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समाचार पत्रों से चयनित अंश
Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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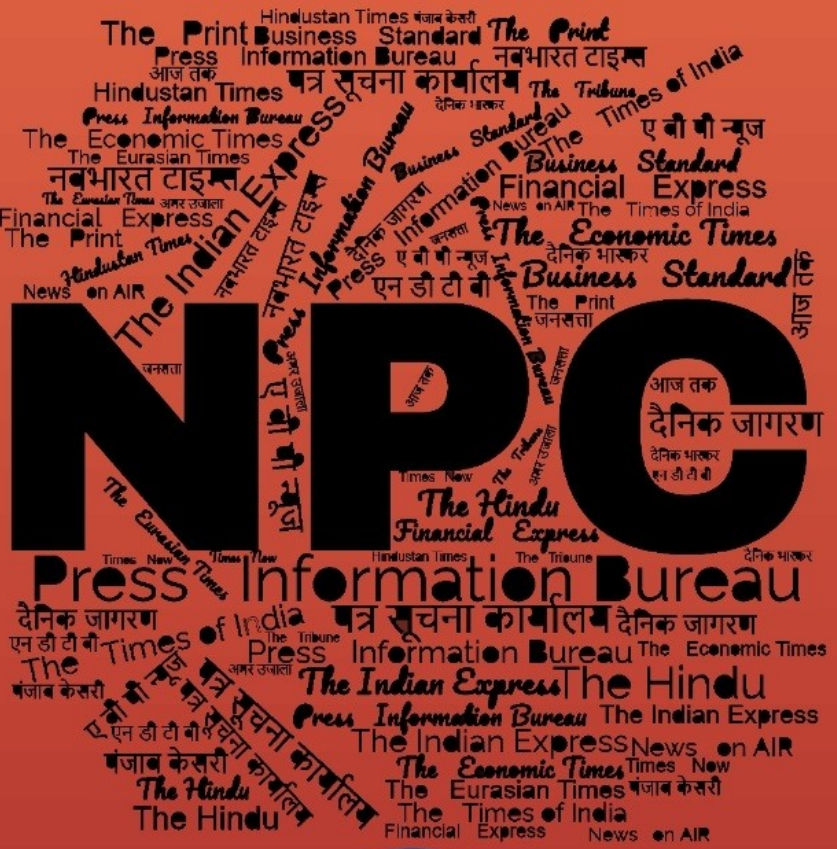

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DRDO News

Stealth fighter prototype to fly in 2029: DRDO chief

Source: Hindustan Times, Dt. 30 May 2025,
URL: https://www.hindustantimes.com/india-news/stealth-fighter-prototype-to-fly-in-2029-drdo-chief-101748543207441.html

Defence Research and Development Organisation (DRDO) chief Samir V Kamat on Thursday said the first prototype of a stealth fighter being developed by India will make its maiden flight in 2029.

DRDO chief Samir V Kamat addresses the CII Annual Business Summit 2025, in New Delhi on Thursday

"The development of AMCA (advanced medium combat aircraft) will be completed by 2034 and it will go into production a year later," he told reporters on the sidelines of a Confederation of Indian Industry event.

His comments came two days after India unveiled its long-awaited plan to fast-track the development of AMCA --- an indigenous fifth-generation stealth fighter, and announced that the execution model will be competitive and provide equal opportunities to public and private sector firms to participate in the project.

The approval of the industry partnership model by defence minister Rajnath Singh came at a critical moment as state-run plane maker Hindustan Aeronautics Limited (HAL) --- the sole manufacturer of fighter jets in the country --- was so far believed to be the front-runner for the project.

On Thursday, Singh said the AMCA execution model was a "bold and decisive step" that will take the domestic aerospace sector to newer heights. "Under the AMCA project, the plan is to develop five prototypes, which will be followed by series production. It is a key milepost in the history of

the Make-in-India programme," Singh said at the CII event. The DRDO's Aeronautical Development Agency (ADA) will execute the programme through industry partnership.

The model unlocks new possibilities for the local aerospace industry, including firms such as Tata Advanced Systems Limited, Larsen & Toubro, Adani Defence and Aerospace and the Mahindra Group. To be sure, HAL is still a strong contender for the project. This could become the private sector's finest hour, chief of the air staff Air Chief Marshal AP Singh said at the same event.

"If today somebody is manufacturing world-class cars, electronics, and equipment in the civil sector, why can't some of those industries come together and say, 'We will make world-class military equipment even if it doesn't give me the profit I am looking for.' Let's rise together to make this nation a great nation," he said.

Speeding up the AMCA programme is critical as China has already deployed the J-20 fifth-generation fighters, it is rolling out the J-35 stealth fighters that Pakistan is looking at buying, and it has tested two so-called sixth-generation platforms designated J-36 and J-50.

Last year, the PM-headed Cabinet Committee on Security (CCS) approved the AMCA's design and prototype development at a cost of around ₹15,000 crore.

This involves the design and development of five twin-engine AMCA prototypes. The IAF's modernisation map envisages the deployment of around 120 stealth fighters (six squadrons) 2035 onwards, with the advanced planes forming an important element of future air combat.

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'Equipments are war-tested': India's defence exports set to rise after Operation Sindoor, says DRDO Chief

Source: The Times of India, Dt. 29 May 2025,
URL: https://timesofindia.indiatimes.com/business/india-business/indias-defence-exports-set-to-rise-after-operation-sindoor-drdo-chief/articleshow/121488147.cms

India's defence exports are expected to increase following Operation Sindoor, as indigenous equipment used in the operation is now considered "war-tested," DRDO Chairperson Samir V Kamat said on Thursday.

Speaking to reporters at the CII Annual Business Summit 2025, Samir V Kamat said that weapons used in Operation Sindoor have boosted confidence among potential buyers. "I am hopeful that exports will increase after Operation Sindoor because now these (equipments) have been war-tested," Kamat said.

"After Operation Sindoor, I sincerely hope that exports will increase because they have just been tested. Equipment and other countries will show a lot of interest in buying them right now," he added. India currently exports defence equipment to over hundred nations, and this number is likely to expand post-operation. "Already we are exporting to hundred countries, then I sincerely hope that this equipment will go to the hundred Countries and some other countries who are not buying us right now will also be interested in buying our equipment right now," he told reporters.

Additionally, Kamat discussed the newly approved execution model for the Advanced Medium Combat Aircraft (AMCA) programme, which enables private sector participation in fighter aircraft development. On May 27, the defence ministry sanctioned this model to enhance India's domestic defence capabilities.

The Aeronautical Development Agency will implement the programme through industry collaboration. The execution model ensures equal opportunities for both private and public sectors to participate, allowing them to bid independently, form joint ventures, or create consortia. The bidding entity must comply with Indian laws and regulations.

"In this execution model, the HAL can bid. Private sector can bid. They can also bid as a joint venture. So this will open a participation of private sector four fighter aircraft," Kamat added. Kamat further said that the development of the Advanced Medium Combat Aircraft (AMCA) is expected to be completed by 2034, with production starting in 2035. The first prototype flight is planned by the end of 2029.

Earlier, during the CII plenary session, defence minister Rajnath Singh said that under the AMCA project, the government—along with industry partners—plans to develop five prototypes of the 5th generation fighter jet, which will later move into series production. Singh, addressing the CII Annual Summit, termed this decision a significant achievement in the 'Make in India' initiative.

The project he said aims to promote Atmanirbharta in defence, marking the first instance where private sector entities can participate alongside public sector companies in a major defence project.

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"Raksha Mantri has promised increase to 10% of Defence budget for R&D": DRDO Chairman

Source: ANI News, Dt. 29 May 2025,
URL: https://www.aninews.in/news/national/general-news/raksha-mantri-has-promised-increase-to-10-of-defence-budget-for-rampd-drdo-chairman20250529151601/

Chairman of the Defence Research and Development Organisation (DRDO), Dr Samir V Kamat, on Thursday, underlined the need for increased investment in research and development in the defence sector, while speaking at the CII Annual Business Summit in the national capital. "We need to invest more in research and development. Today, we spend 5 per cent of our Defence budget on R&D. The Raksha Mantri has promised us that in the next five years, this will increase gradually to 10% of the Defence budget," said Dr Kamat, addressing a gathering of industry leaders and defence stakeholders," Kamat told during the CII Annual Business Summit.

Earlier, Defence Minister Rajnath Singh also addressed the Inaugural Plenary of Confederation of Indian Industry (CII) Annual Business Summit in New Delhi today. According to the official statement by the MoD, the Defence Minister highlighted the critical role played by the defence sector in India's growth journey by enumerating the feats achieved due to the initiatives the Government took in the last decade.

While addressing the summit Defence Minister said, "10-11 years ago, our defence production was approximately. Rs 43,000 crore. Today, it has crossed the record figure of Rs 1,46,000 crore, with a contribution of over Rs 32,000 crore by the private sector. Our defence exports, which were around Rs 600-700 crore 10 years ago, have surpassed a record figure of Rs 24,000 crore today. Our weapons, systems, sub-systems, components, and services are reaching around 100 countries. Over 16,000 MSMEs associated with the defence sector have become the backbone of the supply chain. These companies are not only strengthening our self-reliance journey, but are also employing lakhs of people."

Singh added that today, India is not only producing fighter aircraft and missile systems, but it is also getting ready for New Age Warfare Technology. "We are continuously making headway even in frontier technologies. Our progress in the field of Artificial Intelligence, Cyber Defence, Unmanned Systems, and Space-Based Security is being recognised on the global stage. India has the potential to become a development hub for engineering, high precision manufacturing and future technologies," he said.

Chief of the Naval Staff Admiral Dinesh K Tripathi, Chief of the Air Staff Air Chief Marshal AP Singh, Defence Secretary Rajesh Kumar Singh, Secretary, Department of Defence R&D and Chairman DRDO Dr Samir V Kamat, Vice Chief of the Army Staff Lt Gen NS Raja Subramani, CII President Sanjiv Puri and industry leaders were among those who attended the event.

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Defence News

Defence Strategic: National/International

Nari Shakti played a crucial role in India's effective action against terrorism during Operation Sindoor: Raksha Mantri

Source: Press Information Bureau, Dt. 29 May 2025,
URL: https://www.pib.gov.in/PressReleasePage.aspx?PRID=2132450

"Women pilots and other female soldiers played a crucial role in the effective action taken by India against terrorism in Pakistan and PoK during Operation Sindoor," said Raksha Mantri Shri Rajnath Singh while addressing the flag-in ceremony of INSV Tarini in Goa on May 29, 2025. Raksha Mantri asserted that ever since the participation of women in the Armed Forces has increased, they have performed exceptionally well in every role and fulfilled every responsibility.

"From the heights of Siachen to the depths of the ocean, Indian women are fulfilling many responsibilities, which has further bolstered the security circle of the country. Today, the doors of Sainik Schools are open for girls and 17 women are passing out from National Defence Academy

this month. Operation Sindoor witnessed active and effective participation of women in every branch of the Indian Armed Forces," said Shri Rajnath Singh.

As the two brave Indian Navy Women officers - Lt Cdr Dilna K and Lt Cdr Roopa A – returned home after the successful completion of 'Navika Sagar Parikrama II', Raksha Mantri commended their courage, commitment and endurance in completing the historic circumnavigation expedition. He termed their voyage as the epitome of Nari Shakti.

The duo, in the second edition of the expedition, has become the first from India to accomplish such a feat in double-handed mode. The officers covered a distance of 25,600 nautical miles over a period of eight months with port calls at Fremantle (Australia), Lyttleton (New Zealand), Port Stanley (Falkland Islands) and Cape Town (South Africa).

Shri Rajnath Singh praised the duo for facing physical & mental obstacles head on, overcoming them with strength and proving to the world that they are the brave daughters of India. He commended the mental strength of the women officers as they successfully dealt with the feeling of loneliness during their eight-month-long voyage. He stated that not everyone can accomplish the feat achieved by Lt Cdr Dilna K and Lt Cdr Roopa, which speaks volumes of their grit, determination & strength.

On the warm welcome received by the duo during various port calls by the natives and Indian expatriates alike, Raksha Mantri said the two women officers have made the nation proud by waving the Tricolour all over the world.

"You must document the experiences of this journey with the same spirit with which you completed it. Record your bitter-sweet experiences and learnings so that the future generation, especially our young women, are inspired by it," Shri Rajnath Singh told the courageous duo.

Raksha Mantri recalled his virtual conversation with the women officers days before the flag-in, stating that the interaction had filled him with emotions. He expressed happiness on being part of the welcome ceremony in Goa, terming it as a matter of great pride for the country.

Describing the expedition as the testament to Indian Navy's bravery and resilience in overcoming varied challenges, Shri Rajnath Singh congratulated the personnel who contributed to the expedition. He credited the instructors, technical team, and the resources of the Navy for the successful completion of Navika Sagar Parikrama II.

In his address, Chief of the Naval Staff Admiral Dinesh K Tripathi praised the duo's exemplary resilience, perseverance and indomitable spirit. Highlighting their journey as a tribute to the glorious maritime legacy and a significant step in fostering national maritime consciousness, he recounted their story as an inspiration to every Indian redefining the spirit of Nari Shakti.

As part of the event, a photo Essay Book titled 'Breaking Waves, Making History' chronicling the extraordinary circumnavigation expedition was released. The book provides a narrative of the remarkable voyage with illustrated photographs and insights into life at sea with a unique perspective on maritime adventure and seafaring exploration.

The successful completion of Navika Sagar Parikrama II reinforces Indian Navy's commitment to nurturing talent, promoting adventure and showcasing India's self-reliance in oceanic exploration.

The expedition was flagged off from INS Mandovi, Goa, by the Chief of the Naval Staff on October 02, 2024. The first edition of the expedition was completed by a six-member women crew in 2017-18.

Chief Secretary of Goa government Dr V Candavelou; Director General, Armed Forces Medical Services Vice Admiral Arti Sarin; Flag Officer Commanding-in-Chief, Southern Naval Command Vice Admiral V Srinivas; other senior Naval officers; Commander Abhilash Tomy (Retd) and the families of Lt Cdr Dilna K & Lt Cdr Roopa attended the flag-in ceremony.

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Make-in-India played a key role during Operation Sindoor; AMCA Execution Model to allow private sector to further bolster indigenous capabilities; Govt-Industry synergy can make India a developed nation by 2047: Raksha Mantri

Source: Press Information Bureau, Dt. 29 May 2025,
URL: https://www.pib.gov.in/PressReleasePage.aspx?PRID=2132239

"Make-in-India is an essential component in our national security and it played a key role in India's effective action against terrorism during Operation Sindoor," Raksha Mantri Shri Rajnath Singh has told industry captains, emphasising that through the Advanced Medium Combat Aircraft (AMCA) programme Execution Model, the private sector will get an opportunity to participate in a mega defence project along with public sector companies for the first time, further bolstering indigenous defence capabilities. He was addressing the Inaugural Plenary of Confederation of Indian Industry (CII) Annual Business Summit in New Delhi on May 29, 2025.

Raksha Mantri termed the Execution Model for AMCA programme to build 5th generation fighter aircraft in India as a bold and decisive step, which will take the domestic aerospace sector to greater heights. "Under the AMCA project, the plan is to develop five prototypes, which will be

followed by series production. It is a key milepost in the history of the Make-in-India programme," he said.

Highlighting the success of Make-in-India during Operation Sindoor, Shri Rajnath Singh stated that the Indian Armed Forces would not have been able to take effective action against terrorism in Pakistan and PoK if the nation had not strengthened its indigenous defence capabilities. He described Make-in-India as crucial for security and prosperity, stating that the use of indigenous systems during Operation Sindoor has proved that India has the power to penetrate any armour of the enemy. "We destroyed the terrorist hideouts and then the military bases. We could have done a lot more, but we presented a great example of coordination of power and restraint," he said.

Raksha Mantri asserted that India has redesigned and redefined its strategy & response against terrorism, and Pakistan has realised that running the business of terrorism is not cost-effective, rather it may have to pay a heavy price. He added that India has recalibrated its engagement and scope of dialogue with Pakistan, and now talks will only be held on terrorism and PoK.

Shri Rajnath Singh again made it clear that PoK is a part of India and the people who got geographically and politically separated will, sooner or later, voluntarily return to India. "Prime Minister Shri Narendra Modi-led Government is committed to its resolve of Ek Bharat Shreshtha Bharat. Most of the people in PoK have a deep connection with India. There are only a few who have been misled. The situation of our brothers & sisters living in PoK is similar to that of Shakti Singh, the younger brother of brave warrior Maharana Pratap. Even after separation, the confidence & faith of the elder brother towards his younger brother remains intact and he says: 'तब कुपंथ को छोड़ सुपथ पर स्वयं चला आएगा। मेरा ही भाई है, मुझसे दूर कहाँ जायेगा।'," he said.

Raksha Mantri emphasised that the Government has given priority to policy clarity, indigenisation, economic resilience and strategic autonomy, and the success of these efforts can be ensured only when all the stakeholders, including innovators, entrepreneurs & manufacturers become strong partners in this national mission. He exhorted the Indian industry to focus on national interests, more than company interests. "If securing company interests is your karma, safeguarding national interests is your dharma," he said.

Sharing his views on the theme of the summit 'Building Trust & India First', Shri Rajnath Singh stated that it is a matter of great pride that under the leadership of Prime Minister Shri Narendra Modi, India has become the fourth largest economy. "It is not just a matter of the economy growing in size; it is also about the world's ever-increasing trust in India and its trust in itself. Today, India is not just a consumer of defence technology, but has also become a producer and exporter. When the world approaches us for high-end defence systems, it is not just a market indication, it is a respect for our capability," he said.

Raksha Mantri highlighted the important role being played by the defence sector in India's growth journey by enumerating the feats achieved due to the initiatives taken by the Government in the last decade. "10-11 years ago, our defence production was approx. Rs 43,000 crore. Today, it has crossed the record figure of Rs 1,46,000 crore, with a contribution of over Rs 32,000 crore by the private sector. Our defence exports, which were around Rs 600-700 crore 10 years ago, have surpassed a record figure of Rs 24,000 crore today. Our weapons, systems, sub-systems, components, and services are reaching around 100 countries. Over 16,000 MSMEs, associated

with the defence sector, have become the backbone of the supply chain. These companies are not only strengthening our self-reliance journey, but are also providing employment to lakhs of people," he said.

Shri Rajnath Singh added that, today, India is not only producing fighter aircraft and missile systems, it is also getting ready for New Age Warfare Technology. "We are continuously making headway even in frontier technologies. Our progress in the field of Artificial Intelligence, Cyber Defence, Unmanned Systems, and Space-Based Security is being recognised on the global stage. India has the potential to become a development hub for engineering, high precision manufacturing and future technologies," he said.

Dubbing the Indian industry as the carrier of the collective aspirations of the nation, Raksha Mantri said that only the common efforts & synergy of the Government and the Industry can make India a developed nation by 2047. He stressed that, in today's times, the strength of a nation is not evaluated just by its economic index like GDP, foreign investment or export figures, it also depends on the confidence a country can inspire in its citizens and the global community. "Trust lasts only when a country has the confidence that it can protect its geopolitical interests, ensure the safety of its citizens, and remain stable in the face of future uncertainties. The morale of the nation remains high only when it knows that its today is secure, and tomorrow is safe," he added.

Chief of the Naval Staff Admiral Dinesh K Tripathi, Chief of the Air Staff Air Chief Marshal AP Singh, Defence Secretary Shri Rajesh Kumar Singh, Secretary, Department of Defence R&D and Chairman DRDO Dr Samir V Kamat, Vice Chief of the Army Staff Lt Gen NS Raja Subramani, CII President Shri Sanjiv Puri and industry leaders were among those who attended the event.

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Indian Army Contingent Departs For India-Mongolia Joint Military Exercise NOMADIC ELEPHANT

Source: Press Information Bureau, Dt. 29 May 2025,
URL: https://www.pib.gov.in/PressReleasePage.aspx?PRID=2132473

The Indian Army contingent departed today, for 17th edition of India- Mongolia Joint Military Exercise NOMADIC ELEPHANT. The exercise is scheduled to be conducted in Ulaanbaatar, Mongolia from 31st May to 13th June 2025. Exercise NOMADIC ELEPHANT is an annual event conducted alternatively in India and Mongolia. Last edition of the same exercise was conducted at Umroi, Meghalaya in July 2024.

The Indian contingent comprising 45 personnel will be represented mainly by troops from a battalion of the ARUNACHAL SCOUTS. The Mongolian Armed Forces contingent, also comprising similar strength, will be represented by 150 Special Forces unit.

Aim of the exercise is to enhance interoperability between the two forces while employing joint task force in semi conventional operations in semi urban/ mountainous terrain under United Nations mandate.

The scope of this exercise involves Platoon level Field Training Exercise. During the exercise, Indian and Mongolian troops will engage in various training activities to include endurance training, reflex shooting, room intervention, small team tactics and rock craft training, among others. In addition, to enhance complexity of exercise, aspects pertaining to Cyber Warfare are also being incorporated in this edition of the exercise. Soldiers from both sides will also learn from each other's operational experience.

The exercise underscores the shared commitment of India and Mongolia towards regional security, peace and stability. Exercise NOMADIC ELEPHANT reinforces the India-Mongolia relationship as a cornerstone of regional cooperation, fostering strong military ties and promotion of cultural understanding.

A testament to the enduring bond of friendship, trust and cultural linkages between India and Mongolia, the exercise sets the stage for meaningful professional engagement, highlighting the unwavering commitment of both nations to broader defence cooperation.

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CDS to Attend Shangri-La Dialogue 2025 to Strengthen Defence Diplomacy & Engage with Global Military Leadership

Source: Press Information Bureau, Dt. 29 May 2025,
URL: https://www.pib.gov.in/PressReleasePage.aspx?PRID=2132230

Chief of Defence Staff General Anil Chauhan will visit Singapore from May 30, 2025 to June 01, 2025 to attend the 22nd edition of the Shangri-La Dialogue, hosted annually by the International Institute for Strategic Studies. During the visit, General Anil Chauhan will hold bilateral meetings with Chiefs of Defence Forces and senior military leadership from several foreign countries including those from Australia, European Union, France, Germany, Indonesia, Japan, Netherlands,

New Zealand, Philippines, Singapore, UK and USA. The Chief of Defence Staff will address the Academia, Think Tanks and Researchers and speak on the topic ‘Future Wars and Warfare’. He will also participate in the simultaneous special sessions as part of the event and address on the topic ‘Defence Innovation Solutions for Future Challenges'.

Shangri-La Dialogue is Asia’s premier defence and security summit that brings together defence ministers, military chiefs, policy makers and strategic experts across the globe. The event will witness leaders from 40 nations addressing Indo-Pacific Security challenges. The engagements will provide a platform to strengthen defence cooperation, discuss mutual security interests and enhance India's strategic partnerships in the Indo - Pacific region.

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Raksha Mantri Shri Rajnath Singh approves Miniratna status to three DPSUs

Source: Press Information Bureau, Dt. 29 May 2025,
URL: https://www.pib.gov.in/PressReleasePage.aspx?PRID=2132499

Raksha Mantri Shri Rajnath Singh has approved the grant of "Miniratna" status Category-I for Munitions India Limited (MIL), Armoured Vehicles Nigam Limited (AVNL) & India Optel Limited (IOL). Congratulating these DPSUs for their transformation from a government organization to a profit making corporate entity in a short span of three years, Raksha Mantri expressed his satisfaction over the initiatives taken by the management of MIL, AVNL and IOL to increase the turnover of the company, maximize indigenisation and meet other performance parameters for grant of Miniratna (Category-I) status.

Munitions India Limited has achieved significant milestones after inception, including stellar growth in sales from Rs. 2571.6 Cr in 2021-22 (H2) to Rs. 8282 Cr (provisional) in FY 2024-25. On the Export front, MIL has achieved a growth from Rs. 22.55 Cr in FY 2021-22 (H2) to Rs. 3081 Cr in FY 2024-25 (Provisional). The major products of MIL include small, medium and high calibre ammunition, mortars, rockets, hand grenades etc. with in-house manufacturing of initiatory compositions, propellants and high explosives.

Armoured Vehicles Nigam Limited has witnessed a significant growth in sales from Rs. 2569.26 Cr in 2021-22 (H2) to Rs. 4986 Cr (provisional) in FY 2024-25. AVNL has also achieved 100% indigenization of Engines for all the 3 platforms viz. T-72, T-90 and BMP-II. The major products of AVNL include Armoured/ Combat Vehicles (T-90, MBT Arjun, Infantry Combat Vehicles 'BMP-II Sarath' etc.), support vehicles (MPV, AERV etc.) and Defence mobility solutions (Stallion, LPTA etc.)

India Optel Limited, over the past three years, has pushed its sales from Rs. 562.12 Cr in 2021-22 (H2) to Rs. 1541.38 Cr (provisional) in FY 2024-25. The main products of IOL include Opto-Electronic systems and vision equipment which are used in land system platforms & weapons like battle tanks T-90, T-72, Infantry Combat Vehicle BMP-II, Artillery Guns, Naval Guns etc.

The bestowal of Miniratna status to MIL, AVNL & IOL will further empower these companies to achieve accelerated growth trajectory and new heights in defence production and exports.

To enhance functional autonomy, efficiency and unleash new growth potential and innovation, erstwhile Ordnance Factory Board (OFB) was converted into seven Defence Public Sector Undertakings, including these three DPSUs w.e.f. 01.10.2021. While MIL and AVNL are Schedule 'A' new Defence Public Sector Undertaking (DPSU), IOL is a Schedule 'B' DPSU under the administrative control of Department of Defence Production (DDP).

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India and EU navies to participate in joint exercise in Indian Ocean from June 1-3

Source: The Economic Times, Dt. 29 May 2025,
URL: https://economictimes.indiatimes.com/news/defence/india-and-eu-navies-to-participate-in-joint-exercise-in-indian-ocean-from-june-1-3/articleshow/121495816.cms

India and the European Union will participate in a joint naval exercise from June 1 to 3 in the Indian Ocean on advanced counter-piracy operations, interoperability, tactical manoeuvres, and enhanced communication protocols reflecting the growing maritime security cooperation between the two sides, an EU statement said on Thursday.

The exercise will involve Indian Navy ships and two frigates of the European Union Naval Force (EUNAVFOR) Operation ATALANTA, Italian ship Antonio MARCEGLIA and Spanish ship REINA SOFIA, along with their respective air assets, the statement added. The ships are currently docking in Mumbai. "The joint exercise will focus on advanced counter-piracy operations, interoperability, tactical manoeuvres, and enhanced communication protocols, reflecting the growing maritime security cooperation between the two sides. The respective Maritime Operations Centers (MOC) will control the exercise," the statement said.

Talking to reporters, Herve Delphin, EU Ambassador to India, said the two EU ships belong to navy operations at ATALANTA that cover the northwest Indian Ocean, especially the Gulf of Aden. ATALANTA has a track record of preventing and intercepting acts of piracy.

Over the time, there has been greater recognition for both India and the EU of the interest to cooperate in areas of maritime security and specifically in this part of the Indian Ocean. Delphin said the unprecedented presence of two EU navy ships in Mumbai is a result of commitment to bring the cooperation between the two sides at a much more granular, operational and tactical level. "We both recognise each other as maritime security providers in the Indian Ocean and it is in common interest to develop cooperation at sea," he said.

This exercise builds on the visit of the College of Commissioners to India in February 2025. One of the key deliverables was to enhance engagement on maritime domain awareness with a view to promote shared assessment, coordination and interoperability, an EU statement said.

Launched in 2008 to tackle piracy and armed robbery in the Gulf of Aden, Operation ATALANTA's mandate has evolved. It encompasses a broad range of security challenges, including counter-narcotics, arms smuggling, and combating illegal, unreported, and unregulated (IUU) fishing in the Horn of Africa and western Indian Ocean. EUNAVFOR ATALANTA warships deployed in the Indian Ocean have conducted "Passing Exercises" (PASSEX) at sea with the Indian Navy in the past. Rear Admiral Davide Da Pozzo, Force Commander of EUNAVFOR ATALANTA, claimed since the operation the piracy instances have come down.

The fourth EU-India Maritime Security Dialogue held in March 2025 also emphasised countering illicit maritime activities and exploring new joint maritime initiatives aligning with the objectives of this exercise. Vice Admiral Ignacio Villanueva Serrano, Operation Commander of EUNAVFOR ATALANTA, visited India in April to elevate bilateral cooperation with the Indian Navy.

"Next month, External Affairs Minister S Jaishankar will be in Brussels for the first ever ministerial strategic dialogue," Delphin said. In a few weeks, on the EU side there will be a presentation of the new India Strategic Agenda of cooperation. This will be the basis for future joint road map for cooperation, Delphin said.

"This is a very intensive period for the EU-India cooperation and partnership," the EU envoy said. Naval cooperation between the EU and India has expanded in recent years with joint exercises in the Gulf of Guinea and Gulf of Aden. The Indian Navy has also been providing escort to World Food Programme chartered vessels coordinated by EUNAVFOR Operation ATALANTA.

The EU and India are increasing cooperation on maritime security. The EU and India share a strong commitment to a free, open, inclusive and rules-based maritime order in the Indo-Pacific region. This is underpinned by the respect for territorial integrity and sovereignty, democracy, rule of law, freedom of navigation and overflight, unimpeded lawful commerce, and peaceful resolution of disputes in accordance with international law, notably the United Nations Convention on Law of the Sea (UNCLOS), the EU statement said.

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Rajnath Singh calls AMCA ‘bold, decisive’ move to strengthen India’s defence arsenal

Source: The Economic Times, Dt. 29 May 2025,
URL: https://economictimes.indiatimes.com/news/defence/rajnath-singh-calls-amca-bold-decisive-move-to-strengthen-indias-defence-arsenal/articleshow/121485868.cms

India has taken a significant step in strengthening its defence capabilities with the approval of the Advanced Medium Combat Aircraft (AMCA) programme execution model. Defence Minister Rajnath Singh announced on Thursday that the government, involving industry participation, plans to develop five prototypes of this fifth-generation fighter jet. This initiative marks a major milestone in the ‘Make in India’ programme, aiming to enhance self-reliance in defence manufacturing.

AMCA: A game-changer for India’s defence industry

At the Annual Summit of the Confederation of Indian Industry (CII) in New Delhi, Rajnath Singh called the move "a very bold and decisive decision," emphasising how it will strengthen India's defence and elevate its aerospace sector. The Defence Ministry confirmed Singh's approval of the AMCA Programme Execution Model on Wednesday, stating it would significantly boost India's indigenous defence capabilities and build a robust domestic aerospace ecosystem.

The Aeronautical Development Agency (ADA), part of DRDO, will lead the project, executing it through partnerships with both private and public sector companies. For the first time, private industry will have the chance to work alongside public sector units in such a large-scale defence project.

Rising defence production and exports

Rajnath Singh highlighted the rapid growth of India's defence sector over the last decade. "Ten to eleven years ago, our defence production was approximately Rs 43,000 crore. Today, it has crossed Rs 1,46,000 crore, with a contribution of over Rs 32,000 crore by the private sector," he said.

Exports have seen an even more striking rise. "Our defence exports, which were around Rs 600-700 crore 10 years ago, have surpassed Rs 24,000 crore today. Our weapons, systems, sub-systems, components, and services are reaching around 100 countries." Singh also pointed to the critical role of over 16,000 MSMEs, which form the backbone of the defence supply chain, creating jobs for hundreds of thousands of people.

Preparing for new age warfare

Singh stressed that India is not only producing conventional fighter jets and missile systems but also advancing in frontier technologies like Artificial Intelligence, Cyber Defence, Unmanned Systems, and Space-Based Security. "Our progress in these fields is being recognised on the global stage," he said, adding that India has the potential to become a hub for engineering, high-precision manufacturing, and future technologies. He underlined the importance of unity between government and industry to realise the vision of a developed India by 2047. "The strength of a nation is not just its GDP or exports. It depends on the confidence it inspires in its citizens and the world," Singh said.

Operation Sindoor: Proving value of 'Make in India'

The Defence Minister also referenced Operation Sindoor, launched on May 7, which targeted terrorist infrastructure in Pakistan and Pakistan-occupied Jammu and Kashmir. The operation eliminated over 100 terrorists linked to groups such as Jaish-e-Mohammed and Lashkar-e-Taiba. "In Operation Sindoor, the people of the whole country have seen, understood and felt the success of the Make in India campaign. Today it has been proved that Make in India is important for both the security and prosperity of India," Singh declared at the CII event where service chiefs were felicitated.

What makes fifth-generation fighters special?

Fifth-generation fighter jets are cutting-edge aircraft with stealth technology, advanced sensors, and superior manoeuvrability designed to gain the upper hand in combat. They can cruise at supersonic speeds without using afterburners, enhancing their stealth and fuel efficiency. Currently,

only a few countries produce these jets: the US with the F-22 Raptor and F-35 Lightning II; Russia with the Su-57; China with the Chengdu J-20; and soon South Korea and Turkey with their own models.

India's AMCA Project: Specifications and timeline

The AMCA is a twin-engine, 25-tonne fighter with advanced stealth features to evade enemy radar. Dr Krishna Rajendra Neeli, project director at ADA, claims India's fifth-gen fighter will be on par or superior to global counterparts. It is expected to carry four long-range air-to-air missiles and multiple precision-guided weapons, with a payload capacity of 1,500 kg. A first in India, the jet will feature a Divertless Supersonic Intake. In March last year, the Cabinet Committee on Security approved the development of five prototypes at an initial cost of Rs 15,000 crore. The ADA aims to deliver the first prototype by 2031, with series production set to start by 2035.

The Defence Ministry emphasised that both private and public sectors will have equal opportunities to participate. Companies can bid independently, as joint ventures, or in consortia, provided they are Indian and comply with national laws. This approach is expected to encourage collaboration with firms like Hindustan Aeronautics Limited, Tata, Adani, and Larsen & Toubro, strengthening India's defence industrial base.

Why AMCA matters now

India's Air Force currently operates only 30-32 fighter squadrons, below the sanctioned strength of 42. Several squadrons are also due for retirement in the next decade. This makes rapid development of the AMCA critical to maintain aerial superiority. Meanwhile, Pakistan is upgrading its arsenal with help from China and Turkey. Beijing itself is testing sixth-generation fighter prototypes, underscoring the urgency for India to keep pace.

China is reportedly testing two sixth-generation jets, including the J-36 and the V-shaped twin-engine J-50. These aircraft feature tailless designs and three engines, suggesting high range and payload capabilities. Experts like Malcolm Davis of the Australian Strategic Policy Institute note the size and power of these planes indicate China's push for air dominance. Globally, countries like Britain, Japan, Italy, France, Germany, and Spain are collaborating on their own next-generation fighter programmes.

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Character of warfare changed rapidly, lines between war and peace increasingly blurred: Navy Chief

Source: The Economic Times, Dt. 29 May 2025,
URL: https://economictimes.indiatimes.com/news/defence/character-of-warfare-changed-rapidly-lines-between-war-and-peace-increasingly-blurred-navy-chief/articleshow/121495812.cms

Navy Chief Admiral Dinesh K Tripathi on Thursday said while the nature of warfare has remained the same over centuries, its character has "changed rapidly" and continues to do so, as he also suggested that the lines between war and peace are "increasingly blurred".

"We also know that non-traditional threats such as acts of terror can quickly spiral into a wider conflagration and conflict," he said in his address at the CII Summit here. His remarks come in the backdrop of the recent four-day military confrontation between India and Pakistan after the dastardly Pahalgam terror attack.

"While the nature of warfare has remained the same over centuries, character of warfare has changed rapidly and continues to do so. The lines between war and peace are increasingly blurred," Admiral Tripathi said in his address.

"The commercial technologies are democratising warfare, making it available to non-state actors, and we are moving into an era of mass precision, where highly accurate capabilities, and in large numbers, both remain important for us," he added. The Navy chief said the use of non-contact warfare along with "space and cyber domains to wage a conflict with no ceasefires is a reality". "In this new paradigm, the industry has to see itself at the frontlines of national defence," he added.

The Navy chief further said, "Our ability to absorb technologies at a rapid pace, translate them into combat capabilities, build at scale when called upon... and constantly innovate and adapt will define our collective security."

"So, one may not be wrong in saying that national security no longer begins only at borders, but it also begins in R&D labs, factories and "in our firewalls," he added.

The Navy chief also underlined that the maritime domain shall remain critical and central to India's journey towards becoming a 'Viksit Bharat' by 2047. Earlier in his address, he said as India aspires to become the third largest economy in the world, the seas will remain "our engines for growth".

India's economy will remain dependent upon the seas and by corollary, "our future prosperity will be driven by at and from the seas", he added.

Emphasising India's maritime legacy, Admiral Tripathi emphatically stated that "India was, India is and India will always be a maritime nation", not just by design in terms of geography, which all of you are aware, but also by destiny, in terms of our future growth. "Today India is again realising its rich maritime potential and the apex level vision and policymakers are aware and their statements are reflective of this broader maritime renaissance," he said.

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Operation Sindoor national victory, think God was with us too: IAF chief

Source: The Economic Times, Dt. 29 May 2025,
URL: https://economictimes.indiatimes.com/news/defence/operation-sindoor-national-victory-think-god-was-with-us-too-iaf-chief/articleshow/121484812.cms

IAF Chief Air Chief Marshal A P Singh on Thursday hailed Operation Sindoor as a "national victory", and said all the Indian forces came together to execute it in a very professional manner. In his address at the CII Business Summit here, he also said, "We were taking the path of truth, I think, God was with us also in this."

"This Operation Sindoor that we've been talking about, it's a national victory. I thank each and every Indian. I am sure, every Indian wanted....was looking towards this victory," the IAF chief said.

"Like it has been said again and again that this was an operation that was executed in a very professional manner by everybody, all the agencies, all the forces, we all came together...and when truth is with you, then everything happens on its own," he said.

Operation Sindoor was launched early May 7 in retaliation to the April 22 Pahalgam terror attack. All subsequent retaliations to Pakistani offensives were carried out under this operation.

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Kailashahar Airbase revival: Why a forgotten 1971 war airstrip might be key to India's NE strategy

Source: The Economic Times, Dt. 29 May 2025,
URL: https://economictimes.indiatimes.com/news/defence/kailashahar-airbase-revival-why-a-forgotten-1971-war-airstrip-might-be-key-to-indias-ne-strategy/articleshow/121480532.cms

Kailashahar airport in Tripura, which has remained non-operational since the 1971 Indo-Pak war, is set to be revived in the near future. This will become the second airport for the state, complementing Agartala's Maharaja Bir Bikram Airport, and is expected to greatly enhance connectivity for Tripura's residents and businesses.

The Airports Authority of India (AAI) has initiated steps to revive the defunct Kailashahar airport in Unakoti district. Following a request from the Tripura state government, AAI Northeast Regional Executive Director M Raju Krishore, accompanied by Maharaja Bir Bikram Airport Director K C Meena, visited the site on May 26 to assess infrastructure, land availability, and visibility conditions. Meena told PTI that the AAI is exploring options to acquire either 75 or 205 acres of land to develop the facility and prepare a revival plan accordingly.

Currently, the Kailashahar airport has a runway length of about 1,000 meters, which is insufficient for operating larger aircraft such as ATRs. The availability and safety of smaller planes that carry 16 to 19 passengers remain a concern, according to officials.

The airport that sent alarm bells ringing

The urgency to restart the airport comes amid reports that Bangladesh is receiving assistance from China to renovate Lalmonirhat Airport, a World War II-era airstrip situated approximately 132 kilometres from India's strategically critical Chicken's Neck corridor and just 15 to 20 kilometres from the Indian border. The airport is spread over 1,166 acres and it has a four-kilometre runway and large tarmac.

The Chicken's Neck corridor is only 22km wide, it connects Northeast India to the rest of India and is considered vital for national security. "There is a fear that this airport will be developed for dual use—civilian and military purposes. It could help China keep a tab on Indian activities

whether civilian or military or help them gather intelligence near the Siliguri corridor," said Sriparna Pathak, China Studies professor at O.P. Jindal University, as quoted by TOI.

The importance of Kailashahar airport

The airport, strategically located in Unakoti district, has been inactive for over 30 years. The airport is only a few kilometres from the Bangladesh border. It played a key role during the 1971 India-Pakistan war when the Indian Air Force conducted missions and surveillance from the site.

Ironically, the Kilo Flight which became the first Bangladesh Airforce unit, commenced its operations from this very airport. They carried out missions using one Chetak, one Armed Otter and one Dakota against the Pakistani forces in erstwhile East Pakistan, according to a PIB press release.

The airport is also meant to act as a deterrent to both Bangladesh and China, making it clear that India will respond decisively to any action that threatens its territorial integrity. While the revival of this airport is being portrayed as a measure to improve air connectivity, and promote economic development, it is also being viewed as an important measure to strengthen India's strategic preparedness in the sensitive 'Chicken's neck' border area.

Officials have indicated that revitalizing Kailashahar Airport will facilitate faster movement of goods and personnel and contribute to strengthening infrastructure near the sensitive border areas. The development also reflects India's efforts to maintain and enhance its strategic posture in the northeast, particularly as neighboring countries develop their own border infrastructure with international partnerships.

While the revival of Kailashahar Airport is currently in preliminary stages, authorities emphasize that it will primarily serve civilian purposes alongside supporting regional security needs.

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Estonia courting India with eye on strategic tech ties, from robotics to cybersecurity & AI

Source: The Print, Dt. 29 May 2025,
URL: https://theprint.in/defence/estonia-courting-india-with-eye-on-strategic-tech-ties-from-robotics-to-cybersecurity-ai/2640365/

Estonia is looking to strengthen cooperation with India in a range of strategic technologies, from unmanned vehicles for the Indian armed forces to cybersecurity and Artificial Intelligence (AI). Estonian officials—from defence to foreign affairs ministries—are focusing on building ties with India, drawing on their over 18 years of experience in countering Russian cyber attacks as a model for their engagement with New Delhi.

The Baltic European nation of 1.3 million people, which is set to increase its defence investment to 5.4 percent of its gross domestic product (GDP) by 2026, is moving forward in areas such as unmanned ground vehicles (UGVs) and other tools, which could potentially be of interest to the Indian military.

Kaimo Kuusk, Estonia's Permanent Secretary in the Ministry of Defence, said cooperating with India is essential due to the "shared values" between New Delhi and Tallinn such as India's adherence to international law and its democratic traditions.

"We need to cooperate between the countries that share the values. We definitely will not accept any violence. When we are talking about changing the borders, we are not accepting terrorism as a tool. So countries that are clicking all those boxes, yes, we are on the same understanding, should cooperate more together," Kuusk told ThePrint.

Estonia regained its independence with the fall of the USSR in 1991, and has since joined the European Union (EU) and the North Atlantic Treaty Organisation (NATO). The country is home to NATO's Cyber Defence Centre of Excellence and has many cybersecurity firms, including CybExer and CR-14, both of which provide cyber ranges for training cybersecurity forces across the world.

Unmanned ground vehicles & robotics

One area where Estonia has seen considerable growth in recent years is robotics, specifically unmanned ground vehicles. Estonia's Milrem Robotics, a market leader for light unmanned ground vehicles unveiled THeMIS, its advanced multi-role defence platform a few years ago. The platform has since been deployed by the Ukrainian forces on the frontline and has also attracted interest from the Indian military.

Around 15 THeMIS unmanned ground vehicles (UGVs) are currently deployed in Ukraine, which has been defending its territory from Russia for more than 3 years. They are used for casualty evacuation and logistics on the frontlines of Eastern Ukraine. The platform is currently under trial in around 20 countries. THeMIS, was showcased in India at the Defence Expo 2022 by Bharat Forge Limited (BFL), in partnership with Milrem.

"So, I think they [Indian Army] have seen how they're being used in the battlefields of Ukraine and this has caused them to accelerate their thinking. I think they've always had a longer-term view about adopting unmanned ground vehicles, but that has just been brought forward slightly," Paul Clayton, the Industrial Partnership Director at Milrem Robotics told ThePrint.

"And I think they're looking at various different sizes and scales of vehicles to be able to link up and be compatible with different elements of the armed forces," he added. "We are absolutely clear that if we're going to get into the Indian market, we need a very good Indian partner to be working with. And we would see all of our manufacturing going on in India and that's what we're exploring at the moment, which is exciting."

Milrem is looking at building its vehicles in India with a local partner, given the potential market—the Indian armed forces—is "very large", Clayton said. The firm is also developing several models, which could be of interest to the Indian military, including larger unmanned ground vehicles, weighing 20 tonnes with speeds up to 100 km per hour.

"That's very suited to your mechanised and motorised forces. We've got an 8×8 vehicle, we've got another one which is tracked, which are both in development at the moment and those would fit in very well with your infantry and armoured formations in the future," said Clayton.

Estonian firms such as 5.0 Robotics are also looking to expand to the Indian market, with their field manufacturing systems that are capable of building or repairing parts needed for military equipment close to the frontlines. The war between Russia and Ukraine has pushed Estonia's technology sector into building dual-use products, but its small size forces its companies to look abroad for markets.

"[We have] selected 20 priority markets for exports and FDI…and India, of course, is one of them. In each of these 20 countries, we select focus sectors," Priit Kallakas, Director General of Economic Diplomacy at Estonia's Ministry of Foreign Affairs, told an Indian media delegation last week. "In the Indian case, the focus sectors are everything related to ICT. Then there is defence, and also energy and food," he added.

Cyber security

Estonia is famous for its e-governance systems, as a result of which cybersecurity has become an integral part of its national security strategy. Around 99 percent of all Estonian government services are available digitally, which has resulted in Tallinn and private companies in Estonia focusing on building adequate security infrastructure.

In April 2007, the Baltic state faced repeated denial-of-service incidents, shutting down its government websites, following its decision to move a Soviet-era war memorial from the centre of Tallinn. The attacks, which officials have said likely emanated from Moscow, were the first instance of a nation's cyber systems coming under attack by foreign actors.

In recent years, cyber attacks have become common across the globe, with reports of Indian government websites coming under attack during Operation Sindoor earlier this month. Estonia has, for the past 18 years, been building its capacity to mitigate cyber attacks.

In 2023, India's National Security Council and Rashtriya Raksha University (RRU) partnered with the private Estonian company CybExer to build a "cyber range". The range was used for five days to simulate consistent attacks against India's cyber infrastructure, and over 1,500 teams participated in the exercise.

"So I would also now, maybe on the bilateral [ties] between Estonia and India, mention a few things. We had a very good historic meeting between our President Karis and Prime Minister Modi that was during this AI Summit in Paris [in February], so very relatable to the topics we just spoke about. And of course, the e-governance, cyber and digital security issues were also talked about in the agenda," Minna-Liina Lind, the Vice-Minister for Global Affairs in Estonia's Ministry of Foreign Affairs, told the Indian media last week.

The Vice-Minister added: "And we have already established quite a good bilateral contact on this. I know that my colleague, our Cyber Ambassador [Tanel Sepp], is also often in touch, and also we have these consultations happening both here and in India. And we have three new agreements in the defense industry, since only in the past year, which have been concluded."

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Collab, not just assembly lines: India's defence strategy moving forward

Source: The Economic Times, Dt. 29 May 2025,
URL: https://economictimes.indiatimes.com/opinion/et-commentary/collab-not-just-assembly-lines-indias-defence-strategy-moving-forward/articleshow/121496808.cms?from=mdr

In the aftermath of conflict with Pakistan and security threats on two fronts, emphasis is on swiftly strengthening India's defence capabilities. This week, Rajnath Singh announced a new approach to India's 5th-gen multi-role stealth advanced medium combat aircraft (AMCA) programme. Currently in its development phase, it will see private firms and PSUs compete to work with state-owned Aeronautical Development Agency (ADA) to induct the fighters into IAF by 2035.

India has also been buying advanced, combat-proven military platforms with speed, reliability and transparency under the G2G framework. Such agreements exist with Russia, France, the US and Israel. The S-400 missile defence systems from Russia, and Rafale fighter jets from France were not built in India. They were imported through the G2G route. The French and Russians have demonstrated tech transfers within a government wrap-around. But US military platforms have always been directly imported. Along with developing long-term indigenous capabilities towards strategic autonomy, the future of defence procurements might lie in a middle path that Washington and New Delhi are exploring under the G2G mechanism. This could reshape how India secures itself.

Since the 2008 nuclear agreement, the US has become a $24 bn defence partner, supplying 10% of India's military imports. Major US military sales to India include C-17 Globemaster and C-130J Super Hercules transport aircraft, P-8 Poseidon maritime patrol aircraft, CH-47F Chinook heavy-lift, MH-60R Seahawk and AH-64E Apache attack helicopters, and M777 ultra-light howitzers. India was also the first international buyer of P-8s.

All these platforms have been directly imported through the US G2G Foreign Military Sales (FMS) route, without any local production or transfer of tech. This approach worked when India was a smaller player. But with India's legitimate regional power aspirations today, the old model is inadequate. The M777 ultra-light howitzers deal in 2016 marked the US' first concession to 'Make in India' policy. The contract was signed only after BAE Systems agreed to relocate its assembly, integration and test (AIT) facilities to India. However, it ran into several problems. RBI normally does not allow foreign companies to open project offices under the FMS programme. BAE Systems needed a special approval. GST applied at multiple stages of sale, and local tax exemptions were not available.

It was unclear if sovereign agreements overrode India's tax laws or not. A view was taken that they did, and were, therefore, fully tax-exempt. This may be open to interpretation. These were not merely tax technical issues, but showed a fundamental incompatibility between the hybrid FMS final-assembly model and India's tax and regulatory framework. This experience highlights why India-US defence cooperation needs a new approach. These matters are likely to affect other similar deals. NITI Aayog is reviewing defence laws, and proposing structural reforms to simplify

taxation, reduce bureaucracy and create a more investor-friendly environment. France's Naval Group has built Scorpene-class Kalvari submarines at Mazagon Dock under the French inter-governmental agreement (IGA). Russia's United Aircraft Corporation (UAC) has established a production line for Sukhoi Su-30MKI Flanker fighter jets at HAL under Russia's Inter-Governmental Commission (IGC).

Unlike France and Russia, the US has not built a military platform in India for India. This may change soon. Pursuant to the Modi-Trump meeting in February, India and the US have agreed to pursue co-production arrangements for the Stryker infantry carrier vehicle (ICV) and Javelin anti-tank guided missile (ATGM) within FMS. For the first time, the US is considering building weapons in India and sharing weapon systems tech. However, the details are unclear. It would likely happen in stages. The initial buy would be direct imports to meet immediate operational needs, while subsequent phases would focus on manufacturing in India, possibly through a licencing or JV model, with an Indian partner.

But India wants more. The key lies in structuring these partnerships as genuine collaborations, not just manufacturing arrangements. Co-design and co-development of future upgrades of the weapon systems, with joint IP and provisions for joint exports, would create mutually beneficial long-term ties that transcend traditional buyer-seller dynamics.

Real co-production partnerships create high-skilled jobs, build domestic capabilities, increase local content, integrate into global defence supply chains and open up export opportunities. More importantly, it offers a path to a high-level strategic partnership. Its success, most likely, will depend on how much tech the US is willing to share. More than 80% of tech transfer is unlikely, given the US' reluctance to share 'gold box' sensitive technologies, and its concerns about IP protection and tech security.

The ongoing negotiations for GE's F414 jet engines to power the indigenous Tejas Mk 2 LCA highlight the problem. Despite a proposal for 80% tech transfer, talks have been stuck since 2023. India doesn't have to choose between buying equipment quickly for immediate security needs, and building long-term domestic capabilities. It can do both at the same time. But to do that, India must recalibrate its strategy, and the Stryker and Javelin projects to get the balance right. The US should see this as a chance to elevate defence ties with India. With the US government promoting defence sales to India, now might just be the right time.

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A lesson from China’s defence tech

Source: The Economic Times, Dt. 29 May 2025,
URL: https://economictimes.indiatimes.com/opinion/et-commentary/a-lesson-from-chinas-deftech-for-indias-defence-industry/articleshow/121497236.cms?from=mdr

If there’s one lesson to learn from the latest conflict with Pakistan, it’s the need to be ready to confront China’s defence technology. Beijing is set to offer more advanced weapons and 40 J-35 fighter jets to Pakistan, regardless of whether Rawalpindi can pay for them or not.

GoI was quick to absorb the lesson, announcing a project to develop a 5thgen AMCA earlier this week. This realisation is also evident in Isro's announcement that it plans to launch 52 satellites to enhance space-based surveillance capabilities.

A lot more needs to be done. For instance, Pakistan's use of Turkish-made drones should spur New Delhi to ramp up production of AI-embedded drones in collaboration with US, Poland, Russia and/or Germany. The success of homemade BrahMos missiles, produced with Russia, has underscoredthe importance of joint production. Today's redefined battlefield is more about technological superiority and export profits than about emotional rhetoric and sabre-rattling. Some analysts have even suggested that advanced deftech might influence geopolitics, not the other way around. Understanding China's defence machinery is key to preparing for India's future challenges. China's main goal is to be able to challenge the US, which might try to block its plans to conquer Taiwan, or take over islands in the South China Sea or Sea of Japan.

The high bar is forcing Chinese scientists and engineers to find new ways to acquire knowledge and take up ambitious projects. This explains the frenzied use of AI to supercharge defence systems, development of frigates and difficult-to-detect submarines, PL-15 air-to-air missiles (300 km range), hypersonic and long-range precision missiles capable of neutralising US forward bases in Guam and Japan in the Western Pacific, and integrated satellite networks (267 satellites, including 115 for intelligence) for real-time targeting. Military experts are reassessing China's weapons capabilities to see if they've been overstated.

India successfully conducted strikes on at least nine Pakistani airbases during Operation Sindoor, exposing vulnerabilities in Chinese air defence systems. Chinese satellite reconnaissance was also exposed. Pakistan has provided no evidence that China's PL-15E, delivered by J-10C, hit Indian targets.

The post-Pahalgam India-Pakistan conflict was quite a godsend for Chinese arms manufacturers, who had, prior to the escalation, no opportunty to test their products and get necessary feedback. Beijing is desperate to push ahead in the arms export field, where it ranks 4th in the world after the US, France and Russia.

On the other hand, vulnerabilities in the Chinese defence system should be reassuring for Indian arms manufacturers, including new private sector entrants. A lot of China's weapons development, particularly its use of AI, can be replicated in the Indian scenario if GoI involves major IT companies and startups.

China's dictatorial political system is advantageous for forging collaboration across different industries. For example, Tencent and Baidu are engaged in defence production, though their main business is IT software and satellites. In India and the US, IT and AI companies independently seek profits, instead of getting involved in weapons development.

Several commercial companies, including Tencent, ByteDance (parent of TikTok), and drone-maker DJI, are participating in China's 'civil-military fusion' strategy that emphasises dual-use technologies. Add Huawei, ZTE and SenseTime — blacklisted by the US for supporting PLA — to this list. Chinese arms-makers benefit from a robust manufacturing ecosystem that also supplies a wide range of civilian engineering and electronic goods to global market.

It is heartening that several Indian companies have not only entered the defence sector but are also collaborating with DRDO. They include Adani Defence & Aerospace in short-range missile systems, and L&T and Tata Industries in main artillery guns.

PLA uses Meta's Llama (Large Language Model Meta AI) to process battlefield data, simulate strategies and support command decisions. Observers have noted that PLA used AI to analyse flight data, weather conditions and pilot behaviour during drills in the Taiwan Strait.

Chinese scientists and engineers collaborated with American universities, jointly publishing 9,000 research papers without anyone realising that most of the work focused on dualuse technologies, according to a US Congress investigation. The repeated visits by China's 'research vessels' in the Indian Ocean, sometimes with Sri Lanka's assistance, are also an attempt to spy on India's military facilities and radio waves.

Modern defence tech calls for an amalgamation of different technologies, including engineering, electronics, high-energy physics, high-performance explosives, satellite systems, robotics, drones, IT and AI. Thus, a wide range of public and private companies need to collaborate to produce complex weapons like missiles and drones. It is not enough for single-point production facilities like HAL to be asked to carry the entire weight.

Enthusiasm to invest in R&D is still lacking in India's public and private sectors, though many top companies — including Reliance, Infosys, Mahindra, ITC, LIC and Coal India — are sitting on massive reserves. Aside from the defence sector, a call from GoI to develop India's own LLM did not elicit much enthusiasm from major IT companies.

GoI must find a way to rope in major companies in defence research and adaptation in armed forces, if getting ready for a Chinese challenge is something it considers needs to be taken up seriously.

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Autonomous warfare in Operation Sindoor

Source: The Hindu, Dt. 30 May 2025,
URL: https://www.thehindu.com/news/national/autonomous-warfare-in-operation-sindoor/article69633124.ece

Launched in early May, in retaliation to the April 22 Pahalgam terror attack, Operation Sindoor marks a historic milestone, in which Unmanned Aerial Systems (UAS) played a primary role in direct military combat between two nuclear-armed neighbours, signalling an uncharted era of drone-centric warfare in South Asia.

Over four days of hostilities, both sides effectively rewrote their rules of engagement, ushering in a 'new normal' of airborne deterrence without pilots, but with autonomous platforms, armed drones and loitering munitions, all operating below the threshold of a full-scale war, and shaping a calibrated, escalation-managed conflict.

In the 48 hours preceding Operation Sindoor, Israeli Heron MK-II and indigenously designed TAPAS-BH-201/ Rustom-II-Medium-Altitude Long-Endurance (MALE) Intelligence, Surveillance

and Reconnaissance (ISR) Unmanned Aerial Vehicles (UAVs) are believed to have flown deep into Pakistani airspace to gather electronic and signals intelligence and thermal signatures of suspected Islamist terror camps.

Thereafter, from May 7 onwards, after the Indian Air Force (IAF) attacked nine targets inside Pakistan, both sides employed a broad spectrum of UAS — from ISR UAVs to armed drones, kamikaze loitering munitions, electronic decoys and quadcopters — as dual-purpose tools for real-time intelligence gathering and precision strikes.

And as this drone war intensified, both countries sought to dominate the battlespace through persistent aerial surveillance by mapping out enemy air defences, missile batteries, command centres, troop clusters and logistical nodes. Decoy drones too were widely employed to spoof radars, 'bait' air defence systems and exhaust interceptors, minimising risk to manned assets, before ceasefire ensued on May 10.

India's array of aerial systems

In the intervening period, India claimed to have downed some 600 Pakistani drones, releasing intercepted footage and wreckage to reinforce its assertions in a high-stakes information war, paralleling the kinetic exchanges. Pakistan, in turn, alleged that 300–400 Indian drones had unsuccessfully targeted its military and strategic infrastructure, before being shot down. India has neither confirmed nor denied these avowals, citing Operation Sindoor's enduring operational status for its silence.

Open-source intelligence and drone-tracking data, meanwhile, revealed that India's offensive against Pakistan featured a diverse UAS inventory. It was spearheaded by indigenously developed loitering munitions like the GPS-guided Nagastra-1 and Israeli-origin Harop drones, capable of autonomously homing in on enemy radar systems.

To overwhelm Pakistan's air defences, India also deployed swarm drone formations developed jointly by the Defence Research and Development Organisation and private contractors to create radar clutter, trigger premature defensive responses and saturate surveillance networks. Priority targets included ammunition depots, Surface-to-Air Missile (SAM) batteries, radar sites, and forward operating bases.

The strikes were delivered in carefully sequenced waves. Initial sorties deployed decoy drones and electronic warfare payloads to saturate radar coverage and provoke early, albeit futile SAM launches. These were followed by precision loitering munitions and armed UAVs, guided in real-time by Heron MK IIs and TAPAS-BH-201/ Rustom-Iis.

Quadcopters and micro-UAVs played a critical role in relaying live ISR feeds and target acquisition data via the Army's Integrated Battle Management System (IBMS) to forward units, ensuring dynamic targeting and reaction.

Notably, media reports claimed that India's drone strikes disrupted a cricket match in Rawalpindi, forcing a stadium evacuation due to air defence alarms. Another significant Harop strike, reportedly destroyed a Chinese-supplied HQ-9 air defence system near Lahore, delivering both a psychological blow and a strategic setback to Pakistan's layered air defence shield.

Consequently, military analysts noted that India's overwhelming use of varied UAS to deliver calibrated, cross-border strikes without risking manned aircraft, represented the emerging regional model of deterrence. They said it also visibly showcased India's growing competence in autonomous, cost-effective, and networked warfare, demonstrating a significant shift in the balance of aerial power in South Asia.

Pakistan's retaliation

Pakistan, for its part, in its reactive Operation Bunyan-um-Marsoos (wall of lead), deployed a range of UAS, including its indigenously developed Shahpar (feather)-II MALE UAVs, armed Burraq (lightening) drones, Turkish-origin Bayraktar TB2s, and Chinese-supplied CH-4 and Wing Loong II platforms.

These assets were complemented by CH-901 and WS-43 loitering munitions from China and domestically produced kamikaze drones, launched at multiple targets across a 1,500-kilometre expanse, stretching from Kashmir in the north to Bhuj in the west.

While the Shahpar-IIs, TB2s, and Wing Loong IIs primarily conducted ISR missions — streaming real-time imagery of Indian troop concentrations, artillery positions, and logistics depots — Pakistan's loitering munitions targeted radar stations, forward operating bases and critical Army and IAF command nodes in the northern and western sectors. However, these attacks were effectively neutralised by India's robust, multi-tiered air defence grid, inflicting minimal or no damage at all.

Strategic urban and military infrastructure hubs — including Jammu, Pathankot and Amritsar in Punjab, Bikaner and Jaisalmer in Rajasthan, and Bhuj in Gujarat — too were frequently targeted. But despite the density of these assaults, India's integrated air defence network —comprising layered radar coverage, SAM batteries, automated threat-response mechanisms, and upgraded Cold War-era legacy platforms and systems — mitigated damage, preventing disruption.

India's multi-layer air defence system

Pakistan repeatedly sought to probe and bring to heel India's Integrated Air Command and Control System (IACCS) — its air defence nerve centre — by launching drones via varied routes, altitudes and diverse timings, to disrupt its communication nodes and forward-deployed command centres, albeit unsuccessfully.

The IACCS fuses surveillance inputs from ground-based radars, airborne early warning and control platforms, satellites, and other sensors into a centralised but distributed command-and-control network. It integrates with SAM systems and fighter aircraft, enabling the rapid detection, tracking, and interception of low-altitude threats, including UASs. Its built-in mechanisms ensured continuity of operations, even if any individual nodes were damaged, jammed or destroyed.

Pakistan attempted to overload the IACCSs radar coverage, confuse response loops, and expose vulnerabilities for follow-on drone or missile strikes. However, military officials confirmed the IACCS's core network remained intact, with all and any temporary disruptions swiftly mitigated through alternate data links and pre-positioned mobile radars.

Analysts further noted the system's 'mesh' architecture allowed seamless failovers when nodes were hit, with satellite uplinks and mobile platforms sustaining full situational awareness. The IACCS also displayed its Directed Energy Weapons (DEWs) capability in which high-powered lasers or microwaves, via a real-time network, detected, tracked and neutralised airborne threats like drones speedily.

Complementing the IACCS at the tactical level was the Akashteer (Sky Arrow) air defence control and reporting system, developed by Bharat Electronics Limited, which provided a digitised command layer for Army Air Defence units, enabling seamless coordination between sensor units and weapon platforms. Designed to rapidly disseminate targeting data and manage low-level threats — including UAVs — it ensured that frontline SAM units could engage targets with minimal delay, even under electronic warfare or communication stress.

The accompanying air defence shield was built around a layered architecture combining retrofitted legacy Low-Level Air Defence (LLAD) systems with advanced missile platforms in an unparalleled innovative mix that remains a hallmark of the Indian military's improvisation.

Ingeniously upgraded with radar-directed fire capability and electro-optical sights, Cold War-era systems from the early 1960s, comprised the LLAD network for close-in protection against drones. These included Pechora and OSA-AK SAM systems and ZSU-23-4 Shilka, ZU-23-2 twin barrel 23mm anti-aircraft (AA) guns from Soviet times, and the L/70 Bofors 40mm AA platform dating back to the 1940s. Army and Border Security Force snipers too were part of the LLAD structure, shooting down numerous incoming drones in Jammu, Punjab and Rajasthan.

These 'heirloom' LLAD platforms were supplemented by the Israeli SPYDER short and medium-range air defence missile system using Python-5 and Derby missiles for point defence against UAVs, cruise missiles, and aircraft.

A new kind of war

The domestic Akash and Akash-NG (New Generation) missile system provided medium-range coverage, while the long-range Barak-8, jointly developed with Israel, defended high-value assets and strategic nodes from aircraft, drones, and ballistic/cruise missiles. These were all backed by Russia's Almaz-Antey S-400 'Triumf' self-propelled surface-to-air missile system — renamed Sudarshan Chakra — one the world's best, of which India had acquired five units for $5.5 billion in October 2018 and, so far, taken delivery of three.All these systems were centrally integrated through the IACCS, enabling coordinated, real-time responses and full-spectrum aerial threat mitigation.

In conclusion, Operation Sindoor was not merely a skirmish; it was a seismic shift in which two nuclear-armed rivals stepped into the age of autonomous warfare, where deterrence is digital, and dominance is algorithmic. And as the smoke subsides, one truth remains: the next war will not begin with a soldier's charge, but with the silent whir of drones in the sky.

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What Operation Sindoor tells us about the nature of escalation, and India's changing approach

Source: The Indian Express, Dt. 30 May 2025,
URL: https://indianexpress.com/article/explained/operation-sindoor-nature-of-escalation-10036560/

The four-night military confrontation between India and Pakistan that began early on May 7 was the most expansive outbreak of hostilities since the war of 1971. The Kargil conflict of 1999 was limited to a small area in Jammu and Kashmir; during Operation Sindoor, India hit targets up to 100 km inside Pakistan and Pakistan occupied Kashmir (PoK), and Pakistan launched aerial attacks against J&K, Punjab, Rajasthan, even Haryana.

In terms defined by the American military strategist and thinker Herman Kahn's 44-step "escalation ladder", the situation can be seen as having begun with the terrorist attack in Pahalgam on April 22 — the "Ostensible Crisis" — and gone up to the stage of "Dramatic Military Confrontations" before being paused by the ceasefire of May 10.

Kahn's escalation ladder

The idea of escalation began to appear in strategic literature in the years after the end of World War II, in part as a reaction to the idea of "all-out" war. Kahn, a futurist and military strategist who co-founded the Washington DC think tank Hudson Institute with the vision of "thinking about the future in unconventional ways", was the preeminent Western theorist of the 'structure' of escalation. Kahn's metaphor for escalation was a ladder, each rung of which denoted a rising level of conflict.

In 1962, Kahn proposed a 16-step ladder of escalation from "Subcrisis Disagreement" to "Aftermath". Three years later, he published On Escalation: Metaphors and Scenarios (1965), in which he developed a more detailed, 44-step ladder of escalation — with "Ostensible Crisis" as Step 1, and "Spasm/ Insensate War" as Step 44.

The India-Pakistan escalation

The Pahalgam terror attack can be described as "Ostensible Crisis" — Step 1, in which 26 civilians including 25 tourists and one local Kashmiri were killed by Pakistan-backed terrorists on April 22. This led to Step 2, "Political, Economic and Diplomatic Gestures" — India's decisions from April 23 onward can be labeled as such. These include the decision to keep the Indus Waters Treaty in abeyance, cancelling the visas of Pakistani nationals, stopping trade and postal services, closing India's air space for Pakistan's aircraft, not allowing Pakistan-flagged ships to dock at Indian ports, etc.

Then came Kahn's Step 3 — "Solemn and Formal Declarations". India's top leadership declared the intent to avenge the killings of the tourists at Pahalgam — Prime Minister Narendra Modi vowed to "pursue the terrorists and those who shelter them to the very end". And Pakistan's Prime Minister Shehbaz Sharif promised a "crushing reply to any Indian misadventure".

Kahn's Step 4 is the "Hardening of Positions — Confrontation of Wills". India blamed Pakistan for not taking action against terrorist groups, while Islamabad asked for evidence of India's accusation. It also said that India's position on the IWT would be deemed as an "act of war".

Step 5, Kahn's rung of "Show of Force" was seen as the Indian Navy on April 27 carried out multiple anti-ship missile firings, underlining its preparedness for long-range offensive strikes. On May 3, Pakistan test-fired Abdali, its surface-to-surface ballistic missile with a 450-km range. Step 6 — "Significant Mobilisation" — was quick and stealthy, and from May 7 onward, the escalation quickly reached rungs 8 ("Harassing Acts of Violence") and 9 ("Dramatic Military Confrontations"). India struck at nine terror locations in Pakistan and Pakistan-occupied Kashmir, and successfully thwarted Pakistani drone attacks along the western border. The two militaries remained at Step 9 for four nights before they agreed to stop military action — this is where Kahn's escalation ladder was aborted.

2016, 2019: change of doctrine

In Choices: Inside the Making of Indian Foreign Policy, former National Security Adviser Shiv Shankar Menon concluded the chapter on the 26/11 terror attacks ('Restraint or Riposte? The Mumbai Attack and Cross-Border Terrorism from Pakistan') with the sentence: "…Personalities matter. With a different mix of people at the helm, it is quite possible that India would have chosen [to act] differently [in the aftermath of the attacks]. In fact, if India is forced to make a similar choice in the future, I am sure it will respond differently."

The book was published in November 2016. Weeks earlier, on September 29, Indian special forces had crossed the Line of Control to carry out surgical strikes on terrorist launchpads in PoK. That October, Prime Minister Narendra Modi told a gathering in Mandi, Himachal Pradesh: "Earlier Israel used to be spoken of like this (in the context of carrying out targeted military strikes against its enemies). Now everyone knows our Army can do it too and is no less capable."

A little over two years later, in February 2019, the Prime Minister said in Hindi at a public meeting in Churu, Rajasthan: "I swear by this soil that I won't let the nation be destroyed, I won't let the nation be stopped. It is my promise to Bharat Ma that I won't let her head be bowed." In these two speeches, the Prime Minister mentioned neither the surgical strikes nor the Balakot air strikes of February 26, 2019, but the change in India's doctrine of response to terrorism was clear.

Operation Sindoor and new red lines

In his address to the nation on May 12 this year, Modi articulated the elements of India's current doctrine against terrorism: a befitting response on India's terms; zero tolerance for Pakistan's nuclear blackmail; and no distinction between terrorist leaders and state sponsors of terrorism. He also made it clear that India had only "suspended" its military action, and underlined that for New Delhi, this was the "new normal" now.

India's new policy is qualitatively higher in aggression. Targeting the Pak establishment that has long used cross-border terrorism as an instrument of policy means the military and government of that country are not off-limits for future retributive actions.

By linking Pakistan-based groups like the Lashkar-e-Taiba and Jaish-e-Mohammed to major terrorist attacks in the US and UK, Modi framed Operation Sindoor as India's war on terrorism, similar to what NATO launched in Afghanistan after 9/11.

The PM also painted Pakistan as a country that protects, rather than going after, terrorists, and laid down the red lines on resuming the bilateral dialogue that has been suspended since 2016.

Takeaways, outlook going forward

New Delhi has its task cut out — politically, diplomatically, and militarily.

Lower Threshold For Action: India's "new normal" has lowered the threshold of response in case of a major terrorist attack in future. In terms of Kahn's ladder of escalation, this could mean India's response will begin from Step 3 (Solemn and Formal Declarations) and could very quickly escalate to Steps 9 (Dramatic Military Confrontations) and 10 ("Provocative Breaking off of Diplomatic Relations"). Step 12 ("Large Conventional War") would be very much on the horizon.

Diplomatic Challenge: Pakistan has been trying to project itself as the victim before the international community. New Delhi is concerned at the false equivalence between the two countries that some in the West have suggested, along with a re-hyphenation of India and Pakistan. The multi-political party outreach by the Indian government, where bipartisan political delegations are currently travelling the world, explaining to countries that India was the original victim in Pahalgam, and that it responded in self-defence.

The Donald Trump Factor: President Trump's claim of a "US-brokered ceasefire" has created a challenge for India, which has always rejected any third-party involvement in India-Pakistan issues. Trump's view of the May 10 ceasefire as a success for American diplomacy and the first "military confrontation" that he has been able to stop from escalating presents Indian diplomacy with a delicate task. New Delhi has to navigate Trump's unpredictable statements and posts on social media, pushing back with tact and conviction.

New Frontiers Of War: Besides upgrading its military prowess to dominate in the air, at sea, and on land, India will have to also build capacity in the new frontiers of war where evolving and improving technology is changing the rules very rapidly.

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United Nations to honour 2 Indian peacekeepers posthumously

Source: The Tribune, Dt. 30 May 2025,
URL: https://www.tribuneindia.com/news/india/united-nations-to-honour-2-indian-peacekeepers-posthumously/

The United Nations will posthumously award the prestigious "Dag Hammarskjöld Medal" to two Indian peacekeepers — Brigadier Amitabh Jha and Havildar Sanjay Singh — in recognition of their supreme sacrifice in the service of global peace.

Brigadier Amitabh Jha was attached to the United Nations Disengagement Observer Force (UNDOF), overseeing the delicate ceasefire arrangements in the Golan Heights, while Havildar Sanjay Singh was deployed with the United Nations Stabilisation Mission in the Democratic Republic of Congo (MONUSCO), where he worked to stabilise conflict-affected regions.

The medals will be presented posthumously during a solemn ceremony at the United Nations headquarters in New York today (May 29), marking the International Day of United Nations Peacekeepers — an occasion dedicated to honouring over 4,300 peacekeepers who have lost their lives since 1948 while serving under the UN flag.

The Dag Hammarskjöld Medal, established by UN Security Council in 1997, is named after the second UN Secretary-General, Dag Hammarskjöld, who died in a 1961 plane crash while on a peace mission.

Brigadier Amitabh Jha and Havildar Sanjay Singh.

The medal is awarded annually to military, police and civilian personnel who make the ultimate sacrifice while serving in UN peacekeeping operations. India, as one of the largest contributors to UN peacekeeping missions, has provided more than 2,00,000 personnel across 49 missions over the decades, and many Indian peacekeepers have been honoured with this medal in past years.

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डिटेक्ट, ट्रैक और न्यूट्रलाइज... भारतीय सेना जल्द लेगी काउंटर ड्रोन सिस्टम, चीन-पाक को मिलेगा जवाब

Source: TV9 Bharatvarsh, Dt. 29 May 2025,
URL: https://www.tv9hindi.com/india/indian-army-counter-drone-system-china-pakistan-loc-lac-3315725.html

भारतीय सेना अपने एयर डिफेंस सिस्टम को और मजबूत करने के लिए दो नए सिस्टम की तलाश में है. खासतौर पर GPS और BeiDou सैटेलाइट नेविगेशन सिस्टम के जरिए ऑपरेट होने वाले ड्रोन पर फोकस किया जा रहा है.

चीन BeiDou नेविगेशन सिस्टम का इस्तेमाल करता है और पाकिस्तान भी GPS के साथ–साथ BeiDou का उपयोग करता है. भारतीय सेना को इन दोनों देशों के ड्रोन को LOC, IB और LAC पर डिटेक्ट, आइडेंटिफाई, ट्रैक और न्यूट्रलाइज करने के लिए काउंटर अनमैंड एरियल सिस्टम की जरूरत है. इसके लिए स्वदेशी कंपनियों से RFI जारी की गई है.

ग्राउंड बेस्ड काउंटर अनमैंड एरियल सिस्टम (C-UAS)

सेना के RFI में कहा गया है कि उन्हें ऐसा सिस्टम चाहिए जो किसी भी ड्रोन को डिटेक्ट, ट्रैक और न्यूट्रलाइज कर सके. इसके लिए वाइडबैंड RF डिटेक्टर, रडार और EQ/IR कैमरे से लैस सिस्टम की जरूरत है.

सेना ने ड्रोन के साइज के साथ उसकी डिटेक्शन रेंज भी जारी की है. माइक्रो ड्रोन को 3 किलोमीटर, मिनी ड्रोन को 5 किलोमीटर और छोटे ड्रोन को 8 किलोमीटर की दूरी से डिटेक्ट और ट्रैक किया जा सके. रडार माइक्रो ड्रोन को 3 किलोमीटर, मिनी और छोटे ड्रोन को 5 किलोमीटर दूर से पहचान सके. सॉफ्ट किल के लिए दुश्मन के ड्रोन को 2 किलोमीटर पर ही जैमिंग कर सके.

इसमें GPS, GLONASS, BeiDou, Galileo और IRNSS जैसे सिस्टम को भी जाम करने की क्षमता हो. इसके अलावा स्पूफिंग, मेटाडाटा इंजेक्शन और फॉल्ट इंजेक्शन के लिए भी यह सिस्टम कारगर होना चाहिए. हार्ड किल के सिस्टम के लिए यह सिस्टम भारतीय सेना के पास मौजूद मीडियम मशीन गन और नेगेव LMG के साथ जोड़ा जा सके.

काउंटर ड्रोन सिस्टम की खासियत

RFI के मुताबिक, वाइड बैंड रेडियो फ्रीक्वेंसी डिटेक्टर के जरिए 5 किलोमीटर की रेंज में यह सिस्टम ड्रोन के रेडियो फ्रीक्वेंसी को डिटेक्ट कर सके. इस सिस्टम में यह भी तकनीक होनी चाहिए कि वह अपने और दुश्मन के ड्रोन के बीच फर्क समझ सके.

सिस्टम के डिस्प्ले में दुश्मन के ड्रोन को लाल और अपने या मित्र ड्रोन को नीले रंग से दिखा सके. अगर यह सिस्टम ड्रोन को 2 किलोमीटर की जैमिंग रेंज में आ जाता है तो उसे न्यूट्रलाइज करने के लिए सॉफ्ट किल में वाइड बैंड साइबर इलेक्ट्रो मैगनेटिक ट्रांसमीटर (CEMT) से एंगेज कर सके.

अगर एंगेज करने में विफल हो जाता है तो जिस रेडियो फ्रीक्वेंसी से वह ड्रोन ऑपरेट कर रहा था, उसे थ्रेट लाइब्रेरी में भविष्य के लिए स्टोर कर सके. 1000 से ज्यादा स्टोरेज फैसिलिटी उस सिस्टम के पास हो. सिस्टम की 5 घंटे तक लगातार काम करने की क्षमता हो और इसका वजन 9 किलो से ज्यादा नहीं होना चाहिए ताकि एक ऑपरेटर इसे आसानी से ऑपरेट कर सके.

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50 फीसदी खाकी और 45 फीसदी हरी... अब नए डिजिटल पैटर्न यूनिफॉर्म में दिखेंगे BSF के जवान

Source: Aaj Tak, Dt. 29 May 2025,
URL: https://www.aajtak.in/india/news/story/bsf-border-security-forces-new-combat-dress-digital-pattern-ntc-dskc-2251768-2025-05-29

बॉर्डर सिक्योरिटी फोर्स (BSF) के जवानों की वर्दी बदलने जा रही है. अब बीएसएफ के जवानों को एकदम नए और शानदार कॉम्बैट ड्रेस में देखने को मिलेगा. जल्द ही बीएसएफ के जवान सेना और सीआरपीएफ की तरह डिजिटल पैटर्न वाली कॉम्बैट ड्रेस में नजर आएंगे. बीएसएफ की वर्दी बदलने की प्रक्रिया शुरू हो चुकी है और अगले एक साल

के भीतर पूरा बल नए ड्रेस में नजर आएगा. नई वर्दी में रंगों के अनुपात पर भी खास ध्यान रखा गया है. इसमें पचास फीसदी खाकी, 45 फीसदी हरी और पांच फीसदी भूरा रंग होगा.

इस बार बीएसएफ की वर्दी में जो फैब्रिक इस्तेमाल हो रहा है, वह न सिर्फ आरामदायक है बल्कि काफी मजबूत भी है. पहले जहां कॉम्बैट ड्रेस में 50 फीसदी कॉटन और 50 फीसदी पॉलिएस्टर होता था. वहीं अब यह अनुपात 80 फीसदी कॉटन, 19 फीसदी पॉलिएस्टर और एक फीसदी स्पैन्डेक्स का हो गया है, जिससे कपड़े में खिंचाव बना रहता है.

बीएसएफ की पुरानी वर्दी में प्रिंट सिर्फ कपड़े के ऊपर होता था, लेकिन अब डिजिटल प्रिंट तकनीक से यह डिजाइन सीधे फाइबर के भीतर तक जाएगा, जिससे इसकी टिकाऊपन काफी बढ़ जाएगा. खास बात यह है कि इस पूरी ड्रेस की डिजाइनिंग बीएसएफ ने खुद इन–हाउस की है. इस पर लगभग एक से डेढ़ साल तक अधिकारियों ने कड़ी मेहनत की और अब बीएसएफ ने इस डिजिटल प्रिंट का पेटेंट भी करवा लिया है. केवल प्रिंट ही नहीं बल्कि इसकी सिलाई का भी.

बीएसएफ की अनुमति के बिना कोई भी इस डिजाइन की कॉपी नहीं कर सकता, न इसे पहन सकता है और न ही सिलवा सकता है. यदि कोई ऐसा करता है, तो यह गैरकानूनी होगा और सीधे जेल हो सकती है. बता दें कि बीएसएफ की 2.7 लाख की ताकत पाकिस्तान और बांग्लादेश की सीमाओं की रक्षा के साथ–साथ नक्सल विरोधी, उग्रवाद और आतंकवाद विरोधी अभियानों में भी महत्वपूर्ण भूमिका निभाती है.

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Marching into history: 1st batch of 17 women cadets graduates from NDA alongside over 300 male peers

Source: Deccan Herald, Dt. 30 May 2025,

URL: https://www.deccanherald.com/india/maharashtra/marching-into-history-1st-batch-of-17-women-cadets-graduates-from-nda-alongside-over-300-male-peers-3563864

In a historic milestone, the first batch of 17 women cadets on Friday graduated from the Pune-based National Defence Academy, alongside over 300 male counterparts, marking the passing out of the NDA's first co-ed batch.

The cadets went past the ‘Antim Pag’ at the Khetrpal Parade Ground of the tri-service training academy, widely known as the “cradle of leadership”.

The first batch of women cadets joined the NDA’s 148th course in 2022 after the UPSC (Union Public Service Commission) allowed women to apply to the defence academy following a Supreme Court direction in 2021.

Gen V K Singh, former Army Chief and current governor of Mizoram, was the reviewing officer of the Passing Out Parade.Academy cadet captain, Udayveer Negi, commanded the parade of the 148th course.

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Shehbaz Sharif admits Pakistan caught unawares by Brahmos missile

Source: The Economic Times, Dt. 30 May 2025,
URL: https://economictimes.indiatimes.com/news/politics-and-nation/shehbaz-sharif-admits-pakistan-caught-unawares-by-brahmos/articleshow/121497528.cms

Pakistani Prime Minister Shehbaz Sharif, notwithstanding his earlier claims of a military "victory" against India, on Thursday suddenly admitted that the Pakistan Army was "caught unawares" on the intervening night of May 9-10 when India used Brahmos missiles to strike, including the airport in Rawalpindi.

Sharif, who was speaking at an event in Azerbaijan, said Pakistan planned to attack India on May 10 after the morning prayers. Before Pakistan could act, India's long-range supersonic Brahmos cruise missiles hit multiple targets in Pakistan, across several provinces, Sharif admitted. Sharif said he was informed of the early morning attack by Gen Asim Munir, who has now been promoted to the rank of Field Marshal.

"Our armed forces were prepared to act at 4.30 in the morning (May 10) after the Fajr prayers to teach a lesson. But before that hour even arrived, India once again launched a missile attack using Brahmos, targeting various provinces of Pakistan, including the airport in Rawalpindi."

It is unclear why Sharif admitted a failure during a foreign trip and that too in the presence of Munir. In the past, moves by his elder brother Nawaz Sharif to mend fences with India as the PM was followed by the Pak Army launching attacks on India. On May 10, SU-30MKI launched Brahmos missiles, damaging the northern air command-control network at Nur Khan airbase, Chaklala, Rawalpindi.

Nur Khan is not only the home to the air refuelling capability that kept Pakistani fighter jets in the air, but it is also near the headquarters of Pakistan's Strategic Plans Division, which oversees and protects the country's nuclear arsenal.

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US defence chief looks to woo allies in Asian security forum debut

Source: The Economic Times, Dt. 29 May 2025,
URL: https://economictimes.indiatimes.com/news/defence/us-defence-chief-looks-to-woo-allies-in-asian-security-forum-debut/articleshow/121484260.cms

U.S. Defence Secretary Pete Hegseth will try to convince Asian defence leaders this weekend that the United States is a more trusted partner for the region than China, U.S. officials told Reuters, as questions linger about the Trump administration's commitment to the region. Hegseth, who has spent a large portion of his first months on the job focused on domestic issues, countering diversity, equity and inclusion in the military and taking aim at the press, will make his first extended remarks in Singapore on Saturday about how he envisions U.S. defence policy in the Indo-Pacific.

He will be addressing the Shangri-La Dialogue, Asia's premier security forum, which runs this year from May 31-June 1. Defence ministers, senior military and security officials and diplomats from around the world are expected to attend. French President Emmanuel Macron will deliver the keynote address on Friday. "Secretary Hegseth is going to make the case to Asian allies about why the United States is a better partner than the CCP," said a senior U.S. defence official, speaking on condition of anonymity.

The official, who was using an acronym for China's Communist Party, said Hegseth had the opportunity to take advantage of Chinese Defence Minister Dong Jun's expected absence from the dialogue, where U.S. and Chinese delegates have locked horns in previous years. Before departing for Singapore, Hegseth criticised former U.S. President Joe Biden's approach to the region. " The previous administration talked somewhat about pivots, but all the Biden administration ever showed the world was weakness," he said. "Under this administration we will achieve peace and deterrence through strength (and) that is by working by, with and through allies and partners, specifically in the Indo-Pacific."

Hegseth's speech will be closely watched as it comes after President Donald Trump has lashed out at traditional allies, most recently with tariffs. Hegseth has also roiled allies in Europe. In February, he warned Europe against treating America like a "sucker" while addressing a press conference at NATO headquarters in Brussels. "There's certainly uncertainty being expressed, and sometimes I think it's probably fair to characterize it as a concern," a second senior U.S. defence official said, referring to anxiety among Asian allies. General Dan Caine, the recently confirmed U.S. chairman of the Joint Chiefs of Staff, is also expected to attend the dialogue.

Earlier Asia Visits

Some of the Trump administration's early moves in the Indo-Pacific have raised eyebrows. The U.S. moved air defence systems from Asia to the Middle East earlier this year as tensions with Iran spiked - an effort which took 73 C-17 flights. But Hegseth visited the Philippines and Japan in March, a trip in which experts said the secretary stuck by the more traditional importance of allies.

Ely Ratner, who was the Pentagon's top official on China under the Biden administration, said allies in Asia were seeking a consistent policy from Hegseth.

"The region will be watching closely as to whether the U.S. secretary of defence that shows up at Shangri-la looks like the one that travelled to the Philippines and Japan or has more of the harder edge that we've seen from the Trump administration in Europe," said Ratner. Hegseth, a former Fox News host, was only narrowly confirmed as defence secretary in January. He has moved with stunning speed to reshape the department, firing top generals and admirals as he seeks to implement Trump's national security agenda.

His leadership has been under intense scrutiny after it was revealed that he shared sensitive war plans on Yemen's Iran-aligned Houthis in two Signal group chats. Trump has stuck by him through the turmoil. Hegseth will likely get a friendly audience at the Shangri-La Dialogue, said Greg Poling, with the Center for Strategic and International Studies think-tank.

"Asian allies, and particularly the Philippines, feel a lot more reassured than our European allies, but there's always going to be that voice in the back of their head," Poling said. Democratic Senator Tammy Duckworth, who is co-leading a bi-partisan delegation to the Shangri-la Dialogue, said her aim was to reassure Asian allies that the United States was committed, a message she said Hegseth was not capable of delivering. "He's only got this job because he sucked up to President Trump and looked good on Fox News. So let's be clear about the capabilities of the secretary of defence," Duckworth told Reuters.

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Chinese military declines to comment on performance of China-made weapons used by Pakistan in conflict with India

Source: The Economic Times, Dt. 29 May 2025,
URL: https://economictimes.indiatimes.com/news/defence/chinese-military-declines-to-comment-on-performance-of-china-made-weapons-used-by-pakistan-in-conflict-with-india/articleshow/121493516.cms

The Chinese military Thursday declined to comment on the performance of China-made weapons used by Pakistan in the recent conflict with India. Chinese Defence Ministry Spokesperson Sr. Col. Zhang Xiaogang also played down the reports of India recovering an unexploded PL-15E, a radar-guided beyond visual range missile, stated to be the most advanced rocket of its kind produced by China. The missile you mentioned is an export equipment and has been shown at defence exhibitions at home and abroad many times, Zhang said in his media briefing here.

India and Pakistan are neighbours that cannot be moved away, Zhang said, parrying questions about Indian official's assertions that China provided air defence and satellite support to Pakistan in the military conflict and Chinese weapons systems performed below average. We hope that both sides can remain calm and restrained and avoid action further complicating the situation, Zhang said, reiterating earlier assertions by the Chinese Foreign Ministry.

The Chinese side is willing to continue the constructive role in achieving a comprehensive and lasting ceasefire and preserve regional peace and stability, Zhang said in the first media briefing of the Chinese defence ministry after the May 7-10 military conflict between India and Pakistan.

The Chinese Defence Ministry holds media briefings once a month. Considering the large-scale use of Chinese weapons supplies by Pakistan and the all-weather ties between the two countries, the Chinese official media showed considerable interest in India-Pakistan military confrontation.

About two weeks after the April 22 Pahalgam terror attack, in which 26 civilians were killed, India carried out precision strikes on terror infrastructure in Pakistan and Pakistan-occupied Kashmir on May 7 under Operation Sindoor. Pakistan attempted to attack the Indian military bases on May 8, 9 and 10. The Indian side responded strongly to the Pakistani actions.

According to a recent report by the Stockholm International Peace Research Institute (SIPRI), China has emerged as the largest weapons supplier to Pakistan, accounting for 81 per cent of arms procurement of China's all-weather ally from 2020 to 2024. The procurement included the latest jet fighters, radars, naval ships, submarines and missiles. Both countries jointly manufacture J-17 aircraft, the mainstay of the Pakistan Air Force (PAF).

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Science & Technology News

Rashtriya Boudhik Sampada Mahotsav-2025 at CSIR-IIP, Dehradun

Source: Press Information Bureau, Dt. 29 May 2025,
URL: https://www.pib.gov.in/PressReleasePage.aspx?PRID=2132419

CSIR-Indian Institute of Petroleum, Dehradun celebrated Rashtriya Boudhik Sampada Mahotsav (RBSM) 2025 on 29th May 2025 to promote intellectual property (IP) awareness in India. It is a part of the Azadi Ka Amrit Mahotsav initiative and was first launched in July 2023.

The programme started with the lamp lighting and saraswati vandana. The opening remarks were given by Dr Deepti Agrawal, In-charge, IPMG, CSIR-IIP followed by brief address of Dr. Harender Singh Bisht, Director, CSIR-Indian Institute of Petroleum, Dehradun.

Invited Speaker from CSIR-Innovation Protection Unit, New Delhi, Dr. Kapil Arya gave very insightful talk on “Feel the beat of Intellectual Property Rights”, highlighting the fundamental of patenting followed by interactive session with scientists and research scholars. Dr. N. Vishwanadham, Chairman, PPC shared his experiences on role of patent and publication committee and innovative technologies developed at CSIR-IIP, Dehradun. An online quiz competition on IP was conducted as part of the celebration.

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Indian Space Research Organization (ISRO) - Department of Biotechnology (DBT) convenes Joint Working Group meeting under the BioE3 policy

Source: Press Information Bureau, Dt. 29 May 2025,
URL: https://www.pib.gov.in/PressReleasePage.aspx?PRID=2132399

The 1st ISRO-DBT JWG meeting was convened on 28th May 2025 (through online mode) under the Chairmanship of Shri. M Ganesh Pillai, Scientific Secretary, ISRO and Co-Chairmanship of Dr. Alka Sharma, Senior Adviser/ Sci-H DBT. The JWG meeting is follow-up to the MoU signed on 25th October 2024 between Department of Biotechnology (DBT), Ministry of Science and Technology and Indian Space Research Organization (ISRO), Department of Space (DoS).

The Union Cabinet has approved path breaking initiatives in the field of human space programme and biotechnology with the announcement of establishment of a Bharatiya Antariksh Station and the unveiling of 'BioE3 (Biotechnology for Economy, Environment and Employment) Policy for fostering high performance Biomanufacturing' in the country, respectively. Under the initiative on fostering high performance biomanufacturing, futuristic space biotechnology/biomanufacturing is one of the Thematic areas.

An ISRO-DBT joint working group (JWG) has been constituted to take collaboration forward. Under the aegis of this ISRO-DBT collaboration, currently the Department of Biotechnology (DBT) Institutions- International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi and BRIC-inStem Bangalore are exploring the possibility of experiments in the field of Space Biotechnology and Space Biomanufacturing.

The JWG discussed the ISRO-DBT joint "Announcement of Opportunity" in Space Biomanufacturing and Space Biotechnology. Several opportunities and challenges were discussed. The JWG also discussed the opportunities for both ISRO and DBT in the area of extra-terrestrial biomanufacturing or in-Space Biomanufacturing for futuristic long term space missions.

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ISRO saved satellites from potential collision 10 times in 2024

Source: The Times of India, Dt. 30 May 2025,
URL: https://timesofindia.indiatimes.com/science/isro-saved-satellites-from-potential-collision-10-times-in-2024/articleshow/121501542.cms

ISRO successfully performed 10 Collision Avoidance Manoeuvres (CAMs) in 2024 to protect its satellites from potential collision with other objects in space, according to the newly released Indian Space Situational Assessment Report (ISSAR) for 2024.

The space agency performs Space Situational Awareness (SSA) activities to protect national space assets from space environmental hazards, such as resident space objects, including space debris, natural objects like asteroids and meteoroids, energy and particle flux.

Last year, 89 manoeuvre plans were revised to avoid post-manoeuvre close approaches with other space objects for low earth orbit (LEO) satellites. On two occasions, manoeuvre plans had to be revised to avoid post-manoeuvre conjunctions for Geostationary earth orbit (GEO) satellites, it said.

Overall, ISRO has carried out 122 CAMs for its earth-orbiting satellites in the last 14 years. The agency said more than 53,000 alerts issued by Combined Space Operations Center of US Space Command for Isro's earth-orbiting satellites were analysed using more accurate orbital data from flight dynamics.

Data shows that between 2010 and 2024, 122 CAMs were conducted and a maximum 23 were carried out between 2022 and 2023. Between 2023 and 2024, there were 10 CAMs.

“The number of CAMs was less in 2024 compared to the previous year. This is because improved close approach analysis methodology with larger conjunction screening volume and usage of more accurate ephemerides helped to meet collision avoidance requirements by adjusting orbit maintenance manoeuvres on several occasions and avoiding exclusive CAMs,” ISRO explained.

About the return of satellites once they complete their mission, Isro said a total of 31 Indian satellites had re-entered the atmosphere till the end of 2024. In 2024 alone, nine Indian satellites did so. Among them was Cartosat-2, which re-entered the atmosphere on Feb 14, 2024, being Isro’s first-ever LEO to be deorbited at end-of-life to reduce its post-mission orbital life from more than 30 years to less than four years.

A total of 136 Indian spacecraft, including those from private operators and academic institutions, were launched in Earth-orbit till Dec 31, 2024. The number of operational satellites owned by India stood at 22 in lower earth orbit (LEO) and 31 in geo-synchronous earth orbit (GEO) by 2024 end

.In addition, two Indian deep space missions, Chandrayaan-2 Orbiter and Aditya-L1 at Sun-Earth Lagrange's point, were active. Isro said 34 rocket bodies re-entered the Earth's atmosphere till 2024 end, and five of such re-entries took place in 2024.

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China launches spacecraft it says will return samples and yield ‘groundbreaking discoveries’

Source: The Hindu, Dt. 30 May 2025,
URL: https://www.thehindu.com/news/international/china-launches-spacecraft-it-says-will-return-samples-and-yield-groundbreaking-discoveries/article69633875.ece

China launched a spacecraft that promises to return samples from an asteroid near Mars and yield “groundbreaking discoveries and expand humanity’s knowledge of the cosmos," the country's space agency said.

The Tianwen-2 probe launched early Thursday (May 29, 2025) from southern China aboard the workhorse Long March 3-B rocket. The probe will collect samples from the asteroid 2016HO3 and

explore the main-belt comet 311P, which lies even further from the Earth than Mars, according to the China National Space Administration.

Shan Zhongde, head of the CNSA, was quoted as saying the Tianwen-2 mission represents a ”significant step in China’s new journey of interplanetary exploration” and over its decade-long mission will “yield groundbreaking discoveries and expand humanity’s knowledge of the cosmos.”

Samples from 2016HO3 are due to be returned in about two years. The asteroids, chosen for their relatively stable orbits, hopefully will offer clues into the formation of earth, such as the origins of water.

China earlier returned rock samples from the moon's far side back to Earth in a historic mission and has welcomed international cooperation. However, any cooperation with the U.S. hinges on removing an American law banning direct bilateral cooperation with NASA.

The near side of the moon is seen from Earth and the far side faces outer space. The far side also is known to have mountains and impact craters and is much more difficult to reach.

China also operates the three person-crewed Tiangong, or “Heavenly Palace,” space station, making the country a major player in a new era of space exploration and the use of permanent stations to conduct experiments in space, especially since the station was entirely Chinese-built after the country was excluded from the International Space Station over U.S. national security concerns.

China’s space program is controlled by the People’s Liberation Army, the military branch of the ruling Communist Party.

The country’s space program has grown rapidly in the more than 20 years since it first put a man in space, only the third country to do so under its own speed. The space agency has landed an unmanned explorer on Mars and a rover on the far side of the moon. It aims to put a person on the moon before 2030.

A future Tianwen-4 Jupiter mission will explore Jupiter, although details haven't been released.

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