

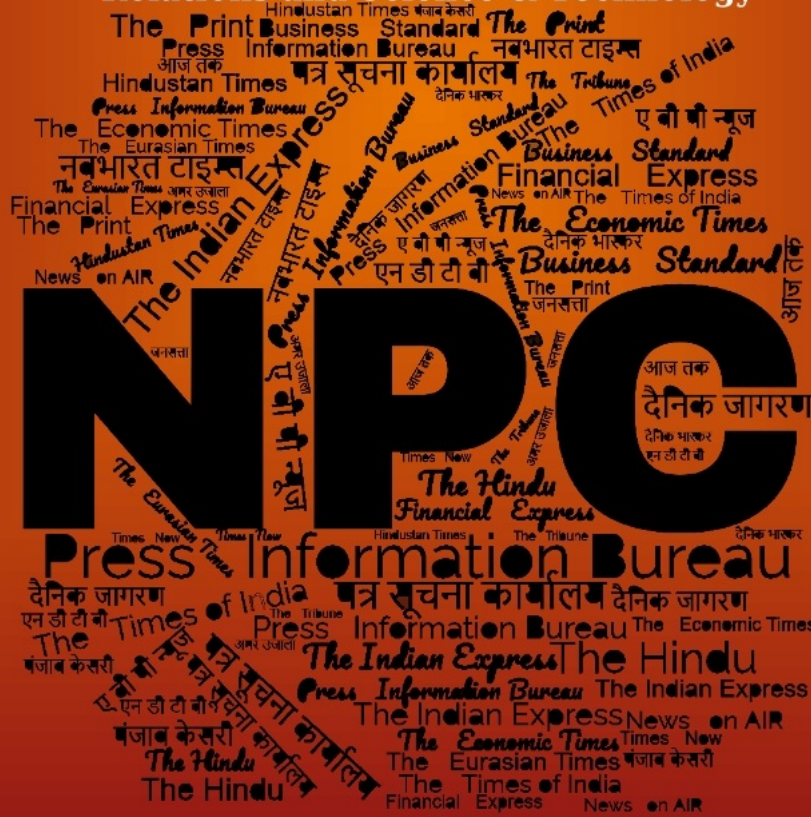
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समाचार पत्रों से चयनित अंश Newspapers Clippings

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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DRDO's 67th Foundation Day: Floral tributes paid to former President Dr APJ Abdul Kalam at his bust in DRDO Headquarters

Several systems handed over & Acceptance of Necessity accorded for value of Rs 1.10 lakh crore in 2024: DRDO Chairman

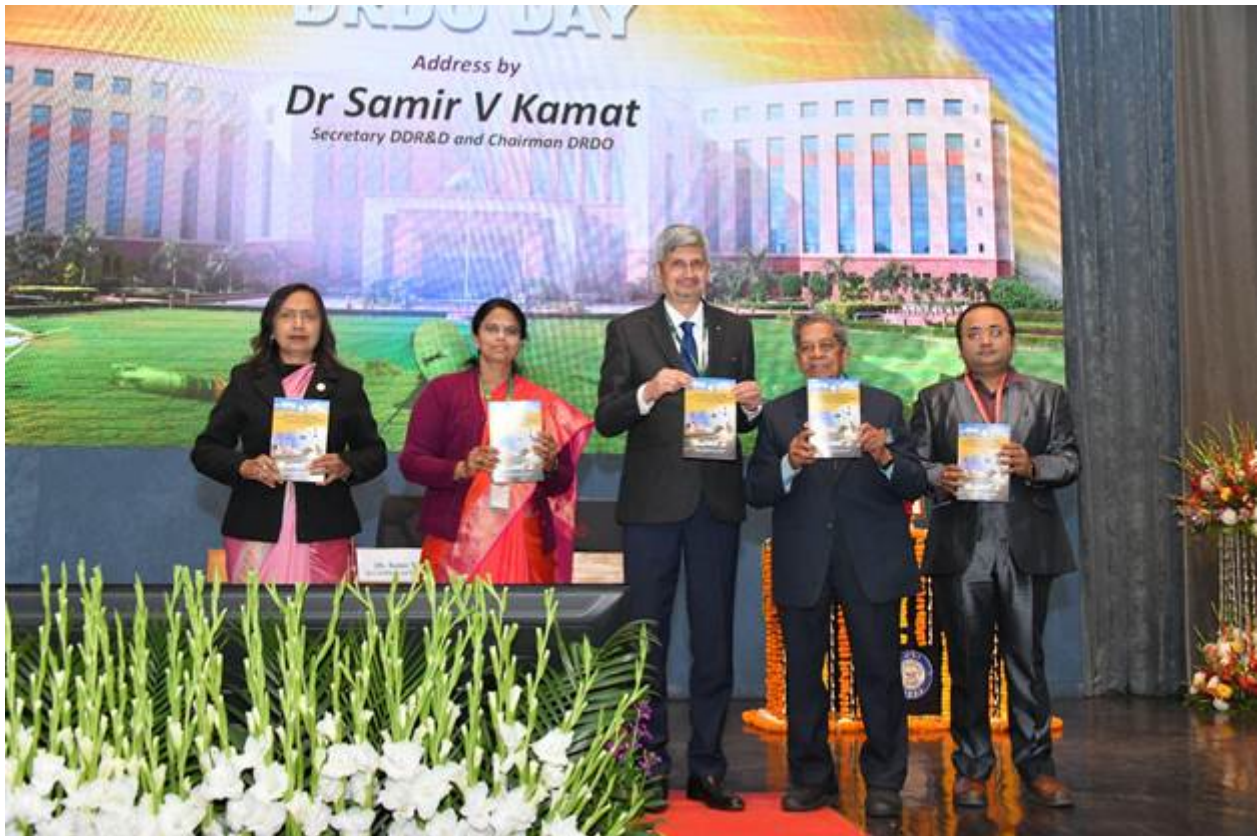
“73 projects worth Rs 275 crore sanctioned in 2024 engaging 266 researchers & 10 new academic institutes”

“1,950 Transfer of Technologies on DRDO-developed systems handed over to Indian Industries; 256 Licensing Agreements for Transfer of Technology signed in 2024”

Secretary, Department of Defence R&D and Chairman, DRDO Dr Samir V Kamat, along with Director Generals and senior officials, paid floral tributes to former President and the Missile Man of India Dr APJ Abdul Kalam at his bust in DRDO Headquarters, New Delhi on January 03, 2025. These tributes were paid to mark the 67th Foundation Day of DRDO, which is celebrated on 1st January every year. During the event, many important DRDO documents were released by the DRDO Chairman. These included an SOP on Product Development, Compilation of various SoPs & Guidelines related to DRDO Personnel, DRDO Transport Policy, Dictionary on scientific and technical terminology, Magazines 'InSight', Biannual Magazine 'Quest' and the January Issue of DRDO Newsletter.

Two DRDO Monographs were released on the occasion. The first monograph was 'Conceptual Guide to Torpedo System Design and Development' authored by Dr RVS Subrahmanyam & Dr Y Sreenivas Rao. The second monograph was 'Himalayas to Hyderabad : A Journey from Border Roads to Missiles, Microdrones and Cyborgs' authored by Lt Gen (Dr) VJ Sundaram & Smt Scharada Dubey.

To increase synergy with industry, Chairman DRDO launched the Industry Interaction Group (IIG) initiative on DRDO website. IIG is a proactive and structured framework, instituted to enable industries to bring forward suggestions, concerns, queries and grievances, if any, by way of one-on-one interaction through open house with concerned laboratories.



In his address, the DRDO Chairman extended his greetings to the DRDO fraternity and said that 2024 was a very good year for the organisation. He stated that DRDO has been conferred with prestigious awards in five categories: Innovation, Technology, One of its Kind Building & Construction and Aatmanirbhar for the project DHARASHAKTI-Integrated Electronic Warfare (EW) System, Advanced Light Weight Torpedo (ALWT), Advanced Towed Artillery Gun System (ATAGS), Mission 45 Day and Quick Reaction Surface to Air Missile (QRSAM) at 32nd Global Symposium and 6th World Project Management Forum.

The DRDO Chairman stated that several systems have been handed over and Acceptance of Necessity accorded for value of Rs 1.10 lakh crore in 2024. These include Air Defence Tactical Control Radar (ADTCR), Air Defence Fire Control Radar (ADFCR), Medium Range Anti-ship Missile (MRashM), Long Range Land Attack Cruise Missile System (LR-LACM), SIGINT and COMJAM Aircraft (SCA), Medium Range Maritime Reconnaissance Aircraft (MRMR) for Indian Navy and Multi-Mission Maritime Aircraft (MMA) for Indian Coast Guard, Anti-Tank Influence Mine PRACHAND, Joint Venture Protective Carbine (JVPC), Area Denial Munition Type-2 & Type -3 for 'Pinaka' Rocket System, 155 mm nubless projectile (Bourrelet), Indigenous EW suite Yodha and Anidra for Su-30 MKI, Software Defined Radio – Tactical, Electro Optical Fire Control system and CBRN Water Purification System Mk-II. Several DRDO systems have either completed or are in the final stages of User Evaluation or Development Trials.

Dr Kamat expressed happiness that Cabinet Committee on Security (CCS) sanctioned two flagship programmes namely Full Scale Engineering Development (FSED) of Advanced Medium Combat Aircraft (AMCA) and Setting up of a Missile Test Range at Nagayalanka, Andhra Pradesh. He also mentioned about some of the infrastructure and test facilities established by DRDO namely

Defence Technology & Test Centre (DTTC) as a part of Uttar Pradesh Defence Industrial Corridor (UP DIC) in Lucknow; Submersible platform for acoustic characterization and evaluation (SPACE) in Idukki, Kerala; A new 'Virtual Reality-based (Chaff) Applications for Naval Ship' (ViRANSh) Centre at Defence Laboratory, Jodhpur (DLJ); Small Arms Barrel Manufacturing Facility at ARDE, Pune; and one-of-its-kind Land-Based Submarine Battery Test Facility at NSTL, Visakhapatnam. He hoped these would play a key role in accelerating development activities within DRDO as well as for allied Indian industries.

The DRDO Chairman also highlighted the DRDO initiatives for Enabling Industry & Engagement of Academia in 2024 and said that, so far, 1,950 Transfer of Technologies on DRDO-developed systems have been handed over to the Indian Industries, of which 256 Licensing Agreements for Transfer of Technology (LAToTs) were signed with Indian Industries in 2024. He informed that more than 19 Development cum Production Partners/Production Agencies were chosen last year for Mission Mode projects. He added that DRDO test facilities have been opened to the industries for utilisation and more than 18,000 tests have been carried out for private Industries/DPSUs in the past three years with over 5,000 tests in 2024 itself. More than 25 Industry meets across the country were held. Industry Interaction Groups have been established in Labs to facilitate industries and resolving industry grievances. 44 Industry partners completed SAMAR (System for Advanced Manufacturing Assessment and Rating) assessments.

Dr Kamat added that, as on date, 80 projects are ongoing, with nine projects awarded to Industries/MSME/start-ups in 2024. 29 projects approvals are also in the pipeline and should get sanctioned soon. A green propulsion system developed under TDF scheme was successfully demonstrated in orbit functionality on a payload launched by the PSLV C-58 mission. Also, an AI tool 'Divya Drishti' that integrates face recognition with immutable physiological parameters such as gait and skeleton has been developed.

The DRDO Chairman mentioned that the organisation had been granted more than 201 patents and filed more than 226 patents in 2024. He added that the 15 DRDO Industry Academia Centres of Excellence (DIA-CoEs) which are steering translational research activities in nearly 65 identified research verticals are performing very well. In 2024, 73 projects were sanctioned with a total cost of Rs 275 crore in which 266 researchers and 10 new academic institutes have been engaged. This makes it a total of 274 sanctioned projects at the cost of Rs 984 crore engaging 900 researchers and 46 academic institutes.

DR Kamat added that Industry engagement with academia has also been activated under the DIA-CoEs and this year 10 tripartite engagements have been done among DRDO, IIT Delhi and Industry partners. He concluded his speech with highlighting the targets pertaining to reforms in the year and expected the structural and other changes to be completed soon in 2025. He expressed confidence that the documents/SOP for industry engagement through DIA-CoEs; Policy for harnessing start-ups, and policy for awarding Higher Risk Projects in Deep Tech Areas will be launched soon.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2090017>

राजनाथ सिंह ने डीआरडीओ मुख्यालय का किया दौरा, बोले- रक्षा सुधारों में DRDO निभाएगा अहम भूमिका

सेना को तकनीकी रूप से उन्नत बल में बदलने के उद्देश्य से सरकार द्वारा 2025 को रक्षा सुधारों का वर्ष घोषित करने के एक दिन बाद रक्षा मंत्री राजनाथ सिंह ने गुरुवार को कहा कि डीआरडीओ निर्धारित उद्देश्यों को प्राप्त करने में महत्वपूर्ण भूमिका निभाएगा।

सेना के तीनों अंगों के बीच तालमेल बढ़ाने को लेकर कही ये बात

राजनाथ ने डीआरडीओ मुख्यालय का दौरा किया और इसके 67 वें स्थापना दिवस के मौके पर वरिष्ठ विज्ञानियों और विभिन्न अधिकारियों के साथ बातचीत की। सरकार ने बुधवार को 2025 को रक्षा सुधारों का वर्ष घोषित किया था और कहा था कि इसका उद्देश्य सेना के तीनों अंगों के बीच तालमेल बढ़ाने के लिए एकीकृत थिएटर कमान शुरू करना तथा सेना को तकनीकी रूप से उन्नत और युद्ध के लिए तैयार बल में बदलना है। रक्षा मंत्रालय ने जिन सुधारों की योजना बनाई है उनका व्यापक उद्देश्य रक्षा खरीद प्रक्रिया को सरल और समयबद्ध बनाना, प्रमुख हितधारकों के बीच गहन सहयोग सुनिश्चित करना, बाधाओं को दूर करना, अक्षमताओं को समाप्त करना और संसाधनों का अधिक से अधिक उपयोग करना है।

रक्षा विज्ञानियों से किया यह आग्रह

रक्षा मंत्री ने गुरुवार को डीआरडीओ से तेजी से विकसित हो रहे तकनीकी इकोसिस्टम के साथ तालमेल बैठाते हुए आगे बढ़ने और बदलते समय की आवश्यकताओं के अनुरूप रक्षा उपकरण तैयार करने का आह्वान किया। उन्होंने रक्षा विज्ञानियों से आग्रह किया कि वे तकनीकी रूप से उन्नत देशों द्वारा अपनाए जा रहे उत्पादों और प्रक्रियाओं पर नजर रखें तथा विशिष्ट प्रौद्योगिकियों का विकास करें।

आगे कहा कि डीआरडीओ की प्रत्येक प्रयोगशाला को दो-तीन महत्वपूर्ण परियोजनाओं की पहचान करनी चाहिए और उन्हें 2025 तक पूरा करना चाहिए। अगले स्थापना वर्ष तक हमारे पास ऐसी 100 परियोजनाएं होनी चाहिए जो पूरी की जा चुकी हों। राजनाथ ने निजी क्षेत्र के साथ सहयोग बढ़ाने की दिशा में डीआरडीओ के प्रयासों की सराहना की, जिसमें संगठन द्वारा अपनी तकनीकें प्रदान करना और अपने पेटेंट तक मुफ्त पहुंच प्रदान करना शामिल है।

निजी क्षेत्र की भागीदारी को लेकर कही ये बात

उन्होंने संगठन से ऐसे और क्षेत्रों की पहचान करने का आग्रह किया, जो निजी क्षेत्र की भागीदारी को बढ़ा सकते हैं और साथ ही इस बात पर जोर दिया कि राष्ट्र तभी प्रगति कर सकता है, जब सभी हितधारक मिलकर काम करें। रक्षा मंत्री ने डीआरडीओ से अपने अनुसंधान एवं विकास प्रयासों में स्टार्ट-अप को शामिल करने की संभावना तलाशने का आग्रह किया। कहा कि इससे विचारों के बहुमूल्य आदान-प्रदान को बढ़ावा मिलेगा और भारतीय रक्षा क्षेत्र को बदलते समय के हिसाब से नवीन तकनीकों के साथ आगे आने का अवसर मिलेगा।

<https://www.jagran.com/news/national-drdo-will-play-important-role-in-defense-reforms-says-rajnath-singh-23860180.html>

Finish 100 critical projects in a year: Rajnath to DRDO

DRDO should be in sync with rapidly evolving technological ecosystem, come up with cutting-edge products, develop 'niche technologies', enhance collaboration with private sector and include start-ups in R&D efforts, defence minister Rajnath Singh said Thursday.

Interacting with scientists at the DRDO headquarters on its 67th foundation day, the minister asked them to keep an eye on products and processes being adopted by technologically advanced countries.

The 41 DRDO labs should identify two to three 'critical projects' each and complete them by 2025. "By the next foundation year, we should have 100 such projects completed," he said. He also lauded DRDO's collaborations with private sector, including providing technologies and free access to patents.

On including start-ups in DRDO's R&D efforts, Singh said this would promote valuable exchange of ideas and provide an opportunity for the Indian defence sector to come out with innovative technologies according to the changing times.

"DRDO can play the role of a catalyst for other similar organisations, academia, industry, etc., which can help in bringing a technological revolution in the country. A new ecosystem can be created, which focuses on defence as well as dual-technology areas, that can bring about a transformative change for civilian users," he said.

DRDO chief Samir V Kamat said 1,950 'transfers of technologies' on DRDO-developed systems have been handed over to Indian industries so far, of which 256 licencing agreements were signed in 2024.

<https://timesofindia.indiatimes.com/india/finish-100-critical-projects-in-a-year-rajnath-to-drdo/articleshow/116894971.cms>

Several DRDO systems in 'final stages' of user evaluation or development trials: Defence Ministry

Several Defence Research and Development Organisation (DRDO) systems have either been completed or are in the "final stages" of user evaluation or development trials, the defence ministry said on Friday. During an event held at the DRDO Bhawan here, Defence Research and

Development Organisation's Chairman Samir V Kamat outlined its multiple deliverables in the last year.

He also paid floral tributes to former president and the 'Missile Man' of India, APJ Abdul Kalam, during the event. Many important DRDO documents were released by the chairman on the occasion, including "a Standard Operating Procedure (SOP) on Product Development, a compilation of various SoPs & Guidelines related to DRDO Personnel", the defence ministry said in a statement.

The DRDO chairman said that several systems have been handed over and Acceptance of Necessity accorded for value of Rs 1.10 lakh crore in 2024, according to the statement. "These include Air Defence Tactical Control Radar (ADTCR), Air Defence Fire Control Radar (ADFRCR), Medium Range Anti-ship Missile (MRashM), Long Range Land Attack Cruise Missile System (LR-LACM), SIGINT and COMJAM Aircraft (SCA), Medium Range Maritime Reconnaissance Aircraft (MRMR) for Indian Navy and Multi-Mission Maritime Aircraft (MMMA) for the Indian Coast Guard," the statement read.

Other systems include "Joint Venture Protective Carbine (JVPC), Area Denial Munition Type-2 & Type -3 for 'Pinaka' Rocket System, 155 mm nubless projectile (Bourrelet), Indigenous EW suite Yodha and Anidra for Su-30 MKI, Software Defined Radio - Tactical, Electro Optical Fire Control system and CBRN Water Purification System Mk-II," it added.

"Several DRDO systems have either completed or are in the final stages of user evaluation or development trials," the statement said without elaborating. Kamat expressed happiness that Cabinet Committee on Security (CCS) has sanctioned two flagship programmes namely Full Scale Engineering Development (FSED) of Advanced Medium Combat Aircraft (AMCA) and Setting up of a Missile Test Range at Nagayalanka, Andhra Pradesh.

He also mentioned about some of the infrastructure and test facilities established by the DRDO, namely Defence Technology & Test Centre (DTTC) as a part of Uttar Pradesh Defence Industrial Corridor (UP DIC) in Lucknow; and one-of-its-kind Land-Based Submarine Battery Test Facility at NSTL, Visakhapatnam.

He hoped these would play a key role in accelerating development activities within the DRDO as well as for allied Indian industries.

The DRDO chairman also highlighted the initiatives by the organisation for enabling industry and engaging academia in 2024, and said, "So far, 1,950 Transfer of Technologies on DRDO-developed systems have been handed over to the Indian Industries", of which 256 Licensing Agreements for Transfer of Technology (LATOts) were signed with Indian Industries in 2024.

He also informed that over 19 development cum production partners/production agencies were chosen last year for 'Mission Mode' projects.

He added that its test facilities have been opened to the industries for utilisation and "more than 18,000 tests have been carried out for private industries/DPSUs in the past three years, with over 5,000 tests in 2024 itself".

He said, "As on date, 80 projects are ongoing, with nine projects awarded to industries, MSMEs, start-ups in 2024," adding that 29 project approvals are also in the pipeline and should get sanctioned soon.

A green propulsion system developed under Technology Development Fund (TDF) scheme was successfully demonstrated in orbit functionality on a payload launched by the PSLV C-58 mission, the chairman said.

An AI-based tool 'Divya Drishti' that integrates face recognition with immutable physiological parameters such as gait and skeleton has also been developed, the statement said.

The DRDO chairman mentioned that the organisation had been granted "More than 201 patents, and it had filed more than 226 patents in 2024."

<https://economictimes.indiatimes.com/news/defence/several-drdo-systems-in-final-stages-of-user-evaluation-or-development-trials-defence-ministry/articleshow/116922933.cms?from=mdr>

The Tribune

Mon, 06 Jan 2025

Reforms must give us a cutting edge

-by C Uday Bhaskar

INDIA's composite defence and military ecosystem is critical for ensuring that national security and sovereignty are not endangered. This domain has been accorded priority by Prime Minister Narendra Modi since he assumed office in 2014.

The need for a holistic review and necessary reforms was long acknowledged — an issue that the late Dr Manmohan Singh often flagged in his interaction with the military top brass — but the institution remained reluctant to go down this path.

During his second term, PM Modi announced the creation of the post of Chief of Defence Staff. However, the task of initiating defence reforms is mammoth, and it remains a work in progress. The entire organisation that is the responsibility of the Defence Minister is like an octopus, whose many tentacles — some going back to the colonial period (ordnance factories, for example) — are insular, prickly and tenaciously resistant to change. This, incidentally, is not an Indian trait. Most militaries the world over are steeped in tradition and slow to adapt to change — this is part of the institutional DNA.

Thus, it is encouraging to note that in PM Modi's third term, 2025 has been designated as the 'Year of Reforms'. Defence Minister Rajnath Singh highlighted this move at the 67th Foundation Day of the Defence Research and Development Organisation (DRDO) last week. He dwelt on the crucial role the organisation could play in realising the objectives of these much-needed reforms.

In a nutshell, the core objectives of India's defence reforms are: One, to move the needle of national combat readiness, as warranted by national security and shaped by contemporary techno-strategic and geopolitical compulsions; and two, to reduce dependency on external sources that provide critical platforms/inventory items/technology. The DRDO and the larger national scientific and manufacturing ecosystem have a major role in this endeavour.

Rajnath Singh exhorted scientists to improve their core competencies and set an ambitious benchmark. He added, "The DRDO should aim to become one of the strongest research and development organisations in the world." He also commended the design team that enabled the success of the Long-Range Hypersonic Anti-Ship Missile, which is the most recent feather in the sparsely burnished DRDO cap.

However, the structural constraints and legacy issues related to India's defence R&D and manufacturing need to be addressed if the stated objective is to be realised. India does not figure among the top R&D nations of the world, and the defence sub-sector has a relatively modest record in terms of investments and scientific output over the decades, barring a few islands of innovation.

In September last year, DRDO Chairman Samir V Kamat pointed out that India spent only 0.65 per cent of the national GDP on R&D. The contrast with other nations is striking. Their respective R&D spending as a percentage of the GDP is: the US, 2.83; China, 2.14; France, 2.19; and South Korea, 4.8. Kamat added that the government was aware of this insufficiency and that over the next few years, during Modi 3.0, this modest figure will hopefully rise to 1 per cent of the GDP and be doubled to 2 per cent by 2035. But on current evidence, this is a low-probability exigency and may need a major political intervention, especially since the whole defence budget just touches 2 per cent of the GDP.

The legacy challenge for the DRDO and the extended defence-military ecosystem is that India continues to have high dependency on foreign imports to maintain its minimum combat readiness. In the decade from FY 2012-13 to 2021-22, as per a report of the Parliamentary Standing Committee on Defence, India's capital expenditure for military inventory acquisitions and modernisation in foreign exchange was above 35 per cent; it hit 49 per cent in one year.

This proportion blunts India's claim to credible strategic autonomy. PM Modi's prioritisation of 'atmanirbharta' (self-reliance) over the past decade is laudable, but the gestation periods are very long and a broad-brush review of the DRDO and defence public sector undertakings (DPSU) indicates a pattern that needs a review.

Over the past seven decades since its founding, the DRDO, along with other organisations, has achieved commendable success in the strategic domain of military capability (nuclear weapons, missiles, nuclear propulsion) despite India being under US-led technology sanctions for three decades. However, the track record in major conventional platforms has been below par. Whether it's the main battle tank, fighter aircraft or submarines, the DRDO-DPSU team has not enhanced the country's combat capability in a significant manner.

The current focus on government-private sector-academia cooperation is welcome, but the procedures and timelines are yet to attain necessary traction. The biggest weakness for India is that

despite other indicators, such as a large GDP, a substantial HR gene pool and a viable higher education network, original design of military equipment has largely been missing. Despite limited success with the Ishapore rifle and the HF-24 Marut fighter aircraft in the 1960s, India is yet to acquire credible indigenous military design capability. (Warship design is an exception, but that is not under the DRDO umbrella). Consequently, even personal weapons for soldiers are imported. This is incongruous for a nation that is missile-capable.

Specific to the DRDO, while welcoming this emphasis on reforms, what would be desirable is a deep and objective techno-strategic audit of the organisation over the past five decades by a blue-ribbon team of independent experts. Their findings may provide a better roadmap to ensure that the proposed defence reforms do not go down a non-productive path in relation to national combat efficiency.

PS: Can the current prioritisation of producing chariots by the DRDO and erecting of statues by the Indian 'fauj' be reviewed as part of the reforms?

<https://www.tribuneindia.com/news/comment/reforms-must-give-us-a-cutting-edge/>

Defence News

Defence Strategic: National/International



Press Information Bureau
Government of India

Ministry of Defence

Sat, 04 Jan 2025

Operational Demonstration By Indian Navy's Eastern Naval Command

Spectacular Op Demo at Visakhapatnam, Hon'ble Chief Minister and the local populace witnessed the event

The Indian Navy successfully concluded a breath-taking Operational Demonstration (Op Demo) at the iconic Ramakrishna Beach, Visakhapatnam, Andhra Pradesh on 04 Jan 25. This captivating event showcased the Indian Navy's operational excellence and outstanding efforts. The event was graced by Hon'ble Chief Minister of Andhra Pradesh, Shri Nara Chandrababu Naidu, as the Chief

Guest, and was hosted by Vice Admiral Rajesh Pendharkar, Flag Officer Commanding-in-Chief, Eastern Naval Command.

The Op Demo featured thrilling display of the maritime might of many Warships, Aircrafts, Submarines, MARCOS etc. The grand finale of the evening included a traditional Beating Retreat Ceremony by the ENC, an impeccable Continuity Drill, and a mesmerising Laser and Drone Show that left the audience in awe. Lakhs of attendees, including the Hon'ble Chief Justice of AP, senior dignitaries, MPs/ MLAs, and local Citizens and tourists, witnessed the event first-hand, while many more joined through the live telecast.

The Hon'ble Chief Minister lauded the Indian Navy's valour, technological advancements, and community outreach efforts. In his address, he emphasised the enduring connection between Andhra Pradesh and Indian Navy, commending the Indian Navy's role in securing the nation's maritime borders and fostering goodwill.

VAdm Rajesh Pendharkar expressed heartfelt gratitude to the State Government and local administration for their unwavering support in organising this spectacular event. He also acknowledged the enthusiasm and support of the people of Andhra Pradesh, whose participation added immense value to the demonstration.

The Op Demo not only displayed the Indian Navy's prowess to the public but also strengthened the bond between the maritime forces and the people of Andhra Pradesh. It was a day of pride, inspiration, and unforgettable memories for all who organised as well as attended the event.



<https://pib.gov.in/PressReleasePage.aspx?PRID=2090251>



Press Information Bureau
Government of India

Ministry of Defence

Sun, 05 Jan 2025

Visit Of Air Chief Marshal AP Singh, Chief Of Air Staff To Lakshadweep & Minicoy Islands From 04 Jan 25 To 05 Jan 25

Air Chief Marshal AP Singh, Chief of the Air Staff visited Lakshadweep Islands from 04 Jan 25 to 05 Jan 25. The CAS interacted with the air warriors at Minicoy Island and Kavarati Island. During his visit, he also visited various military establishments and interacted with the troops of Indian Air Force, Indian Navy and Indian Coast Guard.

During the interactions, the CAS underscored the need to stay ahead in the face of dynamic geopolitical environment and also highlighted IAF's pivotal role in addressing emerging contingencies. He also stressed on the importance of maintaining a high state of readiness at all times. The CAS appreciated the professionalism of the forward deployed troops and exhorted them to be ever vigilant in safeguarding the security interests of the nation.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2090334>



Press Information Bureau
Government of India

Ministry of Defence

Fri, 03 Jan 2025

Air Vice Marshal Manmeet Singh Took Over As Senior Officer-In-Charge Administration, Headquarters Western Air Command, Indian Air Force

On 1st January 2025, Air Vice Marshal Manmeet Singh took over as Senior Officer-in-Charge Administration, Headquarters Western Air Command, New Delhi.

Air Vice Marshal Manmeet Singh was commissioned in the Administration Branch of Indian Air Force on 13 June 1992 and is an alumnus of the prestigious National Defence College, Defence Services Staff College (DSSC), Wellington and holds a Master's Degree in Defence Studies and a Post Graduate Diploma in Financial Management from NIFM, Faridabad.

During his illustrious service career, he has tenanted key appointments in various operational Units, Command Headquarters and at Air Headquarters.



<https://pib.gov.in/PressReleasePage.aspx?PRID=2089919>



Press Information Bureau
Government of India

Ministry of Defence

Fri, 03 Jan 2025

French Carrier Strike Group Visits India To Strengthen Naval Ties And Enhance Interoperability

The French Carrier Strike Group, led by the nuclear-powered aircraft carrier FNS Charles de Gaulle and comprising other French naval ships, is visiting India from 03 - 09 Jan 25 with port call in Goa and Kochi. This visit aims to enhance interoperability, foster mutual understanding, and strengthen collaboration between the French Navy and the Indian Navy.

In Goa, the French Carrier Strike Group is hosting a series of engagements, including a Passage Exercise (PASSEX) at sea with the Indian Navy's Western Fleet. The harbour phase in Goa features professional exchanges, cross-deck visits, Subject Matter Expert Exchanges (SMEE), and social engagements. Rear Admiral Jacques Mallard, Commander of the French Navy Strike Group, along with Rear Admiral Hugues Laine and Commanding Officers of the French naval ships, will interact with Rear Admiral Ajay D Theophilus, Flag Officer Commanding Goa Naval Area.

Simultaneously, French naval ships FS Forbin and FS Alsace, also part of the Carrier Strike Group, are visiting Kochi. The visit includes professional interactions, cross-deck visits, and SMEEs, with Commanding Officers of the French ships meeting the senior leadership of the Southern Naval Command.

These engagements are part of a broader initiative to strengthen ties between India and France, reaffirming their shared commitment to constructive collaboration and mutual growth in the maritime domain.



<https://pib.gov.in/PressReleasePage.aspx?PRID=2090373>



**Press Information Bureau
Government of India**

Ministry of Defence

Sun, 05 Jan 2025

Ins Tushil Arrives At Dakar, Senegal

INS Tushil, Indian Navy's latest stealth frigate, as part of the ongoing operational deployment visited Port of Dakar, Senegal on **03 Jan 25**. This visit will further bolster the existing ties with Senegal and enhance interaction between the navies of the two countries.

INS Tushil, commanded by Captain Peter Varghese, will engage in various military and social engagements during the port call. This will include interactions with senior Senegalese military and government officials and showcasing the cutting-edge indigenous weapons, sensors, and equipment fit onboard. The ship will conduct interaction between subject matter experts from the two navies for mutually beneficial avenues and carry out training along with demonstrations. An

invigorating session of *Yoga* is also planned for Senegalese enthusiasts. To showcase Indian culture, the ship will also organise social interaction onboard. On completion, the ship will participate in a Passage Exercise (PASSEX) and joint patrol with the Senegalese Navy off the waters of the West African Coast. The exercise is aimed at furthering maritime cooperation between the two navies while enhancing regional security and promoting interoperability.

The visit is another strong sign of the importance India attaches to its relations with Senegal and its quest to further strengthen the growing defence cooperation and friendly ties between the two nations. It will also provide an opportunity for both navies to learn from each other and explore new avenues of cooperation.



<https://pib.gov.in/PressReleasePage.aspx?PRID=2090301>

THE ECONOMIC TIMES

Sun, 05 Jan 2025

Defence Ministry prioritises capabilities after 2024 production and export peaks

After a record year of growth in domestic defence production and exports of weapon systems, the defence ministry will be focusing sharply on capability enhancement of the armed forces in 2025, with several major inductions planned and contracts to be signed.

Enhanced Production

2024 saw a record increase in indigenous defence production, with the value reaching ₹1.26 lakh crore, driven largely by initiatives of the government to ink maximum contracts with Indian vendors and encourage 'Make in India'. The 16.7% bump-up also reflected a significant increase in defence exports, with the number reaching ₹21, 083 crore in the calendar year.

This number is expected to climb steadily as global turmoil continues and the Indian defence ecosystem, particularly the private sector, investing heavily in enhancing production capacity. In 2024, many companies initiated investments in setting up ammunition manufacturing plants. At the latest count, at least seven new plants are coming up in the country that will produce different grades of ammunition, including 155mm artillery shells that are in heavy demand across the world.

Coming up across the country, from Himachal Pradesh to Maharashtra, these plants will cater particularly to the European market that has seen a depletion in reserves due to the Ukraine-Russia war. The 32.5% growth in defence exports in 2024 reflects not only exports of ammunition and explosives but major platforms like armoured infantry combat vehicles, multiple barrel rocket launchers, missiles and artillery guns.

Inductions

Several platforms were inducted into the armed forces in 2024 and more are planned from early 2025, improving combat capability. 2024 saw the induction of the second Arihant class nuclear missile submarine. The INS Arighaat is more advanced and capable than its predecessor and will add to India's second strike capability. The Navy also got the INS Tushil, the latest stealth frigate manufactured in Russia. Indigenous Light Combat Helicopters were also inducted into service.

The Navy, which has the lion's share of the defence capital budget this financial year, was also the lead agency for the procurement of 31 MQ-9B Sky/Sea Guardian High Altitude Long Endurance Remotely Piloted Aircraft System (RPAS) that was signed in October 2024.

2025 will be the year of some heavy firepower inductions into the armed forces, starting with three warships that are to enter service in January, with Prime Minister Narendra Modi likely to be present on the occasion. This includes the last of the Kalvari class of submarines and two other major naval platforms. The first of the delayed LCA Mk1a fighter jets will also be delivered to the Air Force this year while the Army will get longer range Pinaka rockets and new artillery systems.

Acquisitions

Among the contracts signed in 2024 were landmark deals for the private sector. The largest-ever defence deal with an Indian private sector entity was signed in March, with Larsen and Toubro bagging a ₹7,668-crore contract for supply of close in weapon systems. This was closely followed by a ₹7,628-crore deal for additional K 9 Vajra self-propelled artillery with the same company.

The defence ministry, through several sittings of the Defence Acquisition Council (DAC) and Defence Procurement Board (DPB), also accorded Acceptance of Necessity (AoN) for 40 Capital Acquisition proposals amounting to ₹4.2 lakh crore, with 94% of it earmarked for Indian vendors. These approvals initiate the procurement process that will roll out over the next 2-3 years and focus in 2025 will be to carry the process forward and initiate a competitive process to select new weapon systems.

In early 2025, two major contracts are expected to be inked with France -- for the acquisition of Rafale Marine fighter jets and additional Kalvari class submarines that are to be built in India. The combined value of the deals could be in excess of \$10 billion.

Capacity Planning

Even though a deal has been reached with China to resume patrolling and reduce hostilities in Eastern Ladakh in 2024, capacity enhancement has remained a key focus, given the uncertain geopolitical situation. While the Ladakh border deal has resulted in a slight easing of tensions, potential for conflict remains, particularly in the Eastern sector where China has invested heavily in infrastructure development.

In 2025, all eyes will be on a new committee that will work on a plan for capability enhancement, particularly for the Air Force. Headed by Defence Secretary RK Singh, the committee is likely to complete a study in four months.

Reforms

The mantra for the defence ministry in 2025 is 'reforms', with Defence Minister Rajnath Singh starting the year with a meeting to lay out a roadmap that will touch various aspects -- from procurement policy to jointness, promoting technology transfer and encouraging public-private partnerships.

The industry is looking at an accelerated procurement procedure. Promoting technology transfer and public-private partnerships in the defence sector are also high on the agenda. Continued focus will remain on domains like cyber and space, emerging technologies like Artificial Intelligence, Machine Learning, Hypersonics and Robotics.

<https://economictimes.indiatimes.com/news/defence/defence-ministry-prioritises-capabilities-after-2024-production-and-export-peaks/articleshow/116948522.cms>

THE ECONOMIC TIMES

Sun, 05 Jan 2025

Goa Shipyard Ltd launches two indigenous fast patrol vessels for Indian Coast Guard

Goa Shipyard Limited (GSL) on Sunday concurrently launched two indigenously designed and constructed Fast Patrol Vessels (FPVs) for the Indian Coast Guard.

The launch marks a historic chapter in GSL's ambitious journey towards technological and operational excellence. Speaking at the launch, Brajesh Kumar Upadhyay, CMD, GSL, highlighted the Shipyard's impressive growth trajectory, which has seen a remarkable 100 per cent increase in Gross Revenue, crossing the Rs 2,000 Crore threshold.

"GSL has consistently outperformed its past achievements, embracing cutting-edge technologies and transformative policies to become one of India's foremost shipbuilders with indigenous capabilities," CMD Upadhyay stated. He attributed GSL's success to its steadfast commitment to innovation, modernization, and the dynamic partnership with the Indian Coast Guard, which has continually strengthened operational readiness for national security.

According to a release, the two vessels, Amulya and Akshay, were launched ceremoniously by Vandana Agrawal in the presence of Sanjeev Kumar, IAS, Secretary (Defence Production) amidst the resonant chants of the 'Atharva Veda'. The distinguished gathering included IG HK Sharma, TM, DDG (M&M), as well as key stakeholders from the defence and maritime communities.

GSL also launched two vessels of the same series in October 2024 as GSL is constructing a fleet of eight FPVs for the Indian Coast Guard, underscoring the shipyard's pivotal role in realising the vision of 'Atmanirbhar Bharat' in defence production. Secretary (DP) lauded the enduring collaboration between the Indian Coast Guard and GSL, which has faced and overcome challenges ranging from the COVID-19 pandemic to geopolitical disruptions.

"This launch epitomizes the resilience and ingenuity of GSL, achieved in close collaboration with Indian industry. The indigenous content of these vessels is a proud reflection of the Atmanirbhar Bharat initiative," said Secretary (DP).

These state-of-the-art FPVs are designed in-house by GSL to meet the Indian Coast Guard's specific operational needs. With a length of 52 meters, a breadth of 8 metres, and a displacement of 320 tonnes, these vessels are optimized for protecting offshore assets, island territories, and conducting surveillance operations. For the first time in GSL's history, two vessels were launched simultaneously using the Shipyard's State-of-the-Art Ship-Lift System, a transformative feat that underscores GSL's modernization efforts.

The Chief Guest praised GSL's team for ensuring the Coast Guard's shipbuilding needs are met through indigenous efforts, and he commended the shipyard's workforce for achieving this milestone despite the challenges. The Chief Guest further urged all to continue the journey towards self-reliance in defence production with undeterred focus and commitment.

<https://economictimes.indiatimes.com/news/defence/goa-shipyard-ltd-launches-two-indigenous-fast-patrol-vessels-for-indian-coast-guard/articleshow/116969011.cms>

THE ECONOMIC TIMES

Fri, 03 Jan 2025

Garuda Aerospace and REIL to set up remote pilot training organisation in Jaipur

Drone manufacturer Garuda Aerospace has signed an agreement with Rajasthan Electronics and Instruments Ltd (REIL) to establish a Remote Pilot Training Organisation in Jaipur, the city-based

company said. The training facility aims to meet the growing demand for skilled drone operators across sectors by offering comprehensive, Directorate General of Civil Aviation (DGCA)-compliant training programmes.

The agreement marks a strategic collaboration between Garuda Aerospace's expertise in drone technology and training, and REIL's infrastructure and reach in Rajasthan. By combining Garuda Aerospace's capabilities with REIL's established infrastructure and presence, the Regional Pilot Training Organisation will provide a strong platform for effective training delivery, Garuda Aerospace said in a press release on Friday.

The partnership highlights Garuda Aerospace's commitment to empowering individuals and modernising industries, contributing to India's rise as a global drone powerhouse, the company added.

<https://economictimes.indiatimes.com/news/defence/garuda-aerospace-and-reil-to-set-up-remote-pilot-training-organisation-in-jaipur/articleshow/116916160.cms>



Mon, 06 Jan 2025

IAF combat capability faces resource shortage and delay in modernisation

Amid the fast-changing geo-strategic scenario, the combat capability of the Indian Air Force (IAF) is turning into a tale of woes; not only is there a shortage of fighter pilots, the training of these pilots, even when inducted, is plagued with shortage of resources.

Delay in modernisation, specifically of the force multipliers, aggravates the situation further, especially when compared to Pakistan and Chinese Air Forces who have an edge in the same.

The audit carried out by the Comptroller and Auditor General (CAG) and tabled in during the winter session has noted a continued decline in the number of combat pilots as, "In February 2015, IAF had assessed that there was a shortage of 486 pilots."

There was a plan to arrest the decline of pilots but the force could not keep up with it. "Between 2016 to 2021, against the planned initial intake of 222 trainees annually, the initial annual intake ranged between 158 and 204 trainees. Also, the annual intake after wastage ranged between 124 to 167." As a result, "the shortage of pilots rose from 486 to 596 which was expected to be filled up between January 2021 and January 2030."

But, what adds to the problem is the training being done on old aircraft in all three streams of the pilot training, which the CAG, in its Report on Training of Pilots in Indian Air Force, presented in Parliament in winter session.

The Performance Audit was conducted during the period January 2022 to May 2022 and covered the three stages of training; Stage I (Basic), Stage II (Intermediate) and Stage III (Applied) imparted by the Flying Training Establishments (FTEs) and the training of Navigators at the Navigation Training School (NTS) during the period 2016 to 2021.

The audit findings about Trainer Aircraft said had stated in March 2013 that action was on hand to procure 296 aircrafts by 2016 and IAF would have sufficient resources to train its pilots till 2036.

But, the report says, “In case of fighter stream, induction of 106 Basic Trainer Aircrafts and 73 Intermediate Jet Trainers, both indigenously being designed and developed by HAL, could not materialise due to delays in clearance from certifying agency and design issues, respectively.”

In case of helicopter stream, the training was being imparted on the Chetak helicopters which had been inducted more than 50 years ago.

<https://www.newindianexpress.com/nation/2025/Jan/06/iaf-combat-capability-faces-resource-shortage-and-delay-in-modernisation>



Sun, 05 Jan 2025

With PM Modi expected to visit Paris in February, deals to buy Rafale fighter jets, Scorpene subs for Navy reach final stage

Two large defence deals in the pipeline between India and France are being finalised, amid expectations that Prime Minister Narendra Modi will visit Paris in February for the Artificial Intelligence Action Summit to be hosted by French President Emmanuel Macron.

The deals, together worth over \$10 billion, will include the purchase of 26 Rafale-M fighter jets for the Indian Navy’s aircraft carriers, and three additional Scorpene-class conventional submarines. The two deals are expected to be put before the Cabinet Committee on Security (CCS) for approval in the next couple of weeks, sources said.

“The expectation is that PM Modi will visit Paris to attend the AI Summit and will also have a bilateral component. So both sides are working to tie up the two deals which are in the final stages of conclusion,” an informed source said. This was also independently confirmed by other sources.

The French President’s office has already announced that Mr. Modi has been invited for the Artificial Intelligence Summit scheduled to be held on February 10 and 11. France said the gathering will focus on concrete actions to ensure that the global AI sector can drive beneficial social, economic and environmental outcomes in the public interest.

Final stage

In response to a question from The Hindu at his annual press conference last month, Navy Chief Admiral Dinesh K. Tripathi said that both the deals are in the final stage and could be completed next month.

“It is just a matter of completing the formalities of the acquisition process and we expect that if not this month, next month, hopefully, this [Scorpene submarine] and the Rafale-M deal should be signed,” he had said.

On the Rafale-M deal, the Navy chief had said it was “one level short of taking it to the CCS (Cabinet Committee on Security)” for clearance, which will be followed by the signing of the contract. As it is a government-to-government deal, it is expected to be implemented quickly.

The deal for three Scorpene submarines is a repeat order to the Mazagon Dock Shipbuilders Limited, which is building them in partnership with the Naval Group of France. Of the six submarines from the earlier contract, five have been inducted.

The last one, Vagsheer, is set to be commissioned on January 15 at Mumbai, in the presence of Mr. Modi, along with two other frontline platforms. On July 13, 2023, as Mr. Modi was enroute to Paris, the Defence Acquisition Council chaired by Defence Minister Rajnath Singh accorded the Acceptance of Necessity for the procurement of 26 Rafale-M fighters and three additional Scorpene-class diesel-electric submarines.

Critical for Naval needs

The Rafale purchase includes 22 single seater Rafale-M jets and four twin-seater Rafale trainers, which are not carrier compatible. The 26 jets are meant to fill a critical gap until the indigenous twin engine deck-based fighter, still under development, is ready to be inducted into service.

The Navy currently operates two aircraft carriers: INS Vikramaditya procured from Russia, and the indigenously built INS Vikrant which was commissioned in September 2022.

The additional Scorpenes are a critical requirement for the Navy as it grapples with with an aging fleet and the huge delay in the procurement of six advanced submarines under Project-75I which is now awaiting a final decision between Germany and Spain. As reported by The Hindu earlier, the first of three Scorpene submarines is likely to be delivered in 2031.

Last month, the Defence Ministry signed two contracts worth ₹2,867 crore related to the existing Scorpene-class submarines. One is for the construction and onboard integration of an air independent propulsion module developed by the Defence Research and Development Organisation, while the second is for the integration of an electronic heavyweight torpedo also being developed by the DRDO.

<https://www.thehindu.com/news/national/with-pm-modi-expected-to-visit-paris-in-february-deals-to-buy-rafale-fighter-jets-scorpene-subs-for-navy-reach-final-stage/article69065017.ece>

INSV Tarini with two woman Navy officers begins third leg of circumnavigation

Indian Naval Sailing Vessel (INSV) Tarini left Lyttelton Port in New Zealand on Saturday (January 4, 2025) morning at about 9. 30 a.m. local time for Port Stanley (Falkland Islands) in the third leg of the ongoing global circumnavigation journey by two woman Navy officers under Navika Sagar Parikrama-II.

This is the longest leg of the expedition with a distance of approximately 5,600 nm (approximately 10,400 km) to cover. This will also be the southernmost transit of Tarini at about 56 degrees South, the Navy said in a statement. “With the frontal weather systems of the Southern Ocean, Team Tarini can expect to experience challenging seas with up to 50-60 knots (90-110 kmph) winds.”

INSV Tarini had arrived in Lyttelton on December 22, completing the second leg of the double-handed circumnavigation, which is being undertaken by two Indian Navy women officers — Lt Cdr Dilna K. and Lt Cdr Roopa A.

“During the period in Lyttelton, the crew undertook repairs and maintenance of the boat with particular focus on the next leg where the vessel will cross the South Pacific, pass through the treacherous Drake Passage, and cross Cape Horn to reach Port Stanley,” the Navy said. “While in Lyttelton, the crew also interacted with the Indian community who were eager to visit the boat and query the crew about various aspects of ocean sailing.”

INSV Tarini was open to visitors at Lyttelton Port of Christchurch (LPC) on Thursday (January 2, 2025). People from different walks of life, including Victoria Henstock, the councillor of Christchurch City Council, visited the vessel and interacted with the crew.

Members of the Indian diaspora as well as Belfiore Bologna, Honorary Consul of Italy for the South Island of New Zealand and Sue McFarlane, Head of Christchurch Antarctic Office turned up for the Flag Off ceremony of the vessel. Traditional Maori prayers for the crew by members of the Maori community were also undertaken during the ceremony.

The expedition was flagged off from Goa on October 02, 2024 by Navy Chief Adm Dinesh K. Tripathi. After sailing across the Indian Ocean for 38 days, INSV Tarini halted at Fremantle, Australia, from November 9 to 24, and the second leg from Fremantle to Lyttelton was covered in 28 days.

Members of Indian diaspora and various dignitaries were present at the Flag Off ceremony of the third leg of the expedition.

The circumnavigation will cover around 23,000 nautical miles in around 240 days, across four continents through three oceans and three challenging Capes, unfolding in five legs with stopovers at four ports for replenishment and maintenance. The five legs are Goa to Fremantle, Australia;

Fremantle to Lyttleton, New Zealand; Lyttleton to Port Stanley, Falkland Islands; Port Stanley to Cape Town, South Africa; and from Cape Town back to Goa.

INSV Tarini, a 56-foot sailing vessel built by Aquarius Shipyard Ltd, was inducted in the Indian Navy on February 18, 2017. The vessel has clocked more than 66,000 nautical miles (1,22,223 km) and participated in the first edition of Navika Sagar Parikrama in 2017, trans-oceanic expedition from Goa to Rio, Goa to Port Louis and other significant expeditions. Both the officers with a sailing experience of 38,000 nautical miles (70,376km) trained vigorously in the last three years.

<https://www.thehindu.com/news/national/insv-tarini-with-two-woman-navy-officers-begins-third-leg-of-circumnavigation/article69061940.ece>



Sat, 04 Jan 2025

मोहम्मद यूनुस का एक और एंटी इंडिया प्लान, बॉर्डर पर इस टैंक के साथ नजर आएगी बांग्लादेशी सेना

बांग्लादेश की मोहम्मद यूनुस की सरकार एक बार फिर भारत विरोधी साजिश रच रही है. और इन साजिशों को अंजाम तक पहुंचाने के लिए यूनुस वो हथियार खरीद रहे हैं, जिनका इस्तेमाल इस्लामिक स्टेट (ISIS) करता है. खबरों के मुताबिक, यूनुस सरकार ने तुर्की की एक डिफेंस कंपनी के साथ डील की है. इस डील के तहत बांग्लादेश से तुर्की को 26 लाइट बैटल टैंक्स मिलेंगे, जो टैंक्स खरीदे जा रहे हैं उनका नाम OTOKAR TULPAR है. बताया जा रहा है साल 2025 में ही ये 26 लाइट बैटल टैंक्स बांग्लादेश पहुंचा दिए जाएंगे.

बांग्लादेश जिस लाइट बैटल टैंक को खरीद रहा है उसका वजन सिर्फ 32 टन है. इस टैंक के अंदर ऑपरेटर्स समेत 12 सैनिक बैठ सकते हैं. एक बार मैदान में निकलने के बाद ये टैंक 600 किलोमीटर तक जा सकता है और इसकी स्पीड 70 किलोमीटर प्रति घंटा तक रहती है. इस टैंक पर MAIN CANNON के साथ ही साथ ये टैंक एक हेवी मशीनगन से भी लैस है. अब सवाल उठता है कि आखिर यूनुस सरकार ने इस टैंक को ही क्यों चुना? लाइट बैटल टैंक के जरिए बांग्लादेश किस तरह भारत को नुकसान पहुंचाना चाहता है और इस टैंक का इस्लामिक स्टेट कनेक्शन क्या है?

बॉर्डर इस टैंक के साथ नजर आएगी बांग्लादेशी सेना

इस लाइट बैटल टैंक के लिए डील पूरी हो गई है और माना जा रहा है जल्द बांग्लादेशी फौज इस टैंक के साथ भारत-बांग्लादेश बॉर्डर पर नजर आएगी. बांग्लादेश ने तुर्की से इसी लाइट बैटल टैंक को क्यों खरीदा, इस सवाल का जवाब इस टैंक की खासियतों में छिपा है. भारत और बांग्लादेश बॉर्डर के कई हिस्से नदियों से गुजरते हैं. TULPAR टैंक कम गहराई वाले पानी में आसानी से ऑपरेट कर सकता है. भारत-बांग्लादेश बॉर्डर के कुछ हिस्सों पर कम ऊंचाई के पहाड़ भी हैं. TULPAR टैंक ऊबड़ खाबड़ रास्तों पर चल सकता है. और सबसे बड़ी खासियत इस टैंक की कैपेसिटी है. टैंक में क्रू के साथ ही साथ एक छोटी सैन्य टुकड़ी भी जा सकती है. यानी बॉर्डर के किसी सीमित हिस्से पर किसी छोटी तनातनी में ये टैंक कारगर साबित हो सकता है.

इससे पहले बांग्लादेशी फौज ने बॉर्डर पर तुर्की में बने बेयरक्तार ड्रोन भी तैनात किए थे, जिनके जरिए भारतीय बॉर्डर पर जासूसी की नाकाम कोशिश की गई थी. पहले ड्रोन और अब लाइट बैटल टैंक मोहम्मद यूनुस की ये बारूदी शॉपिंग लिस्ट बताती है कि बांग्लादेश भारत को उकसा कर किसी सीमित टकराव का आगाज करना चाहता है.

सीरिया में भी किया गया था इस टैंक का इस्तेमाल

मोहम्मद यूनुस जो लाइट बैटल टैंक खरीद रहे हैं, इनका इस्तेमाल सीरिया में हुए तख्तापलट के दौरान भी किया गया था. सीरिया में असद सरकार के खिलाफ हुए विद्रोह में तीन किरदार शामिल थे. पहला था हयात तहरीर अल शाम, जो सीरियाई विद्रोहियों से मिलकर बना संगठन है. दूसरा था इस्लामिक स्टेट, जिसे तुर्की ने मदद की थी. और तीसरा किरदार खुद तुर्की था, जिसने फ्रंटलाइन के पीछे से लगातार बमबारी की और सीरियाई विद्रोहियों के कूच को सपोर्ट किया था.

तुर्की ने बमबारी के लिए इन्हीं TULPAR लाइट बैटल टैंक्स का इस्तेमाल किया था, लेकिन ये टैंक गृहयुद्ध के मोर्चे पर कामयाब साबित नहीं हुए. सीरियाई में रेतीले रास्तों की वजह से इन टैंक्स की रफ्तार कम हो गई थी, जिसकी वजह से कुर्द विद्रोहियों ने इन टैंक्स को एंटी टैंक मिसाइलों से निशाना बनाया. चूंकि ये लाइट टैंक थे, इसी वजह से इनकी सतह ज्यादा मजबूत नहीं थी. और सीरियाई सेना ने एंटी एयरक्राफ्ट गन जैसे हथियारों से भी इन टैंक्स को टारगेट कर लिया था. FPV यानी छोटे ड्रोन से मोर्टार गिराकर भी इन टैंक्स के हल्के पहियों और चेन को बर्बाद किया गया था, जिसकी वजह से ये टैंक्स कारगर नहीं रहे थे.

TULPAR टैंक्स की हिस्ट्रीशीट बताती है कि युद्ध के मैदान में ये टैंक्स कारगर नहीं हैं. लेकिन, यूनुस के दिमाग पर इस्लामिक स्टेट की परछाई पड़ी हुई है. पहले यूनुस ने इस्लामिक स्टेट की तर्ज पर एक प्राइवेट मिलिशिया खड़ी करने का प्लान बनाया था और अब इस्लामिक स्टेट वाले नाकारा हथियारों को यूनुस बांग्लादेशी फौज का हिस्सा बना रहे हैं.

<https://zeenews.india.com/hindi/world/mohammad-yunus-anti-india-plan-bangladesh-to-buy-turkish-tanks-for-armoured-forces/2588026>

THE TIMES OF INDIA

Mon, 06 Jan 2025

Does Pakistan minister's comment on Ghazni signal foreign policy shift?

Pakistan's old antic to taunt India by naming its missiles after Afghan invaders has taken an unexpected turn in the wake of a new conflict with Afghanistan.

The controversy ignited when Pakistan defence minister Khawaja Muhammad Asif described Mahmud of Ghazni - a figure celebrated in Pakistan's historical narrative - as "merely a plunderer". His remark, delivered during a televised interview, stunned many in a country where school textbooks have long celebrated Mahmud for his raid on the Somnath temple in India in 1026. This dispute put the spotlight on naming of missiles after figures who invaded India to rile the country.

Pakistan has named its missiles after Ghazni who raided and destroyed the legendary Shiv Mandir at Somnath, after Ahmad Shah Abdali who won the third battle of Panipat after defeating the Marathas and massacring thousands of them, and after Muhammad Ghorī who defeated Prithviraj Chauhan.

The choices of invaders from Afghanistan were deliberately meant to not only rile India but also leave no doubt that Pakistan's ballistic missile programme was India-centric, a narrative that resonated domestically, while deflecting international scrutiny.

Asif is a hardliner himself. This time, however, he seemed to target a different audience. His comment came amid escalating tensions between Pakistan and Afghanistan. Pakistan recently conducted airstrikes in Afghanistan, claiming it targeted Pakistani Taliban operatives allegedly harboured by the Afghan Taliban. Analysts suggest Asif's critique of Mahmud was less about historical revisionism and more an attempt to antagonize the Afghan Taliban.

The Afghan govt promptly denounced Asif's statements as reckless. Within Pakistan, the remarks sparked a polarizing debate. Some welcomed the re-evaluation of Mahmud's legacy, while others, including members of Asif's own political party, rebuked him. Senator Mushahid Hussain Syed, a former information minister, urged Asif to consult Romila Thapar's work on Somnath. Thapar, a respected Indian historian, posits that Mahmud's attack was motivated by economic and political factors rather than religious zeal, challenging the colonial-era framing of it as a Hindu-Muslim conflict.

As the controversy lingers, it raises a provocative question: If Mahmud of Ghazni is no longer regarded as a hero, should the Ghaznavi missile be renamed? This debate transcends mere symbolism, hinting at broader shifts in Pakistan's foreign policy, historical narratives, and regional positioning, amid growing international and domestic pressures.

<https://timesofindia.indiatimes.com/world/pakistan/does-pakistan-ministers-comment-on-ghazni-signal-foreign-policy-shift/articleshow/116973163.cms>

THE TIMES OF INDIA

Sat, 04 Jan 2025

Under new policy, Lieutenant Generals to be promoted on merit basis

With India moving towards the creation of tri-Service theatre commands, the Army has adopted a radical change in the promotion policy for top officers by making it necessary for all Lieutenant Generals to be graded on their performance through a “quantified assessment system”.

This new system, which will come into force from March 31, will “facilitate merit-based selection” of serving Lt-Gens for apex-level appointments in the integrated theatre commands and tri-Service establishments, sources told TOI.

The new policy for Lt-Gens, with “revised annual confidential report (ACR) forms”, will not apply to the vice chief and commanders-in-chief of the six operational commands and one training command in the Army. These eight officers are also Lt-Gens but a rung higher than the other three-star generals.

The over 11-lakh Army has almost 90 Lt-Gens, 300 Major Generals and 1,200 Brigadiers in its 43,000-strong officer cadre.

“The new policy for Lt-Gens will align the Army with the much smaller IAF and Navy, where the quantified appraisal of equivalent ranks (Air Marshals and Vice Admirals) is already there,” a source said.

“There was no quantified ACR system for Lt-Gens so far. Now, they will be graded on different attributes on a scale from 1 to 9. In effect, promotions will be based on merit rather than just seniority. The impending creation of theatre commands requires a uniform assessment system for the top ranks in all the three Services,” he added.

The Army headquarters’ letter on the new policy does not specify whether it will also be applicable for the selection of the vice-chief and seven commanders-in-chief within the force.

As per the existing Army policy, promotion to the C-in-C level is based purely on seniority, in conjunction with the date of birth and vacancies available. A Lt-Gen, after he has commanded one of the 14 corps in the force, must have ‘residual’ service of 18 months (till he turns 60) to be promoted as the C-in-C of one of the seven Army commands.

Strong reservations against the new policy are already being expressed by some officers. “Very few officers become three-star generals after being assessed on merit at every step in their careers in the Army’s steeply-pyramidal structure,” a senior officer said.

“After the Lt-Gen rank, promotion to C-in-C was based on seniority. Introducing merit at this stage will open the door for interference, political or otherwise,” he added.

The policy comes at a time when the blueprint for the three theatre commands for China, Pakistan and the Indian Ocean Region has been finalized to ensure an integrated war-fighting machinery. Chief of defence staff General Anil Chauhan has already made presentations to defence minister Rajnath Singh and national security advisor Ajit Doval on the matter.

As per the existing plan, which entails the most radical military reorganization in the country since Independence, the China-specific northern theatre command will come up in Lucknow, while the western one for Pakistan will be based in Jaipur.

The maritime theatre command, in turn, will be located at Thiruvananthapuram, as earlier reported by TOI.

<https://timesofindia.indiatimes.com/india/under-new-policy-lieutenant-generals-to-be-promoted-on-merit-basis/articleshow/116929166.cms>

नवभारत टाइम्स

Sun, 05 Jan 2025

LAC के पास एक और एयरबेस, दुनिया के सबसे ऊंचे एयरफील्ड में से एक; जहां से फाइटर जेट उड़ान भर सकेंगे

लद्दाख में एयरफोर्स के फाइटर एयरक्राफ्ट के ऑपरेशंस के लिए तीसरे एयरफील्ड पर ट्रायल चल रहे हैं। न्योमा एडवांस लैंडिंग ग्राउंड को अपग्रेड कर एयरफील्ड बनाने के बाद इसमें एयरफोर्स ने ट्रायल शुरू किए हैं। कुछ दिनों पहले ही एयरफोर्स के C-130J सुपर हरक्यूलस ने पहली बाहर नए रनवे के ऊपर से उड़ान भरी और लैंडिंग सर्किट को पूरा किया।

इसमें एयरक्राफ्ट के लैंडिंग गेयर खुले और एयरस्ट्रिप को छुए बिना ही उड़ान भर ली। किसी भी एयरफील्ड के ट्रायल के अलग-अलग स्टेज होते हैं। एयरफोर्स सभी तरह के ट्रायल पूरे करने के बाद यहां से अपने ऑपरेशंस शुरू कर सकती है।

लद्दाख से फाइटर ऑपरेशन के होगा तीसरा बेस

जब न्योमा एयरफील्ड पूरी तरह से एक्टिवेट हो जाएगा तो यह लद्दाख से फाइटर ऑपरेशन के लिए एयरफोर्स का तीसरा बेस होगा। न्योमा में अडवांस लैंडिंग ग्राउंड था, जिसका इस्तेमाल हेलिकॉप्टर और ट्रांसपोर्ट एयरक्राफ्ट के लिए किया जा रहा था लेकिन यहां पर एयरफील्ड बन जाने से फाइटर जेट भी यहां से उड़ान भर सकेंगे।

200 करोड़ रुपये की लागत से इसे डिवेलप किया गया है। यह एयरफोर्स की कैपेबिलिटी बढ़ाएगा।

दुनिया के सबसे ऊंचे एयरफील्ड में से एक

ये एयरफील्ड दुनिया के सबसे ऊंचे एयरफील्ड में से एक है। सितंबर 2023 में रक्षा मंत्री राजनाथ सिंह ने इसकी आधारशिला रखी थी। न्योमा 13700 फीट की उंचाई पर है और यहां पर एडवांस लैंडिंग ग्राउंड को अपग्रेड कर एयरफील्ड बनाने से फाइटर जेट के ऑपरेशंस के लिए एक और जगह मिल रही है।

यहां रन वे 2.7 किलोमीटर लंबा है और ये पूरी तरह से कंक्रीट का बना हुआ है। अभी लेह और थौएस में इस तरह का एयरबेस है।

ईस्टर्न लद्दाख में तनाव के समय अहम भूमिका निभाई

अपग्रेडेशन से पहले यह अडवांस लैंडिंग ग्राउंड मिट्टी का बना था इसलिए फाइटर जेट के लिए यहां से उड़ान भरना मुश्किल था। इसका इस्तेमाल कुछ ट्रांसपोर्ट एयरक्राफ्ट और हेलिकॉप्टर के लिए किया जा रहा था।

जब ईस्टर्न लद्दाख में भारत और चीन के बीच तनाव चरम पर था तब इस लैंडिंग ग्राउंड ने अहम भूमिका निभाई थी। सैनिकों की तैनाती से लेकर हथियार पहुंचाने तक इस लैंडिंग ग्राउंड का इस्तेमाल किया गया था।

<https://navbharattimes.indiatimes.com/india/flight-trials-begin-at-nyoma-airfield-near-china-border/articleshow/116955862.cms>

The Tribune

Sun, 05 Jan 2025

NSA Sullivan arrives today, seeks to strengthen AI, space, tech ties

US National Security Adviser Jake Sullivan will visit India on January 5 and 6 to meet his counterpart, Ajit Doval, and other senior government officials for a final round of discussions on various bilateral, regional and global issues. The visit also aims to finalise ongoing initiatives. During his trip, Sullivan will deliver a major foreign policy speech at IIT Delhi, where he is expected to emphasise India's pivotal role in US priorities, not only in the Indo-Pacific, but also on a global scale.

Sullivan is scheduled to meet External Affairs Minister S Jaishankar and other Indian leaders. The US delegation, led by Sullivan, will include officials from multiple government departments. Sullivan's term as NSA concludes on January 20, coinciding with the inauguration of the Donald Trump-led administration. He will be succeeded by Congressman Michael Waltz, whom Trump has announced as the next National Security Adviser.

The discussions between Sullivan and Doval will focus on various aspects of the India-US partnership, with particular emphasis on strategic technology cooperation across sectors such as defence, space and artificial intelligence. Both leaders will also address the civil nuclear partnership, with the US proposing modular reactor technology. The White House has confirmed that the talks will span multiple areas, including space, defence and strategic technology.

Doval and Sullivan co-chair the India-US Initiative on Critical and Emerging Technologies (iCET), a landmark collaboration launched in May 2022 by Prime Minister Narendra Modi and President Joe Biden. The initiative seeks to strengthen strategic technology partnerships and defence industrial cooperation between the two nations. Key focus areas include artificial intelligence (AI), semiconductors, enhancing semiconductor supply chains and production capabilities and joint efforts in biotechnology research and innovation.

<https://www.tribuneindia.com/news/india/in-last-visit-to-india-us-nsa-sullivan-boost-innovation-alliance-strengthen-ties/>



Fri, 03 Jan 2025

India issues RFI for C-UAV ammunition

The Indian Ministry of Defence (MoD) has issued a request for information (RFI) to support its procurement of 23 mm counter-unmanned aerial vehicle (C-UAV) ammunition for the Indian Army.

The RFI, issued on 1 January, said the procured ammunition is intended to be fired from the ZU-23-2 semi-mobile anti-aircraft cannon system and the ZSU-23-4 'Schilka' self-propelled anti-aircraft gun (SPAAG) in service with the army's Corps of Army Air Defence.

The RFI is intended for Indian manufacturers, with at least 50% of the munitions' components to be sourced locally. RFI submissions are expected by mid-February, but the RFI does not provide information on the number of rounds that will be procured.

According to the RFI, the procured ammunition should feature a timed fuze that is pre-programmable to detonate the projectiles at variable ranges including 1 km and 2.5 km. It added that the ammunition needs to conform to the "breech block, chamber, and barrel" of the ZU-23-2 and Schilka systems.

The ammunition is required to be operable at temperatures ranging from -25°C to 45°C. The ZU-23-2 and ZSU-23-4 are Soviet-era weapons systems that use 23×152 B cartridges. According to the RFI, India possesses the high-explosive incendiary tracer (HEI-T) and armour-piercing incendiary tracer (API-T) variations of the 23×152 B cartridge.

Both variations are capable of an effective range of 2,500 m horizontally and 1,500 m vertically, according to Janes Weapons: Ammunition. The variations weigh 190 g and have a maximum velocity of 970 m/s. For more information, please see India – Army .

<https://www.janes.com/osint-insights/defence-news/defence/india-issues-rfi-for-c-uav-ammunition>



Sat, 04 Jan 2025

Air Force to host event aimed at boosting indigenous defence innovation

The Indian Air Force (IAF) is set to organise an event aimed at enhancing India's defence capabilities and fostering indigenous innovation. The Industry Outreach Event 2025 (IOE25) will be held in two phases on January 13 and 15.

The event is designed to bring together industry leaders, start-ups and innovators to collaborate on cutting-edge defence solutions, aligning with the government's Atmanirbhar Bharat initiative (self-reliant India).

In the first phase of IOE25 that will be held on January 13, the session will focus on key areas such as the IAF's self-reliance initiatives, the Innovations for Defence Excellence (iDEX) schemes, and processes related to quality assurance and certification for aviation systems.

Experts from the Directorate of Aerospace Design, the Defence Innovation Organisation (DIO), the Directorate General of Aeronautical Quality Assurance (DGAQA), the Centre for Military Airworthiness and Certification (CEMILAC) and the Aircraft Systems Testing Establishment

(ASTE) will provide insights into various certification and testing processes critical for airborne and aviation-related systems.

The second phase will take place on January 15 at Air Force Station Guwahati. This on-site session will offer a unique opportunity for industry representatives to engage directly with the defence operators.

These interactions will allow participants to understand operational requirements more comprehensively and identify areas where they can contribute with innovative and effective solutions. By facilitating such direct engagement, the event aims to bridge the gap between the defence sector and industry stakeholders.

By identifying opportunities in the defence landscape, IOE25 aims to harness cutting-edge technology to support India's strategic goal of achieving self-reliance in defence manufacturing and operations.

An IAF official emphasised the importance of this initiative, saying, "This outreach programme will not only promote innovation but also ensure that the solutions provided by the industry are well-aligned with the operational needs of the IAF."

<https://www.indiatoday.in/india/story/indian-air-force-event-host-january-boosting-indigenous-defence-innovation-aatmanirbhar-initiative-2659640-2025-01-04>



Sun, 05 Jan 2025

Indian Army showcases AI-driven capabilities in latest combat drills

The Indian Army is showcasing its cutting-edge operational capabilities, revolutionising warfare with advanced technologies, including artificial intelligence (AI). In its pursuit to stay ahead in global defence trends, the Army is integrating state-of-the-art platforms and innovative strategies to dominate future battlefields.

In a recent statement, the Army highlighted its modernisation efforts, including equipping mechanised forces with next-generation tanks, swarm drones for precision strikes, and modern artillery systems. Highly trained infantry units, optimised for diverse terrains such as the western deserts, are a key part of this transformation.

These advancements demonstrate a seamless blend of traditional combat expertise and technological prowess. One of the cornerstone achievements is the integration of AI-driven decision-making systems, enhancing battlefield awareness and enabling informed, real-time actions.

Advanced communication networks and all-terrain adaptability further bolster the Army's rapid response capabilities. Swarm drone technology and AI analytics now play a crucial role in coordinated and precision-focused strikes.

These initiatives are aligned with the national vision of #ViksitBharat by 2047, as India marches toward becoming a global leader in defence innovation. The Army embracing futuristic technologies underlines its commitment to safeguarding national interests while preparing for challenges in the evolving global security landscape.

By showcasing these groundbreaking capabilities, the Indian Army reaffirms its status as a modern, forward-thinking force, instilling confidence in its readiness and strategic acumen for future conflicts. The video showcases the Indian Army's latest armoured vehicle, optimised for operations in challenging terrains such as deserts and high-altitude regions. This vehicle is a testament to the Army's commitment to modernising its mobility and survivability capabilities.

The rugged design and advanced communication systems of the armoured vehicle align with the Army's integration of AI-driven innovations and cutting-edge technologies, ensuring effective coordination during multi-domain operations.

It serves as a critical asset in the Army's operational strategy under the Integrated Battle Group (IBG) framework, enhancing rapid deployment and tactical efficiency. This technological leap, combined with AI-enabled decision-making tools and swarm drone capabilities, underscores the Indian Army's dedication to precision and adaptability, making it a formidable force in modern warfare.

The Army continues to showcase its preparedness to tackle diverse threats and ensure the nation's security, furthering its commitment to the vision of #ViksitBharat by 2047.

<https://www.indiatoday.in/india/story/indian-army-news-showcases-artificial-intelligence-driven-capabilities-in-latest-combat-drills-2660008-2025-01-05>

THE ECONOMIC TIMES

Fri, 03 Jan 2024

UK lab develops 'groundbreaking' atomic clock using quantum technology

A "groundbreaking" atomic clock built at a top-secret UK lab will make military operations more secure through experimental quantum technology over the years, the country's Ministry of Defence (MoD) has claimed. Developed at the Defence Science and Technology Laboratory (DSTL), the quantum clock has been dubbed a leap forward in improving intelligence, surveillance and reconnaissance by decreasing the reliance on GPS technology, which can be disrupted and blocked by adversaries.

In a statement on Thursday, the MoD hailed the first device of its kind to be built in the UK to be deployable on military operations in the next five years. It claims that the clock's precision is so refined that it will lose less than one second over billions of years, allowing scientists to measure time at an unprecedented scale.

"Integrating cutting edge technology into existing capabilities exemplifies the government's commitment to innovation in the defence sector, and to ensuring our armed forces have the best kit possible to keep us secure at home and strong abroad," said Maria Eagle, Minister for Defence Procurement and Industry.

"The trial of this emerging, groundbreaking technology could not only strengthen our operational capability, but also drive progress in industry, bolster our science sector and support high-skilled jobs," she said.

The MoD, via DSTL, claims to have invested more than GBP 28 million to shape the UK's research and development to achieve early adopter advantage of such technologies.

The trial is the first time that DSTL has tested a UK-built optical atomic clock outside of a laboratory, offering a new capability beyond the Global Navigation Satellite Systems (GNSS) that currently exist.

According to DSTL, GNSS vulnerabilities are a known national security risk, with atomic clock technology having the potential to provide a stable sovereign-controlled capability for maintenance of precise time for critical operations.

"This first trial of advanced atomic clock represents a significant achievement in the UK's quantum technology capabilities. The data gathered will not only shape future defence effort but is also a signal to industry and academia that we are serious about exploring quantum technologies for secure and resilient operational advantage," said DSTL Chief Executive Paul Hollinshead.

The trial fell within the Demonstration of Advanced Timing Apparatus (DATA) process of a planned series of experiments designed to understand the performance and limitations of quantum clocks, with potential benefits for military and national infrastructure resilience.

Improved clocks such as this atomic device are intended to support current and future defence capabilities.

"The applications of quantum clocks extend beyond precision timekeeping. Further improvement to GPS accuracy could transform global navigation systems, aiding in everything from satellite communication to aircraft navigation," the MoD stated.

"In addition, further research will see the technology decrease in size to allow mass manufacturing and miniaturisation, unlocking a wide range of applications, such as use by military vehicles and aircraft," it said.

Some of the key benefits of the technology include enabling more precise and independent navigation systems, reducing reliance on GPS satellites, which are vulnerable to jamming or destruction in conflict scenarios; secure communications systems, such as encrypted military networks, which depend on highly synchronised timekeeping; enhancing the accuracy of advanced weapon systems, like guided missiles, which rely on accurate timing to calculate trajectories and

coordinate attacks; and allow UK armed forces to gain an edge over adversaries in timing-critical operations, especially in areas like cyber warfare, where milliseconds can make a difference.

The trial involved key partners including Inflection (UK), Aquark Technologies, HCD Research and Imperial College London, as well as in-house technology developed at Dstl's quantum laboratory. These prototype frequency standards were tested in collaboration with the Royal Navy's Office of the Chief Technical Officer and the Army Futures team at the BattleLab.

Commander Matt Steele, the Future Technology Officer for the Royal Navy's Office of the Chief Technical Officer, added: "The Navy has been looking at quantum technologies for a number of years and it is exciting to see that the challenges of physics and engineering in this area are now no longer a scientific concept, but is now reaching the cusp of reality."

"In the next few years, the ability to operate effectively, to survive, and to navigate and also to remain lethal with the use of Quantum alongside GPS will secure operational advantage."

<https://economictimes.indiatimes.com/news/international/global-trends/uk-lab-develops-groundbreaking-atomic-clock-using-quantum-technology/articleshow/116920127.cms>

THE ECONOMIC TIMES

Fri, 03 Jan 2024

AI cannot replace human decision-making on battlefield, Chinese military warns its forces

Investing heavily in modernisation, the Chinese military has cautioned its armed forces against banking heavily on artificial intelligence saying that AI should be a tool to guide but not a replacement for human decision-making in the battlefield because it lacks self-awareness capability.

"As AI evolves, it must remain a tool guided by human judgment, ensuring accountability, creativity, and strategic adaptability remain at the forefront of military decision-making" an article published in People's Liberation Army Daily, the official media of the Chinese military said on New Year's Eve.

"AI must work in tandem with human decision-makers to optimise command effectiveness, enhancing rather than replacing human agency," it said. AI can be used to augment human capabilities - through data analysis, simulations or planning - but cannot replace the human factor.

Human autonomy and creativity are indispensable on the battlefield, it said adding that while human commanders can respond to situations dynamically, and exploit enemy weaknesses AI operates within predefined algorithmic boundaries and its responses often lack originality, it said.

The Daily said PLA preferred a model where "humans plan and AI executes" in which the technology is used to carry out the strategies and tactics developed by commanders and keeps an element of human oversight.

The military prefers a structure where machines analyse data, provide insights and suggest potential actions. However, "final decisions rest with human commanders, safeguarding against errors stemming from AI's black-box nature", the Hong Kong-based South China Morning Post report said. The article said another weakness of the technology is its inability to reflect on its own actions or take responsibility for its decisions, unlike human commanders who can refine their plans in response to the circumstances.

Even advanced systems, such as autonomous missile defence, typically rely on human operators for final decisions to ensure accountability. Last month a comprehensive report by the Pentagon on the Chinese military said the PLA is modernising its capabilities and improving its proficiencies across all warfare domains to become a joint force capable of the full range of land, air, and maritime as well as nuclear, space, counter space, electronic warfare, and cyberspace operations.

But despite its progress, the force still has significant deficiencies including in commander proficiency, long-distance logistics, and urban warfare. The PLA Army (PLAA) continues to modernise equipment and focus on combined arms and joint training to meet the goal of becoming a world-class military by 2049.

The PLAA has continued to demonstrate long-range joint fire capability, the US Department of Defence report titled "Military and Security Developments Involving the People's Republic of China" said.

The PLA Navy (PLAN), numerically has the largest navy in the world, with a battle force of over 370 ships and submarines, including more than 140 major surface combatants. The PLAN is largely composed of modern multi-mission ships and submarines, it said.

PLA Air Force (PLAAF) is modernising and indigenising its aircraft and unmanned aerial systems rapidly, matching US standards. In 2023, the PLA transferred significant portions of PLAN shore-based, fixed-wing combat aviation units, facilities, air defence, and radar units to the PLAAF, the Pentagon report said.

<https://economictimes.indiatimes.com/news/defence/ai-cannot-replace-human-decision-making-on-battlefield-chinese-military-warns-its-forces/articleshow/116915567.cms>



Sun, 05 Jan 2025

100X Faster To Produce, Ukraine To Test AI-Enabled, Anti-Drone Missile Designed To Defeat Russian UAVs

Ukraine will soon test-fire a low-cost, AI-enabled miniature missile designed to counter low-flying drones amid rising Russian drone attacks on the country, including in the capital, Kyiv. The Mark 1 anti-aircraft missile, designed by Estonia-based tech firm Frankenburg Technologies, will be tested in early 2025 at an unspecified location in Ukraine.

The manufacturer said the low-cost miniature missile is designed to use artificial intelligence software to identify and target incoming drones. The missile can counter drones flying at altitudes of up to 2 kilometers or 1.2 miles, Kusti Salm, Frankenburg Technologies' chief executive officer, who previously served as a top official in the Estonian Ministry of Defense, said in an interview with Janes last month.

“Our goal is to help Ukraine win this war. To do this, we offer a sample of a new low-cost missile to shoot down air targets, primarily unmanned aerial vehicles,” Salm told The Kyiv Independent in November 2024. The anti-UAV missile system is also cost-competitive. According to the company's website, it aims to “develop missile systems that are ten times more affordable and a hundred times faster to produce.”

If these tests are successful, Ukraine can also sign a contract for domestic production of the Mark 1 anti-aircraft missile. Notably, Estonia and Ukraine signed a 10-year bilateral security agreement in June last year. The deal stipulated that Estonia would supply Ukraine with defense aid worth more than 100 million euros (US\$107 million) in 2024 and allocate at least 0.25% of its gross domestic product (GDP) annually for military support to Kyiv in the 2024–2027 period. The anti-drone missile test comes at a time when Russia has dramatically increased its drone attacks on Ukraine. Just in the first three days of 2025, Russia launched more than 300 drones against Ukraine, Ukrainian President Volodymyr Zelenskyy wrote in a Telegram post on January 3.

Earlier, CNN reported that Russia has increased its drone attacks on Ukraine by more than six times in the past six months, with strikes rising from around 400 in May to over 2,400 in November. This escalation is fueled by the rapid expansion of the Iranian-designed Shahed drone manufacturing facility in the Alabuga Special Economic Zone in Russia's southern Tatarstan region, about 600 miles east of Moscow.

According to Ukrainian defense intelligence sources, the factory produced 2,738 Shahed drones in 2023 and more than doubled that figure in 2024, manufacturing 5,760 units between January and September. Ukrainian defense officials have also noted that Iranian-designed Shahed drones often fly at very low altitudes to evade air defense systems. Thus, the Mark 1 anti-aircraft missile, which can intercept incoming drones flying at an altitude of up to 2 kilometers, will be a valuable addition to Ukraine's arsenal.

A Rising Estonian Defense-Tech Start-Up

Frankenburg Technologies is a defense-industrial company founded in 2024 and headquartered in Tallinn. It currently operates in Ukraine, Latvia, and Estonia. However, the company will soon start operations in the UK as well.

“Frankenburg Technologies is planning to open a new office in London, initially employing upwards of 50 people. Specializing in the manufacture of low-cost air defense missiles, the rapidly growing company already collaborates closely with the UK defense industry,” the UK prime minister's office said in a statement on December 16, adding that the company “will invest €50 million (US\$52 million) into the UK for research and development into low-cost rocket motors.”

Salm took on the CEO role in September last year after resigning from the Estonian Defense Ministry. He served as Defense Secretary in the Estonian Ministry of Defense. Later, Former

Commander of the Estonian Defense Forces (EDF) Gen. Martin Herem and deputy commander Maj. Gen. Veiko-Vello Palm also joined the company after leaving the EDF.

Ukraine War And The Evolving Anti-Drone Warfare

Cheap, weaponized FPV (First Person View) drones have transformed the battlefield of Ukraine and compelled militaries to innovate numerous novel ways to counter the deadly threat. While traditional air defense systems can protect against drones, the missiles these systems employ are much costlier than the drones. Aircraft and choppers have also been employed in fighting drones. Here, a Ukrainian Mi-8 Helicopter can be seen flying alongside the Shahed drone before a door gunner blasts it with a machine gun. Mi-24 helicopter gunships have also been used to shoot down drones with 23 mm cannons.

Ukrainian and Russian militaries have also experimented with cheap, innovative ways to counter the drone threat. In June 2024, the Russian military showcased its “anti-drone buggy” to counter low-flying drones. The vehicle sports multiple automatic weapons mounted on a light chassis. Unspecified “anti-drone weapons” are fired from the grenade launch tubes mounted at the front and rear of the vehicle.

Similarly, Russian “Turtle Tanks” have also become extremely popular. These ‘wild-looking’ tanks, mainly T-72s, are designed to stop drones and make them explode before reaching the tank itself. These tanks have an improvised steel roof and siding, as well as anti-drone slat armor covering the entire original vehicle. While these tanks are vulnerable to mines and artillery fire, they are better protected against FPV drones.

In April 2023, the Ukrainian military demonstrated its domestically developed ANTI-DRONIC GUN QUERTUS AD G-6. This US\$11,000 anti-drone gun works by throwing radio waves to overwhelm the connection between a drone and its operator. Thus, by severing the connection between the drone and its operator, it can cause them to crash. Both militaries have also experimented with an array of EW devices that work by jamming the drone signals.

Last year, Webslingers were also noticed on the battlefield. Webslingers are essentially net-launching drones that catch and down enemy quadcopters. The tactic is simple: Approach the enemy drone from above, as few FPV Drones have an upward-facing camera. Then, descend before throwing a net at the enemy drone that will entangle it and make it crash. Both Ukrainian and Russian militaries are using these Webslingers.

Any future battlefield will involve the heavy use of drones. As the drone warfare landscape continues to evolve, military planners can ignore this threat at their own peril. They must innovate and design cost-effective solutions to deal with this emerging threat.

<https://www.eurasiantimes.com/ukraine-to-test-estonian-low-cost-ai-enabled-mk1-anti-drone-missile/>



Press Information Bureau
Government of India

Ministry of Science & Technology

Fri, 03 Jan 2025

CSIR-CIMFR Achieves Milestone with First Trial Blast of Dozer Push Mining Method in India

In a groundbreaking achievement for the mining industry, the CSIR-Central Institute of Mining and Fuel Research (CSIR-CIMFR) has successfully conducted the first trial blast for the Dozer Push Mining Method, integrating advanced digital technologies, for the first time in India. This innovative approach developed by CSIR-CIMFR, aims to enhance safety and operational efficiency in mining processes.

The trial was conducted at the PEKB (Parsa East and Kanta Basan) Coal Mine operated by M/s Adani Enterprises Limited in the Udaipur block of Ambikapur, Chhattisgarh. The successful trial was conducted by Adani Natural Resources, one of India's leading private mining companies. The innovative method is expected to revolutionize mining operations with its focus on streamlining processes and improving safety protocols.

The development is a result of sponsored project being undertaken by the Dhanbad based CSIR-CIMFR on Scientific Study for Designing Deep Hole Cast Blasting at PEKB Opencast Coal Mine. The primary objective of the project was to develop a method that not only optimizes the mining process but also ensures that vibration and flyrock are controlled within safe limits. After two years of extensive deliberations, technical evaluations, and adaptations to local mining conditions, the project has successfully tailored the Dozer Push Mining Method for Indian coal mines.



The developed Dozer Push Mining introduces a paradigm shift by utilizing unmanned, automated machinery for mining operations. The trial involved drilling of 108 holes using automated drill machine (man-less), followed by cast/throw blasting using 60 tons of bulk emulsion explosives. Further, the blasted material will be pushed in decoaled area using specially designed, large-sized automated dozer machine.

The dozer push mining method offers a viable alternative to the conventional truck-shovel mining technique or shovel-dumper and dragline methods, with its distinct advantages such as improved efficiency by enabling faster coal recovery, reducing delays caused by adverse weather conditions such as the monsoon season and highly cost-effective, with an estimated 7-10% reduction in operational costs compared to conventional methods. Additionally, it enhances productivity by improving the utilization of dragline machines and reducing unit costs. Moreover, the unmanned operation of the Dozer Push Mining method greatly enhances worker safety, minimizing the risks associated with manual labor and traditional mining techniques.

The first trial was conducted under the leadership of Prof. Arvind Kumar Mishra, Director, CSIR-CIMFR, and the S&T team of CSIR-CIMFR comprising of Dr. Murari P. Roy, Dr. Vivek K. Himanshu, Mr. R. S. Yadav, Mr. Suraj Kumar, and Dr. Ashish K. Vishwakarma. The first trial demonstrated successful drilling and charging operations, precise detonation with minimal environmental impact, and effective material movement using automated machinery. The second phase will involve conducting 8–10 additional trial blasts to refine the blast design further. Final recommendations will focus on optimizing the method for widespread implementation.

The successful implementation of the Dozer Push Mining Method marks a significant advancement for the Indian mining industry. It underscores the potential for adopting cutting-edge technologies to enhance safety, efficiency, and cost-effectiveness in mining operations. This breakthrough is poised to revolutionize mining practices, making them more efficient, cost-effective, and safer, ultimately setting a new benchmark in the industry.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2089955>



Press Information Bureau
Government of India

Ministry of Science & Technology

Fri, 03 Jan 2025

The Design Clinic Facility unveiled at the 71st Foundation Day of National Research Development Corporation (NRDC)

National Research Development Corporation (NRDC) signs Memorandum of Agreement (MoA) with National Institute Design, Madhya Pradesh to promote innovation, research, and design excellence

The Design Clinic Facility was unveiled at the 71st Foundation Day of the National Research Development Corporation (NRDC) at its headquarters in New Delhi. NRDC is currently under the administrative control of the Department of Scientific & Industrial Research (DSIR), Ministry of Science & Technology, Government of India.

Dr. N. Kalaiselvi, Secretary of DSIR and Director General of the Council of Scientific and Industrial Research (CSIR), presided over the event and inaugurated the Design Clinic Facility in partnership with the National Institute of Design, Madhya Pradesh. This state-of-the-art center is designed to support startups, small and medium enterprises (SMEs), and foster design innovation across industries.

Inaugurated by Dr. Kalaiselvi, the facility promises to be a game-changer for India's entrepreneurial ecosystem. It will be an integral part of the one-stop-shop solution being developed by NRDC to support startups."

During the ceremony, Cmde. Amit Rastogi (Retd.), CMD of NRDC, shared the Corporation's rich legacy of fostering technological excellence and driving India's self-reliance by promoting innovation and supporting the startup ecosystem. He also reflected on NRDC's pivotal role in bridging the gap between technological advancements and their application in industry, highlighting the Corporation's commitment to fostering an innovation-driven economy.

A Memorandum of Agreement (MoA) between NRDC and Dr. Vidya Rakesh, Director of the National Institute of Design, Madhya Pradesh, was also signed in the presence of NRDC's Board of Directors and dignitaries from DSIR and CSIR. This partnership aims to promote innovation, research, and design excellence, marking a significant step toward advancing India's design landscape. The MoA exchange symbolizes NRDC's ongoing efforts to create a design facility that supports startups incubated at the NRDC incubation center and serves other stakeholders across the country."

Chief Guest Dr. N. Kalaiselvi, in her address underscored the importance of research, innovation, and collaboration in shaping the future of India's R&D ecosystem, role that NRDC can play in Anusandhan National research Foundation, deeper engagement between NRDC & CSIR and much more. Her address provided a vision for the role that organizations like NRDC will continue to play in supporting India's self-reliance.

NRDC a premier organization dedicated to supporting innovation and entrepreneurship, has granted one crore funding to Adiuvo Diagnostics Pvt. Ltd. under the Technology Development and Validation (TDVC) Scheme Phase 2. This funding, provided in exchange for equity, underscores NRDC's commitment to fostering the growth of startups and MSMEs in the field of advanced diagnostics, helping them scale and bring innovative solutions to market.

Further, NRDC's Best Employee Awards were presented to outstanding staff members Dr. Bhavya Manjeera, Deputy Manager,(Technical) category & Shri Hari Chand, Senior Assistant – Transport (Non- Technical) category who have consistently contributed to the Corporation's success.

A one-minute silence was observed in memory of Dr. Manmohan Singh, the former Prime Minister of India, who recently passed away for his contributions and service to the nation.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2089757>



**Press Information Bureau
Government of India**

Ministry of Science & Technology

Fri, 03 Jan 2025

**CSIR's Indigenously developed "Paracetamol" announced by
Science & Technology Minister Dr. Jitendra Singh**

“CSIR has developed indigenous technology to produce paracetamol, a widely used pain reliever and fever reducer” says Dr. Singh

This innovation aims to make India self-reliant in paracetamol manufacturing, reducing dependence on imported ingredients aligning with Prime Minister Narendra Modi's “Atmanirbhar Bharat” vision

There have been a series of indigenous developments namely India's 1st Indigenously developed Antibiotic- Nafithromycin to treat both atypical and typical drug-resistant bacteria: Dr. Jitendra Singh

40th DSIR Foundation Day celebration marks 16 more Technology
Transfers from CSIR to MSME's

57 technology transfers successful between CSIR and MSME units under
Laghu Udyog Bharati 100 days 100 technology Program

Addressing the 40th Foundation Day of the Department of Scientific and Industrial Research at Dr Ambedkar International Centre here, Union Minister Dr. Jitendra Singh, Minister of State (Independent Charge) for Science and Technology, Earth Sciences (Independent Charge), MoS PMO, DoPT Personnel, Public Grievances and Pensions, Atomic Energy, Space, announced the indigenously developed drug "Paracetamol" , commonly used in pain, fever etc, by the Council of Scientific and Industrial Research (CSIR) which is affiliated to the Ministry of Science & Technology, Govt of India.

The Minister elaborated that CSIR has developed indigenous technology to produce paracetamol, a widely used pain reliever and fever reducer. This innovation aims to make India self-reliant in paracetamol manufacturing, reducing dependence on imported ingredients, he added.

Karnataka-based Satya Deeptha Pharmaceuticals Ltd will utilize this breakthrough to produce affordable paracetamol domestically. Currently, India imports the key raw materials for paracetamol from various countries. Thus the CSIR initiative not only addresses this dependency

but also aligns with Prime Minister Narendra Modi's "Atmanirbhar Bharat" (self-reliant India) vision.

Dr. Jitendra Singh, in his address, traced back the history of DSIR and its contribution for the past decade and recalled its mandate to focus on synergizing collaboration with industry partners to scale up innovation and foster technological growth. He also remembered the birth of CSIR which is a much older organization aimed at India's scientific and industrial progress through research.

Dr. Jitendra Singh also congratulated the team of DSIR on their 40th Foundation Day.

The DSIR Foundation Day marked 16 more technology transfers: 9 CSIR-CSIO Chennai and 6 from CSIR-CEERI, Pilani the technology transfer between CSIR and MSME units registered under LAGHU UDYOG BHARATI under the campaign 100 days 100 technology program. LAGHU UDYOG BHARATI is a registered all India organization of MSME in India since 1994 with more than 60,000 registered members. So far 57 CSIR technologies have been transferred under this campaign and today 16 more are transferred.

The technologies transferred by CSIO are in the area of design and development of scientific and industrial instruments with IoT enabled technologies, while transfers by CEERI are in the area of healthcare and societal implications. One MoU is signed between CSIO and ELCIA, Bengaluru towards mutual collaboration in development of sensors.

The Science and Technology Minister also called this as a moment of celebration for NRDC and CEL. He said our significant work many times remains inside the four walls despite having potential to become a successful enterprise as we often lack the marketing part of it.

Speaking on the pace of technological prowess achieved by India in the past decade, Dr. Jitendra Singh credited the visionary leadership of Prime Minister Narendra Modi who has been a champion of technological development and utilizing its potential for the benefit of the Country.

Dr. Jitendra Singh underscored that even before we had the scientific acumen what lacked was the prioritization of innovation and entrepreneurship. After 2014 the taboo was broken and Government and non-government sectors collaborated on a large scale. The success in the Space sector is the evidence of it with now Startups launching satellites from Sriharikota.

Dr. Jitendra Singh also lauded ISRO for the recent SPADEX (Space Docking exercise) mission which is a landmark making India leaders among few nations to have developed the capability.

Recalling the Success achieved in 2024 and more specifically the third Term Of the government popularly called as MODI.3.0, He said there has been a series of indigenous development naming India's 1st Indigenously developed Antibiotic- Nafithromycin to treat both atypical and typical drug-resistant bacteria. Going further he also mentioned that 1st ever successful trial of Gene therapy for treating the Blood disorder Haemophilia.

Highlighting the achievements of CSIR, Dr. Jitendra Singh praised the efforts of CSIR and enumerated the development of 108 petal Lotus, hydrogen bus, Biofuels, the success of Aroma Mission i.e. Lavender cultivation which got featured in Republic Day Tableau and lauded by the Prime Minister himself. And recent progress on indigenously developed paracetamol.

According to Dr. Jitendra Singh, all the arms of Government should work in synergy and called for a Whole of Government and Whole of Science Approach. He recalled the initiatives One week One Theme (OWOT) And One week One Lab (OWOL) of CSIR which were the brainchild of the Science and Technology Minister. He also mentioned that PM Modi believes in Women-led development and thus women scientists and StartUps are being all necessary help by the government, he said.

Towards the conclusion of his speech, Dr. Singh emphasized that it is high time for us to look beyond government resources for innovation and we should start exploring non-government funds along Knowledge partnership and resource sharing. He underlined that Anusandhan NRF is the Step in the same direction where 60% of the funds will be raised by non-government sectors. he reaffirmed the scientific community that 2025 will also be a power packed year for science and technology with innumerable ventures coming up.

Dr. N. Kalaiselvi, Secretary DSIR, DG CSIR in her remarks recalled the signing of the Guwahati science declaration by the members which aimed at becoming a global economic hub in 2047.

Prof. A.K. Sood, Principal Scientific Advisor to the government of India emphasized on making our country a product-based economy and a good part of our country should come from tech related products. he also gave us an example of the USA, where 9% of their economic growth is based on the tech sector. He also attributed that we have to become a product economy from a service economy and this product economy should be based on our own design. Senior Scientists from DSIR and industry leaders, MSME's were present in large numbers during the celebration.

<https://pib.gov.in/PressReleasePage.aspx?PRID=2090312>



Fri, 03 Jan 2025

Covid-like virus in China: What is HMPV and what are its symptoms?

Videos circulating on social media purportedly showed that hospitals in China are overwhelmed by a surge in respiratory illnesses, including human metapneumovirus (HMPV). Social media posts claim that outbreaks of multiple viruses—HMPV, influenza A, Mycoplasma pneumoniae, and Covid-19—have led to overcrowded hospitals and cemeteries.

Reports indicate a rapid spread of HMPV, which presents symptoms similar to flu and Covid-19, raising concerns among health officials. Videos showed crowded hospitals, with unverified claims of a state of emergency in China. The situation has sparked fears of a potential pandemic five years after Covid-19 disrupted global life.

However, no credible sources have confirmed these claims. Chinese health authorities and the World Health Organisation (WHO) have not reported a new pandemic or issued any emergency warnings. The WHO has also not declared any health crisis related to HMPV.

All you need to know about HMPV

The American Lung Association identifies human metapneumovirus (HMPV) as a significant cause of acute respiratory infections. Discovered in 2001 by researchers in the Netherlands, HMPV typically spreads through close contact with infected individuals, either via respiratory secretions from coughing or sneezing or by touching contaminated surfaces like toys or doorknobs.

In the United States, HMPV tends to circulate more frequently during the winter and spring months, coinciding with the prevalence of other respiratory infections such as Respiratory Syncytial Virus (RSV) and the flu.

Symptoms of human metapneumovirus (HMPV) can vary in severity and commonly include cough, fever, runny or stuffy nose, and sore throat. Some individuals may also experience wheezing and shortness of breath (dyspnea). In certain cases, a rash may also develop as part of the infection.

Who does it affect and how?

Children, the elderly, and individuals with weakened immune systems are at higher risk of complications from HMPV infection.

The virus spreads through close contact with an infected person or by touching contaminated surfaces.

HMPV typically causes cold-like symptoms that generally resolve on their own within 2-5 days.

Most cases of HMPV in children occur in those aged 5 years or younger. A small percentage (5-16%) may develop lower respiratory tract infections, such as pneumonia.

Who is at risk?

HMPV can lead to both upper and lower respiratory illnesses across all age groups. However, it is particularly prevalent among young children and the elderly, where it is more likely to progress into conditions such as bronchiolitis, bronchitis, or pneumonia.

While having a history of lung diseases like asthma, Chronic Obstructive Pulmonary Disease (COPD), or emphysema does not increase the likelihood of contracting HMPV, these conditions can worsen the severity of symptoms once infected. The same applies to individuals with weakened immune systems, such as those undergoing chemotherapy or recovering from organ transplants.

<https://www.hindustantimes.com/world-news/what-is-hmpv-what-we-know-about-the-virus-raising-covid-like-concerns-in-china-101735882259627.html>

Cowpea seeds sprouts in space, leaves expected soon, says ISRO

A batch of cowpea seeds — better known as lobia in Hindi or thattapayaru in Tamil — have successfully sprouted in space, days after they were taken into orbit by an Indian Space Research Organisation (ISRO) mission. The space agency has also successfully operated India's first space robotic arm, it announced on Saturday (January 4, 2025).

The two experiments were part of the 24 payloads flown on the PSLV-C60 SpaDeX mission's PS4-Orbital Experiment Module (POEM-4) on December 30, 2024.

In a series of posts on X, ISRO said, "Life sprouts in space! VSSC's CROPS (Compact Research Module for Orbital Plant Studies) experiment onboard PSLV-C60 POEM-4 successfully sprouted cowpea seeds in 4 days. Leaves expected soon."

"#RRM_TD, India's first space robotic arm, is in action onboard #POEM4! A proud #MakeInIndia milestone in space robotics. #ISRO #SpaceTech," the agency said in another post.

Growing crops in spaceThe CROPS payload, developed by the Vikram Sarabhai Space Centre (VSSC), is envisioned as a multi-phase platform to develop and evolve ISRO's capabilities for growing and sustaining flora in extra terrestrial environments.

SpaDeX first of many as ISRO prepares for Chandrayaan-4

"Designed as a fully automated system, a five to seven-day experiment is planned to demonstrate seed germination and plant sustenance until the two-leaf stage in a microgravity environment," ISRO had said prior to the launch. The experiment plans to grow eight cowpea seeds in a closed-box environment with active thermal control.

Walking robotic armThe Relocatable Robotic Manipulator-Technology Demonstrator (RRM-TD), also known as the Walking Robotic Arm, is India's first space robotic manipulator with walking capability, developed by IISU. It is a 7 Degree of Freedom (DoF) robotic arm that will perform relocation through 'inchworm walking' to defined targets on the POEM-4 platform.

"This experiment will demonstrate a large workspace for in-orbit servicing with robotic manipulators comprising indigenous robotic joints and arm controllers, a grappling mechanism and standardised adaptor with power and data transfer, cameras for eye-in-hand operation, and advanced software architecture with obstacle-aware motion planning and several layers of safety features deployed on a high-compute processor," ISRO said.

It added that the experiment will serve as a precursor technology demonstrator for certain robotic technologies of Bharatiya Antariksh Station (BAS), such as end-on-end walking, microgravity operation of robotic arms, vision-based 6DoF pose estimation, visual inspection of stages, robotic

manipulation through visual servoing and compliance control, harness-free operation using power and data grappling fixtures, tele-operation, and a digital twin.

<https://www.thehindu.com/sci-tech/science/life-sprouts-in-space-says-isro-after-cowpea-seeds-germinate-under-microgravity-conditions/article69061686.ece>

THE ECONOMIC TIMES

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Andhra Pradesh-based N Space Tech tests ultra-high-frequency communication tech on ISRO's POEM-4

Andhra Pradesh-based space start-up N Space Tech on Friday said it has successfully tested an indigenously-developed ultra-high-frequency communication system on its payload SwetchaSat onboard the ISRO's POEM-4 platform. The start-up received its first set of data packages sent by SwetchaSat-V0 at the ground station at the ISRO Telemetry, Tracking and Command Network (ISTRAC) in Bengaluru at 9:20 pm on January 1.

"This remarkable achievement showcases our capability in ultra-high-frequency (UHF) communication with precision and reliability, cementing our position as a leader in space technology. It also represents a significant step in our endeavour to advance satellite-communication technology," N Space Tech co-founder Divya Kothamasu told PTI.

Building on this achievement, the start-up is now setting sights on future missions to demonstrate capabilities up to the Ku-band, she said. The communication, power, computing and sensor modules of the SwetchaSAT payload were designed and developed indigenously at N Space Tech.

"SwetchaSAT, an ultra-high-frequency communication technology demonstrated by N Space Tech on the POEM-4 platform of PSLV C60, paves the way for faster and more reliable communication for many satellite applications," Sudheer Kumar N, a former director at the Indian Space Research Organisation (ISRO), said.

"The success of SwetchaSAT-V0 marks a critical step forward in our mission to develop and deploy advanced communication technologies," Kothamasu said. Founded in 2020, N Space Tech specialises in satellite-communication systems and space solutions.

The ISRO's PSLV Orbital Experimental Module (POEM-4) platform re-purposes the spent fourth stage of the PSLV rocket into a stable orbital environment for experimental payloads. The POEM-4 platform has 24 payloads from various ISRO laboratories, private start-up firms and educational institutes.

<https://economictimes.indiatimes.com/news/science/andhra-pradesh-based-n-space-tech-tests-ultra-high-frequency-communication-tech-on-isros-poem-4/articleshow/116914990.cms>

Remembering R Chidambaram, a world-class physicist who shaped India's nuclear weapons programme

Rajagopala Chidambaram, the architect of India's nuclear weapons programme who played a key role in the atomic tests at Pokhran in 1974 and 1998, passed away in Mumbai on Saturday morning. He was 88.



A world-class physicist and an astute science administrator, Chidambaram made legendary contributions to the field of nuclear physics, besides introducing innovative technologies to empower communities in rural India.

Chidambaram joined the Bhabha Atomic Research Centre (BARC) in 1962 and rose to become its director in 1990. In 1993, he helmed the country's nuclear programme as chairman of the Atomic Energy Commission and as secretary in the Department of Atomic Energy, a post he held till 2000.

Post retirement, he was appointed as the principal scientific advisor (PSA) to the Government of India in 2001, a post he held till 2018.

He also served as chairman of the board of governors of the International Atomic Energy Agency (IAEA) (1994-1995). As PSA, Chidambaram steered India's forays in the fields of nano-electronics, implemented the National Knowledge Network, and set up Rural Technology Action Groups (RuTAG) to find rural applications for advanced technologies.

He also championed initiatives in areas such as energy, healthcare and strategic self-reliance, and steered numerous projects that significantly advanced India's science and technology landscape. Chidambaram will be best known for his contributions to India's nuclear weapons programme with which he had been associated since 1967, when peaceful nuclear explosion technology was much talked about globally.

He represented India at various global conferences organised by the International Atomic Energy Agency. As part of Operation Smiling Buddha—the 1974 nuclear tests—Chidambaram was known to have personally brought the plutonium from Mumbai to Pokhran in Rajasthan.

He had famously donned army fatigues along with the then Defence Research and Development Organisation (DRDO) chairman APJ Abdul Kalam while working on the Pokhran-II tests—dubbed Operation Shakti—in 1998. Chidambaram was at the helm of India's atomic programme when five nuclear tests were conducted on May 11 and May 13 in 1998.

The then prime minister Atal Bihari Vajpayee declared India as a nuclear weapons state. Among the five nuclear tests was also the thermo-nuclear device, popularly known as the neutron bomb.

Vajpayee's visit to ground zero in Pokhran days after the nuclear tests were conducted also was a testimony to the fact that there was no radioactivity contamination at the site. Over a decade later, when some scientists associated with the 1998 nuclear tests questioned the efficacy of the thermo-nuclear device, Chidambaram and his successor Anil Kakodkar led a stout defence of the outcome.

Born on November 12, 1936, in Chennai, Chidambaram did his initial schooling at the Sanatan Dharam High School in Meerut. From eighth standard onwards, he studied at the PS High School at Mylapore in Chennai and graduated from the Presidency College. Chidambaram did his postgraduate studies at Indian Institute of Science in Bengaluru.

He was honoured with prestigious accolades, including the Padma Shri in 1975 and the Padma Vibhushan in 1999. He also received honorary doctorates from several universities and was a fellow of eminent Indian and international science academies. He is survived by wife Chella and daughters Nirmala and Nithya.

"Dr Chidambaram was a doyen of science and technology whose contributions furthered India's nuclear prowess and strategic self-reliance. His loss is an irreparable one for the scientific community and the nation," Ajit Kumar Mohanty, Chairman, Atomic Energy Commission, said.

Chidambaram will be remembered as a "trailblazer, an inspirational leader, and a dedicated mentor to countless scientists and engineers", he said.

<https://www.theweek.in/news/defence/2025/01/04/remembering-r-chidambaram-a-world-class-physicist-who-shaped-indias-nuclear-weapons-programme.html>

