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# समाचार पत्रों से चयित अंश Newspapers Clippings

A Daily service to keep DRDO Fraternity abreast with DRDO  
Technologies, Defence Technologies, Defence Policies,  
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रविवार, 11 सितंबर 2022

### कम क्षमता के परमाणु हमलों में रेडियोएक्टिव तत्वों से बचाएंगी रेमोकोन वाइप्स

भारत अब खुद को कम क्षमता के परमाणु हमलों को लेकर तैयार कर रहा है। इन हमलों से लोगों व फ्रंटलाइन वर्कर्स को बचाने के लिए रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) के दिल्ली स्थित नाभिकीय औषधि तथा संबद्ध विज्ञान संस्थान (इनमास) में लंबे समय से काम चल रहा था। इसमें विज्ञानियों को सफलता मिल गई है। विज्ञानियों ने रेमोकोन वाइप्स बनाई हैं, जो रेडियोएक्टिव तत्वों से प्राथमिक तौर पर राहत देगी।

इस वाइप्स (त्वचा साफ करने का विशेष कपड़ा) का प्रयोग फ्रंट लाइन वर्कर (सैन्यकर्मी, स्वास्थ्यकर्मी, एटामिक प्लांट पर कार्य करने वाले) के साथ आम लोग भी कर सकते हैं। इस वाइप्स की तकनीक इनमास ने मैसूर की एक कंपनी को स्थानांतरित कर दी है। उस कंपनी ने वाइप्स का उत्पादन भी शुरू कर दिया है। कुछ समय पहले डीआरडीओ ने हिसार में प्रदर्शनी लगाई थी। इसमें इनमास के विज्ञानियों ने रेमोकोन वाइप्स को प्रदर्शित करने के साथ इसके फायदे भी बताए थे।

#### शरीर से रेडियोएक्टिव तत्वों को हटाकर सुरक्षित होगा जीवन

कैंसर जैसी बीमारियों के इलाज में कई ऐसी दवाओं का प्रयोग किया जाता है कि जिसमें रेडियोएक्टिव तत्व होते हैं। अगर यह तत्व गलती से भी मरीज या स्वास्थ्यकर्मियों के शरीर पर गिर जाए तो बहुत खतरनाक साबित हो सकते हैं। ऐसे में रेमोकोन वाइप्स से मरीज या स्वास्थ्यकर्मी रेडियोएक्टिव तत्वों को हटाकर अपना जीवन सुरक्षित कर सकते हैं। सिर्फ मरीज ही नहीं जब भी कोई दुश्मन कम क्षमता का परमाणु हमला करेगा तो सेना भी खुद को इन वाइप्स से बचा सकती है। साथ ही परमाणु संयंत्र और विभिन्न लैब

में भी रेडियोएक्टिव तत्वों को लेकर प्रयोग होते रहते हैं, ऐसे में वहां कार्यरत लोगों को भी यह वाइप्स सुरक्षा देने का काम करेगी।

### रेडियोएक्टिव तत्व के संपर्क में आने पर हो सकती हैं घातक बीमारियां

इनमास के विज्ञानियों के अनुसार कम क्षमता का परमाणु हमला भी काफी खतरनाक होता है। इसमें निकले रेडियोएक्टिव तत्व के संपर्क में आने से कैंसर व अन्य घातक बीमारियां हो सकती हैं। साथ ही कुछ दिनों में इंसान की जान भी जा सकती है। रेडियोएक्टिविटी को लेकर कई दवाओं पर कार्य किया जा रहा है, लेकिन अभी तक इसका प्रयोग बंदरों पर ही किया गया है। इंसानों के जीवन पर रेडियोएक्टिविटी के प्रभाव घातक होने के चलते इस पर अधिक काम नहीं हुआ है।

### रेमोकोन वाइप्स का ऐसे होता है प्रयोग

रेमोकोन वाइप्स का प्रयोग सामान्य वाइप्स की तरह किया जाता है। जिस प्रकार सामान्य वाइप्स से शरीर को पोंछा जाता है ठीक इसी प्रकार रेमोकोन वाइप्स का प्रयोग भी शरीर से रेडियोएक्टिव तत्वों को पोंछने में किया जाता है। यह वाइप्स त्वचा को नमीयुक्त बनाती है। इसमें ऐसा फार्मूला है जो खतरनाक रेडियोएक्टिव एजेंटों को समाप्त कर देता है

<https://www.jagran.com/haryana/hisar-remocon-wipes-to-protect-against-radioactive-elements-in-low-power-nuclear-attacks-jagran-special-23062014.html>



*Sat, 10 Sep 2022*

## Directed Energy Weapons: India's Defence Future

Aiming to take India's defence sector to another level, the Defence Research and Development Organisation (DRDO) is making optimal use of the facilities provided by the government. As the world is moving towards laser-based weapon systems, India looks up to organisations like the Centre for High Energy Systems and Sciences (CHESS) under DRDO. In India, CHESS is the nodal centre for such evolved and futuristic weapon systems. Located in Hyderabad, CHESS is a defence lab under DRDO.

According to reports, CHESS conducts research and works on High Energy Laser Systems. The organisation has been experimenting with Directed Energy Weapons (DEWs) in an attempt to modernise the defence technology of the nation.

These systems destroy hostile targets using laser technology. Any hostile object, whether it is a drone, enemy boat or mortar, that comes in contact with a high-energy laser gets destroyed. In layman's terms, DEWs are capable of destroying or damaging the target temporarily or permanently by focusing high-energy beams or lasers. The application of systems developed by

CHESS includes neutralising targets such as personnel, missiles, drones, vehicles and optical devices on land, air or water, reported All India Radio.

Given India's security concerns, DEWs will play an essential role, especially at a time when our neighbouring countries are also experimenting with such weaponry. DEWs are the weapons of the future. CHESS is working on both the Hard Kill and Soft Kill parts of these weapon systems which will enable the country to better engage with threats. These systems will provide India with strategic and operational superiority over its adversaries, the report stated.

In a conversation with PBNS, Ravi Shankar, a scientist at CHESS, said that DRDO has a tie-up with Bharat Electronics Limited (BEL) for mass production of these defence systems as it is only an R&D organisation. "Currently, the defence systems developed by CHESS are employed with Army Air Defence, National Security Guard (NSG) and Special Protection Group (SPG)," said Ravi Shankar at FICCI's event. Making India a Global Drone Hub'.

DRDO has been working in this domain for the past few years to develop weapon systems of up to 100 kilowatts of power for short, medium and long ranges. These high-powered DEWs can quietly incapacitate enemy missiles or drones without leaving any physical evidence or debris.

Russia, France, Germany, the UK, Israel and China are few of the countries that are working and have robust programmes to develop DEWs or Laser Directed Energy Weapons. DEWs are being used by various militaries as a force multiplier and India is also making simultaneous efforts to keep up with the requirements of modern-day warfare.

India's DEW development includes DURGA II (Directionally Unrestricted Ray-Gun Array), which is a 100 kilowatt, lightweight directed-energy system. This weapon system will be integrated with the Indian Army and any other platform on land, air or water bodies. There are many projects in progress related to DEWs under DRDO's sleeves. Some of the projects are Kilo Ampere Linear Injector (KALI), Project Aditya and Air Defence Dazzlers.

<https://odishatv.in/news/technology/directed-energy-weapons-india-s-defence-future-185157>



Press Information Bureau  
Government of India

Ministry of Defence

*Mon, 12 Sep 2022 1:12 PM*

### **Government Committed to Create a Robust & Self-Reliant Logistics System to Deal with Security Challenges, Says Raksha Mantri at 1st Indian Army Logistics Seminar in New Delhi**

**Calls for Civil-Military Fusion to Further Strengthen the System & Stay Prepared for Future Threats**

**Focus on Establishing Common Logistics Nodes, So That Resources of One Service is Seamlessly Made Available to the Rest: Shri Rajnath Singh**

Government is committed to create a robust, secure, speedy and 'Aatmanirbhar' logistics system to effectively deal with future security challenges and take the country to greater heights. This was stated by Raksha Mantri Shri Rajnath Singh during the keynote address at the first Indian Army Logistics seminar, organised on the theme 'Samanjasya Se Shakti', in New Delhi on September 12, 2022. "India has become the fifth largest economy in the world today. It is fast moving towards becoming a \$5 trillion economy. In future, whether in battlefield or civilian sector, the criticality of logistics sustenance is going to increase. In such a situation, reforming the system of logistics according to the needs of the 21<sup>st</sup> century is the need of the hour. Self-reliance is an important component in the field of logistics. To achieve our goals, we need an 'Aatmanirbhar' logistics supply system," said Shri Rajnath Singh, while elaborating on the framework laid by the Government to make India a superpower in 'Amrit Kaal' by 2047.

The Raksha Mantri termed jointness among the three services as one of the major policy changes made in Ministry of Defence in the last few years, which has benefited a number of sectors across the board, especially logistics. He said, the foundation has been laid to establish a strong logistics system, which is pivotal for operational preparedness of the Armed Forces as it ensures that right items, with right quality & quantity, are available to the military at the right time and right place. Military logistics is an extremely important aspect that determines the outcome of a war, he said.

Elaborating on the visible positive results, Shri Rajnath Singh stated that due to the Government's efforts, the response time has been significantly reduced to deal with counter insurgencies as well as in disaster relief, humanitarian assistance, non-combat evacuation, combat search & rescue and casualty evacuation. This is an important aspect of Nation Building and all efforts are being made in this regard, he added.

Stressing on the need to continue bolstering the logistics system, the Raksha Mantri asserted that the government is focussing on establishing common logistics nodes in the country, as per the needs of the three services. Through these nodes, the resources of one Service will seamlessly be available to the rest, he said. Shri Rajnath Singh shared his insights on Information & Communication Technology (ICT) architecture, terming it as a major part of efficient logistics. "All the services have developed their ICT architecture. It is our endeavor that there should be interoperability between the three services, so that we can use our resources in the best way," he added.

The Raksha Mantri called for civil-military fusion to further strengthen the logistics system and stay prepared to deal with future challenges. He emphasised that logistics in future wars will require jointness not only among the three Services, but also among different bodies in the form of industrial back-up, research & development, material support, industry and man-power. He called for formulating robust policies to enhance commitment & mutual trust between civil and the military, which will provide a renewed thrust to the Government's vision of protecting the people from future threats. He suggested learning from the policies and best practices of different countries, stressing that the highest level of civil-military coordination can only be achieved when all stakeholders come together under a robust framework.

Shri Rajnath Singh also threw light on a number of policies formulated by the Government to integrate logistics in the country and make it self-reliant. These policies include National Logistics Policy, PM Gati Shakti and other efforts to ensure infrastructure development. In his opening remarks, Chief of the Army Staff General Manoj Pande emphasised on bringing synergy in the efforts of the Nation to make India a global powerhouse of defence logistics. He exuded confidence that the ongoing efforts will not only cater to the domestic needs, but also help the friendly foreign countries. Chief of the Air Staff Air Chief Marshal VR Chaudhari, Chief of the Naval Staff Admiral R Hari Kumar and other officials of Ministries of Defence, Railways, Civil Aviation, Commerce & Industry, Paramilitary Forces and representatives of academia & industry were present on the occasion.

The seminar was conducted over three sessions. The viewpoints of eminent speakers and subject matter experts on the "Whole of Nation Approach to Logistics" were discussed. Experts from the Ministry of Defence and well-known consultants from business and academia discussed on the topic 'Industry as a driver for Change in Military Logistics'. Young entrepreneurs and veterans & young officers of the Indian Army gave their perspectives on 'Re-imagining Military Logistics via Technology'. The event provided 230 officers and more than six lakh viewers of the Indian Army YouTube Channel with an immersive learning experience and stimulating conversation. The chance to share opinions on this issue of national significance was appreciated by the participants.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1858665>



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*Mon, 12 Sep 2022 9:12 AM*

## **Launch of YD 12653 (Taragiri)**

The fifth Stealth Frigate of P17A, being built at MDL was launched today by Smt. Charu Singh, President NWWA (Western Region) who named the ship 'Taragiri'. In compliance with the notification issued by the Ministry of Home Affairs, Government of India declaring a state-mourning on 11 Sep 2022. The event was limited to a Technical Launch as the event is tide dependent, any change in the schedule was not possible. Vice Admiral Ajendra Bahadur Singh, Flag Officer Commanding-in-Chief, Western Naval Command was the Chief Guest, VAdm Kiran Deshmukh Controller Warship Production and Acquisition other senior officers from the Indian Navy and MoD were amongst the dignitaries who witnessed the launch ceremony.

The Warship Design Bureau (WDB) and the MDL teams having demonstrated multiple successful conventional launches in the past, have honed their expertise further and performed yet another pontoon assisted launch with panache. Following the launch, 'Taragiri' will join its two sister ships at MDL for outfitting activities towards the run up for their delivery to Indian Navy. Seven P17A Frigates are under various stages of construction at MDL and GRSE. Indigenous construction of complex frontline ships such as Stealth Frigates has catapulted the nation to a higher pedestal in the arena of shipbuilding. It provides additional benefits such as economic development, employment generation for Indian Shipyards, their sub-contractors and ancillary industry. Further, 75% of the orders of the Project 17A have been placed on indigenous firms including MSMEs, thus reinforcing the country's quest for 'Atma Nirbhar Bharat'.

Speaking on the occasion, Vice Admiral Ajendra Bahadur Singh, FOC-IN-C, Western Naval Command praised the efforts of Mazagon Dock Shipbuilders Limited, Warship Design Bureau and other Naval Teams in realizing the nation's quest for self-reliance with regard to warship building. He added that 'Taragiri' will surely add to IN's forte as and when it makes its way into the blue waters.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1858575>



*Mon, 12 Sep 2022*

## **Taragiri, the Third Stealth Frigate Under Project 17A, Launched**

The 149-metre-long and 17.8-metre-wide ship is propelled by a combination of two gas turbines and two main diesel engines which are designed to achieve a speed of more than 28 knots at a displacement of as much as 6,670 tonnes, officials said. Taragiri, the indigenously-designed Nilgiri-class stealth guided-missile frigate constructed by Mazgaon Dock Shipbuilders Limited



(MDL), was launched in Mumbai Sunday morning. Taragiri is the third stealth frigate built as part of Project 17A under which a series of such guided-missile frigates are being constructed for the Navy. The event was held without celebrations due to the “national mourning” announced by the central government in the wake of Queen Elizabeth’s death. It was limited to a technical launch as being tide-dependent, a change in the schedule was not possible, officials added.

The ship was named by Charu Singh, president of the Navy Wives Welfare Association (western region) and the wife of the chief guest Vice Admiral Ajendra Bahadur Singh, Flag Officer Commanding-in-Chief, Western Naval Command. MDL said the ship has been built using integrated construction methodology which involves construction of the hull blocks in different geographical locations and integration and erection on the slipway at MDL. The keel of Taragiri was laid in September 2020 and the ship is expected to be delivered by August 2025. The vessel is being launched with an approximate launch weight of 3,510 tonnes. The ship is designed by the Indian Navy’s in-house design organisation, the Bureau of Naval Design. MDL has undertaken the detailed design and construction of the ship which is also overseen by the Warship Overseeing Team (Mumbai).

The first ship of Project 17A, Nilgiri, was launched on September 28, 2019 and is expected to undergo sea trials in the first half of 2024. The total value of Project 17A is around Rs 25,700 crore. The second ship of P17A class, Udaygiri, was launched on May 17 this year and is expected to start sea trials in the second half of 2024. The keel of the fourth and final ship was laid on June 28 this year. The 149-metre-long and 17.8-metre-wide ship is propelled by a combination of two gas turbines and two main diesel engines which are designed to achieve a speed of more than 28 knots at a displacement of as much as 6,670 tonnes, officials said.

The steel used in the hull construction of P17A frigates is indigenously developed DMR 249A, which is a low carbon micro-alloy grade steel manufactured by the Steel Authority of India Limited. The indigenously designed Taragiri will have state-of-the-art weapons, sensors, advanced action information system, integrated platform management system, world-class modular living spaces, sophisticated power distribution system and a host of other advanced features. It will be fitted with a supersonic surface-to-surface missile system. The ship’s air defence capability, designed to counter the threat of enemy aircraft and anti-ship cruise missiles, will revolve around the vertical launch and long-range surface-to-air missile system. Two 30 mm rapid-fire guns will provide the ship with close-in-defence capability while an SRGM gun will enable her to provide effective naval gunfire support. Indigenously developed triple tube lightweight torpedo launchers and rocket launchers will add punch to the ship’s anti-submarine capability.

<https://indianexpress.com/article/cities/mumbai/taragiri-the-third-stealth-frigate-under-project-17a-launched-in-mumbai-today-8144593/>



*Sat, 10 Sep 2022*

## **Army Gets Battle Gear in East, Helipads for Chinooks**

Infantry battalions guarding the Line of Actual Control (LAC) with China in Arunachal Pradesh are racing to equip themselves with a string of new weapons and systems to sharpen their combat

edge, with the capability upgrade encompassing light machine guns, assault rifles, rocket launchers, unmanned aerial vehicles, all-terrain vehicles and high-tech surveillance gear, officials familiar with the army's modernisation said on Friday. Helipads, capable of operating multi-mission Chinook helicopters, are also coming up in remote pockets for faster deployment of soldiers and weaponry as part of an overarching infrastructure push, even as new satellite terminals along the border will provide high-capacity communications capability to plan operations, said one of the officials above. "Infantry battalions form the cutting edge of combat, and they are being stocked up with new military gear for operational efficiency. The capability upgrade is happening at a remarkable pace," said Brigadier Thakur Mayank Sinha, the commander of a mountain brigade deployed in eastern Arunachal Pradesh. The new inductions include Israeli-origin Negev light machine guns, Sig Sauer assault rifles from the US, Swedish Carl Gustav Mk-III rocket launchers, indigenous Swift unmanned aerial vehicles, all terrain vehicles from the US and digital spotting scopes for better recognition and identification of targets.

The focus is on capability development, building infrastructure and training to execute the assigned operational role, said Sinha. Construction of helipads for operating Chinooks that can carry the army's newest US-origin howitzers to forward bases is in full swing, he added. The M777 ultra-light howitzer has emerged as the centrepiece of the army's weapon deployment along LAC in Arunachal Pradesh to counter the Chinese military build-up, with the gun's tactical mobility giving the army multiple options for a firepower boost in remote areas, the officials said. The army's sharpened focus on the eastern sector comes at a time when India and China are locked in border row in the Ladakh sector. The Indian Army and the Chinese People's Liberation Army (PLA) on Thursday announced that their frontline troops have kicked off disengagement from Patrol Point-15 (Gogra-Hot Springs area) in eastern Ladakh, with the breakthrough coming after the 16th round of military talks held in July.

**This is the fourth round of disengagement between the two armies.**

Despite disengagement from Galwan Valley, Pangong Tso, Gogra (PP-17A) and now PP-15, the two armies still have around 60,000 troops each and advanced weaponry deployed in the Ladakh theatre. The army, which has focused on counter-insurgency operations in the North-east for decades, has carried out a reorientation of its forces in the eastern sector to counter challenges along the border with China.

<https://www.hindustantimes.com/india-news/army-gets-battle-gear-in-east-helipads-for-chinooks-101662748444235.html>



*Sat, 10 Sep 2022*

## **Army Chief Gen Manoj Pande Reviews Exercise Parvat Prahara in Ladakh**

Indian Army Chief General Manoj Pande, who is on a two-day visit to Ladakh, reviewed exercise Parvat Prahara on Saturday. He was briefed on operational preparedness by commanders on the ground. "Gen Manoj Pande visited Ladakh Sector and witnessed exercise Parvat Prahara. The COAS was briefed on

operational preparedness by commanders on the ground. He interacted with the officers and troops and complimented them for their steadfastness and professional standards," the Indian Army tweeted. Gen Manoj Pande #COAS visited #LadakhSector and witnessed Exercise PARVAT PRAHAR. #COAS was briefed on operational preparedness by commanders on ground. He interacted with the officers & troops & complimented them for their steadfastness and professional standards.

The visit of General Pande comes amid the ongoing disengagement process between India and China in the Gogra-Hot Springs area on the Line of Actual Control (LAC). This disengagement process follows the 16th round of talks between the corps commanders of India and China that was held at Chushul Moldo Meeting Point on July 17, 2022. Since then, the two sides had maintained regular contact to build on the progress achieved during the talks to resolve the relevant issues along the LAC in the western sector of the India-China border areas. "As a result, both sides have now agreed on disengagement in the area of Gogra-Hot Springs (PP-15)," he said.

<https://www.indiatoday.in/india/story/army-chief-gen-manoj-pande-reviews-exercise-parvat-prahar-in-ladakh-1998870-2022-09-10>



*Sat, 10 Sep 2022*

## **Army in Arunachal Pradesh Gets Modern Equipment**

Latest Sig Sauer rifles, Negev Light Machine Guns (LMG), Carl Gustaf-Mk3 84 mm rocket launchers, digital spotter scopes, fuel cell chargers for patrols, all-terrain vehicles and satellite terminals are some of the new inductions for the infantry soldiers in the Rest of Arunachal Pradesh (RALP), beyond the Tawang sector, in Arunachal Pradesh. This along with helipads at forward posts, M777 Ultra-Light Howitzers backed by Chinook heavy lift helicopters are part of the overall capability enhancement in the region.. "There is big focus on capability development. In the infantry battalions lot of new inductions are happening. Apart from this, there is focus on surveillance and reconnaissance," said Brig. T.M. Sinha who is commanding a Brigade in RALP. Next is infrastructure development, both in hinterland and border areas, he added.

Another major push is on helipads being constructed at forward areas along the Line of Actual Control (LAC) in RALP, officials on the ground said. These are coming up with specifications that they can take the biggest helicopters, the CH-47F(I) Chinook heavy-lift helicopters which gives significant advantage, one officer noted. These developments come in the backdrop of massive Chinese upgradation across the LAC, which also has significant advantage with respect to India in RALP. Acknowledging this, a senior officer posted in the area said the pace of Chinese modernisation was very fast and India was also pushing and catching up.

### **2019 deal**

The Army has procured 72,400 SIG 716 assault rifles from Sig Sauer of the U.S. under a deal signed in February 2019 and they have since been inducted with frontline infantry soldiers deployed in operational areas. The SIG-716 weighing 3.82 kgs, has an effective range of 600m and employs the heavier calibre 7.62 mm ammunition. Army contracted 16,497 Negev Light Machine Guns (LMG) from Israel in March 2020 under fast-track procurement and they have since been inducted on the Line of Control (LoC). They started coming in in RALP early this year, according to officials on the ground. On the fuel cell-based chargers, one officer who did not wish to be identified said they were very useful. "We can take it for long range patrols and are less weight, less maintenance and more durable." Long range patrols on foot in the tough terrain vary from two weeks to a month.

### **Indigenous UAVs**

Another significant aspect is induction of indigenous unmanned aerial vehicles (UAVs) that has given big boost to the forward troops and we can see across the LAC in depth day and night, the officer cited above said. In terms of mobility, all-terrain vehicles procured from the U.S. have been deployed in Ladakh and Arunachal Pradesh. Material lifting cranes are now available in all units which were earlier with the Engineering teams and has significantly eased handling of heavy loads, the officer added talking of the across the board upgradation underway in infantry battalions.

In terms of fire power, a major addition is the induction of M777 ULH which have a range of over 30 km and weighing just 4.2 tonnes allows them to be transported by Chinook and Mi-26 heavy-lift helicopters. Apart from lethality, it has flexibility in employment as it can be moved by air, another officer said. Two regiments of the M777 have been deployed in the RALP and they have already been deployed in the Tawang area. Apart from capability development, the other focus is on infrastructure development. In forward areas for connectivity from the major roads to the forward posts, the Army's engineering task forces are being employed.

### **Communication network**

With significant enhancement and also induction of technology, the communication network is in the process of being upgraded as part of an overall project being taken up across the country. All forward posts are being linked up with optical fibre cable lines so that big data communications are taken care of and satellite terminals are also coming up, another official in the loop explained. As part of this, new radio sets are also being inducted, including some Software Defined Radios. "The focus is to build redundancy in the communications," the officer added. The Tawang sector has already seen significant upgradation of defences as well addition of offensive fire power in recent year by India to match the Chinese build-up. China claims Arunachal Pradesh as south Tibet.

<https://www.thehindu.com/news/national/infantry-battalions-in-rest-of-arunachal-get-major-upgrade/article65872039.ece>

## **Business Standard**

*Fri, 09 Sep 2022*

### **Army's Forward Posts Along LAC in Arunachal Pradesh to have Helipads**

Almost all forward posts along the Line of Actual Control (LAC) in Arunachal Pradesh will have one large helipad each for swift mobilisation of troops and military equipment as part of a mega push for infrastructure development, senior military officials said on Friday. Each of the forward posts and Army units are also being linked with optical fibre network and all of them will have separate satellite terminals for bolstering overall surveillance and communication, they said. The Army has already deployed a large number of indigenously-built remotely piloted aircraft, Switch, in the forward posts to monitor Chinese activities across the LAC. "We are now giving a big push to the infrastructure development in the forward areas in the eastern sector," Brigadier TM Sinha, commander of a Mountain Brigade in eastern Arunachal Pradesh, told a group of visiting journalists.

As part of the capability development initiative, the Army has powered its units in Arunachal Pradesh with a sizeable number of US-manufactured all terrain vehicles, 7.62MM Negev Light Machine Guns from Israel and various other lethal weapons, the officials said. They said the

helipads are being built at the forward posts to facilitate landing and take off the Chinook 47 (F) helicopters which were procured from the US under a deal sealed in 2015. The Chinook is a multi-role, vertical-lift platform, which is used for transporting troops, artillery, equipment and fuel and the choppers are being extensively used to bolster India's military preparedness in the eastern sector. "The construction of the helipads will facilitate operation of Chinooks in forward areas and will ensure quick movement of equipment and troops," said Brigadier Sinha.

The government has been giving a major push to infrastructure development along the nearly 3,500 km long LAC following the eastern Ladakh faceoff that began in 2020. The Army has deployed a significant number of easily transportable M-777 ultra light howitzers in mountainous regions along the LAC in Arunachal Pradesh. The M-777 can be transported quickly in Chinook helicopters and the Army now has the flexibility of quickly moving them from one place to another based on operational requirements. The eastern Ladakh border standoff between the Indian and Chinese militaries erupted on May 5, 2020 following a violent clash in the Pangong lake areas and both sides gradually enhanced their deployment by rushing in tens of thousands of soldiers as well as heavy weaponry. The tension escalated following a deadly clash in Galwan Valley. As a result of a series of military and diplomatic talks, the two sides completed the disengagement process in the Gogra area and the north and south banks of the Pangong lake last year. On Thursday, both sides announced that they have begun disengagement in Patrolling Point 15 in the Gogra-Hotsprings area. Each side currently has around 50,000 to 60,000 troops along the LAC in the sensitive sector.

[https://www.business-standard.com/article/current-affairs/army-s-forward-posts-along-lac-in-arunachal-pradesh-to-have-helipads-122090900434\\_1.html](https://www.business-standard.com/article/current-affairs/army-s-forward-posts-along-lac-in-arunachal-pradesh-to-have-helipads-122090900434_1.html)

## THE TIMES OF INDIA

*Sun, 11 Sep 2022*

### **Military Station Near China Border Named After General Bipin Rawat**

A military station in Kibithu, a tiny town barely 15km from the China border in Arunachal Pradesh's Anjaw district, and a 22km road leading to it have been renamed General Bipin Rawat Military Garrison and Gen Bipin Rawat Marg after India's first Chief of Defence Staff who died in a helicopter crash last year. General Rawat had commanded his 5/11 Gorkha Rifles battalion as a colonel from 1999 to 2000 in Kibithu, the easternmost town in Arunachal. The 22km stretch from Walong to Kibithu is steeped in history.

In the 1962 India-China War, the Battle of Walong was the only counterattack by India. Separated by the Lohit river, Kibithu and neighbouring Kaho sit on a heavily militarised tri-junction, with China to the north and Myanmar to their east. The army said Gen Rawat's vision and foresight were instrumental in implementing infrastructure development and ensuring societal progress in the area. A gate built at the garrison in local architectural style was inaugurated by Arunachal governor Brig (retired) BD Mishra, while the road was opened by CM Pema Khandu. A life-size mural of Gen Rawat was also unveiled.

<https://timesofindia.indiatimes.com/india/military-station-near-china-border-named-after-general-bipin-rawat/articleshow/94124597.cms>

# The Tribune

Mon, 12 Sep 2022

## Defence Ministry Eyes Rs 35,000-Cr Exports by 2025

The Ministry of Defence is set to widen the horizon of 'Make in India' and meeting the target of Rs 35,000-crore military exports by 2025 on the back of global interest in fighter jet 'Tejas' coupled with successes in new technologies. The 'Make in India' initiative is providing state-of-the-art equipment, which matches the best in the world. The BrahMos missile is being exported to the Philippines, while India is getting ready to ink the 'Tejas' Mk1A deal with Royal Malaysian Air Force (RMAF) soon.

Hindustan Aeronautics Limited (HAL), which makes 'Tejas' fighter jets, had got Initial Operational Clearance (IOC) in February last year for manufacturing light utility helicopters (LUH). The first LUH was manufactured last month. Now, HAL has the capacity to manufacture more than 50 helicopters every year and is also looking at the export market. Exports touched Rs 13,000 crore in the fiscal ending March 31, 2022, and are set to rise this year. Sources say that for the first time, the Indian defence industry is participating in the global supply chain significantly. "Some 50 per cent of the Indian defence exports is going to leading manufacturers in the US," said an official. About 2,500 patent applications were filed in the past four years. Last month, the Sealift Command of the US started sending its warships to an Indian shipyard for repair and maintenance, developing a new innovation ecosystem. The Ministry of Defence is upbeat about the non-hackable channel of 'quantum computing communication' over 150 km, while the global capacity is 90 km.

Aircraft carrier INS Vikrant commissioned last week is also seen as a significant step, catapulting India into the league of a few nations to have indigenous capability to design and build aircraft carriers. Contracts from domestic industries are worth Rs 2.2 lakh crore and projects worth Rs 5.07 lakh crore are in different stages of procurement by the three services. The three services enhanced the use of artificial intelligence in their weaponry. "The Indian armed forces have developed solutions that would not have been available from foreign vendors. If it would have been the case, sensitive data shared with foreign vendors would have been compromised," said an official.

<https://www.tribuneindia.com/news/nation/defence-ministry-eyes-35-000-cr-exports-by-2025-430800>



Mon, 12 Sep 2022

## Atmanirbhar Bharat: Indian Weapons Set to Rule the Roost

By Huma Siddiqui

Defence production for the Indian Armed Forces under the 'Make in India' initiative provides state-of-the-art equipment, which matches the world's best in many cases. It exceeds the

specifications of the corresponding world platforms. This is amply demonstrated by other nations seeking many such weapons and equipment.

### **Indian innovation empowering the world**

For the first time, the Indian defence industry is participating in the global supply chain in a significant way. It is supplying to leading Original Equipment Manufacturers (OEMs) worldwide, which is a testament to Indian products' quality and workmanship. This is evident from the fact that nearly 50 percent of the Indian defence exports from the Indian defence industry are going to leading OEMs in the USA. The US Sealift Command, which has started sending naval ships to Indian shipyards, has found the capability of Indian shipyards to meet the highest standards in the world.

Not only in defence production, the innovation ecosystem developed under the iDEX programme, as well as Make-2 and DRDO programmes, is attracting interest from leading countries worldwide, including the USA, UK and Australia, apart from several others in Asia and Africa. India is developing defence technologies that are on the cutting edge for the first time, sometimes exceeding the best the world has seen so far. For instance, the non-hackable quantum channel created by a start-up with a hop of 150 km on a terrestrial optical fibre infrastructure bests the 90 km of similar hop achieved worldwide. India is also working towards greater innovation and manufacturing prowess when it comes to drones. The focus is on creating some global firsts in this field as well.

### **Why is indigenisation important?**

With indigenous weapons and platforms, a new dimension is added to their capabilities. They have an advantage over the adversary since indigenously developed niche capabilities can remain unknown to the enemy- something that is not possible with imported off-the-shelf equipment. Such capabilities have been achieved due to proactive initiatives taken by all three services in the last two years. The latest addition to the indigenisation efforts was the aircraft carrier commissioned last week. Designed by the Indian Navy, it was manufactured by Cochin Shipyard, catapulting India into the league of a small group of nations who have the capability to design and build aircraft carriers.

The rapid success achieved in development of military equipment is also in part to the credit of public-private partnership (PPP). Nagpur-based Economic Explosives (EEL) serves as a prime example. EEL's Dr Manjit Singh, Director R&D told the Financial Express Online that the company has created Pinaka Multi Barrel Rocket Launcher System in collaboration with DRDO; state-of-the art Multi-Mode Hand Grenades with a reliability of 99.82; HE/I ammunition for AK 630 gun, the main CRAA gun of the Indian Navy. He further highlighted that "The Company has established itself as the only alternative to import of chaff payload. Today, the nation can decide on customising its payload depending upon the threat that its armed forces anticipate, a capability hitherto not available. We have also innovated solutions to develop bombs (MK-80 series bombs) that can be used both on the Eastern and Western Origin aircraft. This is one of a kind achievement that has no parallels."

The company also claims that it has the world's largest known state of the art production plant at Nagpur to manufacture HMX and HMX based compositions. "We are regularly exporting HMX and its compositions world over to countries like the USA, France, Ukraine, Israel," said Dr Manjit Singh.

### **Indigenisation boosting services' firepower**

The three positive indigenisation lists issued by the Department of Military Affairs during the last two years are examples of the Armed Forces' conviction in the capability of the domestic industrial ecosystem. These lists prescribe the 310 platforms and equipment services they have chosen to procure from the Indian industry as part of a roadmap that meets their requirements. Moreover, contracts worth Rs 2.2 lakh crores and projects worth Rs 5.07 lakh crores are in different stages of procurement by the three services. There are several instances where the equipment manufactured by an Indian vendor has exceeded in quality compared to the global version of the same equipment. A case in point is K9 Vajra, which provides several value-added services like predictive maintenance using IoT, which provides higher availability of the platform, a feature which was not available in earlier versions of the same equipment.

All three services have led the effort to enhance the use of artificial intelligence in their weaponry. The developed solutions would not have been available from foreign vendors or would have resulted in the compromise of sensitive data. By developing those technologies in India, services have a large number of capabilities that would not have been possible otherwise.

### **Future-Ready through self-reliance**

The focus is not on weapons and defence hardware alone. The Atma Nirbhar Bharat and Make in India initiatives are also covering niche, upcoming fields. The achievements of QNu labs are a prime example. The CEO of QNu Labs, Sunil Gupta says that his company is "working to solve the challenges of protecting the integrity and confidentiality of data and information by offering quantum-safe cybersecurity. The product and solutions from QNu Labs can help mitigate data security risks across verticals such as defence, government, healthcare, financial institutions, and telecommunications to name a few." The company, incubated at IIT-Madras Research Park in 2016, is a testament to swift indigenous innovation that is presently burgeoning in the Indian military-industrial complex. The government and services have provided extensive impetus for such solutions, and to such firms. Defence minister Rajnath Singh recently launched 75 artificial intelligence applications. The Indian Navy has recently decided to launch 75 challenges under iDEX for developing new and emerging capabilities- some of which are not offered by any country to India.

This programme has changed the landscape of innovation in the country. The confidence shown by the services in the domestic defence ecosystem is a result of the fast pace at which innovations are happening in the country. This is undoubtedly a result of policy initiatives taken by the government. Recently, the services decided to acquire 14 sets of new innovative technologies which Indian start-ups have developed in a very short period.

### **HAL breaking the vertical limit**

State owned Hindustan Aeronautics (HAL) has already established facilities for a rated production of 12 LCA per annum, with the help of private participation. It "is augmenting the current facilities to increase the capacity to 16 aircraft per annum from next year, 2023-24 onwards," HAL official sources have confirmed. It is in a position to further enhance the rate of production up to 30 aircraft per annum for any additional operational requirements. It is also gearing up to manufacture for the international market as there is demand from many countries. The current pace of LCA production is as per the IAF's roadmap for the aircraft. As and when required, the capacity could be enhanced further. The company has designed and developed the



Light Utility Helicopter (LUH) as a replacement helicopter for Cheetah/Chetak helicopters. The Initial Operational Clearance (IOC) was issued in February 2021 by the IAF and Army. Production of LUH has commenced, and the first of these was already produced in August 2022. The strength of HAL in helicopters is reflected by more than 200 IPs (patents, designs, etc.), which HAL has filed in the process of designing and developing these helicopters. The flexibility available with design means that HAL can meet users' customised needs. Noted Indian aerospace and defence analyst Girish Linganna highlighted that "yet another one of HAL's famous fighters- the Light Combat Aircraft (LCA) Tejas- has also been showing a stellar performance. Fitted with the indigenous Uttam AESA radar, it is giving strong competition to South Korea's FA-50 fighter jet in the Royal Malaysian Air Force's tender for acquiring LCA.

The superiority of Tejas is visible not just in its sophisticated radar (compared to FA-50's mechanical radar) and ability to integrate the lethal BrahMos Air-to-Air missiles which its competitor cannot, but also in the strong backing provided by the Indian industry and government." He opined that this is a critical example of the strides Make in India initiative has made in the defence sector. The new Make in India initiative in defence as part of the Atmanirbhar Bharat campaign is particularly strong in design. In fact, because of the indigenous technology development efforts, more than 2500 patent applications have been in the last few years, compared to previous years. In continuation of these efforts, it has now been decided to enhance industry-led design and development with 25 percent of the Defence R&D budget allocated to them.

While the Indian armed forces are now sourcing their requirements heavily from domestic sources, wherever the domestic capability does not exist, an effort is made to get the global OEM to manufacture the platform/equipment in India. An example is a recent decision to manufacture C-295 planes in India, collaborating with Airbus and Tata. Moreover, if economic viability for such production does not exist, the government also considers importing essential equipment from foreign OEMs. However, due to the growing defence industry ecosystem, such a situation has shown a progressively downward trend.

<https://www.financialexpress.com/defence/atmanirbhar-bharat-indian-weapons-set-to-rule-the-roost/2662527/>

## Business Standard

*Fri, 09 Sep 2022*

### **NTPC to Supply Power Generated from Renewable Sources to Armed Forces**

State-run power giant NTPC has inked a pact to supply electricity generated from renewable sources to Military Engineering Services. This is the first ever agreement by the Indian armed forces for getting power supply from renewable energy sources, NTPC said in a statement. This will go towards the gradual decarbonization of the armed forces. Power Purchase Agreement for RE power from the NTPC Solapur and Power Uses Agreement for RE power from upcoming NTPC Khavda, was signed to this effect at Chandigarh by A K Srivastava, General Manager

(Commercial), NTPC, Sunit Kumar, AGM (Commercial), NTPC REL and Maj Gen Ashok Kumar, DGW, the statement said.

[https://www.business-standard.com/article/companies/ntpc-to-supply-power-generated-from-renewable-sources-to-armed-forces-122090900698\\_1.html](https://www.business-standard.com/article/companies/ntpc-to-supply-power-generated-from-renewable-sources-to-armed-forces-122090900698_1.html)

# THE ECONOMIC TIMES

*Sun, 11 Sep 2022*

## **Defence Companies to Fly High as Mod Okays Emergency Buys Sans Imports**

With the Ministry of Defence (MoD) ensuring that emergency financial powers allocated to the armed forces for quick contracting of weapon systems aren't used for imports, a significant opportunity has opened up for domestic companies, with officials saying that dozens of proposals are under discussion and the focus is on industry-led design and development. Last month, MoD gave approvals that will help the three armed forces quickly procure weapons and equipment up to ₹300 crore per order, with deliveries to be ensured within a year. It is learnt that several dozen projects are under discussion, with the private sector set to deliver a variety of weapons including swarm drones, long-range rockets, next generation mines, armed unmanned aerial vehicles and artificial intelligence-enabled systems.

Officials say that the focus will be on industry-led design and development, with proposals already received from companies. A high-level meeting in South Block this week is expected to further accelerate this process, for which the government has already allocated 25% of its annual research and development budget. One of the proposals under discussion is a new tactical surface-to-surface missile, which will be a first of its kind project to be developed by the private sector. Being proposed by Economic Explosives Ltd, the 250 plus km range missile would be exponentially cheaper than the Brahmos and is fully indigenous. The ministry is also reviewing a proposal by the same company for guided Pinaka rockets, with a range of up to 150 km and new generation mines.

"We have in the past six months offered 15 Suo motu proposals including loitering munitions, surveillance drones, counter drone systems, drone-based mine detection and neutralisation systems, state-of-the-art anti-tank mine and long-range multi-launcher rocket systems that are being studied by the armed forces," EEL chairman Satyanarayan Nuwal told ET. The bar on imports under the emergency route was imposed after several rounds of internal discussions where it was agreed that capacity exists in the domestic sector to deliver on urgent requirements of the armed forces, officials said. Another proposal being reviewed is for armed unmanned aerial vehicles that will be manufactured in the country at a fraction of import costs. The armed high-altitude long endurance drone is being developed by Adani Defence that already has a joint venture with Israel's Elbit Systems. Sources said that it was being pitched as an indigenous and much more affordable substitute to the stalled proposal for armed Predator MQ 9B drones from the US. The industry is also offering high-technology innovations to the armed forces, with IIT Delhi incubated start-up Botlab Dynamics in advanced stages of developing a path-breaking 3,500 swarm drone system. The company, which is currently looking for capital to expand operations, has submitted proposals for unique systems like disposable drones that can be used

for quick surveillance by special forces, co-founder Sarita Ahlawat told ET. Ministry officials say that the industry can be further accelerated on a public private partnership basis, with the private sector bringing in innovation and the public sector offering testing and manufacturing facilities that have been created over the years. The corporatisation of the Ordnance Factory Board has allowed its newly created entities to create private sector partnerships and changes are expected in other large public sector units to gear up for a similar future.

A public private partnership that is showing results is the development of a high-altitude pseudo satellite that is being partially funded by the ministry. The project is being led by Newspace Research along with Hindustan Aeronautics Ltd. "The long-term focus should be on captive R&D for futuristic products within our country in a public private partnership format to develop next generation military hardware, which is a far bigger deal. Mandated PSUs can exploit the tech prowess and agility of start-ups to create the right impetus for next generation military products," Newspace Research's Sameer Joshi says.

Ministry officials say that the recent geopolitical situation has reaffirmed the need for self-reliance, given the uncertainties in supplies and spares due to the Russia-Ukraine crisis. Dependence on foreign sources for vital equipment, they say, can be leveraged and impact strategic sovereignty of the country.

<https://economictimes.indiatimes.com/news/defence/defence-companies-to-fly-high-as-mod-okays-emergency-buys-sans-imports/articleshow/94138222.cms?from=mdr>



*Sun, 11 Sep 2022*

## **India Raises Objection to Pakistan F-16 Refit**

During official meetings with U.S. Assistant Secretary of State Donald Lu in Delhi last week, India raised "strong objections" to the U.S. plan for Foreign Military Sales (FMS) worth \$450 million for hardware, software, and spares for the F-16 fighter jet programme with Pakistan. The Hindu has learned that officials protested the decision at "each and every" bilateral meeting. Mr. Lu and his delegation had during their visit for the Quad Senior Officials Meeting (SOM). In particular, the Indian side cited concerns about the technology and support being made available to Pakistan for the F-16s, which Pakistan claims are needed for "counter-terrorism operations", and the government conveyed that it believes they are used for operations against India.

Apart from the SOM, Mr. Lu and Defense Assistant Secretary of Defense for Indo-Pacific Security Affairs Ely Ratner held intersessional 2+2 meetings with delegations from the Ministry of Defence and External Affairs. In addition, he met with Joint Secretary Vani Rao separately, and also called on Foreign Secretary Vinay Kwatra. Mr. Lu told officials that the FMS F-16 package was a maintenance deal for F-16s, some of which are 40 years old and part of the U.S.'s global policy of maintaining its defence sales for their entire lifecycle. However, New Delhi is understood to have repeated its skepticism on the issue and made its displeasure known quite clearly. In contrast to 2016, when the MEA had issued a statement expressing its "disappointment" of the planned sale of F-16s, and then (Foreign Secretary) S. Jaishankar had summoned the US Ambassador to protest, this time the MEA has chosen not to make any public comment. "We heard several concerns from the Indian govt," admitted Mr. Lu in an interview to

the India Today TV channel. “Let me say this very clearly, this is a safety and maintenance program. There is no new aircraft being considered, no new capability and no new weapons system,” he added. Significantly, the announcement of the FMS package came while Mr. Lu and Mr. Ratner were in Delhi, and some of the reason for the government’s upset was that it took them by surprise. The announcement made by the Defense Security Cooperation Agency, which gave details of the 12 categories the U.S. would provide support to Pakistan for, said that the State Department had approved the deal and that the DSCA delivered the required certification notifying Congress of possible sale on September 7. Mr. Lu also expressed some skepticism about the latest India-China disengagement agreement at PP-15 at the Line of Actual Control announced this week, saying that the U.S. is not seeing “any sincere effort by Beijing to resolve the dispute”. He said that the U.S. would stand by India “resolutely” as it faces what he called the “terrible threat” from China. The MEA declined to comment on his remarks.

The disagreement over the F-16 package is one of a number of areas where New Delhi and Washington appear to be at odds, despite a period of active engagement, including the meetings with Mr. Lu in Delhi, Commerce Minister Piyush Goyal’s visit to the U.S. for the IPEF ministerial meetings and bilateral trade talks, as well as a visit by U.S. Deputy Secretary of Treasury Wally Adameyo at the end of August. Apart from the government’s suspicions over the Biden administration’s re-kindling ties with Pakistan and the Shehbaz Sharif government, India also decided to stay out of the trade pillar of the Indo-Pacific Economic Framework, citing concerns any trade agreement may “discriminate” against developing economies over issues like environmental commitments, labour standards, and digital laws.

In addition, India has not joined the U.S. push to build a G-7-led coalition on enforcing price caps on Russian oil. PM Modi told Mr. Putin at the Eastern Economic Forum that he attended virtually this week that India wants to step up its energy ties with Russia. In the past few months, India has also rejected U.S. calls to change its vote on Russia at the U.N., and refused to cut Russian energy purchases, instead increasing its oil imports from Russia about 50 times. This week, Prime Minister Narendra Modi’s visit to the SCO Summit in Uzbekistan, where he will be joined by leaders of Russia, China, Turkey, Iran, Belarus, Pakistan, Central Asian States, and possibly Syria, is unlikely to be seen positively by Washington as well.

<https://www.thehindu.com/news/national/india-raised-strong-objections-over-us-sale-of-f-16-spare-package-to-pakistan-during-meetings-last-week-with-key-official-in-delhi/article65878790.ece>



*Sun, 11 Sep 2022*

## **Behind the Pakistan F-16 Deal, A Tale of Many Wheels**

*By S Arun Mohan*

The sale by the United States of F-16 military aircraft to Pakistan, announced in 2005, was celebrated as a sign of deepening strategic ties between Islamabad and the Bush administration in Washington. Described by Secretary of State Condoleezza Rice as an attempt to “break out of the notion that [India and Pakistan are in] a hyphenated relationship,” the decision was met with

anguish in New Delhi. But leaked U.S. diplomatic cables suggest that the sale was used only to further America's broad strategic interests, with Pakistan standing to gain little from the deal.

The despatches, from the U.S. Embassy in Islamabad, indicated that the deal was, among other things, meant to assuage Pakistan's fears of an “existential threat it perceived from India.” The diplomatic cables, accessed by *The Hindu* through WikiLeaks, suggested that the purpose of the sale was to divert Pakistan's attention from “the nuclear option,” and give it “time and space to employ a conventional reaction” in the event of a conflict with India ( >151227: confidential ). Privately, however, the U.S. acknowledged the “reality” that the F-16 programme would not change India's “overwhelming air superiority over Pakistan.” In fact, the cables bluntly assert that the F-16s would be “no match for India's proposed purchase of F-18 or equivalent aircraft.”

Given India's “substantial military advantage,” one cable ( >197576: confidential ) even surmised that the F-16s would at the most offer “a few days” for the U.S. to “mediate and prevent nuclear conflict.” Fully aware of such limitations, the U.S. continued to press ahead with the deal, and cables document hectic parleys to bring it to fruition. Before the agreement was signed in September 2006, the U.S. played hardball to make Pakistan sign the Letter of Acceptance (LoA). Islamabad had threatened to delay it further, raising additional demands. The U.S. Ambassador to Islamabad, Ryan Crocker, suggested that Washington “convene” the Pakistani Ambassador, Ali Durrani, to remind him that “missing the deadline [to sign the LoA] would have serious ramifications.”

“Do not think there is a better deal out there if this one expires,” was one of Ambassador Crocker's suggested bargain lines for Washington to use ( >77877: confidential/noforn ). The agreement was inked two weeks after the cable was sent. At the time of signing the LoA, Major General Tariq Malik, Additional Secretary in the Ministry of Defence Production, had expressed reservations about the payment schedule as an “immense strain on Pakistan's fiscal and foreign exchange reserves..., jeopardising growth.” But Mr. Malik's memo was dismissed by Mr. Crocker as “separate from the valid, legal contract” ( >80337: confidential/noforn ).

But when “a cash-strapped” Pakistan government approached the U.S. two years later for Foreign Military Financing (FMF) to perform mid-life updates for the existing F-16 fleet, the succeeding Ambassador, Anne W. Patterson, was concerned that Washington would be “rewarding economic mismanagement.” The annual disbursement of FMF had “produced a culture of entitlement within the Pakistani military,” according to the diplomat ( >151227: confidential ).

Why, then, did the U.S. push hard to realise the agreement, apart from the stated objective of “additional business for U.S. defense companies”?

If, according to American diplomats, the threat from India was the primary consideration for the Pakistan military, the F-16 sales would not tilt the strategic balance by their own admission. However, the cables suggested that the U.S. was confident that Pakistan would “still fully invest in its territorial defense, despite current economic challenges.” On the other hand, “our [U.S.] cancelling the sale would emphasize that we favor maintaining Indian superiority at Pakistan's expense and feed anti-Americanism throughout the military” ( >197576: confidential ). Another reason to sell F-16s, according to the same cable, was to “exorcise the bitter legacy of the Pressler Amendment” in the 1990s, when the U.S. refused to deliver F-16s that Pakistan had paid with “national money.” Pakistan was even made to undertake costs for storing the fighters in

Arizona. For the Pakistan military, the new deal would be tangible proof of the “post-9/11 bilateral relationship.

### **Avoiding a blow-up**

“The bottom line is that Pakistan cannot afford the \$2 billion required to complete this F-16 program,” wrote Ambassador Patterson in 2009 ( >189129: secret ). “At the same time, nothing is more important to good military-military (and overall U.S.-Pakistani) relations than avoiding a blow-up over the F-16 case.” Even if the sale was considered only “symbolically important” by the U.S., the deal came with many strings attached. The U.S. was more interested in the use of F-16s by Pakistan for counter-terrorism purposes along the Af-Pak border.

Although the Pakistani Air Force (PAF) had been disinclined to use F-16s “due to the risk of collateral damage in civilian areas,” Ms. Patterson suggested linking the FMF for mid-life updates to “explicit commitments by the PAF that accept Close Air-Support training” ( >151227: confidential ). A year after the agreement was concluded, Pakistan learnt that mid-life updates for the F-16s could only be performed in a third country. Since the LoA did not bear any references to “cryptokeys” for the aircraft, officials were also worried that the U.S. would withhold the capability of the F-16s. When these concerns were raised by President Pervez Musharraf and Air Chief Marshal Tanvir Mehmood, the U.S. response was hardly comforting.

“We know many in Washington are dismayed by what they consider a juvenile reaction on Pakistan's part. The Pakistanis do not fully understand our requirements for sharing encrypted devices and need to be reassured that the aircraft will still fly without the cryptokeys.” ( >122429: secret )

Eventually, it was agreed that Pakistan would pay \$80 million to perform the updates in Turkey. The U.S. also expressed concerns about basing the F-16s in Pakistan due to “concerns about potential technology transfer to China.” The outcome? Pakistan was made to fork out another \$125 million to “build and secure a separate F-16 base” ( >197576: confidential ). The purported aim of selling the F-16s to Pakistan was to “yield foreign policy benefits for the U.S.,” but the cables reveal that these benefits were gift-wrapped almost always at Pakistan's expense.

<https://www.thehindu.com/news//article60496298.ece>



*Sat, 10 Sep 2022*

## **Defence, Technology Cooperation and Maritime Security Dominate India-US Talks**

India and the US met this week to advance cooperation on a range of bilateral issues. The agenda, according to a Press Release by the Ministry of External Affairs, included discussion on “defence, counter-terrorism, maritime security, education, health, climate and clean energy, critical technologies, space, and people-to-people linkages”. The Indian delegation at the talks was led by Ms. Vani Rao, Additional Secretary (Americas) in the Ministry of External Affairs while the American delegation was led Mr. Donald Lu, Assistant Secretary of State (South and Central Asian Affairs) and Dr. Ely Ratner, Assistant Secretary of Defense (Indo-Pacific Security

Affairs). According to the Ministry of External Affairs, both sides discussed “discussed developments in the global maritime domain, bilateral maritime cooperation endeavors, regional support initiatives and collaborative efforts such as Indo-Pacific Partnership for Maritime Domain Awareness.”

India and the United States also continued to strengthen their values based partnership. Both sides “affirmed their shared desire to enhance maritime security internationally and strengthen cooperation towards a free, open and inclusive maritime order that would support security, inclusive growth and prosperity”, the press statement detailing the meeting read. The discussion also touched upon regional issues with discussion of events in South Asia, the Indo-Pacific and the Indian Ocean Region. While taking stock of the current state of play in the defence relationship, India and the US also “discussed ways to further strengthen the Major Defence Partnership, including in new and emerging areas in the defence domain such as space, AI and cyber.” New Delhi and Washington closed the meeting by agreeing “to remain engaged with the objective of further enhancing the depth and substance of the India-US Comprehensive Global Strategic Partnership.” Officials from India’s Ministry of Defence, National Security Council Secretariat, Indian Navy and Indian Coast Guard participated in the Maritime Security Dialogue.

<https://www.livemint.com/news/india/defence-technology-cooperation-and-maritime-security-dominate-india-us-talks-11662815901743.html>

## Science & Technology News



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*Sun, 11 Sep 2022 5:10 PM*

### **Union Minister Dr Jitendra Singh Announces Setting Up of a Dashboard to Share the Best Technology Practices Among the Centre and the States**

**The Minister presides over the concluding session of the two-day "Centre-State Science Conclave" at Science City in Ahmedabad**

**Dr Jitendra Singh asks the States to appoint a Nodal officer to coordinate and cooperate for knowing and sharing the best technological practices**

Union Minister of State (Independent Charge) Science & Technology; Minister of State (Independent Charge) Earth Sciences; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh today announced setting up of a Dashboard to share the best technology practices among the Centre and the States. Presiding over the concluding session of the two-day "Centre-State Science Conclave" at Science City in Ahmedabad, Dr

Jitendra Singh informed that a high level mechanism will be developed by the Department of Science and Technology to monitor and coordinate the follow up action of the conclave.

The Minister also asked the States to appoint a Nodal officer in each of the States to coordinate and cooperate with the Special Committee for knowing and sharing the best practices. Giving the example of heli-borne technology launched from Jodhpur, Rajasthan in October, 2021, Dr Jitendra Singh said, to start with, the States of Rajasthan, Gujarat, Punjab and Haryana were taken up for this latest heli-borne survey. The Minister pointed out that if the same technology is uploaded on Dashboard, other States may join and share this CSIR technology from source finding to water treatment and thus benefit millions of people across the country.

Dr Jitendra Singh said, it will also positively contribute to Prime Minister Narendra Modi's "Har Ghar Nal Se Jal" as well as "doubling farmer's income" goals. He said, the latest state-of-the-art technology is being employed by Council of Scientific & Industrial Research (CSIR) for mapping groundwater sources in arid regions and thus help utilise groundwater for drinking purposes. The 2-day 'Centre-State Science Conclave' was formally inaugurated by Prime Minister Narendra Modi at Science City, Ahmedabad, yesterday.

Dr Jitendra Singh expressed satisfaction that important plenary sessions with State S&T Ministers discussed in detail on issues like Agriculture, Innovation for producing portable drinking water including application of technologies like Desalination, Heli borne methods developed by DST, Clean Energy for All including S&T role in Hydrogen mission, Deep Sea Mission of MoES and its relevance for Coastal States/UT, Digital healthcare for All and Synergizing Science with National Education Policy.

A special session with the CEOs of over 100 Start-Ups and industry at the Centre-State Science Conclave' in Ahmedabad came up with scientific solutions in the field of agriculture, drone, artificial intelligence, biotechnological solutions, single-use plastic alternates, irrigation and digital health amongst others. Many of the State governments have shown keen interest in some of the technologies and agreed to partner with some of the start-ups for State-specific technological solutions.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1858527>

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*Sun, 11 Sep 2022*

## **China Finds New Mineral on the Moon, Becomes Third Country to Achieve this Milestone**

*By Harsh Vardhan*

Chinese experts have discovered a new mineral in lunar samples which were brought from the Moon in 2020 during the Chang'e-5 mission. According to the South China Morning Post (SCMP), the mineral has been named Changesite-(Y) and was found by a research team from the Beijing Research Institute of Uranium Geology, a subsidiary of the China National Nuclear Corporation (CNNC). Wang Xuejun, an official from the CNNC, revealed that the team isolated



a single crystalline particle of the mineral from more than 1,40,000 lunar particles in the 1.73 kg rocks retrieved by Chang'e-5. Each of these particles was analysed through modern technological processes, including X-ray diffraction. The expert, during a conference, revealed that the discovered particle is about 10 microns in diameter, or about one-tenth of a human hair and is a phosphate mineral found in lunar basalts.

Making it the sixth new mineral confirmed on the Moon, the discovery has placed China in the third spot after the US and Russia in the list of countries that achieved this milestone. Talking about the discovery, Dong Baotong, vice-chairman of the China Atomic Energy Authority, said as per SMCP that it "provides more basic scientific data for the evaluation and development of lunar resources and has deepened mankind's knowledge of the moon and the solar system". The experts also revealed that currently, 98 applicants from 33 research organisations across China are studying four batches of 152 lunar samples totaling over 53 grams after being distributed by the China National Space Administration (CNSA). According to CNNC's Wang, the discovery would provide "fundamental scientific data for future assessment of helium-3 in lunar samples and their exploration".

#### **About the Chang'e-5 mission**

Named after the Chinese goddess of the Moon, the Chang'e-5 mission launched on November 23, 2020, with four components totaling 8,200 kilograms. While two of these components remained in the lunar orbit, the ascent vehicle with a sample collector touched down on December 1 near the Mons Rümker mountain in the Oceanus Procellarum region on the visible side of the Moon. Soon after its landing, the ascent vehicle unfurled the Chinese flag on the Moon for the first time ever and deployed the sample collector. On December 3, the samples were transferred to the sample collector which carried them to an orbiter in lunar orbit for a journey back to Earth in the same month.

<https://www.republicworld.com/science/space/china-finds-new-mineral-on-the-moon-becomes-third-country-to-achieve-this-milestone-articleshow.html>

