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# समाचार पत्रों से चयित अंश Newspapers Clippings

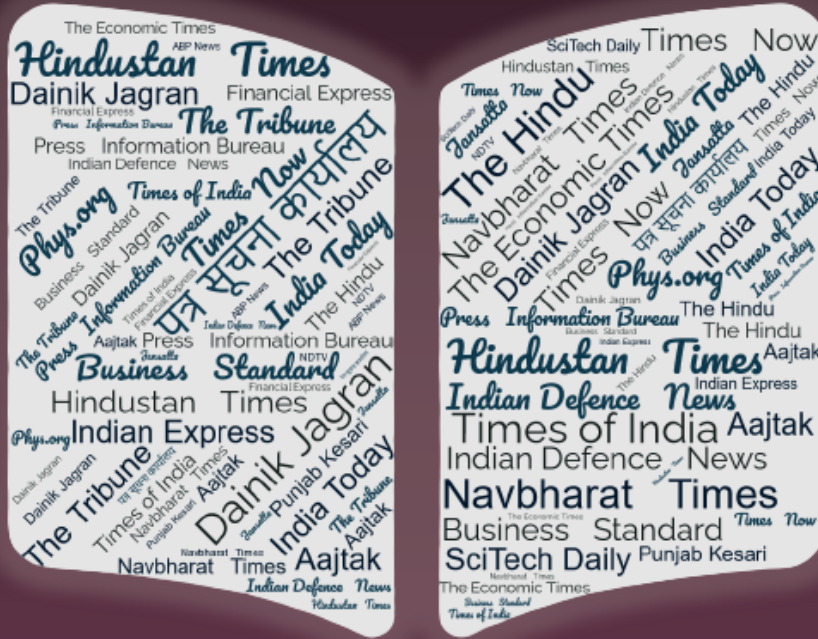
A Daily service to keep DRDO Fraternity abreast with DRDO  
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# The Tribune

Mon, 03 Oct 2022

## **DRDO Developing Advanced Laser Threat Detection System for Armoured Fighting Vehicles for Better Protection**

The Defence Research and Development Organisation (DRDO) is developing a new advanced laser threat detection system for armoured fighting vehicles meant to enhance the survivability of combat platforms in the battlefield. The system will comprise sensors and processing units retrofitted on armoured vehicles like tanks and mechanised infantry combat vehicles to detect the use of lasers by the enemy for detection and target acquisition and to take counter-measures. The project is being executed by DRDO's Instruments Research and Development Establishment (IRDE) at Dehradun, which is inviting the industry to design, develop and manufacture the proposed system. IRDE's research arena includes electro-optical instruments, thermal imagers, night-vision devices and laser-based instruments.

According to DRDO sources, the proposed system is required to detect threats at ranges up to six kilometres. It will have four sensors mounted on the vehicle's turret at different places to provide a 360-degree coverage to detect threats from sources such as laser range finders, laser target designators and laser munition guiding beams. The control units and display screens will be mounted inside, adjacent to the commander's console, and give out an audio and visual warning to the crew, classify the type of threat and enable them to take counter-measures such as firing smoke grenades to obscure the vehicle and move to a different location, sources said. Earlier, another DRDO laboratory, Laser Science and Technology Centre, New Delhi, had produced a laser threat detection system for the indigenously developed Arjun main battle tank. The Army has in its inventory several other armoured vehicles like the T-72 and T-90 tanks and BMP 2/3 mechanised infantry combat vehicles.

The DRDO has been working in the field of lasers for a host of other applications such as protection of high-value assets from aerial attacks, safe ammunition disposal, surveillance, guidance of precision munitions, optical-dazzling, target location and acquisition, detection and identification of explosives, chemical and biological agents and for testing and evaluating various systems. Besides combat operations by the armed forces, some of these systems can also be used by the paramilitary forces and the police for border management and in low-intensity conflict environment.

<https://www.tribuneindia.com/news/nation/drdo-developing-advanced-laser-threat-detection-system-for-armoured-fighting-vehicles-for-better-protection-437751>



**Press Information Bureau**  
Government of India

Ministry of Defence

*Mon, 03 Oct 2022 5:08 PM*

## **Indigenously Designed and Developed Light Combat Helicopter (LCH) Inducted into Indian Air Force**

**LCH is as much a force multiplier for IAF as it is for**

**Atmanirbharata in Defence: Raksha Mantri**

**Raksha Mantri flies on board the newly inducted LCH**

In a big boost to Aatmanirbharatha in Defence, Raksha Mantri Shri Rajnath Singh today presided over the formal induction of Light Combat Helicopter (LCH), designed and developed by Hindustan Aeronautics Limited (HAL), into the Indian Air Force (IAF) in Jodhpur. Naming LCH as “Prachanda”, Raksha Mantri said that its induction comes during the Amrit kal when the Nation is celebrating Azadi ka Amrit Mahostav and a pointer to the future when IAF will be the top most force in the world, as also making the country fully AtmaNirbhar in Defence production requirements. Raksha Mantri also took a sortie onboard the LCH shortly after its induction into IAF. Chief of Defence Staff (CDS) General Anil Chauhan, Chief of Air Staff Air Chief Marshal V.R. Chaudhary, Air Marshal Vikram Singh Air Officer Commanding-in-Chief, South Western Air Command, Chairman and Managing Director of HAL Shri C.B. Ananthkrishnan, senior officials of Ministry of Defence, IAF and local dignitaries were present on the occasion.

In his address, Shri Rajnath Singh praised role of IAF in meeting internal as well as external threats to the country since independence. He added that the induction of LCH, with its tremendous power and versatility, not only enhances the combat capabilities of IAF but is also a big step towards self-reliance in defense production, as envisioned by Prime Minister Shri Narendra Modi. The trust reposed and support extended by the IAF towards indigenous design & development is evident through the examples such as Marut, Light Combat Aircraft, Akash missile system, Advanced Light Helicopter and the Light Combat Helicopter. “The induction of LCH underlines the fact that just as the country trusts the Indian Air Force, the IAF equally trusts the indigenous equipment,” he added.

Raksha Mantri said that adequate attention was not paid to the development of indigenous attack helicopters for a long time after independence. However, since the Kargil War in 1999, the need for LCH was felt more and today’s LCH was a result of two decades of R&D and indigenous

efforts in that direction. Shri Rajnath Singh added that LCH was flying not only on the strength of its rotors, engines and blades, but also on the strength of penance, patience, dedication and patriotism of many scientists, engineers and others. Raksha Mantri noted that the LCH meets the requirements of modern warfare and necessary quality parameters under varied conditions of operations. It is capable of self-protection, of carrying a wide variety of ammunition, and delivering it to the field quickly. This versatile helicopter perfectly meets the needs of our armed forces in various terrains and as such LCH is an ideal platform for both our Army and Air Force, he added.

Raksha Mantri said that the recent conflicts in Ukraine and elsewhere showed us that heavy weapon systems and platforms, which do not allow for rapid movement in the battlefield, are sometimes vulnerable and become easy targets for the enemy. Therefore, the need of the hour is to move towards the development of those equipment and platforms, which are mobile, have ease of movement, are more flexible, and at the same time meet the requirements of the armed forces. In this context, LCH has been developed with an unprecedented balance of all these features and HAL should be congratulated for this, Raksha Mantri said. Air Chief Marshal V.R. Chaudhary, Chief of Air Staff said on the occasion that induction of LCH adds unique capability to the IAF's combat potential. Versatility and offensive potential of the LCH is at par or better than most attack helicopters operating globally. Selection of the personnel in the 143-helicopter unit which will man the LCH have been made based on professional competence so as to ensure operationalisation of the unit at the earliest, he added.

The LCH is the first indigenous Multi-Role Combat Helicopter designed and manufactured by HAL. It has potent ground attack and aerial combat capability. Inducted in IAF's newly raised No. 143 Helicopter Unit, it is a testimony to India's growing prowess in indigenous design, development & manufacturing and a significant milestone in the path towards 'Atmanirbharta' in Defence. The helicopter possesses modern stealth characteristics, robust armour protection and formidable night attack capability. Onboard advanced navigation system, guns tailored for close combat and potent air to air missiles make the LCH especially suited for the modern battlefield. Capable of operating from high altitude terrain and carrying out precision strike at high altitude targets, the helicopter is a formidable addition to IAF's arsenal.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1864787>



*Tue, 04 Oct 2022*

## **Made-in-India Chopper Adds Firepower to IAF**

The Indian Air Force (IAF) on Monday inducted the indigenously built Light Combat Helicopter (LCH), adding to its capabilities for conducting combat operations at high altitudes and buttressing the country's reputation for developing home-grown military hardware. The first fleet of four LCHs was inducted into IAF during a ceremony at Jodhpur airbase in the presence of defence minister Rajnath Singh, Chief of Defence Staff General Anil Chauhan, Air Chief Marshal VR Chaudhary, and senior military officials. The helicopter, under development since 2006, was renamed Prachand (fierce) following its induction. Singh, who made a 20-minute

sortie in the helicopter, said the LCH can fly in any terrain, weather, or altitude. “Our motto is ‘make in India, make for the world’,” he said. Singh noted that the helicopter’s name is testimony to its lethality and versatility. “There is no need to define Prachand, the LCH itself is capable of sending out a message to the enemy,” he said.

While India’s military possesses foreign attack helicopters such as the US-made Apaches and a limited number of Russian-made Mi-24s, the LCH was developed by state-run aerospace major Hindustan Aeronautics Limited (HAL) specifically for combat operations at high altitudes – a need for such a helicopter was first felt during the Kargil border conflict in 1999. The 5.8-tonne twin-engine gunship helicopter is armed with a 20mm gun, air-to-air missiles, rockets, and other weapons. It will be an effective platform for targeting tanks, bunkers and drones in high-altitude areas, military officials said. Addressing the induction ceremony, Singh said this was a “momentous occasion” and an “important milestone” for indigenous defence production. “We have been focusing on boosting the country’s defence production following certain developments...security of the country has been our foremost priority and it will remain so,” he said, speaking in Hindi.

“For a long time, a need was felt in the country for an indigenous attack helicopter. But in 1999, during the Kargil war, its need was felt with great seriousness,” he said. The LCH passed numerous tests during its development and meets all the needs of the armed forces in different terrains, making it an ideal platform for the army and air force, he added. The LCH’s induction dovetails with the government’s current focus on indigenisation of a wide range of military equipment that India has so far acquired from abroad. These moves have also boosted the exports of homegrown systems and platforms, such as the advanced light helicopter Dhruv. Singh said the LCH will increase IAF’s capabilities and is a big step towards self-reliance in defence production. He emphasised IAF’s role in inducting indigenously developed hardware, ranging from the Akash missile system to the light combat aircraft Tejas.

“Whether it is the Ukraine conflict or earlier conflicts, they give us lessons that heavy weapon systems and platforms that cannot move rapidly in the battlefield have a lower capability and sometimes become an easy target for the enemy. Recent conflicts have resulted in a question mark about the use of heavy [weapons],” he said. This has highlighted the need for defence platforms that are mobile, capable of easy movement and have more flexibility and lethality, he said while lauding HAL for its achievements with the LCH. Reiterating the government’s pledge to provide the armed forces with the best platforms for meeting national security needs, Singh said: “Whatever be the global geopolitical scenario, it is our important responsibility to keep national security prepared 24x7. In view of the events of past few years, our government has focused on self-reliance in defence production and preparedness.”

Chaudhari said the LCH’s capabilities are at par with other helicopters of the same class around the world. The LCH’s were given a traditional water-cannon salute after a multi-religion prayer ceremony. The need for a light combat helicopter for mountain warfare was felt acutely during the Kargil war, when the military’s existing fleet of Chetak helicopters were very vulnerable to fire from Pakistani troops that occupied strategic heights along the Line of Control (LoC). The IAF and HAL worked jointly on developing a helicopter capable of operating at altitudes of more than 15,000 feet while carrying an adequate weapons load and fuel. By mid-2010, the LCH prototype completed flight tests and met the required parameters. The LCH was declared ready for production in February 2020, and subsequently, the Cabinet Committee on Security (CCS) approved the purchase of 15 limited series production helicopters at a cost of ₹3,887 crore. The

defence ministry said 10 of these helicopters were for the IAF and the remainder for the army. The army also has a plan to acquire 95 LCHs.

The LCH shares several features with the advanced light helicopter Dhruv, also developed by the HAL, including the engines. What sets the LCH apart are its stealth features such as a narrower fuselage, lower profile and reduced aural, radar and infrared signatures, armour protection, night attack capabilities and crash-worthy landing gear and fuel tanks for better survivability. The LCH is capable of performing in multiple roles, including combat search and rescue, destruction of enemy air defence (DEAD) and counter-insurgency operations. The helicopter can be deployed both at high altitudes and in jungles and urban environments, officials said. Several key technologies used in the LCH, such as the glass cockpit and composite airframe, have already been indigenised and future versions will incorporate more indigenous systems, they added.

Sameer Patil, senior fellow at the Observer Research Foundation (ORF), said: “The induction of LCH Prachand into the IAF is a milestone in India’s quest for defence self-reliance. It imparts a critical capability, fulfilled by only imported equipment so far. The LCH’s technical specifications put India in an exclusive club producing such an advanced helicopter. It will be particularly useful for close combat operations and counter-insurgency missions. Moreover, it’s a valuable addition to India’s defence exports portfolio as and when HAL fulfils the Indian military’s requirements.”

<https://www.hindustantimes.com/india-news/madeinindia-chopper-adds-firepower-to-iaf-101664818248376.html>



*Tue, 04 Oct 2022*

## **‘Special Moment’, says PM Modi as IAF Inducts Made-in-India ‘Prachand’ Choppers**

The light combat helicopters (LCH) were inducted in a ceremony at the airbase in Jodhpur, which precedes its long legacy. The helicopters have been developed by the Hindustan Aeronautics Limited (HAL). Prime Minister Narendra Modi on Monday congratulated the Indian Air Force for the milestone move of inducting made-in-India light combat helicopters, calling it ‘a special moment’ for all citizens. The new choppers are set to replace the foreign attack helicopters in near future. “The induction of LCH ‘Prachanda’ is a special moment for the collective resolve of 130 crore Indians to make our nation strong and self-reliant in the defence sector. Congratulations to every Indian,” Modi wrote on Twitter and reshared a video tweeted by defence minister Rajnath Singh.

Earlier in the day, Singh had shared the video of the new choppers. “Naam hai Prachand. (The name is Prachand),” he wrote. The light combat helicopters (LCH) were inducted in a ceremony at the airbase in Jodhpur, which precedes its long legacy. The helicopters have been developed by the Hindustan Aeronautics Limited (HAL). During the launch, IAF said the helicopter's name is a "testimony to its lethality and versatility". They have been primarily designed for deployment in high-altitude regions – tested under stringent conditions including at sea level, in

desert regions and in Siachen. Apart from Singh, Chief of Defence Staff General Anil Chauhan and IAF chief Air Chief Marshal VR Chaudhari were present at the event.

<https://www.hindustantimes.com/india-news/special-moment-says-pm-modi-as-iaf-inducts-made-in-india-prachand-choppers-101664812630198.html>



*Tue, 04 Oct 2022*

## **Induction of Indigenously Built Light Combat Helicopter Marks a New Chapter: Air Chief**

Induction of the indigenously designed and developed Light Combat Helicopter (LCH) adds unique capability to the combat potential of the Indian Air Force (IAF) and marks a new chapter, said Air Chief Marshal (ACM) V. R. Chaudhari on Monday as the twin-engine helicopter was formally inducted into the 143 Helicopter Unit 'Dhanush' at the Jodhpur Air Force Station. "The induction of LCH underlines the fact that just as the country trusts the IAF, the IAF equally trusts the indigenous equipment," said Defence Minister Rajnath Singh, who presided over the induction ceremony. Stating that the LCH met the requirements of modern warfare and necessary quality parameters under varied conditions of operations, Mr. Singh said it fully met the requirements of both the Army and the Air Force. The Army had formally received its first LCH in Bengaluru last week. The ceremony saw a 'sarwa dharam puja' followed by a ceremonial water cannon salute to the helicopter. Mr. Singh also took a sortie in the LCH after the induction.

"The LCH is at par or better than similar attack helicopters available globally. Selection of the Unit have been specifically selected based on professional competence to ensure quick operationalisation," ACM Chaudhari said.

### **High altitudes**

The twin-engine LCH, designed and developed by HAL, is a 5-8 tonne class dedicated combat helicopter. It was conceptualised after the 1999 Kargil conflict when the need for such a dedicated platform capable of operating in high altitudes was felt. It is the only attack helicopter in the world which can land and take-off at an altitude of 5,000 m (16,400 ft) with considerable load of weapons and fuel significantly augmenting the firepower of the IAF and the Army in high altitude areas. The helicopter has a combat radius of 500 km and go up to a service ceiling of 21,000 feet which makes it ideal to operate at high altitude areas of the Siachen glacier. Speaking at the event, C.B. Ananthkrishnan, Chairman and Managing Director of Hindustan Aeronautical Limited (HAL), said four LCH had been delivered to the IAF and four more would be delivered within this financial year.

More than 200 vendors were involved in production of sub-systems and components, apart from 70 vendors involved in indigenisation, he stated. The HAL had also initiated detailed production planning to gear up for exports, he added. The contract for 10 Limited Series Production (LSP) helicopters was signed between the IAF and the HAL on March 30, 2022, and the 143 Helicopter Unit 'Dhanush' which is operating the LCH was raised on June 1, 2022.



## **Extensive testing**

The first prototype of the helicopter took first flight on March 29, 2010, and has since undergone extensive testing and evaluation. The LCH is armed with 20 mm nose gun, 70 mm rockets, anti-tank guided missile 'Dhruvastra' and air-to-air missile 'Mistral-2' of MBDA which has a maximum interception range of 6.5 km. In March 2020, the Cabinet Committee on Security (CCS) which met under the chairmanship of Prime Minister Narendra Modi approved procurement of 15 LSP variants of the LCH at the cost of ₹3,887 crore along with infrastructure sanctions worth ₹377 crore. Of the 15 helicopters, 10 are for the IAF and five for the Army. The LCH will eventually be deployed along the Line of Actual Control with China in addition to the AH-64E Apache helicopters in service. Both the Army and the IAF have a larger requirement of the LCH and the contract is yet to be worked out.

The Army raised its first LCH Squadron on June 1, 2022 at Bengaluru with one LCH presently and it will be operationalised in the eastern sector in the first week of November 2022, sources said. As reported by The Hindu earlier, the Army plans to acquire 95 LCH of which seven units, with each having 10 helicopters, are planned to be deployed for combat role in the mountains. The LSP LCH contains approximately 45% indigenous content by value which will progressively increase to more than 55% for Series Production version, the Defence Ministry had stated earlier. Light combat helicopters have already been included in the import embargo list. The LCH is equipped with requisite agility, manoeuvrability, extended range, high altitude performance and round-the-clock, all-weather combat capability to perform roles of Combat Search and Rescue (CSAR), Destruction of Enemy Air Defence (DEAD), Counter Insurgency (CI) operations, against slow moving aircraft and Remotely Piloted Aircraft (RPAs), high altitude bunker busting operations, counter-insurgency operations in jungle and urban environments and support to ground forces, the Defence Ministry had stated.

State-of-the-art technologies and systems compatible with stealth features such as reduced visual, aural, radar and infrared signatures and crashworthiness features for better survivability have been integrated in the LCH, Mr. Ananthakrishnan said. The IAF operates the older Mi-25 and Mi-35 Russian attack helicopters which are in the process of being phased out and has inducted 22 AH-64E Apache attack helicopters from the U.S. The Army will also start receiving the Apache attack helicopters from early 2023 onwards, six of which have been contracted under an estimated \$800 mn deal from the U.S. in February 2020.

In all, the IAF operates a wide mix of around 500 rotary platforms which includes around 90 Mi-17s, over 130 Mi-17V5s, over 70 ALH including the weaponised variant, 22 AH-64E Apache attack helicopters, one squadron of Mi-35 attack helicopters and 15 CH-47F Chinook heavy lift helicopters. The Army Aviation currently operates utility helicopters but does not have dedicated attack helicopters in its fleet, though it operates the weaponised version of the Advanced Light Helicopter.

<https://www.thehindu.com/news/national/iaf-inducts-indigenously-built-light-combat-helicopter/article65965662.ece>

## Combat Choppers

THE induction of the first fleet of the indigenously-built Light Combat Helicopter (LCH) into the Indian Air Force is a major step forward for 'Make in India' in the defence sector. The four 5.8-tonne twin-engine gunship choppers — armed with air-to-air missiles, 20-mm turret guns, rocket systems and other weapons — have been developed mainly for mountain warfare by the state-run aerospace and defence major Hindustan Aeronautics Limited (HAL). The helicopters are expected to bolster India's air power as they are capable of carrying out strikes on the enemy's infantry, tanks, bunkers, drones etc. in high-altitude areas, besides being well equipped for counter-insurgency operations.

The welcome addition of LCHs to the IAF inventory comes a month after the commissioning of India's first indigenous aircraft carrier, INS Vikrant. In June, the Coast Guard had commissioned the indigenous Advanced Light Helicopter MK-III's squadron. These are good tidings for India's defence industry, which is not only becoming less import-dependent but also making its presence felt in the international arena. The government claimed recently that defence exports had grown by 334 per cent in the past five years, with India now exporting to over 75 countries. It is heartening that several countries have evinced interest in the Tejas Light Combat Aircraft, including Malaysia, Argentina, Australia, Egypt, the US, Indonesia and Philippines.

The policy initiatives undertaken in recent years to spur indigenous design, development and manufacture of defence equipment are bearing fruit. Earlier this year, the Ministry of Defence had identified 18 major platforms for industry-led design and development. A big challenge for the domestic defence industry is to develop cost-effective technology that meets global standards. Indigenisation should also facilitate and fast-track defence modernisation. The country can move closer towards achieving self-reliance in the defence sector if the government ensures hassle-free procurement from domestic sources. The 'Make in India' push can pave the way for 'Make for the World' through adequate allocation and timely disbursement of funds for R&D as well as production. At the same time, it's imperative to make international players abide by the fine-tuned offset policy by insisting on investments and transfer of technology for defence manufacturing.

<https://www.tribuneindia.com/news/editorials/combat-choppers-437819>

Mon, 03 Oct 2022

## **Amid IAF's 'Prachand' Buzz, Indian Army Readies for More LCHs this Month; to be Deployed along LAC**

The Indian Army is all set to receive its second LCH (Light Combat Helicopter), sources told the Financial Express Online on Monday. The development comes on a day when four indigenously-built LCHs christened 'Prachand' were inducted in the Indian Air Force in Jodhpur. According to sources in the defence establishment, the Indian Army will receive four more indigenous combat helicopters later this month. "The helicopters will provide support to ground operations," explained the source quoted above. Financial Express Online had reported last week that the Indian Army had received its first LCH on September 29 last month. Out of the 15 LCH which have been contracted, ten will go to the IAF and the balance five will be handed over to the Army. The Limited Series Production (LSP) was formally inaugurated in August 2017 and the maiden ground run of this machine for the Indian Army was done last year in November.

The first squadron of the LCH in the Indian Army started earlier this year in June and so far has received one helicopter and soon the deliveries of the balance four will be made taking the total number to five. Once the deliveries are completed, according to sources the first squadron will be operationalised by next month in the Eastern Theatre. According to the Ministry of Defence, the LSP has 45 percent indigenous content by value, and this is expected to go up to 55 percent for the SP version. These machines have been developed, designed, and produced locally in India at the facility in Bengaluru of state-owned Hindustan Aeronautics Limited (HAL).

### **LCH & IAF**

The helicopters inducted today have been named "Prachand" which means fierce. At the induction ceremony of these helicopters, Air Chief Marshal VR Chaudhary, Chief of Air Staff said that the helicopters add unique capability to the IAF's combat potential. According to him the offensive and versatility potential of these machines is at par than most of the attack helicopters which are operating globally. These helicopters have joined 143 Helicopter Unit and the crew has been selected based on their professional competence so that the unit can be operationalised at the earliest.

<https://www.financialexpress.com/india-news/amid-iafs-prachand-buzz-indian-army-readies-for-more-lchs-this-month-to-be-deployed-along-lac/2699656/>



सोमवार, 03 अक्टूबर 2022

## स्वदेशी LCH को मारक बनाएंगे ये विदेशी हथियार... सर्जिकल स्ट्राइक जैसे मिशन के लिए बेजोड़

लाइट कॉम्बैट हेलिकॉप्टर यानी एलसीएच पर ऐसे कौन से हथियार हैं, जो इसे बेहद घातक बनाते हैं. इन हथियारों की बदौलत एंटी-इन्फैंट्री, एंटी-आर्मर, समेत सर्जिकल स्ट्राइक जैसे हमले कर सकते हैं. आइए जानते हैं कि इस तरह के मिशनों को पूरा करने के लिए इस पर किस तरह के हथियार लगे हैं? लाइट कॉम्बैट हेलिकॉप्टर (Light Combat Helicopter) को भारतीय वायुसेना जोधपुर एयरबेस पर तैनात कर 3 अक्टूबर 2022 को सुबह 11 बजे तैनात कर दिया. भारतीय वायुसेना ने ट्वीट करके यह जानकारी साझा की है. इस हेलिकॉप्टर की मदद से कई तरह के सैन्य ऑपरेशंस और मिशन को अंजाम दिया जा सकता है. इस पर ऐसे कौन से हथियार तैनात होते हैं, या हो सकते हैं जो इसे दुनिया के सर्वश्रेष्ठ घातक हेलिकॉप्टरों में शामिल करते हैं.

लाइट कॉम्बैट हेलिकॉप्टर का मुख्य काम है कॉम्बैट सर्च एंड रेस्क्यू यानी युद्ध के समय अपने सैनिकों को खोजकर उन्हें बचाना. दुश्मन के एयर डिफेंस सिस्टम को नष्ट करना. यानी डिस्ट्रक्शन ऑफ एनेमी एयर डिफेंस. घुसपैठ रोकना. ड्रोन, अनमैन्ड एरियल व्हीकल आदि को मार कर गिराना. अधिक ऊंचाई पर मौजूद दुश्मन के बंकरों को ध्वस्त करना. लेकिन इसके लिए किस तरह के हथियारों का उपयोग इस पर किया जा रहा है. लाइट कॉम्बैट हेलिकॉप्टर की कॉकपिट के नीचे लगी है M621 Cannon. यह 20 मिलिमीटर की ऑटोमैटिक कैनन है. जिसे फ्रांसीसी कंपनी नेक्स्टर (Nexter) ने बनाया है. इस कैनन का जवन 45.5 किलोग्राम होता है. इसकी कुल लंबाई 86.9 इंच होती है. जबकि बैरल यानी नली की लंबाई 57 इंच होती है. इसे बंदूक नहीं कहेंगे. असल यह एक तोप है. जो हर मिनट 800 गोलियां फायर करती है. गोलियां 1005 मीटर प्रति सेकेंड की गति से दुश्मन की ओर बढ़ती हैं. यानी एक सेकेंड में एक किलोमीटर.

### लेज़र गाइडेड रॉकेट, जो तबाही मचा दे

लाइट कॉम्बैट हेलिकॉप्टर के विंग्स के नीचे FZ275 LGR यानी लेज़र गाइडेड रॉकेट लगा सकते हैं. इसे फ्रांस की थेल्स (Thales) कंपनी ने बनवाया है. यह कम कीमत गाइडेड रॉकेट हैं. एक रॉकेट 12.5 किलोग्राम का होता है. लंबाई 1.8 मीटर होती है. व्यास 2.75 इंच होता है. इसकी रेंज 1.5 से 8 किलोमीटर तक होती है. यानी यह हवाई हमला भी कर सकता है या फिर किसी युद्धपोत, सतह, विमान या जमीन पर दागा जा सकता है. इसके दो वैरिएंट्स हैं जो बख्तरबंद और टैंक को भी उड़ा सकते हैं.

### हवा से हवा में मार करने वाली मिसाइल से लैस

इस रॉकेट के अलावा लाइट कॉम्बैट हेलिकॉप्टर पर हवा से हवा में मार करने वाली मिसाइल (Air-to-Air Missiles) मिस्ट्रल (Mistral) लगाई जा सकती हैं. मिस्ट्रल मिसाइल को भी फ्रांसीसी कंपनी मात्रा डिफेंस (Matra Defence) ने बनाया है. यह मिसाइल इंफ्रारेड होमिंग शॉर्ट रेंज एयर डिफेंस सिस्टम का हिस्सा है. इसका वजन 19.7 किलोग्राम है. लंबाई 1.86 मीटर हैं. इसकी फायरिंग रेंग 6 से 7 किलोमीटर है. इस मिसाइल में 2.95 किलोग्राम वजन का वॉरहेड लगाया जा सकता है.

### तीन तरह के बम लगाए जा सकते हैं

इस हेलिकॉप्टर में क्लस्टर बम (Cluster Bomb), अनगाइडेड बम (Unguided Bomb) और ग्रैनेड लॉन्चर भी लगाए जा सकते हैं। यानी अगर किसी एक ही जगह पर कई निशानों पर बार घातक हमला करना हो तो क्लस्टर बम दाग दो। बड़ी तबाही मचानी हो तो एक भारी अनगाइडेड बम गिरा दो। या फिर दुश्मन की टुकड़ी को बर्बाद करना हो तो ग्रैनेड लॉन्च कर दो।

### भविष्य में ध्रुवास्त्र मिसाइल लगाने की तैयारी

भारतीय वायुसेना की योजना है कि इस इस हेलिकॉप्टर में भविष्य में हेलिना (Helina) यानी ध्रुवास्त्र (Dhruvastra) लगाया जाए। पहले इसका नाम नाग मिसाइल (Nag Missile) था। इसे इंफ्रारेड इमेजिंग सीकर (IIR) तकनीक गाइड करती है। यह दुनिया के बेहतरीन और अत्याधुनिक एंटी-टैंक हथियारों में से एक है। यह मिसाइल 828 किलोमीटर प्रतिघंटा की रफ्तार से दुश्मन की तरफ बढ़ती है। यह स्पीड इतनी है कि पलक झपकते ही दुश्मन के भारी से भारी टैंक को बर्बाद कर सकती है।

ध्रुवास्त्र की रेंज 500 मीटर से लेकर 20 KM तक है। यह तीसरी पीढ़ी की 'दागो और भूल जाओ' टैंक रोधी मिसाइल (ATGM) प्रणाली है, जिसे आधुनिक हल्के हेलिकॉप्टर पर लगाया जा सकता है। इसके कई सफल परीक्षण हो चुके हैं। ध्रुवास्त्र मिसाइल का वजन करीब 45 KG है। यह 6.1 फीट लंबी है। व्यास 7.9 इंच है। इसमें 8 KG विस्फोटक लगाकर इसे बेहतरीन मारक मिसाइल बनाया जा सकता है। इस मिसाइल के लगने के बाद मिस्ट्रल मिसाइल को हटा दिया जाएगा।

<https://www.aajtak.in/india/news/story/light-combat-helicopters-weapons-indian-air-force-know-its-engines-comparison-with-other-choppers-tstrd-1548701-2022-10-03>

**mint**

मंगलवार, 04 अक्टूबर 2022

## आरंभ है 'प्रचंड', अभी और बढ़ेगी सेना की ताकत, तैयार हो रहे ये घातक स्वदेशी हथियार

हिन्दुस्तान एयरोनॉटिक्स लिमिटेड द्वारा निर्मित देश का पहला स्वदेशी हेलीकॉप्टर सैन्य बेड़े में शामिल हो गया है। रक्षा अनुसंधान एवं विकास संगठन (DRDO) भी स्वदेशी घातक हथियारों की खेप तैयार करने में जुटा है। आइए जानते हैं ऐसे ही स्वदेशी हथियारों के बारे में जो भविष्य में दुश्मन का मुंहतोड़ जवाब देने के लिए सेना की ताकत बनने वाले हैं।

### आसमान पर भी बढ़ेगी सेना की ताकत

स्वदेशी एडवांस मीडियम कॉम्बैट एयरक्राफ्ट व एलसीए एमके-1ए और एमके-2 वायुसेना और नौसेना की ताकत बनेंगे। 114 स्वदेशी एयरक्राफ्ट बेड़े में शामिल होंगे। एलसीए एमके-2, मिराज 2000 व जगुआर की जगह लेगा।

### ER-ASR: समुद्र की गहराइयों में वार

समुद्र की गहराइयों में दुश्मन को धूल चटाने के लिए डीआरडीओ ने एक्सटेंडेड रेंज, एंटी सब मैरिन रॉकेट तैयार किया है। समुद्र के भीतर आठ किलोमीटर दूर तक मौजूद दुश्मन के पनडुब्बी और दूसरे युद्धपोत को विध्वंस कर सकता है।

**ATAGS:** 15 सेकंड में तीन राउंड फायरिंग

एडवांस्ड टोड आर्टिलरी गन सिस्टम 155 एमएम की तोप जैसी आधुनिक आर्टिलरी बंदूक है। 2013 से निर्माण चल रहा है और दो बार परीक्षण हो चुका है। 48 किलोमीटर दूर तक मार सकती है। रात में भी कारगर ब्रस्ट मोड में 15 सेकंड में तीन राउंड फायर कर सकता है। इसे चलाने के लिए छह से आठ सैनिकों की जरूरत होगी।

**प्रीफ्रैग्मेंटेड:** बम 500 किलोग्राम वजनी बम से तबाही

डीआरडीओ और आर्मामेंट रिसर्च एंड डेवलपमेंट इस्टैब्लिशमेंट (एआरडीई) ने इसे तैयार किया है। 500 किलोग्राम वजनी ये बम रूस और जगुआर एयरक्राफ्ट से आसानी से छोड़ा जा सकता है। जहां भी यह फटेगा वहां कुछ नहीं बच सकेगा। 'बॉडी बम' से खड़े एयरक्राफ्ट, लड़ाकू वाहन और सैन्य कैंप को नष्ट किया जा सकता है।

**CSWS:** कोने में छिपे दुश्मन पर हमला

कॉर्नर शॉट वेपन सिस्टम से कोने में छिपे दुश्मन के बिना सामने गए अंत संभव है। मुठभेड़ में सैनिक दिन और रात कभी भी इसका इस्तेमाल कर सकते हैं। इसमें अत्याधुनिक कैमरा, न दिखने वाला लेजर, लेजर से निशाना लगाने वाला यंत्र, कलर एलसीडी मॉनीटर और दुश्मन को चकमा देने के लिए फ्लैशलाइट भी लगी है।

**LWLS:** आसान होगा पहाड़ों पर ऑपरेशन

लाइट वेट लॉन्चर सिस्टम 84 एमएम का लॉन्चर सिस्टम है जो दुर्गम पहाड़ी क्षेत्रों पर सैनिकों को ऑपरेशन को अंजाम देने में मदद करेगा। लॉन्चर सिस्टम को सेना के जवान अपने कंधे पर आसानी से लेकर चल सकते हैं। इसके एक फायर दुश्मन के बंकर को पूरी तरह तबाह किया जा सकेंगे।

<https://www.livehindustan.com/national/story-light-combat-helicopter-prachand-inducted-in-indian-airforce-hindustan-aeronautics-limited-drdo-7174488.html>



Mon, 03 Oct 2022

## The Agnipath Challenge for India's New Chief of Defence Staff

The appointment of General Anil Chauhan as the second CDS of India is welcome news. Though delayed, this appointment has the potential to bring sanity back into a system which has gone off rails. The officer assumes his appointment on the back of a solid professional reputation. There are voices which say that re-commissioning a retired officer is not the best thing to do. There are also views that the second CDS could have been from another service. While there is some merit in such discussion the need is to look ahead. The second CDS has a few challenging, and complex tasks cut out ahead of him. In my opinion, the first major task of national concern is to modify the ill-conceived and poorly planned Agnipath scheme which is being executed with indecent haste. Interaction with those who are executing Agnipath from the lowest to the highest

levels indicates that the flaws of this scheme are surfacing at a fast clip. The road ahead is potholed. The system is at constant risk of disappearance into one of the potholes. If the Agnipath is not modified, India will not need China to defeat it. Very simple. As part of NSCS from May 21, Chauhan was part of the flawed process which visualised Agnipath. In such a situation, he represents both an opportunity, and a danger in the Agnipath rollout. It will be interesting to see what tack he takes hereafter. Converting Agnipath into a success will be his acid test.

Capacity development in the army has been adrift. For reasons beyond comprehension, the MOD and the Government have lost focus. Those in the know of things feel that the acquisition and procurement pipelines are getting clogged. The propensity to use the emergency route in acquisition is worrisome. Capability development is at national risk since the Russian and Ukrainian lifelines are paralysed. The “import and rebrand” trick of defence atmanirbharta has entered a phase of diminishing returns. Stasis is in the air, and we have a CDS who does not have much experience in defence acquisition. In fact, he has no track record whatsoever in this complex business. How he approaches and handles defence modernisation will be interesting to watch. The next priority is to bring jointness and theatrisation back to life. From December 21 last year, each service has been steadily propagating and ploughing its lonesome path. India’s rise cannot be on the back of disjointed armed forces.

Ever since the untimely demise of General Bipin Rawat, the only vestige of jointness was symbolised in a long and moralistic speech by the Additional Secretary Department of Military Affairs during the Agnipath opening ceremonies. That speech would have done politicians proud and made servicemen cringe. Leaving that aside, theatrisation and jointness is often a chicken and egg story. Which comes first? However, in this disjointed situation, theatrisation can wait for some time. The focus must be on enhancing jointness in my opinion. However, the optics of theatrisation make it a political mandate and expediency will rule. Our second CDS has difficult choices to make. In the past year or so, I have often heard comparisons drawn between the times of Prime Minister Jawaharlal Nehru and now. Many old timers feel that the hubris of those times bears resemblance to the present. To some extent, it is borne out by the fact that India’s rise and status in global affairs are largely being projected through the PM, the External Affairs Ministry and the National Security Agency. They are doing an excellent job. However, a rising power like India needs to back such moves with matching military credentials.

The challenge for Chauhan is that he has to emerge from the shadows of his last appointment in the NSCS and create greater space for military diplomacy. While he must adhere and follow government policies, his office should not be an echo chamber of the government. General Chauhan has been chosen over and above the chiefs. Does it indicate that the government does not have confidence in the chiefs of services to appoint one of them as a CDS? This issue will not be lost on the serving chiefs. It has its own ramifications. More significantly, General Chauhan has been in NSCS since May 21. Yet he has been appointed as a CDS after a 10-month delay and not as the obvious first choice. His appointment seems to be premised on political comfort. Hence the process adopted by the government raises its own issues. Overall, our military has been wallowing in doldrums in recent times. It is hoped that the professional in General Anil Chauhan trumps all other peripheral issues and steers the Indian Armed Forces into fair winds. India wishes its second CDS all the best.

<https://indianexpress.com/article/opinion/columns/the-agnipath-challenge-for-indias-new-chief-of-defence-staff-8187533/>



*Tue, 04 Oct 2022*

## **Explained: What is Theaterisation of Armed Forces? Top Agenda for CDS Anil Chauhan**

For General Anil Chauhan, who became India's new Chief of Defence Staff (CDS) on September 30, 2022, the primary task is to implement the ambitious theaterisation plan. For General Anil Chauhan, who became India's new Chief of Defence Staff (CDS) on September 30, 2022, the primary task is to implement the ambitious theaterisation plan. This model will bring in tri-services synergy by rolling out integrated military commands, and prepare the military for future security challenges. Chauhan took charge as India's senior-most commander more than nine months after the first CDS, General Bipin Rawat, died in a helicopter crash in Tamil Nadu on December 8, 2021. In 2021, the Department of Military Affairs, headed by General Rawat, had asked the three services of the Indian Armed Forces — Indian Army, Indian Navy and Indian Air Force — to carry out independent studies on the theaterisation plan for its rollout. The progress in the process halted following the death of General Rawat last year.

### **What is the theaterisation plan?**

According to the theaterisation plan, each of the theatre commands will have units of the Indian Army, the Indian Navy and the Indian Air Force. All the three services of the Indian Armed Forces will work as a single entity looking after security challenges in a specified geographical territory under an operational commander. At present, the three divisions of the Indian Armed Forces have a total of 17 commands. Initially, a plan was made to create an Air Defence Command and Maritime Theatre Command. However, the Indian Air Force has some reservations about the proposed theatre commands, according to a report by news agency PTI.

In June this year, Air Chief Marshal VR Chaudhari said the Indian Air Force remains fully committed to the tri-services synergy for enhancing the comprehensive national combat power. General Rawat had said in 2020 that India will have two to five theatre commands to deal with future security challenges along the western and northern borders of India. According to a PTI report dated February 17, 2020, General Rawat had said that the theatre commands to deal with the security challenges along the western borders will be operational by 2022. However, the process was delayed following his death in 2021.

### **Maritime Theatre Command**

General Rawat had also said that the Western and the Eastern Commands of the Indian Navy will be merged into the proposed Peninsular Command, which went on to be known as the Maritime Theatre Command. The role of the command would be to look after the security challenges in the entire Indian Ocean region. Envisioned to include assets from all the branches of the Indian military, the command will range from Sir Creek Estuary in the western sector to the Sunderbans in the eastern region. The proposed Maritime Theatre Command under an Indian Navy officer will have air assets as well as support from the Indian Army. The command will be responsible for maritime security in the entire Indian Ocean region. General Rawat had said that the commander of the Maritime Theatre Command will get approval from Delhi for operational



matters including movement of ships, according to the report. Theatre Command dedicated to Jammu and Kashmir The then CDS also said that a dedicated theatre command will handle security challenges in Jammu and Kashmir, including the International Boundary region.

### **Air Defence Command**

The proposed Air Defence Command was scheduled to be rolled out by the middle of 2021. Air assets such as missiles of the Indian Army and the Indian Navy will be part of the command, which will integrate all the relevant assets of the three branches of the Indian Armed Forces under a single command authority.

### **Other Theatre Commands**

General Rawat said in 2020 that the government plans to have a separate training and doctrinal command modelled on a similar structure in the United States. Meanwhile, a separate command will be set up to take care of the logistical requirements of the three services. It is important to ensure that the theaterisation plan contributes to the ultimate aim of Joint Armed Forces, India's Centre for Land Warfare Studies (CLAWS), an autonomous think tank on strategic studies and land warfare, says on its website. Since the theaterisation plan will integrate the three services of the Indian Armed Forces, it is important to ensure that the entire process is carried out in a delicate manner. Thus, the theatre commands aim to bring synergy among all branches of the Indian Armed Forces to achieve military objectives.

<https://news.abplive.com/explainers/theaterisation-of-indian-armed-forces-explained-chief-of-defence-staff-cds-general-anil-chauhan-theatre-commands-indian-army-indian-navy-indian-air-force-gen-bipin-rawat-tri-services-integration-1556481>



*Mon, 03 Oct 2022*

## **Tri-services Missile Command on Anvil as Stand-off Weapons Era Dawns**

While work is on to conceptualize and prepare doctrine for the military theatre commands, the cyber, space and missile commands will be the first tri-services set-up and led the way towards ultimate creation of joint war commands. In the era of stand-off weapons, the Narendra Modi government is considering setting up of a tri-services missile/rocket command on the lines of the space and the cyber command as the first steps towards military theatre commands. The proposed missile command will be responsible for deployment of missile and rocket regiments against any hostile adversary and will be manned by commanders of the three services in rotation. This means that conventional missiles like BrahMos and Akash as well as Pinaka rockets will be placed under one command for rapid deployment against any adversary. The proposal to set up a missile command has been moved in the aftermath of the May 2020 East Ladakh stand-off with the PLA and the use of rockets and missiles in the Ukraine theatre by the Red Army. The PLA has deployed rocket regiments in the depth areas of occupied Aksai Chin with missiles in the hinter in Tibet and Sinkiang region. The missile command will be on similar lines as the tri-services cyber command and the space command as the future wars will hardly have any contact between troops unless used for capturing enemy territory.

While the Modi government is moving towards military theatre commands, it does not want to take any military reform in a hurry and without proper conceptualization at the doctrine and commander level as well as integration at the lowest level of formations. Given that India has a land frontier of over 15,000 kilometers and coastline of over 7,000 km, the army will be the priority on land as Navy will be on sea. For optimum operational results, India needs to rethink its offensive doctrines as the tri-services command has a role in taking the war to the enemy and not while defending its own territory. There is no point splitting up scarce military assets among various theatre commands if the threat is coming on India's land frontiers or sea frontiers. The functioning of the tri-service command at Andamans and Nicobar Islands has sobered up the military reformists as the Navy has a spearhead role in India's island territories and not the Army till such time India does not adopt the expeditionary forces concept. The Air Force cannot be limited to air defence of Indian airspace but also in launching offensive against the enemy by taking down or degrading its war machine.

Before embarking on the military theatre command charter, Indian national security planners will have to game war scenarios where the tri-services can be optimally utilized and best fit. With Narendra Modi government appointing India's second Chief of Defence Staff in Gen Anil Chauhan, his task will be to listen to the three armed forces chiefs on their views on theatre commands and rapidly operationalize the cyber and defence commands. Gen Chauhan's task also will be to wean the armed forces from its British Imperial Legacy, as exemplified in PM Modi's Paanch Prans, as the Indian military is still human resource oriented and not tech oriented. Even today, a whole lot of money is spent on building new military messes and golf courses rather than developing counter-offensive capabilities in cyber-war or developing smarter missiles.

<https://www.hindustantimes.com/india-news/triservices-missile-command-on-anvil-as-stand-off-weapons-era-dawns-101664767116679.html>



*Mon, 03 Oct 2022*

## **SIDM & US Defence Companies Seek Deeper Cooperation in Joint Development & Production of Military Platforms**

Indian defence companies under the umbrella of Society of Indian Defence Manufacturers (SIDM) recently concluded their visit to the US and the focus of the visit was to further enhance the Defence cooperation between the two countries. The delegation had interactions with the US Department of Defense, US Chamber of Commerce and the National Defense Industrial Association, USIBC and also US Aerospace giant Boeing Company. This encompasses a broad range of activities including joint exercises, trade in military hardware, intelligence sharing, joint humanitarian and relief efforts, mutual port visits by naval ships, and, most importantly, co-production and co-development of military systems.

### **Which eight companies went under the SIDM banner?**

Eight companies from the private sector including– MKU Ltd, Idea Forge Technologies Pvt Ltd, Larsen and Toubro, Investments and Precisions Castings Ltd, Newspace Research & Technologies Pvt Ltd, Rossell Techsys, Abhyuday Bharat Projects Pvt Ltd and Delta Combat Systems Pvt Ltd were part of the Indian delegation. The maiden visit of the SIDM delegation from Sept 19-23, was led by Neeraj Gupta, Chairman, SIDM International and Exports Committee and Managing Director, MKU Ltd. They had meetings in Washington DC, had meetings with the Ambassador of India to the US Taranjit Sandhu, who gave his perspective on the India-US Defence Partnership.

Neeraj Gupta, Chairman, SIDM International and Exports Committee and Leader of the Delegation told Financial Express Online, “This being the first Industry-led delegation to the United States underscores the importance that SIDM places on India – US Defence Cooperation.” “Our interactions with the US Chamber of Commerce, US Department of Defense and the National Defense Industrial Association highlighted the immense potential for our Industries to collaborate. SIDM will be working with these stakeholders to make sure our bilateral defence trade grows in the next few years”, Mr Gupta added.

### **USIBC Roundtable**

Discussions at this roundtable focused on India-US Defence Technology Collaboration. And during the meeting they also talked about how Indian companies can be part of the US Defence Supply Chain. From the US side those present included US Chamber of Commerce and Ambassador Atul Keshap, President USIBC, Kieth Webster, President, Defense and Aerospace Council, Michael Vaccaro, Performing the Duties of Deputy Assistant Secretary of Defense for Industrial Base Policy, US Department of Defense; Terry Emmert, Principal Deputy, Deputy Chief Technology Officer of Mission Capabilities, Department of Defense. Besides the eight Indian companies, others present in for the roundtable also had Brig Anoop Shinghal, Defence Attache, Embassy of India, Washington and Rajiv Mishra, First Secretary (Political), Embassy of India, Washington.

### **SIDM & US**

Since the last few years to promote bilateral industrial cooperation between the two countries and defence industries on both sides, SIDM, has been working with the US Department of the Defence and Ministry of Defence. There have been several interactions to help deepen relations. Earlier this year in March, Jesse Salazar Deputy Assistant Secretary of Defence for Industrial Policy held an interaction with SIDM to lay out US DOD (Department of Defense) priorities vis-à-vis Indian Industry.

Among other meetings SIDM had included one with the National Defense Industrial Association (NDIA). This association represents around 1800 US Defense Companies and the talks were related to exploring collaborative opportunities between SIDM and NDIA members. The delegates also visited Boeing Headquarters in Washington D.C; Aurora Flight Sciences, subsidiary of Boeing which primarily specializes in the design and construction of special-purpose Unmanned aerial vehicles. And also had interactions at Center for a New American Security & Fairfax County Economic Development Authority.

<https://www.financialexpress.com/defence/sidm-amp-us-defence-companies-seek-deeper-cooperation-in-joint-development-amp-production-of-military-platforms/2699705/>

## **India-Maldives Discuss Ways to Boost Cooperation in Defence**

Indian foreign secretary is on a three day official visit to Maldives where he discussed ways to boost the defence cooperation with Maldivian defence minister. The defence minister of Maldives thanked India for its unwavering support and assistance to enhance capabilities of the Maldives National Defence Force and the defence sector, as India's foreign secretary Vinay Kwatra met Maldivian Defence Minister Mariya Didi and discussed ways to boost the defence cooperation between India and Maldives. Kwatra is on a three day visit to Maldives and he met the Defence Minister on the last day of his visit. Their "discussions focused on further boosting Maldives India defence cooperation," the Maldives' Defence Ministry tweeted.

Foreign Secretary Vinay Kwatra, handed over vehicles to Maldives National Defence Force which they acquired under India's grant aid. The "minister thanked the Govt & people of India for the unconditional, generous support to their neighbor the Maldives at all times," the ministry said in another tweet. Kwatra also met Maldivian President Ibrahim Mohamed Solih and discussed bilateral relations between both nations and assured him of full commitment to the growth of the partnership between both countries. President Solih recently visited India in August and met Prime Minister Narendra Modi where both leaders made several announcements and signed various MOUs. India also extended a \$100 million line of credit to the Maldives to finance infrastructure projects. They also discussed the construction of 4,000 social housing units in Hulhumale, which is being funded by a USD 227 million buyer's credit finance from Exim Bank of India.

Both leaders also reviewed the Greater Male Connectivity Project which entails the construction of a 6.74-kilometer-long bridge and causeway link connecting Male, the Maldives' capital, with the neighboring islands of Villingli, Gulhifalhu, and Thilafushi. India funded this project with a \$100 million grant and a \$400 million line of credit. Kwatra also met his counterpart Ahmed Latheef on Sunday and they reviewed the entire spectrum of bilateral relations and witnessed the exchange of the \$100 million Line of Credit agreement. "Both sides positively assessed the robust growth in our bilateral ties and discussed ways to further build on the momentum," the MEA spokesman said.

<https://www.livemint.com/news/india/indiamaldives-discuss-ways-to-boost-cooperation-in-defence-11664787734693.html>

## **South Korea Nears a Whopping \$10B In Defense Exports Thanks to Sale of Howitzers, Fighters & Missile Systems**

The country's defense exports are expected to reach \$10 billion by the end of 2022, nearly triple the figure from 2020. Arms exports by South Korea were 210% higher in 2016–20 than in 2011–15, giving it a 2.7% share of global arms exports. Reports suggest that the South Korean defense industry's ability to produce various military systems suiting unique security challenges facing each potential buyer has propelled the country's defense exports growth. Before pitching its defense products to any country, South Korea conducts a thorough analysis of the buyers' security challenges, finances, and industrial makeup, based on which it adjusts its sales pitches as required. This means Seoul may suggest joint arms production with a local player or offer to sell second-hand equipment at a cheaper rate.

### **Volume & Range Of South Korea's Arms Export**

In July, South Korea made a significant foray into European markets by entering into a framework agreement on defense cooperation with Poland, stipulating the purchase of three FA-50 squadrons, K2 tanks, and over 600 K9 howitzers. This was a massive victory for South Korea, as the country has been making concerted efforts in recent years to export the FA-50 to various countries, Poland being the latest. The countries that have bought F-50s from South Korea include the Philippines and Iraq. The aircraft was first seen in action during the Battle of Marawi in the Philippines when it was used against terrorists affiliated with the Islamic State. There is also a trainer variant of the fighter jet called the T-50 Golden Eagle advanced training jet, which has been sold to Indonesia and Thailand.

Also, Colombia's Air Force has reportedly selected a mix of TA-50 and FA-50 aircraft as part of a \$600 million acquisition program to replace its retired Cessna A-37B Dragonfly twin-engine light-attack fleet jets. Besides, the F-50 is also competing with India's Light Combat Aircraft (LCA) Tejas Mk1A made by Hindustan Aeronautics Limited (HAL) for the contract of 36 light fighter aircraft for the Royal Malaysian Air Force (RMAF).

### **K9 Thunder**

The K9 Thunder is considered one of the world's most advanced self-propelled 155-millimeter howitzer, which has been exported to some of the major military powers worldwide, such as Australia, Turkey, India, Egypt, Poland, Finland, Norway, and Estonia. Likewise, even the Hyundai Rotem K2 (Black Panther) is regarded as one of the world's finest main battle tanks (MBT). It competes with Germany's Leopard 2A7 to replace the Norwegian Army's aging fleet of Leopard 2A4 MBTs. Apart from that, Egypt is also negotiating with South Korea to co-produce the K2 Black Panther battle tank.

In January, South Korea inked a deal with the United Arab Emirates to export the Cheongung II midrange surface-to-air missiles (M-SAM) system. The deal, valued at around \$3.5 billion, was the country's largest-ever arms export deal in history. Furthermore, the country is developing its

first homegrown fighter jet, the KF-21 Boramae, to be produced jointly with Indonesia. Seoul has grown its arms export not only in terms of volume but also in terms of range.

### **Asia's Top Arms Manufacturer**

Korea was under Japanese occupation during World War II and fought alongside the Axis powers in the war. After the war ended, similar to the partition of Germany after the Axis surrender, Korea was also partitioned along the 38th Parallel (a reference to latitude 38° North) – with the northern half being administered by the Soviet Union and the southern half being administered by the United States. However, unlike Germany, the Korean peninsula could not be reunited because of the Cold War politics of North vs. South. The South Korean military was ill-equipped compared to North Korea, which enjoyed a numerical advantage coupled with significant support from China and the Soviet Union.

This proved devastating for South Korea during the Korean War from 1950-53, as the country was pushed on the verge of defeat until US-led forces intervened. Despite this, South Korea did not take measures to build its defense industrial base because of its security partnership with the US and because it was more focused on developing its economy after the war. However, in 1968, North Korean commandos attacked the presidential mansion in Seoul and came dangerously close to assassinating South Korean President Park Chung-hee. Also, only a year after this incident, former US President Richard Nixon announced the “Guam Doctrine,” which stated that the US would no longer get involved in the conflict in Asia and appealed to its allies in Asia not to depend on the US and to maintain its security. These two events changed the course of the Republic of Korea (ROK), steering it toward becoming the fastest-growing arms exporter in Asia.

### **Humble Beginnings**

Until the mid-1960s, the ROK was completely reliant on the military aid and equipment provided by the US. The country did not have an industrial structure to support large-scale defense industrialization. So, the Park Chung-hee administration decided to begin with the production of ammunition and small arms, which itself was undertaken with the help of US technical data packages and manufacturing license agreements. After that, the South Korean government set up a heavy-chemical industry, particularly for defense, and selected various other industries from sectors such as machinery, electronics, and shipbuilding to participate in the defense industry's production process.

The chosen industries were already established conglomerates engaged in civil production. They were required to engage in defense production and dedicate 70% of their industrial capacity to defense manufacturing. The government also set up an ‘Agency for Defense Development (ADD) to promote Research & Development (R&D) as part of the industrialization process. The state was expected to conduct R&D, and the industries engaged in production activities. Nevertheless, throughout the 1970s and 1980s, South Korea's defense production was based on American technology, either through licensed production or reverse engineering.

It was not until the early 1990s that the focus of the South Korean defense industry began to shift toward improving defense R&D. Together with that, the government also implemented offset policies in procurements from abroad which led to significant enhancements to the country's technological sophistication. This way, South Korea eventually managed to develop and produce capital-intensive weapons systems that are now at par with those made by the US. All the major

present-day Korean-produced military equipment, including the T/FA-50 jet aircraft, the K2 Main Battle Tank (MBT), and the K9 self-propelled howitzer, are developed indigenously to a large extent.

Another important feature of South Korea's defense industrialization drive was the support to the industry from the government through various initiatives and policies primarily introduced in the 1990s, such as the emphasis on procurement of domestically developed and manufactured products. Also, the selected defense contractors are entitled to certain benefits and subsidies. The government guarantees that once a contract is awarded, it will procure the goods after they are manufactured and assembled.

### **Lessons For India**

In recent years, relations between India and South Korea have undergone significant improvements, mainly because of the unity between India's Act East Policy and South Korea's New Southern Policy (NSP) in 2017, based on the commonalities in the respective countries' vision for the Indo-Pacific order. This improvement of bilateral ties also includes increased cooperation between the two countries in the defense sector. In November 2019, the Indian Army introduced the K9 VAJRA-T 155mm/52, a self-propelled caterpillar howitzer derived from South Korea's K9 self-propelled howitzer.

In February 2020, both countries finalized the "roadmap for defense industry cooperation," under which India committed itself to ease regulations on South Korean defense firms in India. The countries also set up a task force for implementing the agreement, which has begun exploring military systems and equipment to be produced in India with the participation of the South Korean defense industry. As India looks to become "*Atmanirbhar*" (self-reliant) in defense production, it could draw some lessons from the success of the South Korean defense industry. India must carefully choose what competencies and capabilities it wants to pursue in its domestic industry, relevant to its strategic needs and operational requirements.

One of the most important features of South Korea's defense industrialization drive was the particular offset policies while procuring arms from foreign companies. In the case of each procurement, the offset requirements are stated upfront in the Request For Proposals (RFPs), which influences the source selection. While India also has offset policies but according to the CAG reports of the Government of India, they have largely failed in realizing their objectives.

In many cases, foreign vendors have not discharged their offset obligations after initially making various offset commitments to qualify for the main supply contract. The Indian government must also significantly increase its spending on research and development if it is serious about becoming self-sufficient in arms production. For about a decade, India's gross expenditure on R&D (GERD) as a percentage of GDP has remained around 0.7%, which is way below South Korea's R&D expenditures, which accounted for 4.81% of its GDP as of 2020.

<https://eurasianimes.com/south-korea-nears-10b-in-defense-exports-thanks-t/?amp>

## **China Says J-20 Stealth Fighters are Now Deployed in All Five Theatre Commands Amid Multiple Front Challenge**

China has begun using its domestically developed J-20 stealth fighter in all five theater commands, announced an air force spokesman. The official announcement demonstrates the country's air force's expanding usage of fifth-generation fighter jets. The J-20 "Mighty Dragon" made its first flight in 2011 and was viewed as a symbol of China's ambitions to modernize the People's Liberation Army Air Force (PLAAF). Senior Colonel Shen Jinke reportedly made the latest announcement during a press conference promoting the China International Aviation and Aerospace Exhibition that will take place in Zhuhai in November. He disclosed that the forces are now operating this fighter jet in the east, south, west, north, and central [theater commands].

Jinke stated that the Chinese military is increasingly using stealth aircraft and flying them farther. The nation began deploying advanced J-20 aircraft in disputed territorial areas. "The warplane was being deployed in the East China Sea, the South China Sea, and the Taiwan Strait," he said. However, the J-20 is not the only aircraft showing China's expanding air force. He boasted that the J-20, J-16, B-6K bomber, and YY-20 [tanker aircraft], all of which were produced domestically, were flown in the Taiwan Strait and improved the nation's capacity to protect its territorial integrity and national sovereignty.

Meanwhile, in a recent news briefing on China's specific military capabilities, the head of US Air Forces in the Pacific appears 'unimpressed' by the power of Beijing's fifth-generation J-20 stealth fighter jet. On September 19, PACAF commander Gen. Kenneth Wilsbach told reporters that the J-20 is "not anything to lose a lot of sleep over." He stated that Chinese-made jets would not be able to compete with American fifth-generation fighters. When queried about the plane, Wilsbach shrugged and said, "It's their [China's] most advanced aircraft." The Taiwan issue has already hampered relations between the US and China. As a result, both nations often show off their military might in the region.

Following Nancy Pelosi's visit to Taiwan in August, Beijing conducted a massive live-fire military drill in the island's vicinity. The exercises included firing missiles and frequently crossing the de facto border of the Taiwan Strait's median line. Beijing views the self-governing island nation as a breakaway province that should, if necessary, be subdued by force. Most countries do not acknowledge Taiwan's independence, but countries such as the United States reject using power to change the status quo.

### **Future Upgrades Of J-20 Fighter Jet**

China is also building a twin-seat J-20 variant that may be combined with drones to increase its firepower. According to the principal designer of the aircraft, developing a twin-seat J-20 is not just for training purposes; rather, its primary function would almost definitely be to coordinate with drones. In January 2021, to commemorate ten years of the J-20's debut flight, the Chinese air force released a video featuring a computer-generated visual of the twin-seat version of the J-



20. A twin-seat aircraft can execute multi-role operations over a greater distance even though it is heavier than a single-seat aircraft, which is often smaller and more maneuverable.

Furthermore, the new variant would carry out various duties, including coordinated reconnaissance, coordinated strikes, and coordinated command missions when partnered with drones. On the other hand, the US does not operate any twin-seater fifth-generation fighter aircraft. In the 1990s, the US halted its efforts to develop a two-seat stealth fighter. The high costs of that aircraft's development and maintenance were significant factors in that decision. In July, Lockheed Martin announced that it was looking at how to pair US fighters with a combination of disposable drone wingmen and more sophisticated autonomous systems.

Jinke also applauded the Y-20 heavy transport aircraft deployed to transfer weapons to Serbia and assist Pakistan and Tonga. In contrast to its reliance on Russian-made engines, the transport aircraft now looks to be powered by WS-20 Chinese-made turbofan engines. Additionally, China recently dispatched Y-20 transport aircraft to South Korea to repatriate the remains of Chinese People's Volunteers (CPV) martyrs who died during the Korean War. China's J-20 stealth fighter jets at the time escorted the Y-20 transport plane.

<https://eurasianimes.com/china-says-j-20-stealth-fighters-are-now-deployed-in-all-five/?amp>

## Science & Technology News



*Mon, 04 Oct 2022*

### **IISc-ICMR to Collate Indian Disease Data**

An MoU signed by the Indian Institute of Science (IISc) and the Indian Council for Medical Research (ICMR) seeks to bridge this gap. The organisations will collaborate to develop 'gold standard' datasets that represent the Indian population. Researchers can use these datasets to develop AI algorithms that can read images and give accurate diagnoses. The agreement was signed on September 16. "International studies have shown that AI algorithms are on a par or even better than expert radiologists in diagnosis. So machines can be trained to do this, but this requires good datasets," says Raghu Dharmaraju of ARTPARK, a non-profit promoted by IISc that is coordinating and managing the programme.

Currently, a few startups in India do use AI for diagnosis, but the datasets they use are too small or are taken from other countries. "The imaging datasets we use should represent Indian population's diversity," says Dharmaraju. Hence the initiative will collect data from institutions across the country in the 'hub and spoke' model. Hub institutions, like AIIMS Delhi, are those with expertise in specific diseases. A panel of experts, including those from hub institutions, will develop and fine-tune the dataset. Imaging datasets have to be created for each disease, and the

plan is to start with oral cancer, according to IISc director Govindan Rangarajan. “There is possibility of expansion to esophageal cancer, TB, and cervical cancer,” he says.

ICMR scientist Dr Harpreet Singh believes the applications hold immense potential. “AI algorithms can differentiate between X-rays of those with and without TB, for example. They could help predict oral and cervical cancer, which are prominent causes of death in India. AI algorithms are not going to replace doctors, but will give them additional evidence to take decisions,” he says. Datasets can also help evaluate the accuracy of the AI algorithms existing in the market. “Then we can probably tell whether a software program that shows accuracy for US datasets is accurate for India also,” he says. Dharmaraju of ARTPARK says AI algorithms would be useful in various settings. “Small towns may have X-ray or even CT equipment, but the radiologists may not have as much training as experts at AIIMS,” he explains.

So images from these settings can be uploaded and sent to teleradiology firms or researchers, who can use AI algorithms to help make quick diagnosis. This would be helpful in emergencies like stroke. Dharmaraju adds in countries like the US and Singapore, teleradiology companies provide services to even large hospitals, given the volume of images to be diagnosed. In addition to radiology images, AI algorithms may also be used with mobile phone images to screen for leprosy and cataract. The list of diseases and hubs under the project is being prepared now, and is likely to be finalised by Dec.

<https://www.deccanherald.com/science-and-environment/iisc-icmr-to-collate-indian-disease-data-1150587.html>

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