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DRDO AT AERO INDIA 2025: ADVANCING INDIA'S AEROSPACE POWER

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DRDO AT AERO INDIA 2025: ADVANCING INDIA'S AEROSPACE POWER

Aero India 2025, the 15th edition of Asia's premier aerospace and defence exhibition, took center stage at the Yelahanka Air Force Station, Bengaluru, during 10-14 February 2025. Organized under the aegis of the Ministry of Defence, Government of India, the biennial event showcased cutting-edge aerospace technologies, facilitating global partnerships and strengthening India's defence capabilities. The Defence Research and Development Organisation (DRDO) played a pivotal role in the event, presenting a comprehensive display of indigenous innovations that underscored India's self-reliance in defence.

Aero India 2025 was inaugurated by Hon'ble Defence Minister Shri Rajnath Singh, in the presence of senior officials from the Indian Armed Forces, DRDO, Hindustan Aeronautics Limited (HAL), and other key defence industry leaders. The event saw participation from over 700 exhibitors, including 150 foreign companies, showcasing the latest advancements in aerospace and defence technologies. This year's theme, "The Runway to a Billion Opportunities", emphasized India's commitment to boosting domestic defence production and fostering global collaborations.

As the backbone of India's defence R&D ecosystem, DRDO's participation at Aero India 2025 focused on highlighting its latest advancements in aerospace, avionics, defence electronics, unmanned systems, air defence, and artificial intelligence-based warfare technologies. DRDO's dedicated pavilion, spread across multiple zones, featured interactive displays, full-scale models, Augmented Reality (AR) simulations, and live demonstrations of breakthrough technologies. The key technologies and systems unveiled during the event were Advanced Medium Combat Aircraft (AMCA), Archer-NG UAV, Uttam AESA Radar and Virupaaksha Surveillance System, Skystriker Loitering Munition, Swarm Drone Technology and Autonomous Combat Systems, Hypersonic Technologies.

As a prelude to Aero India, DRDO also organised the 15th edition of the Biennial Aero India International Seminar in association with the Aeronautical Society of India (AeSI) during 8-9 February 2025 in Bengaluru. The theme of the seminar was 'Futuristic Aerospace Technologies: Challenges in Design Validation', covering emerging trends in futuristic aerospace technologies and military airworthiness & certification: challenges in design and testing. The seminar provided valuable insights about cutting-edge technologies, a platform to explore collaborative research opportunities and forge strategic partnerships, while advancing the future of aerospace and defence technologies.

"As technology has transformed the nature of warfare from conventional to unconventional & asymmetric, India must stay abreast with the latest advancements," said Raksha Rajya Mantri Shri Sanjay Seth while addressing the DRDO seminar in Bengaluru on 11 February 2025. Hon'ble Raksha Rajya Mantri lauded the efforts of DRDO, industry, including MSMEs & start-ups, and academia in making the country self-reliant in defence manufacturing. He urged them to come out with latest innovations and contribute in realising the vision of Viksit Bharat by 2047.

Technology has transformed the nature of warfare; India must stay abreast with latest advancements: Hon'ble Raksha Rajya Mantri during DRDO seminar at Aero India 2025

35 Licensing Agreements for Transfer of Technology for 19 cutting-edge Technologies handed over to 32 Industries during the event.

The seminar 'DRDO-Industry Synergy towards Viksit Bharat: Make in India, Make for the World' was organised on the sidelines of 15th Aero India. During the event, 35 Licensing Agreements for Transfer of Technology (LATOT) for 19 niche technologies of 16 DRDO laboratories were handed

over to 32 industries to nurture indigenous technologies in the defence sector and increase awareness among prospective customers in India and abroad.

Hon'ble Raksha Rajya Mantri also released the revised DRDO policy for Transfer of Technology (ToT). The policy aims to further streamline the ToT process from DRDO to industries, granting them easier access to latest technologies and DRDO expertise, while enhancing the ease of doing business for SMEs in defence R&D. He also released the updated compendium titled 'DRDO Products for Export' consisting of more than 200 products and systems showcasing India's cutting-edge defence capabilities to friendly nations.

An Airworthiness Policy Framework - IMAP-23 was also released during the event. The document provides a paradigm shift in the certification procedure of the military aviation sector by capturing emergent requirements of Indian industry. An airworthiness certification kit was also released. It is a comprehensive compilation of policy documents and templates to enable easy appreciation of certification requirements by industries.

During the event, Exchange of Tripartite MoU took place among Centre for Military Airworthiness and Certification, Defence Institute of Advanced Technology and the Aeronautical Society of India on Designated Engineer Representative implementation. The MoU will facilitate training engineers towards undertaking certification tasks.

Defence industries, government agencies, delegations from friendly nations and defence attachés participated in the seminar. It included presentations from scientists and leading experts on export of defence products from India. The event also marked a panel discussion on 'Opportunities for Industries in Defence Export'.

DRDO indoor pavilion at Aero India was meticulously divided into 9 themes, encompassing core areas of defence innovation. The themes were: 'Airborne Surveillance Solutions', 'Naval Warfare', 'Next-Generation Missile Systems', 'Supremacy in the Skies – ADA's 5th Gen Leap', 'Unmanned Aerial Systems', 'Radar Scape: Mapping the Invisible', 'Maritime Sentinel: A New Era of Surveillance & Safety', 'Sensors Suite for Fighter Aircraft' and 'Rakshak'. The pavilion was displaying over 330 products which were categorised into 14 technology zones. It provided an in-depth exploration of key defence areas, namely Advanced Materials & Composites; Surveillance & Reconnaissance Technology; Antenna & Microwave Technology; Soldier Support Systems; Combat Aircraft Technology; Corporate Directorates; Micro Electronic Devices, Computational Systems and Cyber Security; Land Systems & Munitions; Missile Technology; Next-Gen Combat Vehicles & Tactical Mobility; Photonics, Laser and Quantum Technology; Electronic Warfare & Communication; Simulation & Training Technology; and Aero Propulsion Technology. The indoor pavilion was also displaying the products developed under Technology Development Fund (TDF) Scheme being executed by DRDO.

The outdoor segment of DRDO pavilion was designed to demonstrate the real-world application of cutting-edge defence technologies featuring full-scale model of QRSAM Mobile Launcher Vehicle, Akash NG Launcher; Archer UAV 1:1 (Rustom-1); Air Droppable Survival and Rescue Kit (SARK); Emergency Escape Parachute System for Air Crew (EEPSA);

Military Combat Parachute System (MCPS); Vehicle Mounted Jammer; Anti UAV (JAU) Entity of Project DHARASHAKTI, and VHF Radar.

One of DRDO's key focus areas at Aero India 2025 was enhancing India's defence exports. In line with the government's vision of achieving $5 billion in defence exports by 2025, DRDO showcased systems that have garnered interest from international buyers. Countries from Africa, Southeast Asia, and the Middle East expressed keen interest in purchasing Akash missile systems, loitering munitions, and advanced surveillance radars.

Prize distribution ceremony of Defence Innovation Challenge for Excellence 2024 at Aero India 2025

The grand finale and prize distribution ceremony of the Defence Innovation Challenge for Excellence (DICE-2024) was organised during Aero India 2025 in Bengaluru on 12 February 2025. The competition witnessed an overwhelming response, attracting applications from 47 cities across 17 states. After rigorous screening across three levels, 24 start-ups advanced to the grand finale, with winners selected across three categories: Revenue Stage, Pre-Revenue Stage, and Idea Stage. The grand jury panel for the finale featured senior officials from the Armed Forces, Distinguished Academicians, and seasoned industry leaders. Winners were awarded a total cash prize of Rs 6.50 lakh, along with exclusive incubation and seed funding opportunities through MAGIC. DICE-2024 was launched in October 2024 to identify and support cutting-edge solutions for critical defence challenges while enabling start-ups to transform their research into commercially viable technologies.

Speaking on the occasion, Dr BK Das, DG (ECS), DRDO emphasised the crucial role of initiatives like DICE-2024 in strengthening India's defence innovation ecosystem. Challenges like DICE-2024 provide a crucial platform for breakthrough technologies, he added. The event was organised by the Marathwada Accelerator for Growth and Incubation Council (MAGIC), and powered by DRDO and the 3D Engineering LLP, with support from Start-up India, the Office of the Scientific Advisor to the Government of India, iDEX, and the Maharashtra State Innovation Society.

DRDO's stellar participation in Aero India 2025 reaffirmed India's status as a rising aerospace power. By showcasing indigenous defence innovations, fostering global collaborations, and strengthening India's air defence ecosystem, DRDO has taken a giant leap toward self-reliance in defence manufacturing. As the organization continues to push the boundaries of innovation, India's vision of Atmanirbhar Bharat (self-reliant India) in defence is becoming a reality.

Also, the DRDO's exhibition at Aero India 2025 was an excellent opportunity for the Indian aerospace community to foster the cause of indigenous development of military systems and technologies with the spirit of self-reliance and national pride. Working towards the vision of Samarth and Shashakt Bharat, DRDO is developing the indigenous capabilities of the country by equipping the Armed Forces with state-of-the-art technologies & equipment, and bolstering the defence sector through collaboration with the private sector.


DRDO

GLIMPSES OF AERO SHOW DURING THE AERO INDIA 2025

DIA-COE AT IIT-H DEMONSTRATES LARGE AREA ADDITIVE MANUFACTURING SYSTEM

A groundbreaking breakthrough has been achieved in DRDO-Industry-Academia Centre of Excellence (DIA-CoE) at IIT-Hyderabad in the area of Large Area Additive Manufacturing (LAAM) System. The collaborative efforts between IIT-Hyderabad, DRDO's Defence Research & Development Laboratory (DRDL), Hyderabad, and industry partners have significantly contributed to the achievement of the overall growth of additive manufacturing in the country. The application demonstration of the LAAM system is based on powder-based directed energy deposition technology for the fabrication of rocket components.

The indigenously designed machine has a build volume of 1m x 1m x 3m, which makes it one of the largest metal additive manufacturing machines in India. The process is based on laser and blown-powder-based direct energy deposition technology and employs dual heads for thermal balancing and speed.

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

Dr Samir V Kamat, Secretary, DD R&D & Chairman, DRDO, congratulated DIA-CoE, IIT Hyderabad, for the design, development, and demonstration of the LAAM system.

This will open up new possibilities for large-scale production of metal parts, paving the way for growth and innovation in the area of additive manufacturing in the country, he said.

LAUNCH OF EIGHTH MISSILE CUM AMMUNITION (MCA) BARGE, LSAM 11 (YARD 79)

Launch ceremony of eighth MCA Barge, LSAM 11 (Yard 79) was held on 14 February 2025 at launch site of M/s Secon Engineering Projects Pvt Ltd Visakhapatnam. Chief Guest for the launching ceremony was Cmde N Gopinath, AGM (PL), ND (Mbi). The contract for construction of eighth Missile Cum Ammunition Barges was concluded with MSME Shipyard, M/s SECON Engineering Projects Pvt Ltd, Visakhapatnam. These Barges have been indigenously designed and built by the Shipyard in collaboration with an Indian Ship Designing firm and Indian Register of Shipping (IRS).

Model testing was undertaken at Naval Science and Technological Laboratory (NSTL), Visakhapatnam to ensure seaworthiness.

The Shipyard has successfully delivered seven of these Barges till date and are being utilized by Indian Navy for its operation evolutions by facilitating Transportation, Embarkation and Disembarkation of articles/ ammunition to IN platforms both alongside jetties and at outer harbours.

DRDO RELEASES REDEFINED AND AUGMENTED RESEARCH VERTICALS AND THRUST AREAS ACROSS DIA-COES

Directorate of Futuristic Technology Management (DFTM), DRDO HQrs on 7 February 2025 released the redefined and augmented Research Verticals and Thrust Areas across DRDO Industry Academia – Centres of Excellence (DIA-CoEs) to streamline and enhance the focus of directed research. The realignment and augmentation of research areas include future technology requirements of DRDO laboratories and deep technology research areas. The existing 65 research verticals distributed across 15 DIA-CoEs have been redesigned into 82 research verticals. This important development is part of a strategic effort to refine the DIA-CoEs' research focus and introduce cutting-edge deep technology research areas to strengthen the overall research outcomes.

Some of the new areas added to the bouquet of research verticals are 'Compound Semiconductor Technologies' at IITB, 'Laser Beam Combining based Communication, Power Transmission & Manufacturing and Extraction & Recycling of Materials' at IIT-H, 'Software Defined Radios' at IITK, 'Emerging RF Technologies' at IITR and 'Cryptography and Information Security' at IIT-Kgp and many more. The new realignment is expected to encourage stronger multi-institutional research collaboration engaging Industry & academia, minimise duplicative efforts, and maximise resource utilisation across the institutions. Additionally, it will also ensure that DIA-CoEs contribute meaningfully to address DRDO's future technology challenges and shaping the future of defence technology.

SUCCESSFUL SUCCESSIVE FLIGHT-TRIALS OF VERY SHORT-RANGE AIR DEFENCE SYSTEM

DRDO successfully conducted three successive flight trials of the Very Short-Range Air Defence System (VSHORADS) from Chandipur off the coast of Odisha. These tests were carried out against high-speed targets flying at very low altitude. During all three flight tests, the missiles intercepted and completely destroyed the targets, having reduced thermal signatures mimicking low-flying drones at different flying conditions.

The flight tests were carried out in the final deployment configuration, wherein two field operators carried out weapon readiness, target acquisition, and missile firing.

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

VSHORADS is a man-portable air defence system designed and developed indigenously by Research Center Imarat in collaboration with other DRDO laboratories and development cum production partners. The missile system has the capability to meet the needs of all three branches of the Armed Forces, viz., the Indian Army, Navy, and Air Force.

Hon'ble Raksha Mantri Shri Rajnath Singh congratulated DRDO, the Armed Forces, and the industries for the successful flight tests, terming it a great success. Dr Samir V Kamat, Secretary, DDR&D & Chairman DRDO, also congratulated the entire DRDO team, users, and industry partners.

ADC-150 IN-FLIGHT RELEASE TRIALS FROM P8I AIRCRAFT

The ADC-150 is an air-droppable container with a 150 kg payload capacity. The ADC-150 was reconfigured and developed for integration on the P-8I aircraft. ADC shells were designed and developed with CFRP material to meet the weight constraint. The ADC-150 was interfaced with the aircraft's Bomb Release Unit (BRU). A weight simulated mock-up model was developed and used for form fit trial and pit drop trial. During the pit drop trial, the high speed photogrammetry instrumentation was used to measure the ejection speed of ADC from the BRU.

The store separation studies were conducted with the input conditions finalised by the user. Different scenarios were modeled, and the simulation results were reviewed by NFTS and RCMA, Kanpur.

The ADC-150 was realised and the Safety of Flight Tests (SOFT), comprising shock, vibration, acceleration, CATH, and other load tests as per the CEMILAC-approved SOFT schedule, were completed within a short span of three weeks. The carriage and handling trials of ADC-150 were conducted on the aircraft successfully. The maiden in-flight release trial of ADC-150 from the P-8I aircraft was conducted successfully on 22 January 2025, with the aircraft flying at 2000 ft altitude and 270 KIAS.

Naval Science & Technological Laboratory (NSTL), Visakhapatnam, in association with Aerial Delivery Research & Development Establishment (ADRDE), Agra, have developed the ADC-150 system. The Defence Research & Development Laboratory (DRDL), Hyderabad, has provided the photogrammetry instrumentation scheme for the trial.

The flight clearance certification was given by the Regional Centre for Military Airworthiness (RCMA), Kanpur.

The successful integration and trial of the ADC-150 to P8I will strengthen the enhancement of the naval operational logistics capabilities by providing a quick response to meet the requirement of critical engineering stores to ships (under distress), which are deployed more than 2,000 km from the coast. It reduces the requirement of ships to come close to the coast to collect spares and stores.

DRDO SUCCESSFULLY COMPLETES USER TRIALS FOR CBRN WPS

The CBRN WPS system has successfully completed all the user trials in stipulated time frame work based on AoN from Army and Air Force and further issued trial directives. The user trials of CBRN WPS for high altitude operability, functionality, CBRN agent's purification capability, desert trials, EMI-EMC evaluation and MEG trials were conducted at several designated locations and successfully completed as per the defined schedule.

During CBRN warfare and disaster scenario, water bodies becomes contaminated with fallout radioactive dust, dispersed chemical and biological agents, toxins, etc. Such water if ingested, leads to severe health issues and may lead to death. The system is capable to purify contaminated water due to CBRN agents, high turbidity & salinity and useful for the Services for getting decontaminated and potable water during any war and emergency scenario. It is operable in desert, plains and high altitude area, with sub-zero temperature storage capability. The system is developed by Defence Laboratory, Jodhpur (DLJ) based on QRs from Army and Air Force

VRDE'S PARTICIPATION AT KK RANGE FIRE DEMONSTRATION

Armored Corps Centre & School (ACC&S), Ahmednagar organizes a firing DEMO at KK Ranges every year. This year Integrated Firepower and Maneuver Exercise were conducted by ACC&S at KK Range, Ahmednagar during 1 to 20 January 2025.

Various combat vehicles and defence equipment were showcased during the live firing demonstration, showcasing the strength and accuracy of the Indian Armed Forces.

The Vehicles Research and Development Establishment (VRDE), Ahmednagar, participated in this demonstration and showcased the Wheeled Armoured Platform and Mounted Gun System (MGS) to various dignitaries, army officers, NDA cadets, defence civilians, and schoolchildren.

DEMONSTRATION OF MULTI-PURPOSE DECONTAMINATION SYSTEM

Disaster management is a major concern of any country and has resulted in tremendous increase in scope of work to be carried out by relief forces. Throughout the world, technology is getting deeply exploited by relief forces in recovery and mitigation of disasters. Vehicle Research Development Establishment (VRDE), Ahmednagar has developed a Multi-Purpose Decontamination System (MPDS) capable to rapidly and effectively remove the contaminant(s) from personnel, equipment, and terrain from protection against CBRN warfare agents. Directorate of Low Intensity Conflict (DLIC) organized demonstration of MPDS system to NDRF team on 15 January 2025.

FLAG-OFF CEREMONY OF SIGINT SYSTEM FOR SUBMARINES

The flag-off ceremony of the SIGINT system (RWR and Warner) segments for the Programme Integrated Combat Suite (ICS) for submarines was held on 6 January 2025. The event was graced by Shri N Srinivas Rao, DS & Director, DLRL, along with senior officers from DLRL and BEL. The Program ICS was taken up as a mission mode project by NPOL to provide indigenous sensors for a conventional submarine platform with DLRL as a participating laboratory, mandated to develop Warner ESM for Optical Periscope, RWR for Optronic Periscope, and SIGINT System (RESM and CESM) on a single integrated mast.

The systems have been designed, developed, and successfully completed laboratory demonstration.

The flag-off event marks a significant milestone for the project towards the integration of Warner and RWR systems with Periscope.

This would pave the way for indigenous multi-sensor head units for submarine platforms with seamless functionality of periscopes, ESM, COM, and GPS.

REPUBLIC DAY 2025 CELEBRATIONS

CAIR, Bengaluru

Centre for Artificial Intelligence and Robotics (CAIR), Bengaluru, celebrated 76th Republic day on 26 January 2025. Dr Rituraj Kumar, OS & Director, CAIR, hoisted the national flag and addressed the gathering. In his address, Director, CAIR highlighted the importance of our constitution, fundamental duties, and responsibilities. In addition, he also mentioned the recent achievements of CAIR in various projects. Director, CAIR distributed welfare and sports prizes to the winners.

DEAL, Dehradun

Defence Electronics Applications Laboratory (DEAL), Dehradun, celebrated Republic Day 2025. This year the responsibility of DRDO Tableau for Republic Day 2025 was entrusted to DEAL. DG (ECS) envisioned the theme of Tableau as 'Raksha Kavach,' a multilayered protection from adversary threats to Indian land mass, air, and underwater. This was beautifully captured by the multi-lab implementation team. The DRDO Tableau was led by Contingent Commander Shri Sachin Kumar, Sc 'E' of DEAL.

DMRL, Hyderabad

The Defence Metallurgical Research Laboratory (DMRL), Hyderabad, celebrated the 76th Republic Day on 26 January 2025. Dr R Balamuralikrishnan, OS & Director, DMRL, unfurled the national tricolour and extended heartfelt greetings to the DMRL community. He highlighted the pivotal role of the organization in contributing to the nation's security and well-being and expressed pride in the laboratory's remarkable achievements across various domains. A highlight of the celebrations was the impressive march past by the DSC Corps platoon, resplendent in their ceremonial uniforms, which captivated the audience and added grandeur to the occasion.

DMSRDE, Kanpur

Defence Materials and Stores Research & Development Establishment (DMSRDE), Kanpur, celebrated the 76th Republic Day with great zeal on 26 January 2025. Dr Mayank Dwivedi, OS & Director, DMSRDE, unfurled the national flag. He addressed the gathering and congratulated all the employees and their families. Several DMSRDE employees presented patriotic poems and songs on the auspicious occasion. The event was coordinated by Dr Ajay Katiyar, Sc 'E'.

ITM, Mussoorie

The Institute of Technology Management (ITM), Mussoorie, celebrated the 76th Republic Day with great zeal and high spirit on 26 January 2025. Shri SP Dobhal, Director, ITM, unfurled the national flag and expressed his deep appreciation for the rich cultural heritage and unity

in diversity of the nation. The Director venerated the framers of our constitution and the upholders of democracy in this nation.

LRDE, Bengaluru

The 76th Republic Day was celebrated in a grand manner at Electronics and Radar Development Establishment (LRDE), Bengaluru, on 26 January 2025. Shri Gampala Viswam, DS & Director, LRDE, unfurled the national flag, followed by the national anthem. The Director expressed his happiness and heartfelt thanks. He addressed the gathering and distributed appreciation certificates to Service Personnel.

MTRDC, Bengaluru

Republic Day was celebrated at the Microwave Tube Research & Development Centre (MTRDC), Bengaluru, on 26 January 2025. The celebration started with flag hoisting by Dr SK Datta, OS & Centre Head, MTRDC, followed by his address to the gathering.

NMRL, Ambernath

The 76th Republic Day was celebrated in the Naval Materials Research Laboratory (NMRL), Ambernath, on 26 January 2025 with patriotic spirit and enthusiasm. The celebrations commenced with the hoisting of national flag by Shri PT Rojatkar, OS & Director, NMRL.

He wished NMRL employees and their family members a very happy Republic Day. Children of NMRL employees also participated in the event and presented patriotic poems, songs, and dances.

NSTL, Visakhapatnam

The 76th Republic Day was conducted at the NSTL, Visakhapatnam. Dr Abraham Varughese, OS & Director NSTL expressed happiness over how the NSTL team is striving towards making India, in particular the Indian Navy, self-reliant by playing a vital role in developing state-of-the-art indigenous underwater weapons. Patriotic songs by the students of Ramanath Secondary School captivated the audience during the celebrations.

CVRDE'S GOLDEN JUBILEE EXHIBITION

As a part of the golden jubilee celebrations, Combat Vehicles Research & Development Establishment (CVRDE), Chennai, conducted an exclusive exhibition during 20-22 January 2025. The exhibition displayed the flagship products of CVRDE to the student's fraternity and family members of CVRDE to make them understand the defence R&D technologies. Shri J Rajesh

Kumar, OS & Director CVRDE, and Shri T Panneer Selvam, NDC Sc 'G' Additional Director Arjun ToT & Chairman of golden jubilee celebration committee, gave valuable insights and guidance for the successful execution of the event.

Shri K Anbazhagan, Sc 'F' & Regional PRO, along with Shri RP Chandrasekar, Sc 'E' and PRO, coordinated the event.

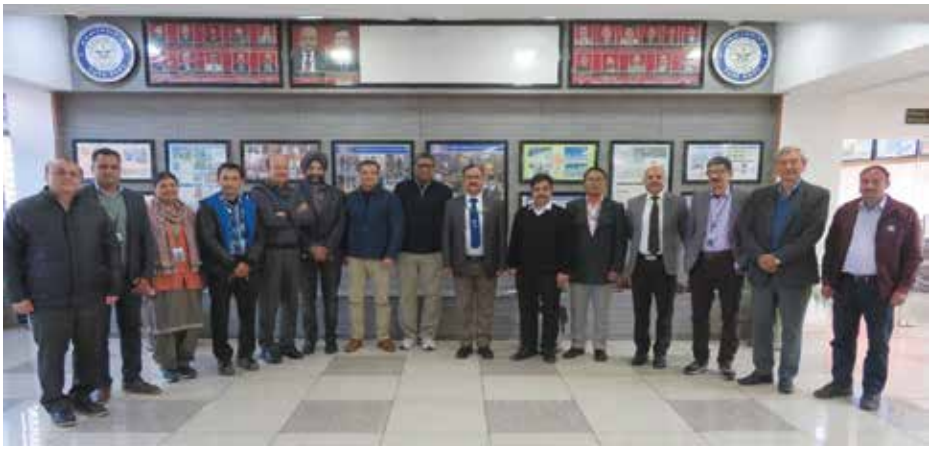
AVALANCHE AWARENESS TRAINING BY DGRE

To enhance the troops preparedness towards safer mobility on operational duties and commitments in the Indian Himalaya, snow-meteorological data collection and avalanche awareness trainings were conducted for troops by the Defence Geoinformatics Research Establishment (DGRE), Chandigarh, from the end of November 2024 to the middle of January 2025 for the troops deployed in the northwestern, central, and eastern Himalaya of India.

A total of 830 troops from different units of HQ15 Corps, 16 Corps by DGRE MMC Srinagar, HQ 14 Corps, and Siachen Battle School (SBS) by DGRE MMC Sasoma, HQ 4 Corps, 3 Corps, and 33 Corps by RDC Lachung and RDC Tawang, and for 9 (I) MtnBde by DGRE MMC Auli participated in the program.

DGRE REVIEWED OPERATIONAL PLANNING FY 2025 IN INDIAN HIMALAYA

An interaction meeting was conducted at DGRE, Chandigarh, under the chairmanship of Dr PK Satyawali, OS & Director DGRE, on 3 February 2025 with the Officiating In-charge (OICs) of DGRE, RDCs Manali (HP), Tezpur, Lachung, and Tawang and of MMC's Srinagar (Jammu & Kashmir), Sasoma (Ladakh), and Auli (Uttarakhand) with a view to enhance the DGRE capability in meeting the requirements of users viz. HQ 4 Corps, 3 Corps, 14 Corps, 15 Corps, 16 Corps, 33 Corps, 9 (I) MtnBde, BRO, ITBP, and DDMA in the Indian Himalaya. The issues faced by OICs were addressed regarding DGRE preparedness for operational planning of troops in snowbound regions of the Indian Himalaya.



VIROCON-2024 AT DRDE

The Defence Research & Development Establishment (DRDE), Gwalior, under the aegis of Indian Virological Society (IVS), New Delhi, organized VIROCON-2024 with the theme 'Emerging Viruses: Pandemic & Biosecurity Perspectives' served as a premier platform for around 475 participants, including scientists, academicians, and industry experts from different countries including USA, Canada, France, Russia to deliberate on the challenges and latest advancements in virology. The inaugural function set an inspiring tone for the event, beginning with a welcome address by Dr Manmohan Parida, Director, DRDE. The Chief Guest, Prof. Arvind Kumar Shukla, Vice Chancellor of RVSKVV, Gwalior, addressed the gathering with a vision for strengthening

collaborative research. The presidential address was delivered by Prof. RK Ratho, President of IVS, followed by an enlightening lecture on the society's contributions by Dr YPS Malik, Secretary General of IVS.

The vote of thanks was presented by Dr Paban Kumar Dash, Organizing Secretary. The scientific sessions featured IVS award orations and several plenary lectures by world-renowned experts.

TRAINING PROGRAM ON SAFETY AT DRDL

A Continuing Education Programme (CEP) on 'Basic Training Program on Safety for DRDO Officers' was organized at Defence Research & Development Laboratory (DRDL), Hyderabad, during 17-19 December 2024, where officers from ACEM, ASL, BrahMos, and DRDL participated. The event was inaugurated by Dr JVR Sagar, OS & Officiating Director, DRDL, Shri PV Sureshu, AD & Group Admin, and Shri GV Siva Rao, GD Testing & Safety & Course Director. Shri N Vijay, Sc 'F' briefed the various topics of the course. The course covered entire spectrum of safety, health and environment with interesting

case studies, video films, and sharing of valuable experiences gained by senior and eminent experts from various defence R&D establishments and industries. A safety quiz was conducted, which was followed by a valedictory function chaired by Shri Rao and Dr Sudhakar Dasari, Competent Authority, Telangana.

INVITED TALK ON POSTAL PRODUCTS AND SERVICES AT NPOL

Naval Physical and Oceanographic Laboratory (NPOL), Kochi, organized an invited talk on 'Postal Products and Services' by officers from India Post on 16 January 2025. Shri Tinto Chacko, Tech 'B', Secretary Works Committee, welcomed the gathering and gave an introduction about the speakers. Smt Shajeena Shamsudheen, sub postmaster of Thrikkakara, explained the basic services. Smt Ashwathy M, Development Officer PLI, made a detailed presentation on various insurance and deposit schemes available through the post office. Shri K Mohanan, Sc 'H' & Director (M), highlighted the importance of utilizing the services

and products of India Post for enhancing the financial security of our fraternity. Smt Remadevi M Sc 'G' & Chairperson NPOL Works Committee summarized the talk and expressed a vote of thanks. The event was coordinated by the Works Committee of NPOL.

PEARLS OF WISDOM- SERIES OF TECHNICAL TALK AT NPOL

'Pearls of Wisdom' is a technical talk series for promoting knowledge sharing within the scientific community. Pearls of Wisdom is organized to enlighten the technological advancements in the area of sonar and other recent advancements happening around the globe. During the year 2024, thirteen talks were arranged in this series.

The lectures were by eminent personalities in various fields, like Dr VK Aatre, SA to RM (Retd.), Former Chairman, DRDO; Dr S Christopher; Smt Nidhi Bansal, Director, TDF; Shri S Anantha Narayanan, Former Director,

NPOL; Dr Ajith Kumar K, OS & Director, NPOL; and Dr Duvuuri Seshagiri, OS & Director, NPOL. The series is organised by the HRD Division regularly from the year 2022 onwards.

CREST 2025 AT CASDIC

CREST 2025, an initiative at Combat Aircraft Systems Development & Integration Centre (CASDIC), Bengaluru, a two-day technical summit for the CASDIC fraternity conducted during 29-30 January 2025. Dr BK Das, DS & DG (ECS) inaugurated the summit and delivered keynote address. The event aimed to enumerate the achievements of the CASDIC and to set way forward for upcoming year 2025. Ms D Vanitha, Sc 'G' & Group Director (P&C) welcomed the guests and gave program outline.

Shri Rajeev Marate, Sc 'H' & Centre Head (CASDIC) addressed the gathering on the importance of CREST 2025. CH, CASDIC in his address mentioned that, this summit is planned to be conducted every year to enrich all personnel about the work undertaken at different groups; the challenges faced and the mitigation of risks and challenges. To mark the event, a brochure of CREST 2025 was released by the DG (ECS), which has a brief on the on-going projects and technologies.

COURSE ON TOOLS AND TECHNIQUES IN MACHINING OF ADVANCED MATERIALS AT DMRL

Defence Metallurgical Research Laboratory (DMRL), Hyderabad, organized a course on 'Tools and Techniques in Machining of Advanced Materials' during 4-6 February, 2025. Dr SN Sahu, Sc 'F', delivered the welcome address followed by the inaugural address and course overview, delivered by Dr Nandam Srinivasa Rao, Sc 'F', & Course Director. Dr R Balamuralikrishnan, OS & Director, DMRL addressed the audience and expressed his happiness at the large participation for the course.

The Chief Guest, Dr B Hari Prasad, OS & Associate Director, DRDL addressed the gathering and particularly appreciated DMRL's support to MSS cluster for various projects.

The faculty presented in-depth talks on a wide range of topics related to fundamental of machining process, introduction to advanced materials, various non-traditional processes such as Electric Discharge Machining (EDM), and Laser Assisted Machining (LAM), machining of various advanced materials.

A total of 60 participants got enriched through the course.

WORKSHOP ON SOLID WORKS AT MTRDC

Two days of training on SolidWorks simulation professional were organized at the Microwave Tube Research & Development Centre (MTRDC), Bengaluru, during 6-7 January 2025. Shri Sudhir Kumar, Sc 'F', was the organizer of the workshop. The topics related to SolidWorks simulation basics and the user interface, thermal optimization & frequency analysis, assembly analysis process, and part analysis process were covered by experts from M/s Conceptia Software Technologies Private Limited in the workshop.

HINDI KARYASHALA AT DMSRDE

The third Hindi Karyashala during FY 2024-25 on 'Rajbhasha Niti Evam Karyanvayan' was organised by the Defence Materials and Stores Research & Development Establishment (DMSRDE), Kanpur, on 30 January 2025. The Karyashala was inaugurated by Dr Mayank Dwivedi, OS & Director, DMSRDE, and Shri Sunil Sharma, OS & Director, DPARO&M, DRDO HQrs. Director appraised the Rajbhasha activities ongoing in the laboratory.

Shri Sharma explained about *Kanthastha* software, which is a memory-based translation tool. Dr Vineeta Nigam, Sc 'F' & Rajbhasha Adhikari, delivered the vote of thanks.

WORLD HINDI DAY 2025 CELEBRATION AT PXE

The 'World Hindi Day' 2025 was organized by the Proof & Experimental Establishment (PXE), Chandipur, on 10 January 2025. The celebration was inaugurated by Shri Subodha Kumar Nayak, OS & Director, PXE. In the inaugural address, Director, PXE mentioned the importance of Rajbhasha Hindi for the personnel of PXE in their day-to-day official tasks and also mentioned the importance of Rajbhasha in the official daily work routine. Prof. (Dr) Saswati Jena of Fakirmohan College, Balasore, Odisha, was invited as the Chief Guest for the event. She emphasized the role of Hindi as a global language and its progressive impact. Dr HS Panda, Sc 'G' & Associate Director, stated that this is the fifth consecutive year that the laboratory is celebrating World Hindi Day in a grand manner, and we are dedicated to the arrangement of various programmes that help us to promote the Rajbhasha Hindi in the laboratory. Smt Anita Parida, Admin Officer & OIC (Rajbhasha), conveyed vote of thanks .

APPOINTMENT

Shri LC Mangal, Distiguished Scientist is appointed as DG (TM)

Shri LC Mangal, DS, has assumed the charge of Director General (Technology Management), DRDO HQrs, New Delhi with effect from 1 February 2025. Shri Mangal has been serving as the Director of Defence Electronics Applications Laboratory (DEAL), Dehradun since 1 March 2022.

Starting his career in satellite communication with system engineering for the project 'NARAD,' he led a team for technology development for baseband systems of secure indigenous briefcase satellite terminals and Satcom Hub for providing a secure voice and data satellite communication network for the Army, Navy, and Light Intensity Conflict (LIC)/strategic applications. He developed DSP-based ECCM technology for Combat Net Radio for Tank applications with robust frequency hopping crypto synchronization and reliable voice/data communication under hostile environment. As technology group director, he led an integrated team for the development of multiple form factors and networking waveforms of Software Defined Radios (SDRs) for the Navy and Army and the development of software-defined miniature satellite terminals (Manpack and Handheld) and related Hub baseband systems for the exploitation of the GSAT6 satellite.

He has been conferred with many prestigious DRDO awards: the Agni Award for Excellence in Self Reliance (2005), the DRDO Award for Performance Excellence (2006), the Agni Award for Excellence in Self-Reliance (2010), the DRDO Award for Performance Excellence (2017), and the Agni Award for Excellence in Self-Reliance (2018) as team leader for Shipborne SDR. His contributions have been recognized outside DRDO also; the IEEE UP Chapter conferred him with the 'Technologist of the Year 2024' award.

DGRE CONFERRED WITH DISASTER RISK REDUCTION AWARD 2024

Dr Neeraj Sharma, Sc 'F', DGRE RDC, Manali, was conferred with the World Congress on Disaster Management-Disaster Risk Reduction Award 2024 under the Disaster Preparedness category risk mapping analysis, harnessing new technologies, by Hon'ble Union Minister for Commerce & Industry, Shri Piyush Goyal, at the WCDM-DRR Annual Awards ceremony held on 15 January 2025 at New Delhi. He did exemplary work and contributed significantly to mitigate the disaster's impact at the RDC Manali campus at the time of the crisis and was dedicated to safeguarding lives through innovative disaster risk reduction strategies.

PATENTS GRANTED AT NPOL

A Patent No. 468465 for 'A Fault Tolerant Digital Data Acquisition and Telemetry System for Thin Line Towed Arrays Over Single Coaxial Cable' has been granted by the Indian Patent Office to Nirmal Mohan and Rajesh Kumar CS, Naval Physical & Oceanographic Laboratory (NPOL), Kochi.

DR BVS SUBBA RAO MEMORIAL AWARD 2024

Dr Venkat Yakatpure, Sc 'F' of Defence Metallurgical Research Laboratory (DMRL), Hyderabad, has been awarded with Dr BVS Subba Rao Memorial Award 2024 by Indian Ceramic Society. The award was given in recognition of his commendable contributions in scientific research and technological development in the area of ceramics for developing an 'Innovative Ceramic Product'. Dr Venkat was presented with a plaque of honour along with a citation during the the society's 88th annual session, held at IIT Madras, Chennai.

APPRECIATION CERTIFICATE TO DMRL AT ITR

Defence Metallurgical Research Laboratory (DMRL), Hyderabad, was awarded for being among the top DRDO laboratories in 2024 and was presented with an appreciation certificate for conducting an effective and participative workshop for the year 2024 on Gender Sensitization as per POSH Act, 2013, which was conducted by ICC, DMRL on 12 September, 2024.

The certificate was presented to DMRL during the 'Workshop for ICCs of laboratories of DRDO', held during 17-18 January, 2025, at the Integrated Test Range (ITR), Chandipur, Odisha.

HIGHER QUALIFICATION ACQUIRED

Shri Sham Kumar S, Sc 'E', Naval Physical and Oceanographic Laboratory (NPOL), Kochi, has been awarded a PhD from Cochin University of Science and Technology for the thesis titled 'Design and Development of a Novel Interrogator System for Fibre Optic Underwater Acoustic Sensors.'

Please mail your feedback and suggestions at:
director.desidoc@gov.in; drdonl.desidoc@gov.in
Contact us at: 011-23902403; 23902472; Fax: 011-23819151

DRDO SOUTH ZONE TT TOURNAMENT

Microwave Tube Research & Development Centre (MTRDC), Bengaluru, organised DRDO South Zone Table Tennis tournament during 6-8 January 2025. Ms Sheela, TO 'C', Centre for Artificial Intelligence and Robotics (CAIR), Bengaluru, won open singles competition and Ms Sheela and Ms Minakshi, Sc 'F' from Aeronautical Development Establishment (ADE), Bengaluru won open doubles Women competition. Mr Alind Sharma, Sc 'F' and Mr

Himanshu Kumar Haran, Sc 'F' from CAIR won open doubles Men competition. Dr P Srikrishna, Sc 'F', from MTRDC, won in the veteran's singles category.

DRDO SOUTH ZONE LAWN TENNIS TOURNAMENT

Centre for Artificial Intelligence and Robotics (CAIR), Bengaluru had taken the responsibility of conducting the DRDO South Zone Lawn Tennis Tournament for the year 2024-25. The opening ceremony was held on 15 January 2025 and Dr Rituraj Kumar, OS & Director, CAIR inaugurated the tournament. The events conducted as part of the tournament included Team Championship; Women's Open Singles; Mixed Doubles;

Men's Open Singles; Men's Open Doubles; Men's Veteran Singles; Men's Veteran Doubles. Forty-five players participated from 10 different laboratories of South Zone. DRDO South Zone Lawn Tennis tournament was won by Aeronautical Development Establishment (ADE), Bengaluru and CAIR was runner up. The closing ceremony was held on 18 January, Shri Prasanna Kumar, Sc 'H' & Associate Director CAIR and Dr Narayan Panigrahi, Sc 'H' graced the occasion and distributed the prizes.

WEST ZONE VOLLEYBALL TOURNAMENT AT VRDE

Vehicle Research & Development Establishment (VRDE), Ahmednagar organized West Zone Volleyball Tournament during 8-10 January 2025. Teams from R&DE (E), HEMRL, ARDE and VRDE participated in the tournament. All the participants showed the spirit of sportsmanship during the tournament. VRDE won the tournament by beating R&DE in the final match. Shri GRM Rao, OS & Director, VRDE felicitated

both the winning and runner up team. During his address, Director VRDE emphasized the importance of participation over winning and appreciated the display of sportsmanship by all the participants.

VISITORS TO DRDO LABORATORIES

ARDE, Pune

❑ Fifty seven student officers of the rank of Lt Col, Major, Cdr (IN), Lt Cdr, Wg Cdr & SqnLdr undergoing 80th Staff Course at Defence Services Staff College, Wellington along with two directing staff members visited Armament Research & Development Establishment (ARDE), Pune, on 15 January 2025. The visitors were briefed about ARDE and a presentation-cum-demonstration on Infantry weapon was given. A visit to the EM Rail Gun Facility, Static Exposition Hall and Static Display of ATAGS and Pinaka was also arranged during the visit.

❑ Air Marshal Sanjiv Ghuratia, VSM, SMSO, HQ MC visited ARDE on 20 January 2025. Shri A Raju, OS & Director, ARDE welcomed him and briefed about various ARDE ongoing projects. Detailed presentation was made on Air Delivered Munitions, Canopy Severance System and Air Pilot Plant by respective groups. At the end, a visit to Static Exposition Hall was arranged.

❑ One hundred and three officers of the rank of Col, Major, Lt Col and Captain undergoing Long Gunnery Staff Course Sr No 5001 at School of Artillery, Deolali, Nashik along with eight directing staff members visited ARDE on 24 January 2025. The visitors were briefed about ARDE and a presentation on infantry weapon and 155 mm Bourrelet Ammunition was given. Demonstration of Pinaka System and ATAGS was arranged in Artillery Rocket Park and ATAGS Gun bay, respectively.

CAIR, Bengaluru

❑ Air Marshal Rakesh Sinha, AVSM, DCIDS (Ops) visited Centre for Artificial Intelligence and Robotics (CAIR), Bengaluru, on 17 January 2025. There was a briefing by Dr Rituraj Kumar, OS & Director, CAIR followed by discussion and demonstration of various technologies developed by CAIR.

❑ On 22 January 2025, the Geographical Information System Division (GISD) of CAIR led by Dr Narayan Panigrahi, Sc 'H' along with Col Sandeep Rohilla, Asst Director (Army) and Shibumon Alampatta, Sc 'F' visited MEG for a technical discussion. They interacted with the officers of MEG led by Brig AS Thakur, Comdt MEG Centre, Bangalore. They deliberated on prospective usage of Indigenous GIS for Tri-service and other the GIS technology indigenously developed by CAIR.

CHESS, Hyderabad

❑ Instructional-cum-study tour of Long Sir Defence Course AD-08 took place on 16 January 2025. A total of 30 student officer visited Centre for High Energy Systems & Sciences (CHESS), Hyderabad. They were given brief over view of CHESS and instructional tour was given for the technologies developed.

❑ Vice Chief of Army Staff Lt. Gen NS Raja Subramani visited Centre for High Energy Systems & Sciences (CHESS), Hyderabad, on 9 January 2025. Dr BK Das, DS & DG (ECS) joined CHESS fraternity to welcome VCOAS. Detail exhibition of CHESS products was made and live demonstration of 2kW DEW was given. VCOAS appreciated the progress made in this field and encouraged the team to make more such valuable contribution.

❑ Instructional-cum-study tour of technical instructors RDR (NCOS) course SER AD 50 took place on 7 January 2025. A total of 18 students visited CHESS. They were given brief overview of CHESS and instructional tour was given for the technologies developed.

DL, Jodhpur

Shri RV Hara Prasad, DS & DG (NS&M), Visited Defence Laboratory (DLJ) on 19 February 2025. Shri VS Shenoi, OS & Director, DLJ welcomed him. DG (NS&M) along with Director DLJ, performed the Bhoomi Pujan and laying of foundation stones for a new residential complexes (type IV, type V & DLJ House). DG (NS&M) appreciated the infrastructure development being taken up at DLJ and expressed that new complex will be addressing most of the deficiency of married accommodations. Director, DLJ, informed that all the residential complexes are aesthetically designed matching the Rajasthan Heritage architecture. DG (NS&M) also reviewed various ongoing and futuristic road map projects of the laboratory.

DMSRDE, Kanpur

DIG Manoj Pande, Principal Director (Indigenization) of Indian Coast Guard (ICG) visited Defence Materials and Stores Research & Development Establishment (DMSRDE), Kanpur on 16 January 2025. He was accompanied by Shri Mohinder Singh, PSE; Shri Salil Saurabh, USE and Shri M Jithin, PSE. Dr Mayank Dwivedi, OS & Director, DMSRDE welcomed Indian Coast Guard Officers. Dr Kingsuk Mukhopadhyay, Associate Director chaired the discussion and briefed about the progress of the feasibility study of Sea Water Desalination Membrane. Dr Subhash Mandal, Sc 'E' gave the technical presentation on the work carried by the DMSRDE in the field of nano-enabled technology for water filtration membrane.

DLRL, Hyderabad

A team consisting of 42 Indian Navy and coast guard officers from long communication and electronic warfare specialized course visited Defence Electronics Research Laboratory (DLRL), Hyderabad, on 3 February 2025. The naval team was briefed about the history of DLRL, various naval systems developed & commissioned, systems under development and the future projects for India Navy. The naval team was immensely satisfied with the interaction held with the senior scientists of DLRL and the demonstration of real time system operation.

DMRL, Hyderabad

Shri RV Hara Prasad, DS & DG (NS&M) and Shri PT Rojatkar, OS & Director, NMRL visited DMRL on 23 January 2025. During the visit, DG (NS&M) chaired the Apex Certification Committee meeting for Advanced Materials and Weld Consumables for Naval Applications. One of the highlights of the event was the felicitation of

Indian Navy and Coast Guard Officers visit at DLRL, Hyderabad

Shri PT Rojatkar on the occasion of his superannuation. Shri Prasad spoke highly of Shri Rojatkar's contributions to the organisation and his exceptional leadership skills. Dr R Balamuralikrishnan, OS & Director, DMRL, extended his heartfelt appreciation to Shri Rojatkar for his invaluable service to the organisation and his impact on the advancement of NMRL.

MTRDC, Bengaluru

An Industrial visit was organised in the Microwave Tube Research & Development Centre (MTRDC), Bengaluru during 21-22 January 2025. About 30 students from Army AD college, New Delhi participated in the event. The visit also included 34 students from Airforce, AFTC, Bengaluru.

SSPL, Delhi

Lt Gen JP Mathew, PVSM, UYSM, AVSM, VSM Chief of Integrated Defence Staff (CISC) along with his team visited Solid State Physics Laboratory (SSPL), Delhi, on 5 February 2025. The CISC was warmly welcomed by Ms Suma Varugheses, DG (MED & CoS) and Dr Meena Mishra, Director, SSPL. Dr Mishra briefed them about various activities of the laboratory. The briefing was followed by an engaging discussion and live demonstration of innovative materials and devices developed by the laboratory. The CISC delegation was deeply impressed by the laboratory's cutting-edge work at the forefront of semiconductor technology and emphasized the strategic importance of further developing the laboratory's capabilities.

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