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DRDO News

DRDO ने ओडिशा तट पर किया सबसे कम दूरी वाले एयर डिफेंस सिस्टम का सफल ट्रायल

Source: Jagran, Dt. 02 Feb 2025,

URL: <https://www.jagran.com/odisha/bhubaneshwar-drdo-successfully-trials-shortest-range-air-defense-system-off-odisha-coast-23877222.html>

मिसाइल के क्षेत्र में आज भारत पूरी दुनिया में मानो एक नया सूर्योदय बनकर उभरने लगा है। कई देश भारत से मिसाइल खरीदने के लिए व्याकुल हैं तो कुछ देश मिसाइल की टेक्नोलॉजी खरीदने की कोशिश कर रहे हैं। रक्षा अनुसंधान एवं विकास संगठन (DRDO) ने 1 फरवरी को ओडिशा तट से दूर चांदीपुर में बहुत कम दूरी वाली वायु रक्षा प्रणाली के क्रमिक उड़ान का सफल परीक्षण किया है।

स्वदेशी मिसाइलों का परीक्षण

रक्षा अनुसंधान एवं विकास संगठन (DRDO) आज जितनी भी मिसाइलों का परीक्षण कर रहा है चाहे वह बैलिस्टिक सीरीज की मिसाइल हो या फिर क्रूज सीरीज की मिसाइल सभी मिसाइलों को संपूर्ण स्वदेशी ज्ञान कौशल से निर्मित किया जा रहे हैं।

अति लघु दूरी वाले एयर डिफेंस सिस्टम का ट्रायल

इसी कड़ी के तहत डीआरडीओ ने बालेश्वर शहर से मात्र 12 किलोमीटर दूर पर स्थित चांदीपुर नामक स्थान के आईटीआर परीक्षण केंद्र से लगातार एक ही मिसाइल का तीन-तीन बार परीक्षण किया है।



चांदीपुर से वायु रक्षा प्रणाली (VSHORADS) की लगातार तीन उड़ान परीक्षण संपूर्ण सफल रहे तथा वह अपने निशाने को ध्वस्त करने में पूरी तरह से कामयाब रहे हैं।

यह परीक्षण बहुत कम ऊंचाई पर उड़ने वाले उच्च गति वाले लक्ष्यों के खिलाफ किए गए थे। तीन उड़ान परीक्षणों के दौरान मिसाइलों ने अलग-अलग उड़ान स्थितियों में कम उड़ान वाले ड्रोन की नकल करते हुए कम थर्मल सिग्नचर वाले लक्ष्यों को रोका और पूरी तरह से नष्ट कर दिया।

उड़ान परीक्षण अंतिम तैनाती विन्यास में किए गए, यहां दो फील्ड ऑपरेटर ने हथियार की तैयारी लक्ष्य प्राप्ति और मिसाइल फायरिंग की। आज यदि यह कहा जाए की मिसाइल के क्षेत्र में भारत विश्व के बाजार में अपने आप का लोहा साबित करने में लगा है तो शायद कम नहीं होगा।

कोरोना काल में भी नहीं थमी थी मिसाइलों की सांसे

कोरोना काल में भी भारत ने ताबड़तोड़ बैलिस्टिक और क्रूज सीरीज की मिसाइल का परीक्षण करके मिसाइल के क्षेत्र में अपने आप का एक भिन्न परिचय विश्व के मानचित्र में स्थापित करने में कामयाब रहा था। यह मिसाइल प्रणाली कम ऊंचाई पर उड़ने वाले दुश्मन के किसी भी ड्रोन को सटीक तरीके से नष्ट करने में संपूर्ण तौर पर कामयाब होंगे।

रक्षा मंत्री ने दी बधाई

यह देश के और सिस्टम डिफेंस को और मजबूत बनाने की दिशा में एक नया कदम बताया जा रहा है। इस परीक्षण को देखते हुए भारत के रक्षा मंत्री राजनाथ सिंह ने इसे एक डीआरडीओ की अति महत्वपूर्ण उपलब्धि बताया है।

उन्होंने परीक्षण करने वाले सशस्त्र बल को बधाई दिया है। इसके साथ ही डीआरडीओ के अध्यक्ष समीर भी कामत ने भी लगातार एक ही मिसाइल का तीन-तीन बार सफलतापूर्वक परीक्षण के लिए पूरी DRDO टीम को बधाई का पात्र बताया है।

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DRDO successfully conducts three trials of indigenous man portable air defence system

Source: The Indian Express, Dt. 03 Feb 2025,

URL: <https://indianexpress.com/article/cities/pune/drdo-indigenous-man-portable-air-defence-system-9813871/>

The Defence Research and Development Organisation (DRDO) has successfully conducted three successive flight-trials of the Very Short-Range Air Defence System (VSHORADS) from Chandipur off the coast of Odisha. These tests were carried out against high-speed targets flying at very low altitude.

VSHORADS is a fourth generation technically-advanced miniaturised Man Portable Air Defence System (MANPAD), indigenously designed and developed by DRDO's Hyderabad-based premier facility Research Centre Imarat (RCI) in collaboration with other DRDO laboratories and Indian Industry partners.



During all the three flight-tests on Saturday, the missiles intercepted and completely destroyed the targets which had a reduced thermal signature to mimic low flying drones. These targets were flown at different flying conditions.

The flight-tests were carried out in final deployment configuration where two field operators carried out the full operation sequence of weapon readiness, target acquisition and missile firing.

“The flight data captured by various range instruments like telemetry, electro-optical tracking system and radar deployed by Integrated Test Range, Chandipur, confirmed the pin-point accuracy and established the unique capability of VSHORADS missile system in neutralizing drones along with other classes of aerial threats. The flight-tests were witnessed by senior officials of DRDO, armed forces and development and production partners,” a press statement from the Ministry of Defence read.

Defence Minister Rajnath Singh congratulated DRDO, armed forces and the industries for the successful flight tests, terming it as a great success. DRDO chairperson Dr Samir V Kamat also congratulated the entire DRDO team, users and the industry partners.

The development trials of the missile were carried out at the Pokhran Field Firing Ranges in Rajasthan in October last year and showcased repeatability of hit-to-kill capability of the weapon system in various target engagement scenarios covering approaching, receding and crossing modes.

The DRDO said that the missile system has the capability to meet the needs of all the three branches of the armed forces — Indian Army, Navy and Air Force.

During the development phase of the VSHORADS missile, two production agencies were engaged in the development-cum-production partner (DcPP) mode.

In the development trials in October last year, the missiles produced through DcPPs were successfully used, paving the way for early user trials and production in a short time. Similarly, two successful trials were conducted in February 2024 and in September 2022.

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DRDO-Industry-Academia Centre of Excellence at IIT Hyderabad demonstrates Large Area Additive Manufacturing System

Source: Press Information Bureau Dt. 31 Jan 2025,

URL: <https://pib.gov.in/PressReleasePage.aspx?PRID=2098098>

A groundbreaking breakthrough has been achieved in DRDO-Industry-Academia Centre of Excellence (DIA-CoE) at IIT Hyderabad in the area of Large Area Additive Manufacturing (LAAM) System. The collaborative efforts between IIT Hyderabad, DRDO's Defence Research & Development Laboratory, Hyderabad and industry partners have significantly contributed to the achievement for overall growth of additive manufacturing in the country. The application demonstration of the LAAM System is based on Powder based Directed Energy Deposition technology for Fabrication of Rocket Components.

The indigenously designed machine has a build volume of 1m x 1m x 3m, which makes it one of the largest metal additive manufacturing machines in India. The process is based on Laser and Blown-Powder based Direct Energy Deposition technology and employs dual heads for thermal balancing and speed.

Recently, a significant milestone has been achieved in the fabrication of a component that is one meter in height, bringing it into the large size league in the process of creating large-sized components using additive manufacturing.

Secretary, Department of Defence R&D and Chairman DRDO Dr Samir V Kamat congratulated DIA-CoE, IIT Hyderabad for the design and development and demonstration of LAAM System. This will open up new possibilities for large-scale production of metal parts, paving the way for growth and innovation in the area of additive manufacturing in the country, he said.

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Defence News

Defence Strategic: National/International

CISC Along With Vice Chiefs Of Armed Forces

Source: Press Information Bureau, Dt. 31 Jan 2025,

URL: <https://pib.gov.in/PressReleasePage.aspx?PRID=2098761>

Lieutenant General Johnson P Mathew, Chief of Integrated Defence Staff to the Chairman Chiefs of Staff Committee (CISC), Lieutenant General NS Raja Subramani, Vice Chief of the Army Staff (VCOAS), Vice Admiral K Swaminathan, Vice Chief of the Naval Staff (VCNS), Air Marshal SP Dharkar, Vice Chief of Air Staff (VCAS) and Lieutenant General Ajay Kumar, Director General Infantry embarked on Indian Navy ships off the West coast from 30 to 31 Jan 25 to witness the Joint Phase of Theatre Level Operational Readiness Exercise-2025 (TROPEX-25), which included the Amphibious Landing by Indian Army troops.

The senior officers embarked onboard the aircraft carrier INS Vikrant, guided missile destroyer INS Visakhapatnam, stealth frigate INS Satpura, and Landing Platform Dock INS Jalashwa and witnessed dynamic operations of Indian Naval ships, submarines, and aircraft, demonstrating the Navy's combat capability and preparedness. This included missile, gun, and rocket firings and anti-submarine drills. They were also briefed on the tactical situation as part of TROPEX-25 and the concept of operations. Interacting with the officers and sailors over a Barakhana, they commended the Indian Navy for mitigating emerging challenges in the IOR.



Onboard INS Vikrant, the senior officers witnessed extensive flying operations by Mig 29 K and various helicopters both by day and night. The Air Power demo by Indian Navy aircraft included bomb busts, rocket firing and low-level aerobatics. Onboard INS Jalashwa, the senior officers interacted with the Army component embarked onboard and witnessed an amphibious landing that included Bunker-Busting drills, Combat Free Fall by the Marine Commandos of the Indian Navy, and landing of troops and BMPs by Landing Craft Mechanised (LCM) and Landing Craft Assault (LCA) culminating in the establishment of a beachhead.

The senior officers later visited the Naval Base at Karwar and were briefed on the progress of infrastructure works.

TROPEX is the Indian Navy's largest biennial maritime exercise, involving the Indian Army, Air Force, and Coast Guard. Conducted in the Indian Ocean, it aims to validate operational concepts and enhance operational readiness and interoperability in a multi-threat environment.

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Lieutenant General Batoo Tshering, Chief Operations Officer Of Royal Bhutan Army Arrives On Official Visit To India

Source: Press Information Bureau, Dt. 01 Feb 2025,

URL: <https://pib.gov.in/PressReleasePage.aspx?PRID=2098684>

Lieutenant General Batoo Tshering, Chief Operations Officer of the Royal Bhutan Army, commenced an official visit to India today, marking an important step in further enhancing the longstanding defence relations between Bhutan and India. The visit, which will run from 1st to 6th February 2025, is focused on fostering closer bilateral military cooperation and exploring new avenues for defence collaboration between the two nations.

Upon arrival, General Tshering will spend his first day in Gaya, where he will visit the Officers Training Academy and a number of significant Buddhist cultural sites, underscoring the deep-rooted cultural and historical ties that exist between Bhutan and India.

From 2nd to 5th February, General Tshering will be in New Delhi, where he will participate in several key activities. On February 3rd, he will lay a wreath at the National War Memorial and will be accorded a Guard of Honour at the South Block. The General is also scheduled to call on the Chief of the Army Staff, and other senior officials to include National Security Advisor, Chief of Defence Staff, Defence Secretary and Foreign Secretary. General Tshering will also visit several key military institutes, including the National Security Guard (NSG) in Manesar and the Defence Image Processing and Analysis Centre (DIPAC).

Before concluding his visit, General Tshering will travel to Kolkata, where he will visit the Headquarters of the Eastern Command of the Indian Army. He will pay his respects by laying a wreath at the Vijay Samarak and will call on the General Officer Commanding-in-Chief, Eastern Command.

This visit by Lieutenant General Badoo Tshering paves the way for continued collaboration between the two militaries. The visit will further deepen the strategic relationship between the two friendly nations and enhance their cooperation on matters of mutual interest.

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A record over Rs 6.81 lakh crore allocated in Union Budget 2025-26 for MoD, an increase of 9.53% from current Financial Year

Source: Press Information Bureau, Dt. 01 Feb 2025,

URL: <https://pib.gov.in/PressReleasePage.aspx?PRID=2098485>

In pursuance of Prime Minister Shri Narendra Modi-led Government's vision of 'Viksit Bharat @ 2047' with technologically-advanced and 'Aatmanirbhar' Armed Forces, Union Budget of India has made a provision of Rs 6,81,210.27 crore for Financial Year (FY) 2025-26 for the Ministry of Defence (MoD). This allocation is 9.53% more than the Budgetary Estimate of FY 2024-25 and stands at 13.45% of Union Budget, which is highest among the Ministries.

Out of this, Rs 1,80,000 crore i.e. 26.43% of total allocation will be spent on Capital Outlay on Defence Services. On Revenue Head, allocation for the Armed Forces stands at Rs 3,11,732.30 crore which is 45.76% of total allocation. Defence Pension receives a share of Rs 1,60,795 crore i.e. 23.60% and balance Rs 28,682.97 crore i.e. 4.21% is for civil organisations under MoD. The Ministry has taken a decision to observe 2025-26 as 'Year of Reforms' which will further strengthen the resolve of the Government for modernisation of Armed Forces and is aimed for simplification in the Defence Procurement Procedure to ensure optimum utilisation of the allocation.

Addressing the media in New Delhi, Raksha Mantri Shri Rajnath Singh congratulated Finance Minister Smt Nirmala Sitharaman for presenting a budget towards fulfilling the Prime Minister's resolve of Viksit Bharat. "This budget will promote the development of youth, poor, farmers, women and all other sections of society. Recognising the contribution of the middle class, the budget has brought an unprecedented gift," he said.

Capital Outlay

In the current geopolitical scenario where the world is witnessing a changing paradigm of modern warfare, Indian Armed Forces need to be equipped with state-of-the-art weapons and have to be transformed into a technologically-advanced combat-ready force. Keeping this in view, Rs 1,80,000 crore has been allocated on Capital Outlay of the Defence Forces. This allocation is 4.65% higher than the Budgetary Estimate (BE) of FY 2024-25.

Out of this, Rs 1,48,722.80 crore is planned to be spent on Capital Acquisition, termed as modernisation budget of the Armed Forces and remaining Rs 31,277.20 crore is for capital expenditure on Research & Development and creation of infrastructural assets across the country.

During FY 2020-21, MoD took a decision to strengthen the domestic industries and to make the forces self-reliant. Since then, a substantial share of modernisation budget is being earmarked for

the capital procurement from domestic industries. In order to encourage the private sector for manufacturing and technological development in the defence sector, a notable percentage of domestic share is further earmarked for acquisition from domestic private industries. Accordingly, for FY 2025-26, Rs 1,11,544.83 crore i.e. 75% of modernisation budget has been earmarked for procurement through domestic sources and 25% of domestic share i.e. Rs 27,886.21 crore has been provisioned for procurement through domestic private industries.

This allocation will take care of major acquisitions planned in the ensuing FY and bolster jointness & integration initiatives. This allocation of funds will further facilitate MoD's plan to venture in new domains such as Cyber & Space and emerging technologies such as Artificial Intelligence (AI), Machine Learning and Robotics etc. Some major acquisitions planned in the next year such as Long Endurance Remotely Piloted Aircraft of High and Medium altitude, stage payment of Deck-based Aircraft, next generation submarines/ships/platforms will be funded out of this allocation. The capital investment in defence manufacturing sector has a cascading and multiplier effect in the National Economy which will boost the GDP and provide greater job opportunities to the youth of this country.

Operational and sustenance budget of Armed Forces

Revenue expenditure is to take care of Pay & Allowances of the Armed Forces Personnel and for sustenance & operational preparedness. Accordingly, Rs 3,11,732.30 crore has been allocated for this purpose which is 10.24% higher than budgetary allocation of FY 2024-25. Out of this, Rs 1,14,415.50 crore has been allocated on account of non-salary expenditure which will facilitate procurement of Ration, Fuel, Ordnance Stores and maintenance/repair of equipment etc.

Government has been continuously allocating higher amount for sustenance and operational preparedness of the Armed Forces since mid-year review during FY 2022-23 and accordingly has given significant jump of 24.25 % in the next FY in comparison to the budgetary estimate of current FY. This allocation will address the requirement due to additional deployment of the forces in the border areas, hiring of vessels, increase in expenditure on longer sea deployment of ships and increase in flying hours for the aircraft. Under the Salary Head of revenue expenditure, Rs 1,97,317.30 crore has been allocated to take care of Pay & Allowances of the three services and any further requirement will be addressed during mid-year review.

Enhanced Allocation for DRDO

The budgetary allocation to Defence Research and Development Organisation (DRDO) has been increased to Rs 26,816.82 crore in FY 2025-26 from Rs 23,855.61 crore in FY 2024-25 which is 12.41% higher than the BE of 2024-25. Out of this, a major share of Rs 14,923.82 crore has been allocated for capital expenditure and to fund the R&D projects. This will financially strengthen the DRDO in developing new technologies with special focus on fundamental research and hand-holding of the private parties through Development-cum-Production Partner. The increased allocation under Capital Head of DRDO will further provide adequate financial resources in funding the projects to be taken up in collaboration with private parties through flagship scheme of DRDO i.e. Technology Development Fund and will assist the development of Deep Technology in the defence sector.

Encouraging Start-up Ecosystem for Innovation in Defence

For making the Armed Forces self-reliant in defence technology and encouraging innovation, it is imperative to engage the private players and strengthen the start-up ecosystem in the country for technological development and innovation in the defence sector. For this purpose, Rs 449.62 crore has been allocated to iDEX scheme, including its sub scheme Acing Development of Innovative Technologies with iDEX (ADITI) to be utilised for funding the projects to be taken up under this scheme. Allocation in this head shows a jump of almost three times in two years.

Govt's resolve for ex-servicemen welfare

The Government has maintained the continuously higher allocation for providing best healthcare facilities to the esteemed veterans and their families through dedicated Ex-Servicemen Contributory Health Scheme (ECHS). In the ensuing FY, Rs 8,317 crore has been allocated towards ECHS which is 19.38% higher than BE of FY 2024-25. During the mid-year review in the current FY, additional allocation was made to meet the emergent requirements of medical treatment related expenditure.

There are approximately 34 lakh defence pensioners whose monthly pension is met out of Defence Pension Budget. In order to further enhance the Defence Pension for the Armed Forces, One Rank One Pension (OROP) was implemented w.e.f. July 2014. Since then, it is revised after every five years. Third revision under OROP came into effect from July 2024 and it was timely implemented.

Considering elements of expenditure under Defence Pension, Rs. 1.61 lakh crore has been allocated for FY 2025-26, which is 13.87% higher than the allocation made during FY 2024-25. This will take care of inflationary trends and provide comfort to the Ex-Servicemen and their dependents for maintaining a better lifestyle.

Capital Budget of Indian Coast Guard

Indian Coast Guard (ICG) has been allotted Rs 9,676.70 crore under Capital and Revenue Head which is 26.50% more than the allocation for FY 2024-25 at BE stage. This increase is primarily in line with the focus of the Government on capability development of ICG and equipping them with modern equipment. ICG not only strengthens coastal security, but also provides assistance to neighboring countries and commercial ships during emergency through faster response.

A jump of 43% in Capital Budget i.e. from Rs 3,500 crore for FY 2024-25 to Rs 5,000 crore for FY 2025-26 will provide adequate financial space for acquisition of Advanced Light Helicopters (ALH), Dornier Aircraft, Fast Patrol Vessels (FPVs), Training Ships, Interceptor Boats etc. On revenue head, the allocation has been increased from Rs 4,151.8 crore for FY 2024-25 to Rs 4,676.70 crore for FY 2025-26 which shows an increase of 12.64%. The increase will be utilised to fund the expenditure to be incurred on additional deployments of manpower and resources in addition to addressing the inflation.

Strengthening border infrastructure

In order to further improve the border Infrastructure and facilitate the movement of Armed Forces personnel through tough terrains, Rs 7,146.50 crore has been allocated to Border Roads Organisation (BRO) under capital head which is 9.74% higher than the BE of 2024-25. The

financial provision made for the FY 2025-26 for BRO will not only promote the strategic interest of the nation in border areas by constructing tunnels, bridges and roads such as LGG-Damteng-Yangtse in Arunachal Pradesh, Asha-Cheema-Anita in J&K and Birdhwal-Puggal-Bajju in Rajasthan, but will also boost socio-economic development, provide employment opportunities and encourage tourism. BRO has created substantial employment opportunities by employing 70,000 local youths and has contributed to the local economies fostering long-term employability and skill development.

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Atmanirbhar Bharat in Defence

Source: Press Information Bureau, Dt. 01 Feb 2025,

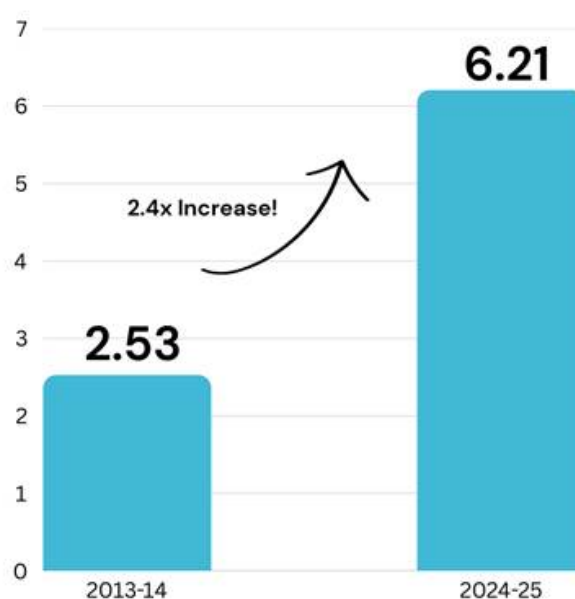
URL: <https://pib.gov.in/PressReleasePage.aspx?PRID=2098431>

Introduction

India's defence sector has undergone a remarkable transformation since 2014, evolving from a largely import-dependent military force to one increasingly focused on self-reliance and indigenous production. As one of the strongest military powers globally, India holds a pivotal role in ensuring regional security and fulfilling strategic goals.

India's Defence Budget Allocation

(In Rs Lakh Crore)



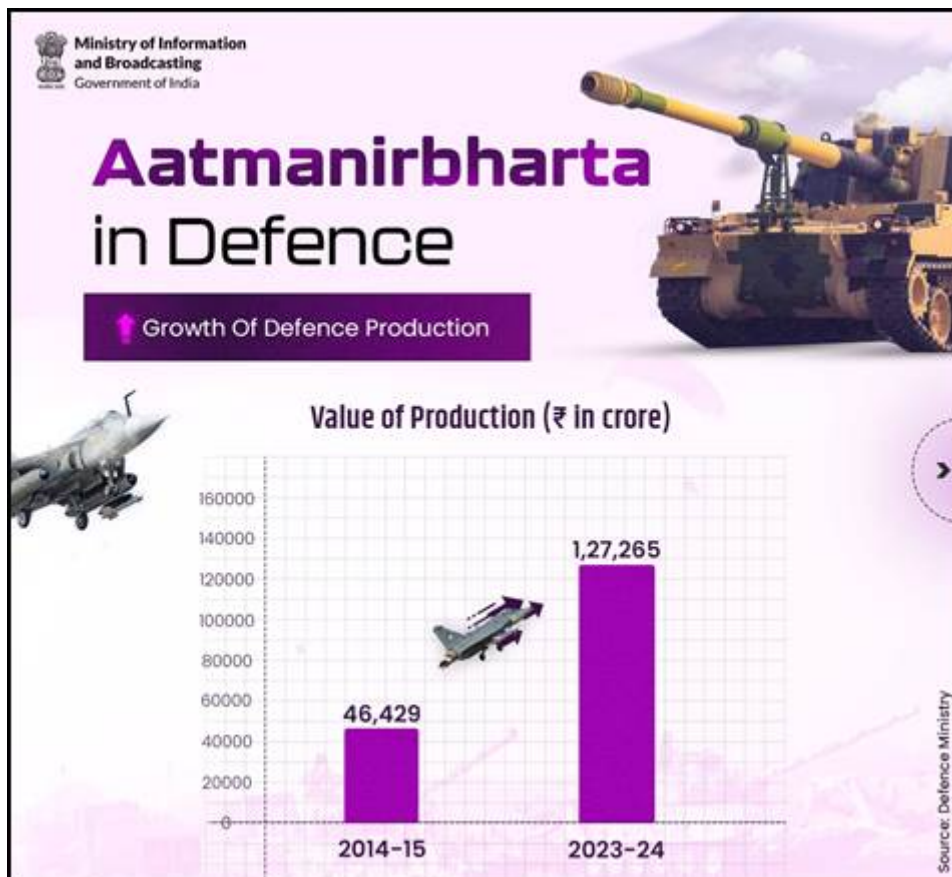
The country's defence budget, which stood at ₹2,53,346 crore in 2013-14, has seen a significant rise, reaching ₹6,21,940.85 crore in 2024-25, reflecting a clear commitment to strengthening the nation's defence capabilities.

Central to this transformation is the growth of India's defence manufacturing industry, which has become an integral part of the economy. Through the "Make in India" initiative and policy reforms, the government has actively promoted domestic production and reduced reliance on foreign procurement. This shift has been a key component of India's broader vision of achieving

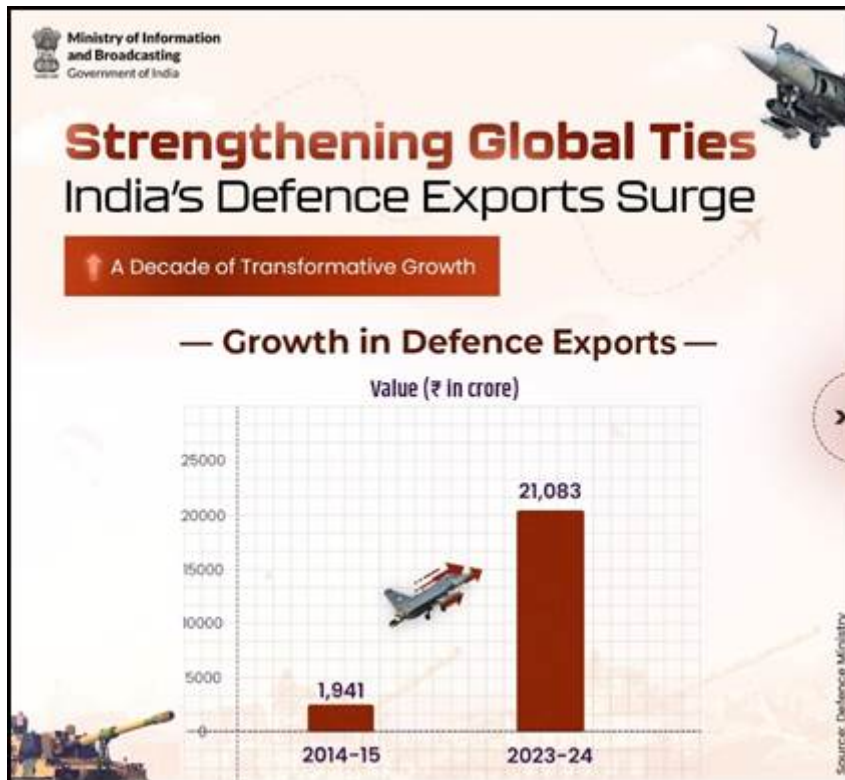
Atmanirbharta (self-reliance) in defence, positioning the nation as an emerging hub for the production of advanced military technologies and equipment.

Defence Production

- **Record Defence Production:** In FY 2023-24, India's domestic defence production reached ₹1.27 lakh crore, marking a record high, with an impressive increase of approximately 174% from ₹46,429 crore in 2014-15.
- **Achieving New Milestones:** India is on track to achieve a target of ₹1.75 lakh crore in defence production in the current fiscal year.
- **Vision for the Future:** India aims to reach ₹3 lakh crore in defence production by 2029, further establishing itself as a global defence manufacturing hub.

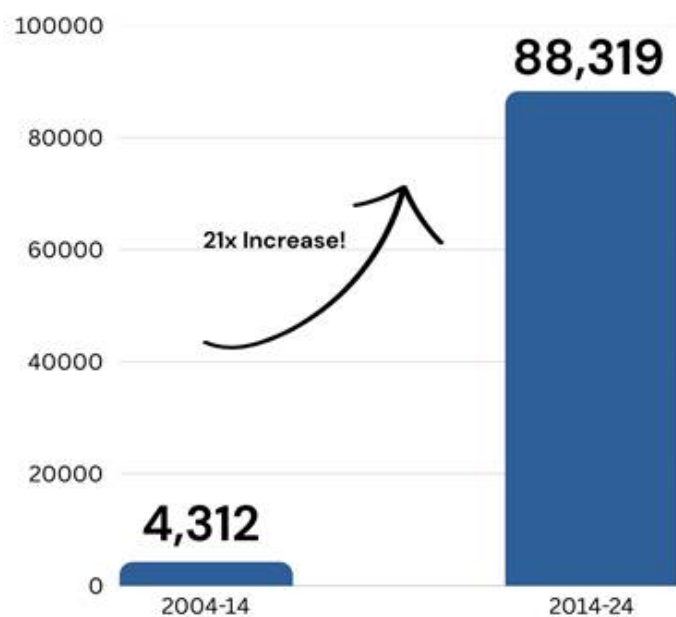


- **Decadal Growth:** Defence exports have grown 21 times, from ₹4,312 crore in the 2004-14 decade to ₹88,319 crore in the 2014-24 decade, highlighting India's expanding role in the global defence sector.
- **Expanding Global Reach:** Driven by government policy reforms, ease of doing business initiatives, and a push for self-reliance, India now exports to over 100 nations.



- **Key Export Destinations:** The top three destinations for India's defence exports in 2023-24 were the USA, France, and Armenia.
- **Ambitious Export Target:** The target for 2029 is to increase defence exports to ₹50,000 crore, underscoring India's ambition to become a reliable global defence partner.

Decadal Growth in India's Defence Exports (In Rs Crore)



- **Diverse Export Portfolio:** India's export portfolio includes advanced equipment such as bulletproof jackets, Dornier (Do-228) aircraft, Chetak helicopters, fast interceptor boats, and lightweight torpedoes.
- **Milestone Achievement:** A significant milestone was the inclusion of 'Made in Bihar' boots in the Russian Army's equipment, highlighting India's high manufacturing standards in the global defence market.

India's defence sector has made unprecedented strides over the past decade, driven by a strong policy push towards self-reliance and domestic manufacturing. The significant rise in defence production and exports underscores the country's growing capability as a global defence manufacturing hub. With a record ₹1.27 lakh crore in defence production and exports reaching ₹21,083 crore in FY 2023-24, India has demonstrated its commitment to reducing dependency on imports while strengthening its presence in the global market.



As the nation aims for ₹3 lakh crore in defence production and ₹50,000 crore in exports by 2029, these achievements highlight India's emergence as a reliable defence partner worldwide. By leveraging innovation, strategic partnerships, and indigenous capabilities, India is well-positioned to play a pivotal role in the future of global defence manufacturing and security.

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Launch Of 9th Ammunition Cum Torpedo Cum Missile (ACTCM) Barge, LSAM 23 (Yard 133)

Source: Press Information Bureau, Dt. 01 Feb 2025,

URL: <https://pib.gov.in/PressReleasePage.aspx?PRID=2098347>

Launching ceremony of 9th ACTCM Barge, LSAM 23 (Yard 133) was held on 31 Jan 25 at M/s Suryadipta Projects Pvt Ltd, Thane. Chief Guest for the launching Ceremony was Cmde R Anand, AGM (COM)/ ND (Mbi).



The contract for construction of eleven (11) Ammunition Cum Torpedo Cum Missile Barge was concluded with MSME Shipyard, M/s Suryadipta Projects Pvt Ltd, Thane on 05 Mar 21. These Barges have been indigenously designed and built by the Shipyard in collaboration with an Indian Ship Designing firm and Indian Register of Shipping (IRS). Model testing was undertaken at Naval Science and Technological Laboratory (NSTL), Visakhapatnam to ensure seaworthiness. The Shipyard has successfully delivered eight of these Barges till date and are being utilised by Indian Navy for its operation evolutions by facilitating Transportation, Embarkation and Disembarkation of articles/ ammunition to IN platforms both alongside jetties and at outer harbours.

These Barges are proud flag bearers of “Make in India” and “Aatmanirbhar Bharat” initiatives of Government of India.

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College of Defence Management Concludes National Seminar on Future-Ready Military Leadership

Source: Press Information Bureau, Dt. 02 Feb 2025,

URL: <https://pib.gov.in/PressReleasePage.aspx?PRID=2098888>

The College of Defence Management (CDM), Secunderabad, hosted its annual National Seminar from January 30-31, 2025, on 'Developing Military Strategic Authentic Leaders (MISAL): Re-Imagining Concepts and Strategies,' bringing together senior military officials, strategic experts, and leading academicians to explore evolving leadership frameworks in modern warfare. Chief of Defence Staff General Anil Chauhan delivered the keynote address, emphasising the critical need for adaptive leadership in an era of disruptive technologies and complex geopolitical shifts.

A key highlight of the seminar was the session on 'Strategies for Developing Military Strategic and Authentic Leaders,' where Vice Adm Biswajit Dasgupta (Retd) and Lt Gen Ajay Chandpuria led discussions on the impact of disruptive technologies, shifting geopolitical dynamics, and the evolving role of strategic military leadership. The seminar featured discussions by various academicians on subjects including leadership evolution, lessons from the Ancient Indian Knowledge System, and competencies required for integrated, cross-service leadership. Senior veterans provided critical insights into modern military challenges and leadership models essential for shaping future-ready armed forces. Commandant CDM Major General Harsh Chhibber, underscored the necessity of re-evaluating military leadership strategies in light of increasing global conflicts, diminishing control mechanisms, and the socio-economic diversity of the Armed Forces.

The seminar reinforced the urgent need for military leadership to align with national security objectives, leveraging technological advancements and structural reforms within the Armed Forces. The seminar provided a common platform to delve deeply into the construct, concepts and strategies that shape military leadership & explored theoretical frameworks as well as examined real-world experiences in a military context. The College of Defence Management (CDM), established in December 1970, remains a premier tri-service institution dedicated to equipping senior military leadership with contemporary management thought, concepts, and best practices. Over the years, its National Seminars have addressed crucial themes ranging from strategic challenges and self-reliance to geopolitical power shifts and leadership transformation, cementing CDM's role in shaping India's military future.

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India's defence budget heavily weighted to manpower costs

Source: The Economic Times, Dt. 01 Feb 2025,

URL: <https://economictimes.indiatimes.com/news/defence/indias-defence-budget-heavily-weighted-to-manpower-costs/articleshow/117832104.cms>

India on Saturday proposed defence spending of 6.81 trillion rupees (\$78.70 billion) for the 2025-26 fiscal year, up 9.5% from the previous year's initial estimates, with most eaten up by wages and pensions rather than acquiring new weapons.

The 4.7 trillion rupees the budget allocated for manpower costs dwarfed its proposed capital outlay of 1.80 trillion rupees, focused on modernisation and defence procurement. The capital outlay figure was 4.6% more than the previous year, but analysts said it needed to be higher still to meet India's efforts to modernise its military to counter rival China.

Main allocations in terms of outlay were 486 billion rupees for aircraft and aero engines, and 243.9 billion rupees for the naval fleet - two key areas where India is seeking to enhance its capabilities.

"This has been a concern for a long time, that pensions (and) salaries put together... consume the major chunk of the defence budget, which continues to be the case," Amit Cowshish, former financial adviser for acquisitions at the Defence Ministry, said.

Even with higher spending, the slow speed at which defence deals can be procured is hampering efforts to build up India's military, analysts said. The country is yet to spend 125 billion rupees from the defence budget for the current fiscal year that ends on March 31, something that Indian analysts said showcased the nature of defence deals in general, which involve lengthy negotiations.

"Even if we allocate more to capital outlay... I am pretty sure that this amount can't really be spent," said Cowshish.

India employs more than 1.47 million active troops in its armed forces, and its defence budget in 2023 was the fourth largest in the world behind the U.S., China and Russia.

"With a very marginal increase in the capital expenditure, the modernisation will not pick up pace," said Laxman Behera, a defence expert at government-funded Jawaharlal Nehru University in New Delhi.

"Of course, the government can revise these numbers later... they can go ahead and sign new deals, but the deals should be on the table and there is no such deal," Behera added.

Speaking to Prime Minister Narendra Modi this week, U.S. President Donald Trump stressed on the importance of India buying more American-made security equipment. However, analysts do not expect any fresh deals to be signed immediately.

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Indian Army looks to bolster strength with advanced indigenous drones

Source: The Economic Times, Dt. 02 Feb 2025,

URL: <https://economictimes.indiatimes.com/news/defence/indian-army-looks-to-bolster-strength-with-advanced-indigenous-drones/articleshow/117853590.cms>

The Indian Army is currently implementing a long-term strategy to enhance its fleet of unmanned aerial vehicles (UAVs) and remotely-piloted aircraft (RPA). With an increasing reliance on drones for intelligence, surveillance, reconnaissance (ISR), and precision strikes, the Army aims to bolster its technological capabilities to meet the evolving demands of modern warfare, as reported by TOI. The rising operational utility of drones has been underlined by recent conflicts like the Russia-

Ukraine and Armenia-Azerbaijan wars, which have highlighted the effectiveness of unmanned systems in real-time combat scenarios.

Key Requirements for Long-Range, High-Endurance UAVs

Sources within the Indian Army revealed to TOI that the service is looking to acquire UAVs that can operate at ranges exceeding 1,000 km, particularly for strategic ISR missions. Additionally, these drones must be capable of flying at altitudes above 30,000 feet to evade detection and must have an endurance of more than 24 hours. The requirement for such advanced drones is driven by the need to enhance surveillance along India's borders, particularly with China and Pakistan, where the military standoff remains ongoing.

The Army has identified a critical need for long-range drones that can provide continuous real-time intelligence gathering, reducing the risk to soldiers and offering precision strike capabilities. These UAVs will play a vital role in countering cross-border infiltration and supporting counter-terrorism operations. As one source explained, "UAVs and RPA systems reduce risk to soldiers, allow longer operational endurance and provide precision-strike capabilities. They also enhance counter-terrorism operations by tracking cross-border infiltrations and carrying out strikes on terrorist hideouts."

Current Drone Capabilities and ChallengesThe Indian Army currently operates a fleet of about 50 medium-altitude long-endurance (MALE) drones, including the Heron Mark-I and Mark-II, and Searcher-II drones, which are primarily used for surveillance and targeting. In contrast, China operates a significantly larger fleet of over 2,000 UAVs, including combat drones like the Cai Hong-4, CH-5, and the stealthy Hongdu GJ-11 'Sharp Sword'. These drones are an integral part of China's military operations and exports, with countries like Pakistan receiving armed drones such as the CH-4 and Wing Loong-II.

To keep pace with these developments, the Indian Army is ramping up its drone capabilities, with a focus on acquiring drones that offer both operational flexibility and enhanced strike capabilities. While the Army Aviation Corps currently operates larger drones for surveillance, infantry battalions make use of smaller drones for tactical reconnaissance, logistics, and other critical tasks.

Indigenous Development and DRDO's RoleIn a bid to reduce dependency on foreign drone systems, the Indian Army is pushing for indigenous drone development. The Defence Research and Development Organisation (DRDO) has developed several UAVs, including the Rustom series, but these systems have not fully met the Army's operational requirements.

As one source told TOI, "Efforts are now underway to enhance the capabilities of Tapas." The DRDO is also working on a new weaponised MALE drone, the Archer-NG, which is expected to make its debut soon. This drone will feature a maximum altitude of 30,000 feet and the capacity to carry up to 300 kg of payload, including anti-tank guided missiles and smart anti-airfield weapons. The Archer-NG will be designed primarily for ISR, target acquisition, and precision strikes, with a range of up to 1,000 km.

Collaboration with Private Sector and IG Drones

Recognising the need for quicker technological advancements, the Indian Army has turned to the private sector for the development of advanced UAV systems. In January, IG Drones, an Indian drone technology company, secured a "significant contract" to supply Vertical Take-Off and Landing (VTOL) and First-Person View (FPV) drones to the Army.

These drones, which are indigenously manufactured with no Chinese components, will help the Army address mounting security concerns, particularly in the wake of incidents such as the hijacking of an Indian Army drone near the Pakistan border. As IG Drones stated, "The decision to prioritise domestically developed drone technology comes at a time when the Indian Army faces mounting security threats along international borders."

The VTOL drones are designed for operations in difficult terrains, such as mountainous regions and urban conflict zones, offering the flexibility of vertical take-off and landing in areas without runways. The FPV drones, meanwhile, provide real-time tactical reconnaissance, aiding intelligence gathering while ensuring the safety of personnel.

Growth of India's Drone Ecosystem India's growing drone ecosystem has seen remarkable development, with the number of drone startups in the country doubling in the past three years. As of August 2024, India had 398 drone startups, surpassing China's 298. However, security concerns, including the hijacking of a military drone near the Pakistan border, have underscored the need for more stringent certification processes for domestic drone manufacturers. The Indian Army's decision to prioritise domestically manufactured drones is also aimed at mitigating risks posed by foreign components, particularly those of Chinese origin.

Future of the Indian Army's UAV Fleet

Looking ahead, the Indian Army's drone capabilities are set to grow substantially, with the addition of advanced systems like the MQ-9B Predator drones, set to be delivered under a Rs 32,350 crore contract with the United States, beginning in 2029. These drones, armed with Hellfire missiles and precision-guided bombs, will significantly enhance the Army's strike capabilities.

In conclusion, the Indian Army's expanded UAV fleet will improve its surveillance, reconnaissance, and precision-strike operations, ensuring a robust defence against emerging threats. The Army's focus on indigenous technology development, in collaboration with the private sector and DRDO, highlights the growing importance of drones in modern warfare and the nation's push towards self-reliance in defence technology.

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US firm replaces Indian Navy's crashed drone

Source: Hindustan Times, Dt. 03 Feb 2025,

URL: <https://www.hindustantimes.com/india-news/usfirm-replaces-indian-navy-s-crashed-drone-101738521095761.html>

US firm General Atomics has replaced the MQ-9B SeaGuardian remotely piloted aircraft (RPA) that crashed into the Bay of Bengal on September 18, under the lease agreement it had signed with the Indian Navy, people aware of the matter said on Sunday.

A power failure caused the crash, and the high-altitude long endurance RPA was written off.

The RPA has been replaced by the original equipment manufacturer and is being used for intelligence, surveillance and reconnaissance (ISR) in the Indian Ocean Region (IOR), the people said, asking not to be named.

Under the 2020 lease, the navy has been using two RPAs operated by General Atomics to provide assured surveillance of the IOR to the navy. The platforms are based at naval air station Rajali in Tamil Nadu.

The RPAs have helped the navy keep a close watch on the Indian Ocean at a time when it has stepped up surveillance in the region to check China's ambitions. They have together clocked more than 18,000 hours of flying.

Last year, India signed a deal worth \$3.5 billion with the US to acquire 31 MQ-9B Sea/SkyGuardian drones to boost its defence preparedness, primarily with an eye on China. Fifteen drones will be for the navy, and eight each for the army and the Indian Air Force. The deliveries are expected to begin in 2029, HT has learnt.

Also, Adani Defence and Aerospace will supply a Drishti 10 Starliner drone to the Indian Navy in six months, the people said. It was to be delivered earlier but the drone crashed off the Porbandar coast in Gujarat on January 10 while it was undergoing acceptance trials. The medium-altitude long-endurance drone is already in service with the navy --- it inducted one last year. The navy and the army had earlier ordered two such drones each by invoking emergency financial powers to boost their ISR capabilities. Each system costs around ₹145 crore.

The Drishti 10 Starliner has been built by Adani Defence and Aerospace at its Hyderabad facility with technology transfer from Israeli defence firm Elbit Systems. The drone is the first major defence platform to be delivered to the Indian military by Adani, and a variant of Elbit Systems' Hermes 900 Starliner drone.

The all-weather Drishti 10 Starliner is 70% indigenous, has an endurance of 36 hours and can carry a payload of 450 kg. The drone, which has three hard points, can be weaponised too.

The planned second India-made carrier, or IAC-2 (indigenous aircraft carrier-2), which figures in the navy's modernisation plan will be a replacement for INS Vikramaditya, the people said, clarifying that the service will not be operating three carriers simultaneously.

The navy currently operates two aircraft carriers --- INS Vikramaditya and INS Vikrant, the former was bought second hand from Russia, while the latter was built in Kochi. The local warship-building ecosystem is ready to build the IAC-2, the people added.

The 45,000-tonne INS Vikrant was built at Cochin Shipyard at a cost of ₹20,000 crore. Only the US, the UK, Russia, France and China have the capability to build aircraft carriers. It was commissioned into the navy in September 2022, in the presence of Prime Minister Narendra Modi.

India is all set to sign two separate deals with France for 26 new Rafale-M fighter jets for INS Vikrant, and three more Scorpene-class submarines to sharpen the navy's combat capabilities.

The deal for the Rafale-M twin-engine deck-based fighters, built for sustained combat operations at sea, is estimated to be worth around ₹50,000 crore. The Rafale-M is being imported as an interim measure to meet the navy's requirements until India develops its own twin-engine deck-based fighter (TEDBF). The first prototype of TEDBF could make its maiden flight by 2026 and be ready for production by 2031.

The additional Scorpene-class submarines, to be built at Mazagon Dock Shipbuilders Limited (MDL) in Mumbai, will strengthen the country's maritime posture in the IOR where the challenges include China's carefully calculated power play for influence and defending the rules-based international order.

MDL has already built six Kalvari-class (Scorpene) diesel-electric attack submarines with technology transfer from the French firm, Naval Group, under a ₹23,562-crore programme called Project 75 (P-75).

Also, MDL and German yard thyssenkrupp Marine Systems (tkMS) have emerged as the frontrunner for a ₹70,000-crore project (P-75I) to build six advanced submarines in India to sharpen the navy's underwater capabilities, edging out their only competitor the Larsen & Toubro-Navantia combine that did meet the navy's requirements.

These advanced submarines, a variant of HDW Class 214 vessels, will come with air independent propulsion (AIP) systems. AIP significantly increases a submarine's underwater endurance and reduces the risk of detection.

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BSF stops 'illegal' bunker construction at Bangladesh border

Source: Hindustan Times, Dt. 03 Feb 2025,

URL: <https://www.hindustantimes.com/india-news/bsf-stops-illegal-bunker-construction-at-bangladesh-border-101738521635171.html>

India's Border Security Force (BSF) on Saturday halted Border Guards Bangladesh (BGB) from constructing an "illegal bunker" within 150 meters of the international boundary, marking the second such intervention in two days as border tensions between the neighbours remains high.

BSF officials at Kolkata's Eastern Command said they spotted the construction, initiated Friday night on Bangladesh's side, during a patrol. This follows Friday's intervention when BSF stopped BGB from building a "sentry bunker" in the Dahagram Angarpota area along the North Bengal frontier.

"On February 1, a team of BSF sector Kishanganj observed some fortification work being carried out by Bangladesh nationals along the embankment of Kulik River within 150 yards of zero line," a senior official said. The area falls under BGB's Govindpur border outpost.

Following BSF's objections during a flag meeting, BGB personnel agreed to halt construction. "Joint India-Bangladesh guidelines prohibit defence related constructions within 150 yards of International Boundary, but BGB continued such work despite existing guidelines," the official added.

Over the past month, BSF has observed BGB personnel constructing bunkers beyond the 150-yard limit and equipping their forces with lethal and non-lethal arms, officials said. These constructions outside the restricted zone didn't prompt objections.

The latest confrontation comes amid growing tensions between the two border forces since Bangladesh's regime change last August. The situation escalated last month when Indian and Bangladeshi villagers clashed in Malda, North Bengal, over BSF's attempts to construct a border fence, leading to stone-pelting incidents.

The border friction reflects broader challenges in bilateral relations since former Bangladesh Prime Minister Sheikh Hasina fled to India on August 5 amid political turmoil. Under the previous government, many of India's current construction projects had received approval, but the new administration under caretaker Prime Minister Muhammad Yunus has taken a different stance.

The border tensions began escalating in August when BGB started opposing BSF construction at multiple previously approved sites along the 4,156-kilometer shared border.

Recent months have seen confrontations involving local populations, allegations of crop theft, and social media propaganda, marking a shift from typical border management issues to community-level conflicts.

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Major defence upgrade: India to procure 26 Rafale jets, 3 Scorpene submarines from France soon?

Source: The Week, Dt. 31 Jan 2025,

URL: <https://www.theweek.in/news/defence/2025/01/31/major-defence-upgrade-india-to-procure-26-rafale-jets-3-scorpene-submarines-from-france-soon.html>

India is expected to seal a deal for the procurement of 26 naval variant of Rafale jets and three Scorpene submarines from France in the next few weeks in a bid to crank up its defence capabilities.

It is not immediately clear if the procurement will be announced during Prime Minister Narendra Modi's visit to Paris next month to attend a summit on artificial intelligence. PM Modi and French President Emmanuel Macron are expected to hold bilateral talks on the sideline of the summit, being held on February 10 and 11.

Citing sources, news agency PTI said the two deals are in the final stage of finalisation and that the Cabinet Committee on Security (CCS) will have to look at them.

In July 2023, the defence ministry approved the purchase of 22 Rafale (marine) jets from France, primarily for deployment on board the indigenously built aircraft carrier INS Vikrant. The ministry had also cleared the procurement of three Scorpene submarines from France.

Under the Indian Navy's Project 75, six Scorpene submarines have already been constructed in India by Mazagon Dock Limited (MDL) in cooperation with the Naval Group of France.

The procurement of the Rafale (M) jets along with associated ancillary equipment including weapon systems and spares would be based on an inter-governmental agreement.

The Indian Air Force bought 36 Rafale fighter aircraft in fly-away condition. IAF believes that it should go for at least two more squadrons of the Rafale jets.

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Design of Advanced Light Helicopter Dhruv needs re-evaluations, says top ICG official after recent chopper crash

Source: The Week, Dt. 01 Feb 2025,

URL: <https://www.theweek.in/news/defence/2025/02/01/design-of-advanced-light-helicopter-dhruv-needs-re-evaluations-says-top-icg-official-after-recent-chopper-crash.html>

A senior Indian Coast Guard (ICG) official has called for design re-evaluations of the Advanced Light Helicopter Dhruv after one of the military choppers of the ICG crashed in Gujarat on January 5, killing three. ICG Inspector General and Regional Commander (West) Bhisham Sharma said ALH has been in the service for the past 20 years and the CIGG has the Mark III version of the indigenous helicopters called Dhruv.

"We have undertaken extensive flying operations. I have myself taken a ferry (helicopter ride) from Agatti to Minicoy and from Minicoy to Kavaratti (in Lakshadweep) again. It is a wonderful machine but few incidents certainly call for some design re-evaluations," he told reporters in Mumbai recently.

He said Hindustan Aeronautics Ltd, the ALH manufacturer, is working on it. Two pilots and an aircrew diver of an ALH of the ICG were killed when the chopper crashed and caught fire at Gujarat's Porbandar airport on January 5. Following the accident, the armed forces grounded the entire fleet of the twin-engine helicopters.

The indigenously designed and developed ALH was not part of the Republic Day flypast this year as the entire fleet of military choppers has been grounded following the fatal crash. The Army, the Indian Air Force, the Navy and the Coast Guard operate around 330 ALHs.

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India fourth in military strength in the world; China ahead at third, Pakistan behind: Global Firepower Index

Source: The Week, Dt. 01 Feb 2025,

URL: <https://www.theweek.in/news/defence/2025/01/31/india-fourth-in-military-strength-in-the-world-china-ahead-at-third-pakistan-behind-global-firepower-index.html>

The Global Firepower Index 2025, which ranks military capacities of countries based on a comprehensive analysis of over 60 individual factors, ranked India as fourth in the Power Index.

According to the website, the ranking is based on each country's potential war-making capability across land sea and air, fought by conventional means.

"The result incorporates values related to manpower, equipment, natural resources, finance, and geography, represented by 60+ individual factors used in formulating the finalized GFP ranks..."

The rankings offer an interesting glimpse into an increasingly volatile global landscape where war seems an inevitability.

According to the rankings, the US tops the list, followed by Russia and China.

"The GFP index denotes India as a Top 5 global military power. For 2025, India is ranked 4 of 145 of the countries considered for the annual GFP review."

South Korea is right behind India, in fifth place, followed by the United Kingdom, France and Japan.

The yearly ranking of military powers places Pakistan in the 12th position.

Global Firepower notes that its "unique, in-house formula allows for smaller, more technologically-advanced nations to compete with larger, lesser-developed powers and special modifiers, in the form of bonuses and penalties, in the form of bonuses and penalties, are applied for further refine the list which is compiled annually."

In 2025, a new element, Navy Fleet Strength by Total Tonnage, which attempts to offer a more accurate reading of actual naval firepower between countries, was added to the ranking system.

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Russia condemns Trump missile defence shield plan, accuses US of plotting to militarise space

Source: Hindustan Times, Dt. 31 Jan 2025,

URL: <https://www.hindustantimes.com/world-news/us-news/russia-condemns-trump-missile-defence-shield-plan-accuses-us-of-plotting-to-militarise-space-101738320463946.html>

Russia on Friday condemned an executive order by U.S. President Donald Trump to build a new missile defence shield, accusing the United States of trying to upset the global nuclear balance and pave the wave for military confrontation in space.

Trump on Monday signed an order that "mandated a process to develop an 'American Iron Dome,'" a next-generation U.S. missile defence shield against ballistic, hypersonic, cruise missile and other forms of aerial attack.

The White House said the intention was to modernise an outdated system and address a "catastrophic threat" that had become more complex as U.S. adversaries developed new delivery systems.

But Russian Foreign Ministry spokeswoman Maria Zakharova said the plan was aimed at undermining the ability of both Russia and China to exercise nuclear deterrence.

In the sharpest Russian criticism so far of a policy announced by Trump's new administration, she said that the planned U.S. move would hinder the prospects for talks on nuclear arms control - something that both Trump and Russian President Vladimir Putin have said they favour.

"It directly envisages a significant strengthening of the American nuclear arsenal and means for conducting combat operations in space, including the development and deployment of space-based interception systems," Zakharova told reporters at a news briefing in Moscow.

"We consider this as another confirmation of the U.S. focus on turning space into an arena of armed confrontation... and the deployment of weapons there.

"The indicated U.S. approaches will not contribute to reducing tensions or improving the situation in the strategic sphere, including creating a basis for a fruitful dialogue on strategic offensive arms," she said.

The White House's Iron Dome statement did not refer to strengthening the U.S. nuclear arsenal, but said:

"The Iron Dome will further the goals of peace through strength. By empowering the United States with a second-strike capability, the Iron Dome will deter adversaries from attacks on the homeland."

Trump and Putin have both said they would like to meet face-to-face to discuss a range of issues, including the Ukraine war, but Moscow says it has yet to receive any signals from the U.S. on when and where such an encounter could take place.

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Iran unveils new ballistic missile in show of force

Source: The Economic Times, Dt. 02 Feb 2025,

URL: <https://economictimes.indiatimes.com/news/defence/iran-unveils-new-ballistic-missile-in-show-of-force/articleshow/117855821.cms>

Iran revealed a new ballistic missile on Sunday that it said was capable of travelling 1,700 kilometres, unveiling it in a Tehran ceremony attended by President Masoud Pezeshkian. State television broadcast images of the missile, dubbed Etemad, or "trust" in Persian, saying it had a maximum range of 1,700 kilometres (1,056 miles) and was "the most recent ballistic missile" built by the Iranian defence ministry.

Western countries have grown concerned over advances in Iran's ballistic missile programme, accusing it of destabilising the Middle East.

Iran's missiles, including this newest design, are capable of reaching its arch-foe Israel, which it targeted twice last year as the Gaza war spilled over.

"The development of defence capabilities and space technologies... aims to ensure that no country dares to attack Iranian territory," Pezeshkian said in a televised address.

The ceremony took place on Iran's national aerospace day and a few days before the 46th anniversary of the creation of the Islamic republic on February 10, 1979.

Since the return of US President Donald Trump -- who pursued a "maximum pressure" approach to Iran in his first term -- Tehran has made multiple shows of force, including large-scale military exercises and the presentation of underground military bases.

At the same time, Tehran has signalled its willingness to restart negotiations over its nuclear programme, which has been the subject of tensions with Western countries for decades.

Iran, which once sourced the majority of its military equipment from its then-ally the United States, has been forced to develop its own weaponry since Washington cut off ties and imposed sanctions in the wake of the 1979 Islamic Revolution.

Having been under an arms embargo during a devastating war with Iraq between 1980 and 1988, Iran now has a substantial arsenal of domestically developed weapons, including missiles, air defence systems and drones.

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Science & Technology News

CSIR-IIIM organised one day Skill development Training program on Research Methodology, Science Communication and IPR

Source: Press Information Bureau, Dt. 01 Feb 2025,

URL: <https://pib.gov.in/PressReleasePage.aspx?PRID=2098721>

The Indian Institute of Integrative Medicine (IIIM), a constituent laboratory of the Council of Scientific and Industrial Research (CSIR) organized a Skill development training program on Jan 31, 2025 at its Jammu campus. The event was designed to impart knowledge about Research Methodology, Science Communication & Intellectual Property Rights (IPR) which gathered participants from all domains of Science and technology and also from other domains like management, law etc. The event was attended by students, research scholars, scientists, and other professionals who would get benefit from this program.

The event was inaugurated by Dr. Zabeer Ahmed, Director CSIR-IIIM. In his inaugural address, he shed light on the importance of research methodology, science communication and IPR to enrich the scientific ecosystem of the country.

During the inaugural session, Dr. Kancherla Prasad, Coordinator & Senior Scientist, CSIR-IIIM welcomed all the guests and participants. Dr. Nasir Ul Rasheed, Senior Scientist, CSIR-IIIM introduced the participants with the theme of the skill development program and provide an overview of the benefits and key outcomes of the program.

The inauguration was followed by talks from experts of domains of science communication and IPR. During the first session, Dr. Manish Mohan Gore, Senior Scientist, CSIR-NIScPR, New Delhi presented a talk on the occasion where he highlighted the significance of science communication

in bringing out research outcomes of Indian labs to make people aware about scientific developments in the country.

Dr. Kancherla Prasad delivered his talk on another important aspect of science which let the scientist reap the benefits of their research and motivated them regarding the IPR. Dr. Prasad discussed the importance of IPR and detailed about application part through citing various examples.

In the next session, Dr. Lipika Patnaik, Senior Principal Scientist, CSIR- IPU, New Delhi continuing the discussion on IPR, elucidated the process of Patent filing and the processes that are required to safeguard the innovations.

Dr. Love Sharma, Scientist, RMBD&IST, CSIR-IIIM, Jammu during his talk discussed the basics of science communication and shared the examples of few writings to highlight the skills needed for effective science communication that can send the appropriate message to scientific people as well as general public for wider impact.

Dr. Zabeer Ahmed also unveiled the calendar 2025 in the event. The calendar, a visual journey through 2024, highlights the institute's contributions to research and development, skill development, entrepreneurship, international collaborations and its commitment to societal welfare.

In the valedictory session, Er. Abdul Rahim, Head RMBD & IST, CSIR-IIIM, Jammu took the feedback of participants and also facilitated the distribution of certificates to the participants. Dr. Nasir proposed vote of thanks to all the guests and participants for their warm presence at the event and wish for more such kind of events in future.

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Union Minister Dr. Jitendra Singh described Budget 2025 as a futuristic budget with a revolutionary and far reaching announcement to involve private players in the Nuclear sector

Source: Press Information Bureau, Dt. 01 Feb 2025,

URL: <https://pib.gov.in/PressReleasePage.aspx?PRID=2098710>

Union Minister Dr. Jitendra Singh described Budget 2025 as a futuristic budget with a revolutionary and far reaching announcement to involve private players in the Nuclear sector. This announcement is going to startle the world, he said, and reflects the same courage of conviction which PM Modi had demonstrated when he opened the Space sector to private sector and the outcomes were miraculous within a few years.

Speaking to a series of media channels here today, Dr Jitendra Singh said, the Union Budget 2025-25 reflects sensitivity of the Government at the Centre and also the futuristic vision of Prime Minister Narendra Modi . While its sensitivity is reflected in the middle class relief to taxpayer and other measures like Duty exemption on certain life saving drugs, its long term futuristic vision

is reflected in provisions like Nuclear Mission, Small Modular Reactors, Green Tech Mission , Centre of Excellence for AI, etc, he said.

It Is going to be a definitive stride towards realizing Viksit Bharat @2047 and also going to raise India's esteem in the global arena, the Minister said. Dr. Jitendra Singh appreciated the Budget with its sensitivity to ease of living because of it's a middle class-focused with a lot of tax-relieved and ease of business as well. Terming the Budget citizen-centric, the Union Minister said, it is comprehensively encompassing the synergy of technology and tradition.

The Minister referred to the Union Budget as very revolutionary with the bringing about an amendment in Atomic Energy Act in order to involve the private sector players something the Hon'ble Prime Minister had done a few years ago in the space sector. Dr. Singh further said, the Nuclear Energy Mission envisaged by the Prime Minister and announced by the Finance Minister is not only going to add value to India's vibrant economy, not only carry onward a storehouse of green energy but also going to give us a lead ahead of several other countries in this arena. He, however, said, some of these aspects won't give immediate dividends but will gradually percolate down our minds and in fact going to affect the entire world which are never per se expected from India.

Appreciating the Union Budget for stimulating a paradigm shift in the global perspective of the country in the arena of nuclear energy, Dr. Singh said, we are also laying the target of generating 100 Gigawatt nuclear energy by 2047 which sends a huge message across the world that India is no longer a follower and we are giving lead and paving the way for others to follow. He also said, even the farming sector is giving the edge of technology with Rs. 20,000 Crore allocation for Small Modular Reactors(SMRs) and commitment to realize a minimum of five(5) SMRs by 2033 and the initiative itself is again a futuristic area with scientific and technological support to the farmers.

The Union Minister said, additional Increase in startup support (Fund of Funds for startup FFS) by Rs. 10,000 Crore, provisions to install 50,000 more Atal Tinkering Labs in Government schools in the next five(5) years, to boost Maritime Development Fund with a corpus of Rs. 25,000 Crore and allocation of Rs. 20,000 Crore to boost Research and Development as well as innovation will provide impetus to technology-led development for realization of Viksit Bharat@2047.

Dr. Jitendra Singh further said, PM Research Fellowship scheme which will provide an ecosystem of 10,000 fellowships over the next five years at top notch institutions like IITs and IISc. He said, the setting up of National Geospatial Mission will lead to develop foundational geospatial infrastructure and data.

He also said, the government will use PM Gati Shakti to facilitate modernisation of land records, urban planning and design of infrastructure projects. He said, the Second Gene bank with 10 lakhs germ plasma lines will be set up for future Food and Nutritional Security and conservation support from genetic resources in both public and private sectors.

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Gene therapy promises individualised management of disease for each patient: Dr. Jitendra Singh

Source: Press Information Bureau, Dt. 02 Feb 2025,

URL: <https://pib.gov.in/PressReleasePage.aspx?PRID=2098931>

“Gene therapy promises individualised management of disease for each patient. Even if two individuals suffer from the same condition—be it cancer, kidney disease, or any other ailment—the treatment could be different in each case, guided by the individual’s unique genetic makeup, pre-existing susceptibilities and inherited vulnerabilities.”, stated Dr. Jitendra Singh, Union Minister of State (Independent Charge) for Science and Technology; Earth Sciences and Minister of State for PMO, Department of Atomic Energy, Department of Space, Personnel, Public Grievances and Pensions, while inaugurating the Centre for Advanced Genomics & Precision Medicine at AIIMS Jammu.

Set up in collaboration with 4 base Care, the Centre aims to usher in a new era of personalised medicine, leveraging cutting-edge genomic research to provide targeted treatment based on individual genetic profiles. Underscoring the transformative potential of gene therapy, the Minister emphasised that with genomic advancements, doctors would no longer rely on a one-size-fits-all approach but would tailor treatments to maximise efficacy and specificity for each individual.

The newly launched Centre for Advanced Genomics & Precision Medicine places AIIMS Jammu among the frontrunners in India’s medical research landscape. By integrating genomic data with AI-driven diagnostics, the centre aims to enhance early disease detection, optimise treatment strategies, and reduce the trial-and-error approach in medical prescriptions. Experts at the event noted that this facility would play a pivotal role in advancing precision oncology, cardiovascular genomics, and genetic screening for rare disorders.

Dr. Jitendra Singh pointed out that under Prime Minister Narendra Modi’s leadership, India has prioritised technology-driven progress in the healthcare sector. He cited the government’s efforts in promoting indigenous research and biotechnology, highlighting the exponential growth in India’s bio-economy—from a mere \$10 billion in 2014 to nearly \$130 billion today, with an ambitious target of \$300 billion in the near future. He further stated that with over 9,000 biotech startups compared to just 50 in 2014, India is rapidly emerging as a global leader in medical innovation.

The Minister stressed the need for an India-specific genomic database, highlighting the country’s unique genetic diversity. “India is a subcontinent in itself, with over 4,600 distinct demographic groups. Our gene sequencing efforts, which have already mapped 10,000 healthy individuals across 99 communities, will help create a robust dataset tailored to Indian-specific health challenges,” he said. He reaffirmed the government’s commitment to completing one million genome sequences in the coming years to enable more accurate disease prediction and personalised interventions.

Dr. Jitendra Singh also pointed out the resurgence of infectious diseases alongside the rise in non-communicable diseases, urging a hybrid approach combining traditional diagnostics with genetic insights. “India has already proven itself in preventive healthcare, pioneering innovations like the

world's first DNA-based COVID-19 vaccine and the HPV vaccine. With this new centre, we will further strengthen our ability to prevent, diagnose, and treat diseases using cutting-edge technology," he said.

A key objective of the centre is to make precision medicine affordable and accessible to the masses. While personalised treatments have traditionally been costly, AIIMS Jammu aims to leverage indigenous research and government-backed biotech initiatives to bring down costs and integrate precision medicine into public healthcare programs. The Minister highlighted initiatives like Ayushman Bharat, which has provided health coverage to millions, and the recently launched Bio-E3 policy, which focuses on biotechnology for economic growth, environmental sustainability, and employment generation. He stated that the government's National Research Foundation (Anusandhan) will play a crucial role in funding next-generation research in genomics and personalised medicine.

Dr. Jitendra Singh elaborated on how Precision Medicine could be a game-changer for cancer treatment, enabling doctors to design targeted therapies instead of relying solely on conventional chemotherapy and radiation. He cited India's recent success in conducting the first-ever genetic therapy trial for haemophilia at CMC Vellore, where patients showed a 60% improvement in clotting factor production, with zero bleeding episodes. The trial, acknowledged globally and published in the New England Journal of Medicine, underscores India's rising stature in genetic research.

He also noted that genomic medicine would play a crucial role in tackling lifestyle diseases such as diabetes, which is now affecting younger age groups in India. A recent study found that the prevalence of Type 2 diabetes in Jammu is slightly higher than the national average, making AIIMS Jammu's research even more critical in developing effective intervention strategies. Dr. Jitendra Singh concluded his address by reaffirming the government's vision of a Viksit Bharat by 2047, where healthcare is not only curative but also predictive and preventive. "This is just the beginning. The future of medicine is personalised, and India is well on its way to leading the world in genomic healthcare," he said.

Earlier, in his welcome address, Director AIIMS Jammu, Dr Shakti Gupta was all praise for Dr Jitendra Singh for the setting up and continuous upgradation of AIIMS Jammu. Dr YK Gupta President AIIMS and Dr V Srinivas Director AIIMS New Delhi also spoke on the occasion.

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ISRO's orbit raising operations for NVS-02 satellite disrupted by valve malfunction

Source: The Hindu Dt. 02 Feb 2025,

URL: <https://www.thehindu.com/sci-tech/science/isros-orbit-raising-operations-for-nvs-02-satellite-disrupted-by-valve-malfunction/article69173305.ece>

The Indian Space Research Organisation (ISRO) has been unable to perform the intended orbit raising operations for the NVS-02 satellite due to a valve malfunction. The NVS-02, the second

satellite in the NVS series, was launched by the ISRO on January 29 as part of its landmark 100th launch from Sriharikota.

The space agency on Sunday said that the orbit raising operations towards positioning the satellite to the designated orbital slot could not be carried out as the valves for admitting the oxidiser to fire the thrusters for orbit raising did not open.

The ISRO was supposed to carry out the orbit raising operations after the launch, but has been unable to perform the manoeuvres due to the glitch. The operations were to be executed by the Master Control Facility at Hassan in Karnataka.

“The satellite systems are healthy and the satellite is currently in elliptical orbit. Alternate mission strategies for utilising the satellite for navigation in an elliptical orbit is being worked out,” the ISRO said in a statement. The space agency said the NVS-02 navigation satellite was successfully injected into the intended Geosynchronous Transfer Orbit.

“All the launch vehicle stages performed flawlessly and the orbit was achieved with a high degree of precision. Subsequent to the launch, the solar panels on board the satellite were successfully deployed and power generation is nominal. Communication with the ground station has been established,” the space agency said on Sunday.

NVS-02 is configured with navigation payload in L1, L5 and S bands, in addition to ranging payload in C-band, like its predecessor, NVS-01. “It will be placed at 111.75°E, replacing IRNSS-1E. NVS-02 uses a combination of indigenous and procured atomic clocks for precise time estimation,” the ISRO said before the launch.

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New mission for manuscripts announced in Union Budget

Source: The Hindu Dt. 01 Feb 2025,

URL: <https://www.thehindu.com/business/budget/new-mission-for-manuscripts-announced-in-union-budget/article69168643.ece>

The Union Budget 2025-26 announced a special mission for the survey, documentation, and conservation of India’s manuscript heritage. Launched as the ‘Gyan Bharatam Mission’, it intends to cover more than one crore manuscripts.

The ‘Gyan Bharatam Mission’ is for undertaking the “survey, documentation and conservation” of India’s manuscript heritage lying with academic institutions, museums, libraries, and private collectors, Union Finance Minister Nirmala Sitharaman said in her budget speech.

National Manuscripts Mission

To accommodate this new initiative, the budget allocation for the National Manuscripts Mission (NMM), whose aim is to identify and document manuscripts and make the manuscript heritage accessible across the country, has been hiked from ₹3.5 crore to ₹60 crore.

The Hindu had reported last October that the Union Ministry of Culture was set to “revive and relaunch” the National Mission for Manuscripts (NMM) and was mulling the formation of an autonomous body to help preserve ancient texts in India.

Presently, NMM is a part of the Indira Gandhi National Centre for Arts. It was set up in 2003, but had not taken off as expected.

Welcoming the move, Union Culture Minister Gajendra Singh Shekhawat said that the new mission “announced by Finance Minister Nirmala Sitharaman today will enable Bharat to preserve and protect the invaluable wisdom and knowledge held by these manuscripts found across the country”.

Culture Ministry allocation

The overall allocation for the Culture Ministry has been increased by approximately ₹100 crore with a total outlay of ₹3,360.96 crore as against the revised estimate of ₹3,260.93 crore in the current fiscal.

Out of this, the Archaeological Survey of India (ASI) has been allocated ₹1,278.49 crore against ₹1273.91 crore allocated in 2024-25 which was revised to ₹1191.99 crore. A total of ₹156.55 crore has been allocated for national libraries and archives, ensuring the maintenance of historical records and documents, while museums such as the National Museum and the National Gallery of Modern Art will receive ₹126.63 crore to enhance cultural preservation efforts.

Funds for organising events to mark centenaries and anniversaries and international cultural collaborations have seen a sharp decline.

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Budget 2025: Rs 20,000 crore allocated to DST to kickstart Rs 1 lakh crore research and development fund

Source: The Economic Times, Dt. 01 Feb 2025,

URL: <https://economictimes.indiatimes.com/news/science/budget-2025-rs-20000-crore-allocated-to-dst-to-kickstart-rs-1-lakh-crore-research-and-development-fund/articleshow/117836514.cms>

Signalling a commitment to research and development, Union Finance Minister Nirmala Sitharaman on Saturday allocated Rs 20,000 crore to the Department of Science and Technology as a corpus for a fund to promote private sector-driven innovation. Sitharaman had announced setting up of a Rs 1 lakh crore research and development fund in the budget last July. The allocation in Saturday's budget will kickstart the fund aimed at supporting research and development in deep tech and sunrise sectors.

"To implement the private sector-driven Research, Development and Innovation initiative announced in the July budget, I am now allocating Rs 20,000 crore," Sitharaman said.

Presenting the Union Budget for the 2025-26 fiscal, the finance minister also said a Deep Tech Fund of Funds would be explored to catalyse the next generation start-ups as part of this initiative.

"The allocation this year will kickstart the fund and be a major boost to support research and development in the private sector in deep tech and sunrise sectors. This will be a major step towards creating strategic autonomy in some key technology sectors," said Abhay Karandikar, secretary in the Department of Science and Technology.

The government had decided to step in to nudge the private sector to take up research and development, which had not picked up despite tax exemptions for the purpose. The Economic Survey, presented in Parliament on Friday, had flagged concerns over the private sector's disinterest to spend on research and development.

Addressing a press conference on Friday, Chief Economic Advisor V Anantha Nageswaran said the private sector's expenditure on research and development was very low despite a lot of incentive schemes provided by the government. The government contributes 50 per cent of the total research and development spending in the country whereas the business enterprises' spending accounts for only 41 per cent, he added.

Nageswaran also raised concerns regarding sector-centred investments on research and development by the private sector. He said research and development was one area where the private sector should make improvements. With the Department of Science and Technology being the nodal ministry driving this fund, its budgetary allocation witnessed a sharp increase from Rs 8,029 crore to Rs 28,508.90 crore. The Department of Biotechnology has been allocated Rs 3,446.64 crore, a hike of Rs 1,170.94 crore over the budgetary allocation of Rs 2,275.70 crore in the July budget.

The Department of Scientific and Industrial Research has received an allocation of Rs 6,657.78 crore against Rs 6,323.41 crore in the 2024-25 fiscal. The Department of Atomic Energy has received an allocation of Rs 24,049.10 crore against Rs 24,968.98 crore. The Department of Space has been allocated Rs 13,416.2 crore, up from Rs 13,042.75 crore. The budget has allocated Rs 10,230.2 crore to various Indian Space Research Organisation (ISRO) centres such as the Vikram Sarabhai Space Centre, UR Rao Satellite Centre, the Human Spaceflight Centre and various projects, including launch vehicle development.

Space applications received the second-largest share with Rs 1,706.8 crore, supporting centres such as the Space Applications Centre, Development and Educational Communication Unit, and the National Remote Sensing Centre.

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Deep Ocean mission 'Samudrayaan' gets Rs 600cr budget boost

Source: The Times of India, Dt. 03 Feb 2025,

URL: <https://timesofindia.indiatimes.com/india/deep-ocean-mission-samudrayaan-gets-rs-600cr-budget-boost/articleshow/117868032.cms>

In a big boost for India's ambitious Deep Ocean Mission, Union finance minister Nirmala Sitharaman has allocated Rs 600 crore for the Samudrayaan project, under which scientists will be

sent to the depths of the ocean in a specially-designed submersible to explore the ocean floor, including the country's continental shelf and exclusive economic zones.

The earth sciences ministry, which is spearheading the mission, received an allocation of Rs 3,649.8 crore in the budget, presented on Saturday, as against Rs 3,064.8 crore in the ongoing fiscal year. India plans to send a manned-submersible, developed by the Chennai-based National Institute of Ocean Technology (NIOT), up to a depth of 500 metres in the ocean later this year, and gradually explore the seabed at the depth of 6,000 metres next year.

The mission involves mapping of floors of deep oceans and development of technologies like a manned submersible, mining system for deep sea mining, sustainable utilisation of deep-sea bioresources, and developing engineering designs for offshore thermal energy-driven desalination plants. Human capacity will be developed in ocean biology and engineering through the translation of research into industrial applications.

The Deep Ocean Mission aims to explore deep-oceanic resources and develop technologies for their sustainable use. The mission consists of six major themes, namely development of technologies for deep sea mining, manned submersible, and underwater robotics; development of ocean climate change advisory services; technological innovations for exploration and conservation of deepsea biodiversity; deep ocean survey and exploration; energy and freshwater from the ocean; and advanced marine station for ocean biology.

The minister also allocated Rs 1,329 crore for Mission Mausam. In the last revised budget of 2024-25, the mission was allocated Rs 671 crore, thus doubling the outlay this time. This is an ambitious initiative by the earth sciences ministry designed to enhance India's weather and climate forecasting capabilities across various critical sectors, including agriculture, aviation, urban planning, defence, sports, and disaster preparedness.

The mission seeks to leverage cutting-edge technologies, high-performance computing, and advanced modelling techniques to revolutionise weather monitoring, prediction, and data analysis. By advancing weather surveillance, incorporating next-generation radars and satellites, and utilising artificial intelligence and machine learning, Mission Mausam aims to provide more accurate and timely forecasts, addressing the challenges of extreme weather events and climate change.

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