are still conceptual. Many technologies are under development in parallel. At the earliest, sixth-generation fighters may be visible in the 2030s or 2040s, and may see further conceptual change by then.

Sukhoi/HAL FGFA

The Sukhoi/HAL Fifth Generation Fighter Aircraft (FGFA) or Perspective Multi-role Fighter (PMF) was a 50:50 (funding, engineering, and intellectual property rights) joint venture between India and Russia. It was a derivative project of the Russian Sukhoi Su 50 (later Su-57) for the Russian Air Force.

The completed FGFA was to include a total of 43 improvements over the Su-57, including stealth, super-cruise, advanced sensors, networking and combat avionics. The Indian version would have been a two-seater with pilot and co-pilot or weapon systems Operator (WSO). Though India withdrew from the FGFA programme in 2018, it also hinted that the project could be resumed at a later date, when the Su-57 is fully operational in the Russian Air Force. Russia also claimed in August 2018 that the FGFA program was not cancelled and India was still in dialogue with Russia. The FGFA is a stealth multirole air superiority fighter.

The joint development deal would have each country invest $6 billion and develop over 8–10 years. The preliminary design cost was $295 million and was to be completed within 18 months. The Russian version will be a single-pilot fighter. The single-seat fighters were to be assembled in Russia, and HAL was to assemble two-seaters. FGFA was to be fitted with the next generation air-to-air and air-to-surface weapons, have the NO79 AESA radar, use 2 Saturn 117 engines (about 147.1 kN thrust each).

The Saturn 117 is an advanced version of the AL-31F. There were to be 6 external (on the wing) hard points and 6 internal. HAL's work share was to include critical software including the mission computer, navigation systems, most of the cockpit displays, the countermeasure dispensing (CMD) systems and modifying Sukhoi's prototype into fighter as per the requirement of the IAF.

FGFA was scheduled to be certified by 2019, following which the series production was to start. But there was apprehension that the FGFA would significantly exceed its $6 billion budget, as the crucial avionics systems would cost extra. Cost was estimated at $100 million per fighter in addition to the development costs. By October 2012, India had cut its total purchase size to 144 aircraft. Russia also admitted to huge delays and cost overruns.

There were also accusations that HAL had contributed only 15% of the research and development work, but provided half the cost. There were also questions about maintenance issues, the engine, stealth features, weapon carriage system, safety and reliability. By 2016, Indian interest in the project was fading after Russia cut back their own purchases. In 2017, Russians suddenly demanded seven billion dollars that the Indians could not afford. India then began evaluating the need for FGFA in light of the price increase and progress on the HAL AMCA. There was also a proposal of an upgraded Su-35 with stealth technology, as a more affordable alternative to the FGFA. On 20 April 2018, it was reported that India had left the project. It was asserted that India

was not satisfied with the capabilities of the Su-57. However, India did not rule out the possibility of re-launch of the FGFA.

Lockheed Martin F-35 Lightning II

The F-35 is a family of single-seat, single-engine, all-weather, fifth generation, stealth multirole fighters designed to perform ground-attack and air-superiority missions. The F-35A is the conventional takeoff and landing variant that would normally be of interest to any air force. The F-35 had emerged as the winning design of the Joint Strike Fighter (JSF) programme. The United States principally funds F-35 development, with additional funding from other US allies. These funding countries generally receive subcontracts to manufacture components for the aircraft. Several other countries have ordered, or are considering ordering, the aircraft. The F-35 first flew on December 15, 2006.

The USAF formed its first squadron in August 2016. In 2018, the F-35 was first engaged in combat by the Israeli Air Force. The United States plans to buy 2,663 F-35s, which will provide the bulk of the crewed tactical airpower of the USAF, Navy, and Marine Corps in coming decades. 520 had been delivered by 07 March 2020. Deliveries of the F-35 for the U.S. military are scheduled until 2037, with a projected service life up to 2070. The unit cost of the aircraft is around US$ 90 million.

HAL-ADA AMCA

The HAL-ADA Advanced Medium Combat Aircraft (AMCA) is a fifth generation aircraft being designed by ADA and will be manufactured by HAL. It will be a twin-engine, stealth, all weather multirole fighter. AMCA feasibility study and the preliminary design stage have been completed. It will combine super-cruise, stealth, advanced AESA radar, super maneuverability and advanced avionics. It is meant to replace the Jaguar, MiG-27 and Mirage 2000 aircraft of the IAF, and complement the SU-30 MKI, Rafale and Tejas in the IAF, and MiG 29K in the Navy.

In October 2008, IAF had asked ADA to prepare a detailed project report for a next generation medium combat aircraft. In April 2010, IAF issued the ASQR for the AMCA, which placed the aircraft in the 25-ton category. The first flight test of the prototype aircraft was scheduled to take place by 2017. DRDO proposed to power the aircraft with two GTX Kaveri engines. In October 2010, the government released RS 100 crore to prepare feasibility studies.

Meanwhile in November 2010 itself ADA sought Rs 9,000 crore to fund the development which would include two technology demonstrators and seven prototypes. In 2013 ADA unveiled a 1:8 scale model at Aero India 2013. The AMCA design will have shoulder-mounted diamond-shaped trapezoidal wings, and an all-moving Canard-Vertical V-tail with large fuselage mounted tail-wing. It will be equipped with a quadruple digital fly-by-optics control system using fibre optic cables. The reduced radar cross-section (RCS) would be through airframe and engine inlet shaping and use of radar-absorbent materials (RAM). AMCA will have an internal weapons bay, but a non-stealthy version with external pylons is also planned.

Low-speed and supersonic wind tunnel testing and Radar Cross Section (RCS) testing was reportedly completed by 2014, and project definition phase by February 2014. The Engineering Technology and Manufacturing Development (ETMD) phase was started in January 2014 after HAL Tejas attained IOC, and it was announced that the AMCA will have first flight by 2018.

At Aero India 2015, ADA confirmed that work on major technological issues, thrust vectoring, super-cruising engine, AESA radar and stealth technology was going full swing. Russia was to support for the development of Three-Dimensional Thrust Vectoring (TDTVC), AESA Radar and stealth technology. Saab, Boeing and Lockheed Martin also offered to help in key technologies. AMCA will initially fly with two GE-414 engines. Eventually it is planned to be powered by two GTRE, 90 kN thrust, K 9 or K10 engines which are the successor to the troubled Kaveri engine. France has offered full access to the Snecma M88 engine and other key technologies, and the United States offered full collaboration in the engine development with access to the GE F-414 and F-135. Two technology demonstrator and four prototypes are scheduled to go under various types of testing, and analysis in 2019. Ground reality is that they are far from it. The first flight is

scheduled to occur in 2028.Backing the project, chief of Indian air staff, RKS Bhaduria in a briefing in October 2019 said DRDO "must" make the project happen. IAF wants to have "full control" in "defining" technologies of aircraft and supports indigenous fifth generation fighter aircraft as it becomes restricted for IAF when purchasing a foreign system. Defence ministry has been looking for cabinet approval and funds as of 2019 for the prototype development phase which will require Rs 7,000-8,000 crore in a decade. The aircraft was reported to be under Detailed Design Phase in February 2019. and the design phase expected to be completed by the end of 2019. ADA in consultation with the IAF will try to freeze the design of AMCA soon with their very ambitious first flight target of 2024. With LCA Mk 1 still under delivery for next two years, LCA Mk 1A still doing its first flight and there is LCA MK2 or MWF still in between, a more realistic first flight would be close to 2028 or later.

Decision Matrix India

India has to finally take a call for itself. Choices are few.

1. The Russian Air Force has just formed the first squadron Su-57. They have reportedly ordered 78. India has walked out of the project for cost, work share and core technology transfer issues. The Russian government has been trying to put pressure at the highest levels to induct India back into the Russian FGFA program or to buy a few Su-57 squadrons. The then IAF Chief BS Dhanoa during an interview with Russian Ministry of Defense's official newspaper Krasnaya Zvezda (Red Star), stated that while Su-57 is currently not being considered for the IAF, but the combat aircraft can be evaluated once it joins active service with the Russian Air Force. India's final decision could depend on resolving the differences. In any case India has already committed to nearly 300 Su-30 MKI. That currently amounts to 45 per cent of the IAF. Putting any further eggs in the Russian basket has its own risks and dynamics.

2. The F-35 first flew on December 15, 2006. A large number of countries are part of the program. Nearly 600 have already been built. The US plans to buy 2,456 F-35s through 2044. It is a huge program and the aircraft will continuously be upgraded. India and the US have strategically come closer in recent years. The Americans are currently not talking with India on the F-35. They believe that India must first fit into the American fighter aviation eco-system, tacitly implying that first India must choose between the F-21 (India-specific variant of the F-16) or the F-18 super hornet. Americans will at best talk about F-35 with India after 2025, or if American fighters lose the India fighter competition. After having procured the Russian S 400 SAM system, has India lost the last of chances to procure F-35? Only time will tell.

3. The BAE Systems Tempest is a proposed fighter aircraft concept that is under development in the United Kingdom for the British Royal Air Force and the Italian Air Force. It is being developed by a consortium known as "Team Tempest," consisting of the UK Ministry of Defence, BAE Systems, Rolls Royce, Leonardo and MBDA, and is intended to enter service from 2035. Two billion pounds will be spent by the British government on the project by 2025. On 19 July 2019, Sweden and the United Kingdom signed a memorandum of understanding to explore ways of jointly developing sixth-generation air combat technologies. Italy announced its involvement in Project Tempest on 10 September 2019. Tempest will be able to fly unmanned, and use swarming technology to control drones. It will incorporate artificial intelligence deep learning and possess directed Energy Weapons. In 2019 the UK offered for India to join the Tempest program. The programme is still at an early stage. The aircraft will effectively skip the classic fifth generation stage and leave the participants to partial sixth generation. For India it is too early to take such a call.

4. Follow the currently charted route for indigenous fighter. India is still at LCA Mk 1 stage and IAF awaits 20 FOC aircraft in next 18 months. LCA Mk 1A induction is still optimistically more than 36 months away. IAF wants nearly 200 LCA Mk II. Meanwhile this variant would most likely now be the single engine 17.5 ton Medium Weight Fighter (MWF), and would perhaps borrow technologies being developed for AMCA. These could include some RCS reducing measures so that a degree of frontal stealth can be achieved, including Radar-absorbent material coating and composites making up its skin, and twisted air-intake ducts. Originally planned first flight of 2023

is clearly unachievable. Most analysts believe the timeline would be closer to 2028. There is also a talk of a twin-engine version of Tejas, identified as Omni-Role Combat Aircraft (ORCA). There is a go-ahead for a deck-based fighter variant (TEDBF). As LCA evolves, the current plan is to proceed with AMCA development. If the Mk II will do first flight in 2028 then realistic estimates are that AMCA will do first flight in 2032 or so. AMCA will then induct in 2035 or later. It must be remembered that the clock starts only once significant funds are allotted. The clock for LCA Mk 1A, which is technologically the least challenging, is just starting. If India is ready for these timelines, this option needs to be pushed.

5. One other option is to concentrate on LCA Mk II, forget the fifth generation aircraft and convert the AMCA concept to a straight into the sixth generation fighter.

6. India may also be forced into an interim option. LCA Mk 1 had its first flight in 2001, and in 2020 only 20 have been delivered. Technologies do push challenges and often excessive delays force looking at fresh technologies. Chinese J 20 first flew in 2011 and was inducted in service in 2017. JF 17 'Thunder' first flew in 2003 and service induction was in 2007-08, and nearly 130 are flying today. India's fifth generation aircraft timelines are currently nearly 18-20 years behind China. India can ill afford that long wait. India is thus sandwiched between the two ends of the vice. Buying a foreign fifth generation aircraft could further delay the AMCA. So India needs to first ensure it acquires critical technologies during the new 114 fighter acquisition even if it means paying for some. Some systems of the AMCA including engine, radar and EW suites can be developed through joint venture route. By a finite time, say around 2025, India should review the progress of the AMCA and maybe then decide to buy, as an interim two squadrons of some foreign fifth generation. It could be the F-35 or some other on offer that has matured. Meanwhile the entire nation must commit itself for AMCA to succeed quickly.

https://idrw.org/fifth-generation-fighter-aircraft-fgfa-india-time-to-get-the-act-right-read-more-at-https-newsable-asianetnews-com-india-fifth-generation-fighter-aircraft-fgfa-india-time-to-get-the-act-ri/#more-228741

Mon, 08 June 2020

DRDO to resume key pending Missile tests after monsoon

Key Missile tests that were canceled due to Covid-19 situation in the country scheduled for March and April will likely now be rescheduled and will happen after monsoon is over by DRDO. As informed to idrw.org, the Extended version of MR-SAM and BrahMos-ER were some of the key missile tests which were delayed due to the Covid-19 situation and also due to Non-Availability of Russian and Israeli team at the launch site.

All Experimental Missile launches are avoided at Monsoon period between June to August usually when the missile launch pads at Eastern India, see very heavy rains during this period. While all Missile system developed by DRDO is All-weather systems, due to their experimental nature such missile is not tested in adverse weather conditions to avoid any undue incidents at the launch pads which can damage the surrounding areas were civilian population exists.

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https://idrw.org/drdo-to-resume-key-pending-missile-tests-after-a-monsoon/#more-228742

Mon, 08 June 2020

Former Naval Chief Backs development of Kaveri engine successor, Says killing it was a blunder

By Raunak Kunde

Admiral Arun Prakash Retd tells Shiv Aroor well known defence correspondent that the killing Kaveri engine program was the biggest blunder by India and its right time for India to again start work on successor of the program or forever we will be depended on foreign engine manufactures for our jet engine requirements to the power of Indigenous fighter jets in near future. He also stressed that advancement in engine technology will be difficult to cover for India if we delay in the development of jet engines as the world over the development of new engine tech is underway.

Citing Chinese example, Prakash said that the Chinese WS-10 engine has been under development forever and yet Chinese have not given up on the jet engine since they know that they need to continue perfecting the jet engine technology and have produced 300 engines of WS-10 in Mark 2 and Mark 3 to power J10 and J11 jets even though it's still not perfect. Prakash also backed testing of the Kaveri engine in current configuration for airborne testbed even with deficient thrust so that in the future variant of the engine this can be corrected.

Prakash also backed the development of various engines from ships, tanks, and cruise missiles to be made in India for Indian made systems. *(Note: Article cannot be reproduced without written permission of idrw.org in any form even for YouTube Videos to avoid Copyright strikes)*

https://idrw.org/former-naval-chief-backs-development-of-kaveri-engine-successor-says-killing-it-was-a-blunder/#more-228811

Sun, 07 June 2020

Philippines plans to procure Brahmos land-based supersonic anti-ship missile system from India

The development of BrahMos is based on the Russian made P-800 Oniks / Yakhont supersonic anti-ship cruise missile. The BrahMos propulsion is based on the Oniks, while the guidance system was developed by BrahMos Aerospace. The first flight test involving BrahMos anti-ship missile was carried out on June 12, 2001, in the Interim Test Range in the state of Orissa, India.

The ship-based BrahMos missiles can carry a conventional semi-armour-piercing warhead of 200 kg. According to India, the Brahmos missile is claimed to be the fastest low-altitude missile in the world. It has a maximum firing range of 500 km.

The Brahmos missile is powered by a two-stage power-plant, with a solid-fuel rocket providing the first stage, accelerating the missile to supersonic speeds and with a liquid-fuelled ramjet as the second stage, accelerating it to a maximum speed of Mach 2.8.

Block III has advanced guidance and upgraded software, incorporating high maneuvers at multiple points and steep dive from high altitude. The steep dive capability of the Block III enables it to hit targets hidden behind a mountain range. It can engage ground targets from an altitude as low as 10 meters for precision strikes without any collateral damage. It is capable of being launched from multiple platforms like submarines, ships, aircraft and land-based Mobile Autonomous Launchers (MAL).

https://www.defencenews.in/article/Philippines-plans-to-procure-Brahmos-land-based-supersonic-anti-ship-missile-system-from-India-840979

Defence News

Defence Strategic: National/International

ThePrint

Mon, 08 June 2020

Army HQ orders reduced attendance in offices, no face-to-face meetings as Covid cases rise

Army's new instructions, coming into effect from Monday, call for conduct of all meetings via phone calls or video conferences

By Amrita Nayak Dutta

New Delhi: The Army headquarters has come up with a fresh set of rules to limit attendance in its offices and stop face-to-face meetings, even as the entire defence ministry headquarters building in South Block is being sanitised after after Defence Secretary Ajay Kumar tested positive for Covid-19 last week.

The Ministry of Defence at South Block in New Delhi | Commons

Defence Minister Rajnath Singh has also been working from home for the past few days. While nearly 35 officials working at the ministry headquarters have been sent on home quarantine, sources in the ministry told ThePrint that Singh is likely to attend office from Monday.

The new rules drafted by the Indian Army headquarters include reduction in attendance and prohibition on face-to-face meetings to control the spread of the highly infectious viral disease. The new guidelines have come days after the Department of Military Affairs (DMA) told the three services that personnel should return to their units at the earliest from leaves.

The rules have come also after reports about increasing number of positive Covid cases in the Army.

The military headquarters and the government offices had reopened days before 'Unlock 1.0', or the phase-wise withdrawal of the two-month-long Covid-19 lockdown, began Monday, 1 June.

In the ministries, staff below the rank of deputy secretaries were asked to attend offices maintaining 50 per cent strength, while 100 per cent attendance was made compulsory for officials above the rank of deputy secretary.

The number of Covid-19 positive cases in government buildings, however, has only gone up since then.

Army's new instructions

The Army's new Covid-19 instructions, which will come into effect from Monday, call for conduct of all meetings via phone calls or video conferences.

Branches such as Military Operations, Military Intelligence, Operational Logistics will function at 33 per cent attendance and for a minimum duration.

The Military Secretary branch, Staff Duties, Military Training and Financial Planning directorates, administration and coordination will function with only 15 per cent attendance.

In the Adjutant General's branch, only the section dealing with coronavirus-related work will function, while the DGMS Army (the medical wing) will function with full strength to ensure adequate Covid-19 related responses.

Other directorates will work from home, except for emergencies.

The instructions also state that all other personnel, including officers and other ranks, who stay outside cantonments and government accommodations will work from home.

The command headquarters have been asked to put in place health measures according to the guidelines issued by various state governments.

Army instructions issued after rising infections

India has been grappling to contain the Covid-19 pandemic, with Sunday alone recording 9,971 new infections, taking the country's tally to 2.46 lakh and 6,929 deaths. The military too has reported several positive cases.

Early last month, 24 people admitted to the Army Hospital (Research And Referral) at the Delhi Cantonment had tested positive for the novel coronavirus.

The Indian Navy's INS Angre had reported Covid-19 cases among 26 sailors in April. And sources have now said that 12 more had tested positive since then. This week, 16 trainee sailors of the Indian Navy also tested positive in Gujarat.

Lt Gen. Anup Banerji, director general of the Armed Forces Medical Services (AFMS), had told ThePrint earlier this month that "the armed forces cannot be considered in isolation from the rest of the country" while dealing with Covid-19 cases.

Rising cases in Lutyens' Delhi

With an increasing number of positive cases being reported from government buildings across central Delhi, the Department of Personnel and Training had, on 5 June, issued a memorandum for all ministries, asking for strict adherence to social distancing norms and other hygiene practices.

As many as 10 central government buildings were sealed in the last two months after staff and many senior ministry officials tested positive for Covid-19.

In the last one month, over 10 positive cases have been reported in government offices, most of which are located in central Delhi. Several positive cases were detected in the labour and employment ministry's office at Shram Shakti Bhavan too.

Many officials in the finance ministry, located in North Block, as well as in Shastri Bhavan which houses several ministries have also tested positive for coronavirus. At Nirman Bhavan, which houses the Ministry of Health and Family Welfare, at least half a dozen health ministry officials have been down with the virus.

Last week, a Niti Aayog official had tested positive for the virus, following which the building's third floor was sealed. Earlier, two officials from the Ministry of External Affairs had tested positive for Covid-19.

There have been over two dozen Covid-19 positive cases across ministries in the last one month.

https://theprint.in/defence/army-hq-orders-reduced-attendance-in-offices-no-face-to-face-meetings-as-covid-cases-rise/437408/

TIMESNOWNEWS.COM

Mon, 08 June 2020

IAF reactivated world's highest airstrip Daulat Beg Oldie near China border without Centre's permission

Established during the Sino-Indian conflict in 1962, the world's highest airstrip Daulat Beg Oldie in Eastern Ladakh near China border was reactivated without Centre's permission

Key Highlights

- ***DBO is the world's one of the highest advanced landing grounds***
- ***Its airstrip can be used for landing aircraft like the AN-32 and the C-130J Super Hercules***
- ***When the airstrip was reactivated by India in 2008, the Chinese wanted to hold discussions***

New Delhi: The Daulat Beg Oldie (DBO) airstrip in eastern Ladakh which is currently being used in the ongoing dispute with China was reactivated by the Indian Air Force (IAF) in May 2008 without taking written permission from the Centre, said former Vice Chief Air Marshal (Retd) Pranab Kumar Barbora.

One of the highest advanced landing grounds at an altitude of over 16,800 feet, DBO airstrip can be used for landing aircraft like the AN-32 and the C-130J Super Hercules.

The retired Vice Chief Air Marshal said there was nothing in writing about reactivating the airstrip which is why the government was informed through proper channel only after the landing was done and after he returned from there.

DBO airstrip is one of the highest advanced landing grounds at an altitude of over 16,800 feet | Google Earth

'IAF's responsibility to maintain the troop's logistics'

When asked about the Centre's reaction, Barbora said: "The government asked why you did it? We said it is the Air Force's responsibility to maintain troop's logistics."

He also said that the Chinese wanted to hold discussions when the airstrip was reactivated through a flag meeting but despite India agreeing to it they never came to discuss it.

He said the then Defence Minister AK Antony had asked him what he would tell the Chinese if they raise questions about it during his visit to China where he was taking the earthquake relief supplies; however, the issue was never raised by the Chinese during the visit.

'The proposal was rejected multiple times in the past'

Barbora further said that after 1965, the proposal to reactivate the airfield had been rejected.

"So, 43 years had gone by, and there was no clearance to re-operate from there because of so many reasons and every time there was no no no ...," ANI quoted him as saying.

The airstrip was reactivated in 2008 when Barbora flew an AN-32 transporter and the entire operation had been kept a secret.

Meanwhile, India and China have agreed to continue military and diplomatic talks to resolve the ongoing border standoff peacefully.

https://www.timesnownews.com/india/article/iaf-reactivated-worlds-highest-airstrip-daulat-beg-oldie-near-china-border-without-centres-permission/602900

THE TIMES OF INDIA

Sun, 07 June 2020

Ladakh stand-off: Talks between senior army officers of India and China end with 'positive trajectory'

New Delhi: India and China held their first round of talks between senior military officers on Saturday at the Chushul-Moldo point along the Line of Actual Control in Ladakh with sources expressing "satisfaction at the positive trajectory" in the bid to resolve the month-long troop confrontation in the Himalayan region.

There was no official word on the outcome of the marathon meeting between the Indian delegation led by 14 Corps commander Lt-General Harinder Singh and the Chinese side headed by South Xinjiang Military District commander Major General Liu Lin.

But sources said the meeting was "positive" and could eventually lead to restoration of status quo ante in eastern Ladakh, with both sides de-inducting soldiers and heavy weaponry from the confrontation sites at the northern bank of Pangong Tso (Tso means lake), Gogra-Hot Springs area and Galwan Valley region in a phased manner. The points lie along the LAC with Chinese troops having intruded into the Indian side at places leading to counter-mobilisation.

The Indian delegation crossed over into Chinese territory for the meeting, at the Chushul-Moldo border personnel meeting (BPM) point in eastern Ladakh, at about 11am. The dialogue, interspersed by lunch, carried on till the evening. The accommodative note in Indian and Chinese statements on Friday had indicated the talks would not be a failure though more heavy lifting could be needed.

"It may require some more military as well as diplomatic meetings for the actual de-escalation to take place," said a source. The meeting on Saturday came a day after joint secretary-level diplomatic talks between India and China reiterated that the two countries should not allow their differences to turn into disputes, in tune with the strategic guidance given by PM Narendra Modi and President Xi Jinping.

The earlier almost dozen meetings between the opposing commanders, including three at the Major-General level, had failed to break the deadlock with both the armies sticking to their respective positions.

The People's Liberation Army is strongly opposed to India's construction of feeder roads and bridges in what it calls "disputed areas" like Pangong Tso and the Galwan Valley region. The Indian side is equally determined that Chinese vacate the intrusions and is also committed to developing the border infrastructure.

The Indian side has stressed that its infrastructure build-up was "well within Indian territory". The Indian Army has asked the PLA to restore status quo ante by withdrawing its troops, who have dug in and built fortifications after physically occupying the "Finger-4 to Finger 8" (mountainous spurs) area on the northern bank of Pangong Tso as well as the Galwan Valley region and Gogra-Hot Springs area.

The PLA, in particular, is upset over India's attempt to construct a feeder road joining "Patrolling Point-14" in the Galwan Valley to the 255-km Darbuk-Shyok-Daulat Beg Oldie (DBO) as well as a bridge in the region. The infrastructure upgrade will provide Indian troops with swifter and easier access to areas like the strategically-important Karakoram Pass, Depsang plains and Galwan Valley, among other areas, to challenge the PLA's relatively uncontested dominance in the region till now.

The mobilisation of PLA troops in mid-April and then the multiple intrusions into Indian territory in eastern Ladakh in early-May in a well-coordinated manner across a broad frontage on the LAC initially caught the Indian Army off-guard.

India, of course, has now more than matched the PLA build-up by moving forward troops of the Leh-based 3 Infantry Division into their “operational alert areas” as well as pumping in several additional battalions into Ladakh from other regions. “We are prepared for the long haul if it comes to that. We have enough acclimatised troops along the LAC in eastern Ladakh now,” said another source.

https://timesofindia.indiatimes.com/india/ladakh-stand-off-talks-between-senior-army-officers-of-india-and-china-end-with-positive-trajectory/articleshow/76240283.cms

DECCAN Chronicle

Sun, 07 June 2020

India, China continuing to engage through diplomatic, military channels: Indian Army

The statement came in the midst of a scheduled high-level military dialogue between the two armies

The Indian Army on Saturday said Indian and Chinese officials continue to remain engaged through the established military and diplomatic channels to address the current situation in the India-China border areas.

The statement came in the midst of a scheduled high-level military dialogue between the two sides to resolve the current border standoff in eastern Ladakh.

Indian soldiers keep watch at India-China border. (AFP)

"Indian and Chinese officials continue to remain engaged through the established military and diplomatic channels to address the current situation in the India-China border areas," the Indian Army said in a statement.

"At this stage therefore any speculative and unsubstantiated reporting about these engagements would not be helpful and the media is advised to refrain from such reporting," it said without providing any details about the high-level dialogue.

On Friday, the two countries held diplomatic talks during which they agreed to handle their "differences" through peaceful discussions while respecting each other's sensitivities and concerns. This they said should be done keeping in mind the other side’s sensitivities and concerns so that “differences do not become disputes”.

This was decided during a video conference between the Ministry of External Affairs (MEA)’s Joint Secretary (East Asia) Naveen Srivastava and Director General in the Chinese Ministry of Foreign Affairs Wu Jianghao.

The two officials recalled the consensus reached between Prime Minister Narendra Modi and Chinese President Xi Jinping in previous meetings including two informal summits in the past couple of years while emphasising both the above aspects.

The references to the resolve of the leaders of the two nations is being seen as a positive indication that the two nations can yet resolve their differences peacefully.

In a statement, the MEA said, “The two sides reviewed the state of bilateral relations including the current developments. In this context they recalled the consensus reached by the leaders of the two countries, that peaceful, stable and balanced relations between India and China will be a positive factor for stability in the current global situation.”

The MEA added, “Both sides also agreed that in accordance with the guidance provided by the leadership, the two sides should handle their differences through peaceful discussion bearing in mind the importance of respecting each other's sensitivities, concerns and aspirations and not allow

them to become disputes. The two sides also exchanged views on the challenge posed by the COVID-19 pandemic and cooperation in various multilateral forums."

In the context of the stand-off between the two militaries, India had last month accused the Chinese People's Liberation Army (PLA) of blocking Indian Army patrols on the Indian side of the LAC which is the de-facto Sino-Indian border. New Delhi had also said that occasionally such incidents do occur as both sides do not have a common perception of the LAC.

https://www.deccanchronicle.com/nation/current-affairs/060620/india-china-continuing-to-engage-through-diplomatic-military-channel.html

DECCAN HERALD

Sun, 07 June 2020

Has China pushed India into US arms?

Dealing with the Dragon: Delhi might have finally decided to shrug off strategic ambiguity

Prime Minister Narendra Modi introduced Wuhan to India almost two years before the Chinese city came to be known as the 'Ground Zero' of the COVID-19 pandemic. He and his host Chinese President Xi Jinping took a stroll by the East Lake, went on a boat-ride, sipped tea and had lunch together. Their picture-perfect camaraderie made the first India-China 'informal summit' in April 2018 a success. It brought back on track the bilateral relations that had hit the nadir following the 72-day-long military stand-off in Doklam the previous year.

The Modi-Xi bonhomie was again on display at the second 'informal summit' at a seaside resort near Chennai in October 2019.

There was, however, no trace of the 'Wuhan Spirit' or the 'Chennai Connect' on the banks of the Pangong Tso lake in eastern Ladakh on May 5, when Chinese soldiers attacked Indian soldiers with stones and sticks near the disputed boundary between the two nations.

Build up at the Line of Actual Control on the disputed border between China and India (Reuters Photo)

Over the next few weeks, China deployed nearly 5,000 troops near the Line of Actual Control (LAC) – the de facto border between India and China – even as hundreds of its soldiers transgressed into areas that have for long been understood to be Indian territory. India responded by rushing additional troops "in adequate numbers" to forward positions. The build-up by both sides escalated tension all along the LAC. A skirmish was also reported from Naku La in northern Sikkim on May 9.

The 'Wuhan Spirit' started fading after China joined its "all-weather ally" Pakistan to oppose the Modi government's move last year to reorganise the state of Jammu and Kashmir into two Union Territories, Jammu & Kashmir, and Ladakh. Beijing saw in the Ladakh move a bid by Delhi to strengthen its claim on Aksai Chin, which is currently under China's control.

China's recent aggression on the northern bank of the Pangong Tso was triggered by the construction of a strategic road and a bridge by India. China perceives these constructions as a prelude to a military move by India to wrest control of Aksai Chin.

The LAC is not the only scene where India is at the receiving end of the new aggression that China has resorted to amid the Covid-19 crisis. Beijing is said to have encouraged Nepal to ratchet up its territorial dispute with India. Meanwhile, the Power Construction Corporation of China has embarked on building the Diamer-Bhasha hydro-electric plant in Gilgit-Baltistan, area under illegal occupation by Pakistan.

China has also stepped up its bid to spread its tentacles in the seas around India. The Chinese Navy recently deployed its 35th Task Force in the Indian Ocean, on the pretext of patrolling the sea lanes to protect vessels from pirates. The task force has altogether 690 naval personnel, with the missile destroyer Taiyan and frigate Jingzhou joining 'counter piracy' patrol in the Indian Ocean for the first time.

Unsurprisingly, while Modi has discussed the Covid-19 crisis with many foreign leaders over phone in the past three months, he and Xi have not had a call on the subject. Modi and President Ram Nath Kovind did exchange greetings with their counterparts in Beijing on April 1, on the 70th anniversary of the establishment of diplomatic relations between India and China. None, however, invoked the 'Wuhan Spirit'.

On the other hand, Modi has called US President Donald Trump twice in this period. The second call, on June 2, surprised many as he not only supported Trump's plan to expand the G-7 to G-11 (without China), but also discussed with him the escalating India-China border tension, just after giving the cold shoulder to Trump's earlier offer to mediate between the two Asian countries.

Modi not only discussed the LAC situation with Trump, he made sure that it was made public, perhaps in a message to Beijing that if China could not rein in its aggression, it would end up pushing India into America's waiting arms.

Indeed, that may have already happened. For the Modi-Trump call is not the only sign that India may have tired of the strategic ambiguity it has so far meticulously maintained.

India joined the US, Japan and Australia to re-launch the 'Quad' in November 2017 to build a bulwark against the hegemonic aspirations of China in the Indo-Pacific region but had done so hesitatingly and only as a hedge. Indeed, as Delhi's efforts to mend ties with Beijing gained momentum after Wuhan, India tweaked its policy on the Indo-Pacific, stating that its vision for the region was inclusive and not hostile to any particular country.

This week, though, India signed a military logistics sharing pact with Australia – a move, which came amid China's growing belligerence, not only on the banks of the Pangong Tso, but also in the contested waters of South China Sea and East China Sea. India had already signed a similar pact with the US in 2016 and is set to ink another with Japan soon. Delhi also seems willing now to invite Australia to join India, US and Japan in naval drills, a move likely to rile Beijing.

That's not all. New Delhi also joined a subtle bid by the US to expand the Quad. Foreign Secretary Harsh Shringla has been in regular contact with US Deputy Secretary of State, Stephen Biegun, as well as with his counterparts not only in Australia and Japan but also in Vietnam, New Zealand and South Korea.

Though the professed objective of the weekly video-conference they have is to share ideas and best practices to deal with the Covid-19 crisis, it is clear that India is not opposed to the US-led initiative to build a "Quad Plus" to pre-empt an expansion of China's influence in the region in the post-Covid-19 world order.

Under Modi, just like under previous governments, India went the extra mile between April 2018 and August 2019 to respect Beijing's sensitivities, including on issues like Tibet and Taiwan, to keep the India-China détente on track. It, however, got very little in return. China continues to oppose India's entry into the Nuclear Suppliers Group. It still defends its "iron brother" Pakistan in the United Nations and other international forums.

Its bid to encircle India through a "string of pearls" has been unrelenting. It continues to build an 'economic corridor' that passes through territory claimed by India but illegally occupied by Pakistan. And, it continues its salami slice tactics to cut off pieces of Indian territory all along the LAC.

https://www.deccanherald.com/specials/sunday-spotlight/has-china-pushed-india-into-us-arms-846595.html

THE ECONOMIC TIMES

Mon, 08 June 2020

In making for two decades, DSDBO road now upsets China

The 255-km Darbuk-Shyok-Daulat Beg Oldie (DSDBO) road joining Leh to the Karakoram Pass, which has become a thorn in China's flesh, has been in the making for around two decades and is expected to be completed by this year

By Shaurya Kartanbir Gurung

The 255-km Darbuk-Shyok-Daulat Beg Oldie (DSDBO) road joining Leh to the Karakoram Pass, which has become a thorn in China's flesh, has been in the making for around two decades and is expected to be completed by this year.

The road from Darbuk traverses at an altitude of 14,000 feet and reaches Shyok, the last Indian village in the region. Between Shyok and Karakoram Pass (that divides Ladakh from China's Xinjiang province) lies DBO, a plateau at an altitude of over 16,000 feet and the location of an Advanced Landing Ground (ALG) used by the air force to drop supplies.

DBO is India's northernmost corner, which in army parlance is called Sub-Sector North, and building a road till here has been of vital importance to India. DBO is located only 9 km away from the Line of Actual Control with China and the road will help manage the border and the areas adjoining Aksai Chin, Chip Chap River and Jiwan Nalla.

It will also ensure faster deployment of troops in the area. Before the laying of the road, the only way to reach the area was via the ALG, where heavy-lift aircraft, such as the C-130J, can land.

From the DSDBO road, a road branches off towards Galwan Valley, a hill feature, which India wants to protect because it overlooks the area around the main road. The branch road has prompted the stand-off in Galwan Valley. Indian troops have been patrolling up to this area, but the idea now is to have a road access and presence here. China has objected to this and doesn't want India to utilise the DSDBO road to its full potential, which has led to the ongoing confrontations.

The construction of the DSDBO had first started in 2000 and was to be completed by 2012 at a cost of Rs 320 crore. The road, which was being monitored by the PMO, was aligned with the Shyok riverbed that led to it being damaged every summer during flooding. Later, major portions of the road were realigned, keeping them away from the river.

In April last year, a motorcycle expedition that was flagged off from Leh had traversed across Eastern Ladakh and reached the Karakoram Pass. In October, defence minister Rajnath Singh inaugurated the 430-m Colonel Chewang Rinchen bridge that joins Durbuk to DBO. India has decided to not stop road construction on its side of the LAC despite the border confrontations.

https://economictimes.indiatimes.com/news/defence/in-making-for-two-decades-dsdbo-road-now-upsets-china/articleshow/76250295.cms?from=mdr

जागरण

Sun, 07 June 2020

भारत की चीन को दो टूक, इलाके से खाली करो जमावड़ा, पूर्व की स्थिति करो बहाल

पूर्वी लद्दाख में जारी गतिरोध के समाधान के लिए भारत और चीनी सेना के बीच शनिवार को लेफ्टिनेंट जनरल स्तर की बातचीत हुई। जानें इस बातचीत में क्या हुआ...

संजय मिश्र

नई दिल्ली: लद्दाख में वास्तविक नियंत्रण रेखा यानी एलएसी पर अतिक्रमण को लेकर जारी गतिरोध का समाधान निकालने के लिए भारत और चीन के शीर्ष सैन्य कमांडर स्तर पर हुई बातचीत तनाव घटाने की दिशा में सकारात्मक मानी जा रही है। सूत्र बताते हैं कि शनिवार को हुई इस बैठक में भारत ने चीन से दो-टूक कहा है कि तनाव घटाने के लिए एलएसी पर अप्रैल की पूर्व स्थिति को बहाल किया जाना जरूरी है।

जब तक नहीं हटोगे, पीछे नहीं हटेंगे

भारत ने चीन को स्पष्ट कर दिया है कि जब तक चीनी सैनिक एलएसी का सम्मान करते हुए पीछे नहीं हटते तब तक भारतीय सेना मजबूती से डटी रहेगी। साथ ही भारत ने अपने इलाके में किए जा रहे निर्माण पर चीन की आपत्तियों को भी अनुचित बताया है। मालूम हो कि लद्दाख में एलएसी पर चीन के सबसे गंभीर अतिक्रमण का बातचीत से हल निकालने की दोनों देशों की घोषणा के तहत शनिवार को शीर्ष कमांडर स्तर की सैन्य वार्ता हुई।

हरिंदर सिंह ने किया प्रतिनिधित्व

चुशूल सेक्टर के सामने चीन के मोल्डो सैन्य बेस में हुई इस बैठक में भारत का नेतृत्व लेह स्थित सेना की 14वीं कोर के कमांडर लेफ्टिनेंट जनरल हरिंदर सिंह ने किया और उनके साथ दो ब्रिगेडियर स्तर के अधिकारी भी शामिल थे। चीनी प्रतिनिधिमंडल की अगुआई पीपुल्स लिबरेशन आर्मी के दक्षिण शिनजियांग सैन्य कमांड के मेजर जनरल लियो लिन ने किया। हालांकि बातचीत को लेकर कोई भी आधिकारिक बयान जारी नहीं हुआ है।

जारी रहेगा वार्ताओं का दौर

एक सैन्य प्रवक्ता ने केवल इतना कहा कि भारत और चीन के बीच सैन्य और कूटनीतिक स्तर पर गतिरोध का हल निकालने के लिए वार्ताओं का दौर अभी जारी रहेगा। समझा जाता है कि तीन घंटे से अधिक चली इस बैठक में भारत ने एलएसी पर चीनी अतिक्रमण पर अपनी गंभीर आपत्ति जताते हुए पहले की स्थिति बहाल किए जाने को तनाव खत्म करने के लिए अपरिहार्य बताया है।

सड़क निर्माण पर भड़का ड्रैगन

चीनी पक्ष ने एलएसी के निकट भारत के अपने इलाके में किए जा रहे सड़क निर्माण को रोके जाने की बात उठाई। हालांकि इस पर भारतीय सैन्य अधिकारियों ने साफ कर दिया कि चीन की ऐसी आपत्ति वाजिब नहीं क्योंकि निर्माण कार्य भारत अपने अधिकार वाले इलाके में कर रहा है। भारत की ओर से एलएसी पर यथास्थिति बहाल किए जाने की शर्त एक तरह से स्पष्ट कर दी गई।

भारत करता रहेगा पेट्रोलिंग

इस बातचीत में पैंगोंग त्सो लेक के फिंगर-4 और फिंगर-8 पर चीनी अतिक्रमण को लेकर भी बातचीत हुई। गलवन घाटी में चीनी सैनिकों के तीन दिन पहले कुछ पीछे हटने के बाद उम्मीद की जा रही है कि इस इलाके का मुददा जल्द

सुलझ सकता है। वहीं दोनों फिंगर हाइट पर पीएलए सैनिकों के अचानक घुसपैठ का मसला सुलझने में वक्त लग सकता है। भारत का रुख साफ है कि उसकी टीम फिंगर-8 तक पहले की तरह पैट्रोलिंग करती रहेगी और चीन फिंगर-4 तक ही पैट्रोलिंग को सीमित रखे।

अब तक 12 दौर की बातचीत

वहीं सूत्रों ने बताया कि दोनों सेनाओं में स्थानीय कमांडरों के स्तर पर अब तक 12 दौर की बातचीत हो चुकी है जिसमें मेजर जनरल रैंक के अधिकारियों के बीच तीन दौर की बातचीत भी शामिल है। उक्त वार्ता का कोई ठोस नतीजा नहीं निकलने पर ही शनिवार को लेफ्टिनेंट जनरल स्तर पर बातचीत हुई है।

भारत ने कहा, चीन ने बढ़ाया तनाव

भारत ने अब तक हुई वार्ताओं के सभी दौर में स्पष्ट कहा है कि एलएसी पर सैनिकों की तैनाती बढाने का सिलसिला चीन ने शुरू किया है। ऐसे में भारत के पास जवाबी कार्रवाई के तहत अपने सैनिकों की संख्या बढ़ाने के अलावा कोई दूसरा विकल्प नहीं था। एलएसी पर अतिक्रमण करने के बाद से चीनी सैनिक फिंगर-4 इलाके से भारतीय सैनिकों को गश्त के लिए बढ़ने से रोक रहे हैं।

बातचीत के जरिए मसला सुलझाने पर जोर

इस बातचीत से ठीक एक दिन पहले दोनों देशों के बीच राजनयिक स्तर पर बातचीत हुई थी जिसमें दोनों पक्षों में गतिरोध का हल शांतिपूर्ण बातचीत के जरिए निकालने और इसके किसी बड़े टकराव में नहीं बदलने देने पर सहमति बनी थी। यही नहीं दोनों देश एक-दूसरे की संवेदनाओं और चिंताओं का ध्यान रखते हुए समाधान निकालने पर सहमत हुए थे।

चीनी सैनिकों के जमावड़े पर आपत्ति

सूत्रों की मानें तो वार्ता के लिए पहले ही तय हो गया था कि भारतीय पक्ष पूर्वी लद्दाख में गलवान घाटी, पैंगोंग सो और गोगरा में यथा स्थिति की पुन:बहाली के लिए दबाव बनाएगा। यही नहीं क्षेत्र में चीनी सैनिकों के जमावड़े का भी विरोध करेगा। वार्ता में चीन से कहा जाएगा कि वह भारत द्वारा सीमा के भीतर किए जा रहे आधारभूत ढांचे के विकास का विरोध न करे।

यथास्थिति को बदलने की कोशिश

दोनों देशों के बीच यह बातचीत पूर्वी लद्दाख क्षेत्र में खास तौर पर पैंगोंग त्सो के उत्तरी तट पर गतिरोध को हल करने के लिए हुई जहां चीनी सेना पीएलए ने यथास्थिति को बदलने की कोशिश की है। रिपोर्टों में कहा गया था चीनी सेना ने पैंगोंग झील के फिंगर-4 क्षेत्र में बड़ी संख्या में जमावड़ा किया है।

सैन्य ढांचे में इजाफा किया

सूत्रों ने बताया कि उपग्रह से ली गई तस्वीरों में नजर आ रहा है कि चीन ने वास्तविक नियंत्रण रेखा के अपनी तरफ के क्षेत्र में सैन्य आधारभूत ढांचे में महत्वपूर्ण रूप से इजाफा किया है। यही नहीं चीनी सेना एलएसी के निकट अपने पीछे के सैन्य अड्डों पर रणनीतिक रूप से जरूरी चीजों का भंडारण कर रही है। इनमें तोप और भारी सैन्य उपकरणों शामिल हैं।

कड़ा रुख रहेगा बरकरार

पैंगोंग झील को आठ फिंगर क्षेत्रों के हिसाब से विभाजित किया गया है। झील के साथ पहाड़ियों के उभरे हुए हिस्से को ही फिंगर कहा जाता है। अब तक भारत कई फिंगर के क्षेत्र को नियंत्रित करता रहा है। पिछले महीने के शुरू में गतिरोध शुरू होने के बाद भारतीय सैन्य नेतृत्व ने फैसला किया था कि भारतीय सेना के जवान चीनी सेना के आक्रामक रवैये के खिलाफ पैंगोंग सो, गलवान घाटी, डेमचोक और दौलत बेग ओल्डी में कड़ा रुख अपनाएंगे।

https://www.jagran.com/news/national-indian-army-demands-china-to-remove-its-troops-and-structures-from-pangong-lake-20358492.html

नवभारत टाइम्स

Mon, 08 June 2020

Ladakh Standoff: चीन भी देखे, रूसी टैंक से लेकर इजरायली वॉरक्राफ्ट तक, भारतीय सेना के पास है इन देशों की ताकत

Ladakh Standoff: भारत और चीन के बीच सीमा पर जारी तनाव (Sino-India Border Conflict) के बीच चीन की People's Liberation Army (PLA) युद्धाभ्यास कर भारत को संदेश देने की कोशिश में है। हालांकि, पिछले साल जब सीमा पर ऐसे ही तनाव बढ़ा था, तब भारत ने युद्धाभ्यास में रूस, अमेरिका और इजरायल से आए वॉरक्राफ्ट और टैंक्स का बखूबी प्रदर्शन किया था।

लद्दाख में वास्तविक नियंत्रण रेखा पर भारत के साथ तनाव को लेकर चीनी अधिकारी बातचीत कर रहे हैं लेकिन पीपल्स लिबरेशन आर्मी (PLA) युद्धाभ्यास के बहाने भारत को धमकाने की कोशिश में है। भारतीय सेना के पूर्व अध्यक्ष जनरल बिक्रम सिंह का कहना है कि दुनियाभर में अपने बर्ताव और कोरोना वायरस को लेकर घिरा चीन दरअसल भारत को तनाव के हालात पैदा करके संदेश देना चाहता है। डराने-धमकाने का चीन का पुराना रवैया रहा है और वह इस बार भी ऐसा ही कर रहा है। खासकर तब जब वह बाकी दुनिया को अपने खिलाफ खड़ा देख रहा है। हालांकि, उसे भी अच्छी तरह से पता है कि भारतीय सेना 1962 के बाद से कहीं ज्यादा ताकतवर हो चुकी है। पिछले साल सितंबर में भारतीय सेना ने भी युद्धाभ्यास किया था जिसमें उसकी ताकत साफ नजर आ रही थी। यहां देखें, अमेरिका से लेकर इजरायल तक भारत के खास हथियार किन देशों से आए हैं-

रूस के T90 टैंक

पिछले साल जब लद्दाख में चीन के साथ तनावपूर्ण स्थिति पैदा हुई थी, तब भारतीय सेना और एयरफोर्स ने ऊंचाई वाले इलाकों में जोरदार युद्धाभ्यास किया था और दुश्मन को अपनी सैन्य ताकत का अहसास कराया था। रूस से आए सेना के अत्याधुनिक टी-90 भीष्म टैंकों की गड़गड़ाहट से लद्दाख की पहाड़ी वादियां भी थर्रा उठी थीं। ये टैंक अपनी मोबिलिटी, फायर करने की क्षमता, देखते ही निशाना मारने की काबिलियत और आत्मरक्षा के लिए जाने जाते हैं। इनके अलावा एयर फोर्स के सी-17 विमानों ने रात के अंधेरे में भी रसद पहुंचाने की क्षमता का प्रदर्शन किया था।

रूस का Mi 17 V5 हेलिकॉप्टर

रूस निर्मित एमआई 17वी5 चॉपर का भी इस्तेमाल इस युद्धाभ्यास में किया गया था। इन्हें दुनिया के सबसे अडवांस्ड हेलिकॉप्टर्स में से एक माना जाता है। ये असॉल्ट, ऐंबुलेंस और ट्रांसपोर्टर के तौर पर बेहतरीन काम कर सकते हैं। खास बात यह है कि यह बेहद सर्दी से लेकर बेहद गर्मी वाले इलाकों में भी बेहतरीन काम करते हैं। इनका फ्लाइट नैविगेनशन, दिन-रात, सर्दी-गर्मी, बारिश-तूफान कैसे भी हालात में ऑपरेट करने में मदद करता है।

अमेरिका का C 130J एयरक्राफ्ट

अमेरिका का 4-इंजन टर्बोप्रॉप मिलिटरी ट्रांसपोर्ट एयरक्राफ्ट बिना किसी खास रनवे के टेक-ऑफ और लैंडिंग कर सकता है। इसे पहले मेडिकल इवैक (Evacuation) और कार्गो के लिए इस्तेमाल किया जाता था। इसके खास एयरफ्रेम की वजह से इसका इस्तेमाल असॉल्ट, सर्च ऐंड रेस्क्यू, साइंटिफिक रीसर्च, मौसम के जायजे, एरियल रिफ्यूलिंग, मैरीटाइम पट्रोल और एरियल फायर फाइटिंग के लिए किया जाता है।

इजरायल का Heron UAV

बीच की ऊंचाई पर उड़ने वाले इजरायल के Heron UAV की खासियत है ज्यादा वक्त तक लंबी दूरी तय कर पाने की काबिलियत। यह अनमैन्ड एरियल वीइकल 52 घंटों तक उड़ान भर सकता है। यह एक इंटरनल जीपीएस नैविगेशन डिवाइस से नैविगेट करता है। पहले से प्रोग्राम्ड फ्लाइट होने पर इसकी लैंडिंग और टेक-ऑफ भी प्रोग्राम्ड होता है। साथ में ग्राउंट कंट्रोल स्टेशन से इसे मैन्युअली भी ऑपरेट किया जा सकता है।

https://navbharattimes.indiatimes.com/world/asian-countries/indian-army-has-warcrafts-and-equipment-from-countries-like-usa-and-russia/articleshow/76246021.cms?story=4

THE FINANCIAL EXPRESS

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Indian Navy's challenges: Countering Chinese naval activities in the Indian Ocean Region

China has an advance Space programme, which is several decades ahead of India's efforts. China had successfully launched the first manned Space mission in 2003 and by 2008 completed the maiden spacewalk by a Chinese Taikonaut

By Huma Siddiqui

With Lieutenant General-level dialogue between Indian and Chinese armies taking place on Saturday, in an effort to resolve the month-long standoff in eastern Ladakh, the Indian Navy has been reporting Chinese naval presence closer home in Indian Ocean Region (IOR). According to strategic experts, "Within the IOR region, the Chinese interests are far greater than a mere border dispute since the free passage of cargo ships are essential for the interest of the very existence of China's mammoth industry. The South China Sea is already well-known disputed water, with China always on an aggressive stance so as to ensure safe and uninterrupted navigation of its cargo ships." With American rhetoric against China rising and, further keeping in mind its relationship with neighbours like India, China has been preparing itself gradually over the past few years for IOR operations.

The South China Sea is already well-known disputed water, with China always on an aggressive stance so as to ensure safe and uninterrupted navigation of its cargo ships.

China's Naval Modernisation Efforts

China's People Liberation Army (PLA) Navy has been undergoing a rapid modernization for more than a decade and has already successfully launched an indigenous Aircraft Carrier, with follow-up carriers also under construction. According to a former Indian Navy officer, "Various new primary surface combatants and amphibious assault ships, along with a major increase in PLAN Marine Corps (PLANMC) have been undertaken as a part of PLA's modernization effort. Its first aircraft carrier, the Liaoning, was introduced in 2012 and there are plans to field additional carriers. A Carrier-based Task Force fleet truly indicate China's ambitions beyond the South China Sea and Taiwan. Beijing has already established a naval base in Djibouti, Africa, and is working on a network of ports and airfields in the Indian Ocean."

China's IOR Presence

Large traffic of Chinese ships and submarines in the IOR has been recently reported by the Indian Navy while they were traversing the oceans in COVID support from Malacca Straits to the

Gulf of Aden to the Red Sea. The submarine picked up were both conventional and nuclear types, aspiring doubts on the nature of such covert activities.

Also, there have been reports on the deployment of Unmanned Underwater Vehicles (UUV) by the Chinese in IOR since last year December, which had completed 3,400 observations until last month.

"The presence of such extensive UUVs measurement is merely to profile the IOR by the Chinese side to know the underwater arena for an advantageous Anti-submarine Warfare operations, while the Indian Navy is short of such advanced resources. Knowledge of underwater sea profile is a major factor in the calculation of acoustic signals by sonars (fitted onboard a warship or a submarine). With the advantage of the underwater information, a Chinese submarine lurking in water can today detect and make a silent approach towards an Indian warship or a submarine with a higher chance of success with the torpedo attack than its adversary. This makes operational missions of Indian Naval warships in IOR highly risky for Fleet Task Force even though these are operating within the Anti-submarine Warfare (ASW) screen formed by ships and Naval aircraft (like P-8Is multirole maritime aircraft)," explains Milind Kulshreshtha, C4I expert.

China's Space Dominance

China has an advance Space programme, which is several decades ahead of India's efforts. China had successfully launched the first manned Space mission in 2003 and by 2008 completed the maiden spacewalk by a Chinese Taikonaut. A Chinese Space Station was positioned in Earth Orbit in 2011 and was followed with the first crewed Space Station docking in 2016. In Kulshreshtha's view "Such feats indicate the Space prowess China has achieved and it had tested an anti-satellite (ASAT) weapons since 2007. China has successfully coursed the Space effort under the dual-use technology ploy so as to avoid any undue military attention. Today, China has a network of satellites in space which are capable of scanning complete IOR with digital technology, and thereby considerably reduce Indian Navy's stealth during combat operations. In fact, with the use of Cyberwarfare, Indian defence satellites too are vulnerable to Chinese cyber attack."

"For an efficient ISR (Intelligence, Surveillance and Reconnaissance) over the vast IOR regions, Indian Navy requires additional resources in terms of ships and maritime aircraft. With a limited induction of P-8Is, the large IOR oceans requires Space-based monitoring in terms of a robust indigenous Space Command, but this too in India is still at nascent stages (as part of a tri-services Space Cell). Despite the best of the efforts by the Indian Navy in all the three dimensions viz. Air, Surface and Underwater, additional resources in waters are to be positioned as a foolproof deterrent against hostile forces from freely carrying out their activities on high seas," the C4I expert observes.

"A Chinese Carrier-based Task Force positioned and operating in the IOR region closer to Indian shores as part of Power Projection by China, shall be a nightmare for India's sea dominance, unfortunately, a situation which can be a possibility in the near future," he adds.

https://www.financialexpress.com/defence/indian-navys-challenges-countering-chinese-naval-activities-in-the-indian-ocean-region/1983186/

The Indian EXPRESS

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Undoing the damage

Military talks between India and China are a good beginning. Delhi must push the process forward, carefully

In its typically laconic statement on Saturday's talks between senior Indian and Chinese generals, the ministry of external affairs sounded surprisingly positive about the nature of the conversation and said there will be more military and diplomatic engagement to resolve the current crisis in Ladakh region. Saturday's military talks followed inconclusive local-level engagement between the two armed forces in the last few weeks. On the eve of Saturday's talks, there was intensive diplomatic consultation between the two sides that reaffirmed the mutual political interest in a peaceful resolution of the issues at hand. That the talks between senior generals were held in a "cordial atmosphere" is a relief. Delhi's affirmation that the two sides agreed to resolve the situation in accordance with the bilateral confidence-building measures instituted over the last three decades is welcome. It is reasonable to conclude that the talks mark a good beginning in the effort to resolve yet another military crisis on the China frontier.

Before Saturday's talks, Delhi was careful to downplay the prospects for an early breakthrough and suggested an extended process is at hand. The government's caution was complemented by widespread pessimism within the Indian strategic community about an immediate resolution. That scepticism was rooted in the fact that India was taken unawares in April by the big forward push by the People's Liberation Army across multiple locations along the so-called Line of Actual Control separating the two sides. That the PLA had dug into the new positions and had brought in heavy weapons systems seemed to suggest China was here to stay in the new positions it had secured. With China having seized some ground that it did not control before, Delhi's task of getting Beijing to undo the new facts it had created in Ladakh appears rather difficult. But having publicly signalled its case for the restoration of the status quo that existed in April, Delhi has little room to back off. Therefore the government's suggestions that the Indian armed forces are in this for a long haul.

The strategic community fears two negative implications of Delhi's current engagement with Beijing. One is that Delhi might be tempted to ease the standoff in return for some cosmetic steps from the PLA to defuse the current crisis. The other is that Beijing might demand rather costly political concessions from Delhi in return for a full restoration of the April status quo. Given the unenviable situation Delhi finds itself in, South Block's upbeat description of the talks suggests that the outcomes on Saturday may have exceeded initial expectations. But there is no forgetting that the April surprise has given the upper hand to the PLA. Delhi will have to press all its leverages — on the military, diplomatic and political fronts — to persuade Beijing to restore status quo ante in Ladakh. If Delhi, however, is seen as making unreasonable concessions to ease the current crisis, it will face a domestic political backlash and considerable diminution of its regional and international status in relation to Beijing.

https://indianexpress.com/article/opinion/editorials/india-china-ladakh-border-crisis-6447599/

THE FINANCIAL EXPRESS

Mon, 08 June 2020

India's two-front war: Myths and IAFS' capability to fight

The government approved fighter squadron strength for the IAF is 42.5 squadrons of which the existing number of squadrons are in the thirties

By Wing Commander Amit Ranjan Giri

The scenario wherein India is engaged with its traditional opponent in the western sector and the Red Dragon opens up the eastern front, or vice versa is a 'sticky wicket' to play on. Questions have been asked, war games have been played and strategies have been built around this scenario to get a feel and predict the requirements so as to be prepared for addressal in future. If an analysis of the probable situation is to be done the first item needing attention is the reality and the efficacy of a two-front war. Is it possible to have one and how effectively can the opponent(s) run the campaign?

IAF has adequate depth and diversity to nullify the effect of the Chinese SSBM.

Yes, a two-front war is a definite possibility in the Indian context nevertheless, the war envisaged, would be very difficult to coordinate and execute by the opponents. The worst-case scenario for India is, both, the western as well as eastern fronts being attacked simultaneously, thus forcing her to divide the war efforts. Any more coordinated effort by the enemies would require centralised command and control structures, aka WW II, which is envisaged not to be a possibility in the present situation. Thus, bereft of centralised command, the efficacy of a two-front attack and maintenance of the aim is diluted, giving India the edge. For India, it would now mean breaking down the war into three distinct major geographical theatres viz. the west theatre, encompassing the borders and sea we share with Pakistan, the north theatre, encompassing the border regions of Ladakh down south to the northwestern edge of Nepal and the northeastern theatre, encompassing border regions from the south-east of Nepal to all the way up to Arunachal and further down towards the south. The border regions of Nepal, approx 1500 km and that of Myanmar to the Far East is expected to be left off the main battle. This sounds rather rosy but in actuality would be a Herculean task for the centralised war room at Delhi to handle. Air power which paves the way for all modern campaigns, need to match up to the challenges on all three fronts.

Interestingly, in the context of traditional air warfare, Pakistan stands at a better position to threaten India, than China would. Adequacy of airbases all along the border and a tight network of air defence system provide Pakistan just the required platform for an ideal offensive and subsequent defence. China whereas, all along its area of interest, lacks adequate airbases, the few they have are at very high altitudes, penalising the take-off requirements and all up weight performance. The PLAAF would have to be broken down, to at least four elements along the entire border and reaching the Indian assets, overflying Nepal or Myanmar, would not only involve international complexities but also the use of multiple air refuelling for every mission. However, on its plus side, China has a robust long-range air defence for most of its bases and vital points, not to forget its wide battery of "second artillery corps". These missiles could and would prove a threat to India.

China has an arsenal of 2500 +, the surface to surface missiles of varying ranges and CEP (circular error of probability), with conventional warheads, which it would most certainly use against India in the opening wave. However, it needs to be said for IAF that a little care, planning and distribution of assets would render this threat to mostly a nuisance value, in the face of the

enormity of the situation. Civilian targets addressed by these missiles are not being considered here, nor are nuclear warheads. It would be sacrilege to put in actual calculations involving range, warheads, CEP, target diversity & a few other factors, on an open platform, however, it is safe to say the IAF has adequate depth and diversity to nullify the effect of the Chinese SSBM (surface to surface ballistic missiles) rain, the logistics for it and the actual execution would no doubt be a massive task.

The government approved fighter squadron strength for the IAF is 42.5 squadrons of which the existing number of squadrons are in the thirties. The air defence element is undergoing a revamp and looks pretty potent, notwithstanding, for a two-front war this element requires a rather large boost, especially for enemy targets of interest, not within a military zone. Gone are the days of base defence only, its time for Air Defence Umbrella for larger areas. India's missile force also needs work to be done on, at present, it is in a very juvenile state, a shade better than Pakistan's. In conventional warfare, however, the SSBMs don't really push much weight except for a few tactical ones, which could shape the immediate battlefield. The lift capability of the IAF, in the present state, is rather envious. During the last Ex Gagan Shakti in 2018 and related events of the time, the IAF had demonstrated this capability to the envy of our neighbours, interestingly enough, heavy lift capability of the IAF has increased since.

As and when it happens, in the western theatre, it would be a conventional air war like it has been for the past three full fledged wars with Pakistan. A lot of offensive air action would be seen, to make sure the PAF keeps its head down during the advance of the Indian Army. Also, offensive missions against supplies lines and feeder mechanisms would be undertaken at the onset of hostilities, in addition, missions to suppress the Pak Air defence would be required. These would be closely followed by the actions over the battlefieldwhere in our tactical fighters pound the Pak army. The entire offensive force would require a rock-solid defensive package, to give them cover from enemy fighters. The air battle here would be bloody and intense. The Rafales would welcome such a scenario to prove their multi-billion dollar worth.

The other two theatres would be pretty different the Indian air battle here would mostly involve a defensive posture. Fewer missions for airfield busting and long-range interdiction would be flown, as compared to the battlefield strikes and shorter-range interdiction missions. It is to be appreciated that the same problems which plague the PLAAF, distance and altitude, causes problems for the IAF too. The Air defence of own assets would be one of the most important missions in these sectors. Since the Army is the one who would play a major role in most of the places in these sectors, from holding the 'chickens neck', to fighting the battle mainly in mountains, most IAF missions would be in support of our surface forces.

Needless to say, the entire IAF has a task cut out in a dual front war. This scenario is generally practised by the IAF during regular intervals, the last exhaustive one being Ex Gagan Shakti, in the first half of 2018. During this exercise, the IAF demonstrated its capability and reinforced its concept of a two front war. Also practised during this, was the swing effort from front to front and very successfully too. The effort was lauded the world over including, surprisingly, from the state-owned Chinese media. Serviceability rates and launch sustainability rates achieved during the exercise surpassed the USAF efforts at times. The IAF had similar number of fighter squadrons then as it does now, give or take one odd here and there. So are the number of squadrons now sufficient and we never need to reach the magic figure of 42.5?

The answer to the above is a big 'NO'. Like Sam Manekshaw in the 1971 Indo-Pak war, the IAF had adequate time to plan the entire orchestrated effort for the exercise, a privilege it wont have during actual action nowadays. The blueprint for the exercise was finalised at least two years ago, over the year prior, assets were developed, raised, maintained and nursed for use during the exercise. The capability was demonstrated with a dual message, for the country-to push for the assets so due to the airforce and for the world to take notice of the IAF as a major force.

Since advance notice in case of a present-day armed conflict would be most likely absent or minuscule, the IAF may be caught in an embarrassing situation with the present strength of its assets. It is here when the entire 42.5 squadrons of fighters and other approved machinery of the

IAF are required, maybe, even more with the ever-changing face of warfare. The build-up is slow but seems to be steady over the last few years, the S-400s, the Rafales, the Akash, the LCAs, the Chinooks, the Apaches, the Globemasters, the Hercules, the Prithivis, etc, are all looking good at giving the IAF the required edge, but what looks excellent over the last few years is the will to attempt and succeed. This is by far the biggest force multiplier.

(The author is an IAF Veteran. Views expressed are personal.)

https://www.financialexpress.com/defence/indias-two-front-war-myths-and-iafs-capability-to-fight/1983816/

Telangana Today

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Tata Lockheed to accelerate manufacturing in Hyderabad

As a part of digital transformation of manufacturing, company to use robotics in Hyderabad facility

By Y V Phani Raj

Hyderabad: Tata Lockheed Martin Aerostructures Ltd, a joint venture between Tata Advanced Systems Limited (TASL) and Lockheed Martin, is seeing growth opportunities through its operations in Hyderabad, at a time when Central government is bringing defence reforms in terms of defence procurement, pushing indigenous manufacturing and increasing foreign direct investment (FDI).

There will be a lot of interest globally in Indian defence procurement, with the government speeding up reforms.

Sharing the near-term outlook, Abhay Paranjape, chief operating officer, Tata Lockheed Martin Aerostructures, told Telangana Today, "We are already engaged in additional manufacturing for fighters and helicopters in Hyderabad. This will accelerate more by the end of 2020. Once the new defence procurement procedure (DPP) is finalised, there will be more clarity on investment opportunities."

"As a company, we are going to see disruptive innovations in our operations through Industry 4.0. We are going to use robotics in our Hyderabad facility for things that were done manually, earlier. This will provide leverage in competing worldwide with companies that require the precision," he added.

The company is also developing F16 wings at its F16 wings. It expects a capacity to make 3-4 wings a month in the steady state.

Advantage Telangana

Talking about the ecosystem in the State, Paranjape said, Telangana has an advantage as it has a right mix of private industry in Adibatla cluster and in the GMR Aerospace Park, as well as the presence of public sector units and research labs headed by the DRDO and Midhani.

There is a significant layer of MSMEs in the State, which will be benefited from the recent packages announced by the Finance Ministry, in terms of loans, equity and investments.

Also, Research and Innovation Circle of Hyderabad (RICH) is looking to help MSMEs in the aerospace and defence sector with new capabilities so that they can get loans and equity and enter into new markets.

"Possibilities for Telangana are vast and the challenges can be turned into opportunities. The State is rightly poised to reap opportunities both in the manufacturing and research and development," he noted.

Defence reforms

Paranjape observes that the recent DPP aims at time-bound procurement. Delays in procurement have been plaguing the Indian defence procurement system for years and that has been one of the major hurdles for industry to go and participate in the procurement process. With the time-bound procurement process, there will be a lot of interest in the industry, globally, to try and see how they can participate in the defence procurement.

The second major change that is coming through is the preference for the indigenous. Since 2012, the government has progressively added the 'Make in India' concept but now it is really going to take off, with the Finance Minister announcing specific packages for defence sector and how certain platforms and products that will be procured only from India, he said at a recent CII webinar.

There will also be another trend, 'buy global but make in India', which will make global original equipment manufacturers (OEMs) to look at setting up their manufacturing base in India. These developments will open up new doors for the indigenous industry in the country.

Additionally, the government's focus on indigenous has also resulted in increase in foreign direct investment (FDI), taking the ceiling in automatic route from 49 per cent to 74 per cent, and up to 100 per cent in some cases. This allows funding to come from outside and also gives an incentive to the OEMs worldwide to come and manufacture or develop something in India because they can protect their intellectual property.

If they hold a significant share in their business, they can make sure that the processes and systems are followed according to their international standards. As a result, MSMEs will also be benefited with the presence of these OEMs.

Technology adoption

From the technology point of view, he said, "New materials are coming in for all sorts of platforms and products. Composites are getting more and more prevalent in structures. Smart structures are coming through that give stealth to aircraft. The man-machine interface is going through radical changes. Unmanned aircraft systems are being increasingly used. India is poised to take advantage of all these developments."

Smart network systems are also offering new ways of operations, both in terms of on-ground as well as the systems in air. Machine learning, artificial intelligence and networking are going to make a significant impact. Industry 4.0 will bring a new change in defence manufacturing, Paranjape noted.

https://telanganatoday.com/tata-lockheed-to-accelerate-manufacturing-in-hyderabad

THE TIMES OF INDIA

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IAF choppers to be pressed into service for anti-locust ops

By Saurabh Sinha

New Delhi: Indian Air Force choppers will now be deployed to tackle the locust menace. The agriculture ministry is importing high-powered spraying equipment that will be fitted on five Mi-17 helicopters for IAF for spraying on locust swarms.

"A high-power spraying equipment is being imported from EU to be fitted on five Mi-17 helicopters of the IAF. The close collaboration between different ministries, IAF, Army Aviation Corps and the industry will help us win against the worst locust attack in 27 years. An empowered committee is negotiating with helicopter companies and an agreement is expected soon, subject to DGCA clearance," said a senior aviation ministry official.

The aviation ministry had last month allowed the agriculture ministry use of spray drones to spray for anti-locust operations. “An inter-ministerial empowered committee conducted fast-track negotiations with bidders and work orders have been issued to five drone companies. The drone-squads will reach the hotspots — Barmer, Phalodi, Nagaur and Bikaner, early next week,” said the official.

“In 2-3 years, as demand rises and drone prices fall, we hope to have village-based entrepreneurs who provide drone services for crop mapping, analytics, yield improvement advice and spraying. Just like people who loan out tractors, seeders and harvester-combines,” the official added.

https://timesofindia.indiatimes.com/india/iaf-choppers-to-be-pressed-into-service-for-anti-locust-ops/articleshow/76242202.cms

The Indian EXPRESS

Mon, 08 June 2020

NDA set to resume academic sessions today

According to officials, while strict norms have been put in place for the conduct of classes, the strength attending each session has been divided into two, to further ensure distancing

Pune: The National Defence Academy (NDA) is set to resume academic sessions, which were suspended on March 21 due to the Covid-19 pandemic. According to officials, while strict norms have been put in place for the conduct of classes, the strength attending each session has been divided into two, to further ensure distancing.

Officials said the academic sessions are set to resume on Monday and a daily timetable for cadets has been issued. One of the key features of the timetable is staggered timings for various activities within a squadron where time slots have been allotted to cadets from different academic terms.

The process of selection of the fresh batch of the NDA through the Service Selection Board and Union Public Service Commission is yet to be completed

“Since the beginning, the activities where common spaces are shared, are being done in staggered timings. Now the conduct of academic sessions will also be done in the same manner. Each class of say 30 students is being divided into two. When the first subgroup attends the lecture, the other half will stay back in the cabin and complete the online learning module of the subject. At every step it will be ensured that distancing norms are strictly adhered to,” said an officer.

“The NDA campus is a huge entity. Cadets, a large number of military and civilian officers, staff and their families reside on the campus. Social distancing, other safety norms have been put in place since the beginning of the outbreak of the pandemic,” another officer said.

Officials said that during this entire period, cadets were being closely monitored for any symptoms of Covid-19 by their divisional officers, seniors, and civilian instructors. Visitors have not been permitted, be it parents or general populace. These precautionary measures will continue in coming days. Every year, two batches of cadets pass out from NDA, India’s premier tri-services training academy, after completion of three years of training. They continue with one more year of training at the academies of their respective forces, including Indian Military Academy in Dehradun, Air Force Academy in Dundigal and Indian Naval Academy in Ezhimala. This year, the passing out cadets are directly being sent to their respective academies instead of going home for a break.

The process of selection of the fresh batch of the NDA through the Service Selection Board and Union Public Service Commission is yet to be completed. The schedule for this term's process is awaited, officials said.

https://indianexpress.com/article/india/nda-set-to-resume-academic-sessions-tomorrow-6447544/

Mon, 08 June 2020

45 Army officers awarded 'aviation wings' on successful completion of Combat Aviators Course

Forty-five army officers were awarded "aviation wings" for successfully completing the 17-week Combat Aviators Course on June 6. The valedictory ceremony was held at the Combat Army Aviation Training School (CATS) located at Nashik.

Ministry of Defence shared the picture of the valedictory ceremony, writing, "45 Army Officers were awarded the coveted 'Aviation Wings' on successful completion of Combat Aviators Course Serial Number 33 during the Valedictory Ceremony held at Combat Army Aviation Training School, Nashik, today."

Captain Omkar Lokhande won Silver Cheetah trophy for standing first in overall order of merit as well as AOP-35 trophy for standing first in ground subjects, while Capt Suraj Fartyal won the Capt SK Sharma trophy for best in flying, and Capt PK Gour trophy for best in gunnery.

The Fledgling trophy for standing first in PAPC was won by Capt Harpreet Singh Arneja.

https://idrw.org/45-army-officers-awarded-aviation-wings-on-successful-completion-of-combat-aviators-course/#more-228788

Mon, 08 June 2020

Nigeria, India Armed Forces sustain defence co-operation

Indian Bilateral Defence Co-operation is entering a new phase of mutually beneficial arrangements and agreement at the Ministerial levels. The Indications to this emerged at the Ministry's Headquarters, Ship House, Abuja when the Minister of Defence Maj Gen Bashir Salihi Magashi (Rtd) hosted the Indian High Commissioner to NIgeria, Abhay Thankur on a courtesy call in his Office.

A statement signed by the Special Assistant, Media and Publicity to the Minister of Defence Mohammed Abdulkadri indicates that the issue of bilateral interest

which necessitated the interface between the representatives of the two Countries were discussed behind closed doors and were not made available to the media.

Furthermore, the statement put on record that the highly classified and restricted matters that are strategic to common interest of the two Countries were witnessed by Senior Military Officers and some Principal Personnel of the Ministry as we as the Indian Defence Adviser Colonel Cachin Dubey. The courtesy visit climaxed with the usual exchange of plagues between the host Minister and his visitor. It is on record that the two countries Armed Forces enjoy Defence co-operation in the areas of training and exchange of Military programmes as captured in the Memorandum of understanding.

https://idrw.org/nigeria-india-armed-forces-sustain-defence-co-operation/#more-228789

जागरण

Mon, 08 June 2020

नौसेना के जहाजों ने सेशेल्स में दवा व सोमालिया में खाने की तीन हजार टन सामग्री पहुंचाई

नौसेना ने बताया कि आइएनएस केसरी ने भारत सरकार के मिशन सागर कार्यक्रम के तहत आवश्यक दवाओं को सेशेल्स सरकार को सुपुर्द किया।

नई दिल्ली: भारतीय नौसेना के जहाज रविवार को सेशेल्स व सोमालिया में खुशियों की सौगात लेकर पहुंचे। आइएनएस केसरी ने जहां सेशेल्स में दवाओं की दूसरी खेप पहुंचाई, वहीं आइएनएस ऐरावत व्यापारिक पोत एमवी जुइस्ट को अपनी सुरक्षा घेरे में बेरबेरा से सोमालिया की राजधानी मोगादिशु तक पहुंचाया। जहाज में 3,000 टन खाने की सामग्री थी।

नौसेना ने बताया, 'आइएनएस केसरी ने भारत सरकार के मिशन सागर कार्यक्रम के तहत आवश्यक दवाओं को सेशेल्स सरकार को सुपुर्द किया। इनमें ब्लड प्रेशर, कोलेस्ट्रोल, शुगर, कैंसर व अन्य बीमारियों की दवाएं शामिल थीं।

इसके अलावा भारत सरकार ने नौसेना की तरफ से विकसित दो एयर इवैकुएशन पॉड भी सेशेल्स की हेल्थ केयर एजेंसी को दान दिया।' आइएनएस ऐरावत ने संयुक्त राष्ट्र के विश्व खाद्य कार्यक्रम के तहत भेजी गई खाद्य सामग्री को सुरक्षित सोमालिया की राजधानी मोगादिशु तक पहुंचाया।'

हाल ही में 700 भारतीयों को कोलंबो से भारत लाया गया

वहीं, दूसरी ओर विश्वव्यापी कोरोना संकट के बीच अभी हाल ही में नौसेना का पोत आइएनएस जलाश्व 700 भारतीयों को लेकर कोलंबो से स्वदेश आया था। विदेश में फंसे भारतीयों की वापसी के लिए जारी वंदे भारत मिशन के तहत समुद्र सेतु अभियान के दूसरे चरण में श्रीलंका से भारतीय नागरिकों को भारत लाया गया था।

गौरतलब है कि भारतीय नौसेना कोरोना वायरस महामारी के बीच विदेश में फंसे भारतीयों को वापस लाने के लिए एक जून से ऑपरेशन समुद्र सेतु के अगले चरण की शुरुआत की थी। भारत सरकार ने ऑपरेशन समुद्र सेतु के साथ ही मिशन वंदे भारत भी चला रखा है। कोरोना वायरस के कारण विभिन्न देशों में फंसे भारतीय नागरिकों को वापस देश लाने के लिए सरकार द्वारा वंदे भारत मिशन की शुरुआत की गई थी। विशेष एयर इंडिया की फ्लाइट से दिल्ली के लिए रवाना हुए भारतीय नागरिकों ने वहां मौजूद भारतीय दूतावात और भारत सरकार द्वारा आवश्यक व्यवस्था करने के लिए शुक्रिया अदा किया।

https://www.jagran.com/news/national-indian-navy-ships-transport-medicine-in-seychelles-and-three-thousand-tons-of-food-items-in-somalia-20364612.html

TSG SundayGuardianLive

Sun, 07 June 2020

India, Nepal and the Gorkha connection

By Ian Cardozo

Fear is something that is common to all human beings and the reaction to fear is to "fight or fly". One of India's most loved and revered Army Chiefs who led India to a decisive victory in the Indo-Pak war of 1971and who is from my regiment, the 5th Gorkha Rifles (FF) stated that "Every human being is afraid of something—some are afraid of many things. However, if anyone says that he is not afraid; he is either a liar or a Gorkha."

The relevance of Sam Manekshaw's statement is clear to us who belong to Gorkha regiments and who have led these brave soldiers into battle.

Prior to India's Independence, Gorkha soldiers fought with distinction for the British Indian Army in both the World Wars. During World War II, Indian Army was awarded 20 Victoria Crosses, Britain's highest award for valour. Of these, ten were awarded to the Gorkhas and four of them were awarded to soldiers from my regiment.

Gorkha soldiers are tough. Living in the hills of Nepal makes them strong and resilient and they can stand the vicissitudes of war, climate and terrain better than most. No one can match their movement in the mountains. They are inveterate hunters and in the hills of Nepal, the only meat they eat is what they get from hunting. The word for meat in Gorkha units even today is shikar. They are cheerful in disposition and nothing disturbs their equanimity. They are loyal to the core and fearless in battle. They are cheerful in adversity and however bad the situation they never complain. All this makes them amongst the best soldiers in the world and they are much sought after. Soldiering for them is a natural profession and Gorkha regiments have men from the same family who have served with the regiments for five generations and more.

Gorkhas are adept in the use of the khukri—a knife with a curved blade, heavy on the outside and tapering towards the inside, which is very sharp. What the Gorkha can do with the khukri is pure magic. The length of the blade of a battle khukri is from 14 to 16 inches. It has a notch near the handle to prevent blood from flowing over and making the handle slippery.

Nepal was the only Hindu kingdom in the world and the presiding deity in all Gorkha Regiments is the Goddess Durga. The most important festival is Dussehra, which is called "Dassain" in Nepali. Dassain commemorates the triumph of good over evil and the victory of Goddess Durga over Mahisura. Animal sacrifices are made during this festival and every young officer has to prove his blood by demonstrating that he too is adept in the use of the khukri.

During the Indo-Pak war of 1971, my battalion, the 4th Battalion the 5th Gorkha Rifles (FF) was tasked to capture a Pakistani post which was protected by marshes, minefields and barbed wire. The battalion decided to assault the enemy position through the marshes which had three to four feet of water. The Commanding Officer, Lieutenant Colonel Arun Harolikar led the battalion in what has come to be known as the last khukri attack in modern military history. The enemy came to know of our presence only when the Gorkhas were upon them. Khukris flashed that night and Pakistani heads rolled to the dexterous use of this Gorkha weapon. The enemy was decimated. Those who managed to escape passed the word around: "Don't mess with the Gorkhas. If you do, you may lose your head!"

Later, this same battalion was used in the Indian Army's first heliborne operation, where it landed deep inside East Pakistan for the capture of Sylhet. Although the strength had depleted after two savage battles, the Corps Commander said: "Send the Gorkhas. I know them well. They will deliver." And so they did, but at great cost. The battalion, which had been reduced to just about

380 men, fought an enemy force of two Pakistani brigades and troops of the Sylhet garrison and held them for nine days and nights. They were without food and water and with diminished ammunition in the ratio of 1:20. Although the enemy was in overwhelming strength, the tenacity, courage and fortitude of the Gorkhas won the day. The battalion was no doubt led well. It started the war with 18 officers but at the end of a 14-day war, only seven officers survived. Four were killed and seven were wounded. The casualties in men killed and wounded were much more. The medical facilities were destroyed during the battle and no medication was available—even water for the wounded was not available but not one of them complained!

It was acknowledged by the Eastern Command that this under strength battalion of Gorkhas hastened the fall of Dhaka by keeping two Pakistani brigades and the Sylhet garrison tied down and unavailable for the defence of Dhaka.

There are many more instances to recount but space does not permit the sharing of the valour of the Gorkhas.

The ongoing border dispute with Nepal is unfortunate. There is no doubt that this has occurred at the instigation of China. The road built by us close to the trijunction of India, Nepal and China at Lipulekh has worried the Chinese, who have used their economic clout to pressurise the Communist government of Nepal to raise this issue. We who have lived life long with the Gorkha soldier hope that better sense prevails and there is a peaceful resolution to the problem.

Major General (Retired) Ian Cordozo has led the Gorkhas of his battalion in the 1965 and 1971 Indo-Pak wars. He was disabled with the loss of a leg in the 1971 war but proved that disability was not a deterrent to command a battalion, a brigade and a division.

https://www.sundayguardianlive.com/opinion/india-nepal-gorkha-connection

Science & Technology News

The Statesman

Mon, 08 June 2020

Scientists find process for synthesizing crystalline rubrene helpful for preparation of 'Electronic Skin'

The novel process may also be useful as a tool for laboratory simulation of different biological systems for probing the organization and dynamics of those systems

The scientists at the Institute of Advanced Study in Science and Technology (IASST), have found a new process for synthesizing crystalline rubrene, a polycyclic aromatic hydrocarbon-based thin film which can be useful for the development of optoelectronic devices and also for preparation of Electronic Skin (E-Skin).

"The new synthesis is a water-free, solvent-free, environmentally friendly one-step plasma process. The resultant crystalline rubrene based film demonstrated optoelectronic properties, and an Indian patent has been filed for the process. A highly uniform pin-hole-free thin film can be deposited by this process, which is useful for fabrication of high-end devices," Ministry of Science and Technology said.

Devices made of pyro-electric materials, that generate electric charge when they are heated or cooled and piezo-electric materials, that generate electric charge under the effect of mechanical pressure, can help detect change in temperature and pressure.

Pyro-electric materials also show pyro-phototronic effect where pyro-electricity is associated with the change in temperature of a material when it absorbs photons. Pyro-electric infrared detectors are well known for application in infrared sensing for space research, defense, remote sensing, and household appliances.

"The present study conducted by the IASST team published in Journal of Materials Chemistry revealed that centro-symmetric rubrene crystal has a thin amorphous oxide layer formed over the crystalline film. This induces surface layer polarization effect leading to pyro-phototronic effect," the ministry said.

"This work delivered a new experimental approach for synthesis of crystalline rubrene film and realization of pyro-phototronic effect on a fully organic crystalline medium with rubrene for the first time. It also circumvents the essentiality of materials to be non-centrosymmetric to show pyroelectric behavior," it added.

According to the IASST team, formation of crystalline rubrene at sufficiently high Radio Frequency (RF) plasma power confirmed that with increasing applied RF power, a phase transition from amorphous to crystalline rubrene can be obtained. This oxide layer over the crystalline rubrene film that causes surface polarization is formed after exposure of the deposited film in air due to film surface oxidation.

Since last few years, scientists from around the world are working on the synthesis of organic materials for electronic applications. The conventional process for synthesis of organic electronic materials based on chemical processes provides very good quality materials, but the stability of the materials is not very good, and it requires use of solvents. Moreover, multiple steps are required for material synthesis and film deposition. To overcome these challenges, the IASST team has been working on plasma-based process due to the unique advantages of such process over the conventional processes of organic electronics.

This novel process developed by the IASST team, besides being useful for developing advanced optoelectronic devices and preparation of Electronic Skin (E-Skin), may be useful as a tool for laboratory simulation of different biological systems for probing the organization and dynamics of those systems.

https://www.thestatesman.com/technology/science/scientists-find-process-for-synthesizing-crystalline-rubrene-helpful-for-preparation-of-electronic-skin-1502897293.html

USA TODAY

Sun, 07 June 2020

Could COVID-19 be prevented before it starts? Some researchers are looking for a way

He expressed satisfaction on the progress of the research connected with the vaccine development so far, but insisted that "in science, things can change"

By Karen Weintraub

Finding a way to protect against COVID-19 would transform the fight against the coronavirus that has spread across the world since late last year.

Pharmaceutical companies and doctors have been hunting for drugs to treat COVID-19 and launched a major effort to develop a vaccine against it, but they haven't focused as much on therapies for preventing infection before or after someone is exposed to the virus that causes the disease.

"The idea of having a way of preventing the infection and/or symptoms remains a critical need," said Dr. Susanna Naggie, vice dean for clinical research and an associate professor at the Duke University School of Medicine.

That's why there was so much excitement over the drug hydroxychloroquine, which President Donald Trump said he was taking for a while, to avoid infection with the virus. A study published last week found hydroxychloroquine failed to prevent infection. Other studies are ongoing, including some larger ones, that will confirm or contradict that finding.

Hydroxychloroquine has received the most scientific attention – undergoing more than 200 ongoing trials – both because it was one of the earliest drugs available to be considered and because Trump's support drove public interest.

Now that questions have been raised about its effectiveness, focus is slowly beginning to turn elsewhere, and trials of other approaches, from medications to mouthwashes, are beginning.

Even though some of those approaches already are well used, it will be months before scientists will know whether they can prevent COVID-19.

Turning focus elsewhere

The negative attention on hydroxychloroquine has made it much harder for researchers to get enough volunteers to complete trials of the drug, said Naggie, who is helping to lead one of the largest.

Naggie said her team had hoped to quickly get 15,000 health care workers to volunteer to take hydroxychloroquine and finish her study in five or six months. Instead, only about 800 have signed up, and she expects her study to take months longer.

Public opinion of the drug has suffered, she said, in response to the politics and observational studies such as one in The Lancet, which has since been retracted, that raised questions about its effectiveness and risks in patients very sick with COVID-19.

Her $50 million study, called Healthcare Worker Exposure Response and Outcomes, or HERO, will be useful to definitively answer the question about hydroxychloroquine's effectiveness for pre-exposure prevention, she said.

Other prevention approaches are likely to be added to the study in the hopes that one or more will eventually prove useful against the virus.

"The level of enthusiasm for something that is not hydroxychloroquine will be much higher," Naggie predicted. "The politicization of hydroxychloroquine, as well as the data that has come out in the inpatient setting, made a murky picture for this drug in particular."

A prevention approach differs from a vaccine, though it may be useful in combination, Naggie said. A vaccine hopefully provides long-term protection; a prophylaxis could help in the case of an exposure, or ongoing risk, such as to a health care worker.

For the flu, for example, an annual vaccine is not 100% effective, though it can reduce risk of serious infection. Many people exposed to the flu are prescribed the antiviral Tamiflu to help limit the infection. In HIV, for which researchers have tried for decades to develop a vaccine, people at high risk for the infection can be prescribed the same drug cocktail for prevention as is used for treatment.

There are no federally approved treatments for COVID-19, though the anti-viral drug remdesivir has shown some effectiveness against it and is routinely used in many places. For now, remdesivir is delivered only intravenously, so it is not a good option for people looking to prevent disease.

Researchers hope that whatever works as a treatment will also prevent initial infection and visa versa.

On the hunt for other preventives

In a gigantic global trial called Solidarity, the World Health Organization is testing four different approaches to treating COVID-19: hydroxychloroquine, remdesivir and two combinations of drugs used to combat HIV, Lopinavir and Ritonavir, and Lopinavir and Ritonavir plus the multiple sclerosis drug Interferon beta-1a. The two-drug combination was tested in China early in the outbreak and shown not to work as a treatment in very serious disease, but there is some hope that it might work in lesser infections.

Romark, a pharmaceutical company based in Tampa, Florida, is running two different trials of its candidate drug nitazoxanide, which has long been used to treat "traveler's diarrhea." For the past 15 years, the company has been studying whether it can be used to prevent a wide range of respiratory viruses.

Romark is testing the drug in 800 people in nursing homes and 800 health care workers and first responders to see whether it can prevent infection in people who have been exposed to the coronavirus. They hope to have results by the end of the summer, said Marc Ayers, Romark CEO.

Although it's too soon to know whether the drug will be successful, if it is, Romark will be prepared to produce as much as 200 million pills by the end of the year at its production facility in Puerto Rico, Ayers said.

For the trial, the pills will be given twice a day for six weeks. In nursing homes, once someone in the facility has COVID-19, Ayers said, he hopes nitazoxanide will stop the virus from spreading. Nursing homes are eligible to join the trial if they have an outbreak, he said, and the company pledged to enroll a nursing home within 72 hours of first contact with the company.

"We're working with a sense of urgency," he said.

Could simple iodine help?

Dr. Alexandra Kejner was in her third trimester of pregnancy and struggling with insomnia this spring when it struck her that the iodine she uses to sterilize the nose and throat of her patients might help clear COVID-19.

"That's what I wash my hands with before surgery," said Kejner, an assistant professor at the University of Kentucky, adding it's also used for wound packing and sinus disease, and is relatively safe and affordable.

Kejner, the mother of a 2-month-old girl, has since launched a major study examining a specific concentration of iodine to prevent COVID-19. The aim is to coat the inside of the nose and mouth to prevent the virus from getting a foothold.

She's started to enroll 300 patients in the trial, as have collaborators at George Washington University and Louisiana State University.

Eligible participants use the carefully dosediodine nasal spray and gargle with it three times a day. Originally, they were going to be asked to use a nasal swab similar to the COVID-19 testing swabs, but Kejner's husband tried it and vetoed it.

"No one will do this three times a day," he warned. So she changed the protocol.

The trial will include two groups of participants: patients hospitalized for non-COVID-19 reasons and health care workers exposed to COVID-19 patients. To enroll, each participant will be tested to ensure he or she is not infected and screened for allergies to iodine.

For health care workers, Kejner said she sees iodine as a "second line of defense" in case they don't have enough personal protective equipment or it fails to keep them safe.

She hopes to have at least preliminary data within the next two to three months.

Dr. Michael Paasche-Orlow, a professor of medicine at Boston University School of Medicine and Boston Medical Center, said he wishes such trials had started sooner, so more results could arrive this summer.

The federal government, he said, focused too much on hydroxychloroquine instead of spreading the research into different prevention approaches.

"The early enthusiasm distorted the market," he said. "Why would we have 200 recent studies about hydroxychloroquine and not more diversity of projects? It feels that there was a missed opportunity."

(Health and patient safety coverage at USA TODAY is made possible in part by a grant from the Masimo Foundation for Ethics, Innovation and Competition in Healthcare. The Masimo Foundation does not provide editorial input.)

https://www.usatoday.com/story/news/health/2020/06/07/researchers-look-beyond-hydroxychloroquine-prevent-covid-19/3147715001/

Mon, 08 June 2020

Research on Avigan as potential treatment for COVID-19 may drag on until July: Fujifilm

As drugmakers around the world scramble to develop a vaccine for the new coronavirus, Fujifilm Holdings Corp says research on Avigan as a potential treatment for COVID-19 may drag on until July.

Tokyo: Fujifilm Holdings Corp's research on Avigan as a potential treatment for COVID-19 may drag on until July, the company said on Sunday, a further setback in the Japanese firm's race to find a vaccine.

"There is a possibility that clinical trials will continue in July," a Fujifilm spokesman said, responding to a Nikkei report that any approval will be delayed until July or later, due to a lack of patients for trials.

After the government of Prime Minister Shinzo Abe gave up on getting approval for the drug by the end of May, the aim was to complete clinical trials this month.

But researchers have only been able to get around 70% of the patients needed for the trials, and because it takes 28 days to get results, the process will continue until at least July, the Nikkei business daily said, citing an unnamed source.

The spokesman said Fujifilm does not make public details of the progress of clinical trials but it has expanded the number of medical institutions that are cooperate in the trials. "We aim to complete clinical trials as soon as possible."

Drugmakers around the world are scrambling to develop a vaccine for the new coronavirus, which has infected nearly 7 million people globally, while the disease it causes, COVID-19, has killed nearly 400,000.

Research on Avigan as potential treatment for COVID-19 may drag on until July: Fujifilm| Photo Credit: iStock Images

Many countries are focusing on drugs like Gilead Sciences Inc's antiviral remdesivir and some are using the anti-malaria drug hydroxychloroquine, touted by US President Donald Trump. Abe's government has championed Japanese candidate Avigan, also known as Favipiravir.

Countries that have succeeded in curbing infections have sometimes paradoxically found it difficult to sustain clinical trials because of dwindling sample sizes for patients.

Japan has avoided the explosive outbreaks seen in some other nations, with about 17,000 infections, and the number of daily infection has been falling, according to public broadcaster NHK and the health ministry.

https://www.timesnownews.com/health/article/research-on-avigan-as-potential-treatment-for-covid19-may-drag-on-until-july-fujifilm/602978

The Indian EXPRESS

Mon, 08 June 2020

The Lancet's HCQ study: Why it was retracted, and the status now

After publishing a study raising questions on hydroxychloroquine's efficacy against Covid-19, The Lancet has issued a retraction. What led to this, and what questions does it raise about the peer review process?

By Abantika Ghosh

Last week, The Lancet published a retraction from three of four authors of a study that had said neither chloroquine nor hydroxychloroquine (HCQ) with antibiotics hold any significant promise as a treatment for Covid-19. The World Health Organization (WHO), which had suspended enrolment for the HCQ arm of the Solidarity Trial following the original study, has reinstated it following the retraction. Solidarity is an international clinical trial on possible Covid-19 treatments, including HCQ, which is an antimalarial drug. India has continued to repose its faith in HCQ, while US President Donald Trump claims to use it himself.

What was the study and why was it retracted?

In the study on chloroquine and HCQ with antibiotics, the authors had written: "Each of these drug regimens was associated with decreased in-hospital survival and an increased frequency of ventricular arrhythmias when used for treatment of COVID-19."

Following the retraction by three of the authors, The Lancet wrote: “They were unable to complete an independent audit of the data underpinning their analysis. As a result, they have concluded that they ‘can no longer vouch for the veracity of the primary data sources’… There are many outstanding questions about Surgisphere and the data that were allegedly included in this study. Following guidelines from the Committee on Publication Ethics (COPE) and International Committee of Medical Journal Editors (ICMJE), institutional reviews of Surgisphere’s research collaborations are urgently needed.” Alongside the note appears an interest disclosure list that is significantly longer than the one in the original study.

It is a Chicago-based firm that collates data. Its website says, “The Surgisphere registry is an aggregation of the deidentified electronic health records of customers of QuartzClinical, Surgisphere’s machine learning program and data analytics platform. Surgisphere directly integrates with the EHRs of our hospital customers to provide them actionable data insights to improve efficiency and effectiveness.”

Surgisphere has stood by the integrity of its data even while refusing to give access to it to peer reviewers citing client confidentiality agreements. “One of the core principals at Surgisphere is based around data integrity. Another is centered on data security. Our entire ISO 9001:2015 and ISO 27001:2013 certificate and various audits that we have completed all focus on these two foundations of the company, and the data acquisition, warehousing, analytics, and reporting processes that relate to them. It is vitally important that our colleagues around the world understand the validity of our database as it relates to those functions, especially where the data comes from, the database, and the statistical analysis,” the company said in a statement following an earlier expression of concern by The Lancet on the HCQ study.

There has been another retracted study (not related to HCQ), again with data from Surgisphere. The New England Journal of Medicine has printed a retraction note for a study it published last month: “Because all the authors were not granted access to the raw data and the raw data could not be made available to a third-party auditor, we are unable to validate the primary data sources underlying our article, ‘Cardiovascular Disease, Drug Therapy, and Mortality in Covid-19’.” The two studies have three authors in common.

What is the message from the controversy?

The retractions have exposed gaps in the peer review process. It is usually an unpaid job for researchers who are sparing time for work that carries no credit. Checks and balances that can call out fudged data are very few.

James Heathers, a research scientist at Northeastern University in Boston wrote in The Guardian: “The immediate solution to this problem of extreme opacity, which allows flawed papers to hide in plain sight, has been advocated for years: require more transparency, mandate more scrutiny. Prioritise publishing papers which present data and analytical code alongside a manuscript. Re-analyse papers for their accuracy before publication, instead of just assessing their potential importance. Engage expert statistical reviewers where necessary, pay them if you must. Be immediately responsive to criticism, and enforce this same standard on authors. The alternative is more retractions, more missteps, more wasted time, more loss of public trust … and more death.”

The Covid-19 pandemic has given rise to a global hunger for scientific work and a rush of medical journals to get research published. The compulsive need among researchers to publish papers, or perish, is called the Darsee Syndrome, after John Darsee, a researcher who was considered extremely bright early in his career, before being accused of data fraud.

Said Dr KS Reddy, President of the Public Health Foundation of India, member of the Indian Council of Medical Research’s Covid-19 task force and member of the executive group of the international steering committee of the Solidarity Trial, “Scientific publications depend on rigorous, unbiased and knowledgeable peer reviews by experts supplemented by the journal’s editorial team. Slip-ups can occur at any stage in this process… When expedited reviews are conducted at a great rush, in the Covid-19 era, the chances of a slip-up increase. The consequences

can be harmful if the errors are uncorrected. However, the beauty of science is that it can quickly self-correct… Lessons will be learnt but respect for science must go up and not diminish as a result of this controversy."

What is the status of HCQ now?

While the WHO has reinstated the HCQ arm of its trial, India has never wavered from its faith in the drug as a treatment and a prophylactic for Covid-19. India weathered The Lancet study, citing its own data to justify the use of the drug.

Meanwhile, investigators in the Recovery Trial at the University of Oxford have announced that they would stop enrolment for the HCQ arm as no benefits have been found of the drug. Peter Horby, chief investigator of the trial, said: "Hydroxychloroquine and chloroquine have received a lot of attention and have been used very widely to treat COVID patients despite the absence of any good evidence. The RECOVERY trial has shown that hydroxychloroquine is not an effective treatment in patients hospitalised with COVID- 19. Although it is disappointing that this treatment has been shown to be ineffective, it does allow us to focus care and research on more promising drugs."

https://indianexpress.com/article/explained/hydroxychloroquine-efficacy-covid-19-lancet-report-retracted-6447824/