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VIGYAN VAIBHAV 2025: SHOWCASING DRDO'S SCIENTIFIC EXCELLENCE AND INNOVATION



NATIONAL SCIENCE DAY CELEBRATIONS

VIGYAN VAIBHAV – 2025

28th FEB – 02nd MAR 2025

POWERING INDIAN YOUTH FOR GLOBAL LEADERSHIP
SCIENCE & INNOVATION FOR VIKSIT BHARAT



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VIGYAN VAIBHAV 2025: SHOWCASING DRDO'S SCIENTIFIC EXCELLENCE AND INNOVATION

“India can remain strong and secure in adverse situations if it has solutions to critical technological challenges”. Govt’s endeavour is to harness the potential of India’s youth to achieve the goal of Viksit Bharat by 2047, says Shri Rajnath Singh

A mega event ‘Vigyan Vaibhav-2025 with the theme 'Empowering Indian Youth for Global Leadership in Science & Innovation for Vikasit Bharat 2047' was jointly organised by DRDO, Aeronautical Society of India (AeSI), Hyderabad and Kalam’s Institute of Youth Excellence Foundation, Hyderabad during

28 February 2025 to 2 March 2025 at GMC Balayogi Stadium, Gachibowli, Hyderabad to honour the discovery of Raman Effect by Sir CV Raman. The event was organised to recognise the scientific contributions, raise the scientific awareness, scientific temper among student community, and showcase scientific achievements

to attract the young talent towards scientific research.

The three-day event inaugurated by Hon’ble Defence Minister, Shri Rajnath Singh and Hon’ble Chief Minister of Telangana, Shri A Revanth Reddy features nearly 200 exhibition stalls and has attracted over 30,000 graduate students.





Shri Rajnath Singh emphasized the importance of scientific thinking and encouraged youth to explore emerging technologies such as artificial intelligence, quantum computing, machine learning and clean tech for nation's strength and security. He also highlighted the importance of education in nation building.

Hon'ble Chief Minister of Telangana, Shri A Revanth Reddy acknowledged historical role of Hyderabad in scientific excellence in defence sector, encouraged students to embrace innovation and aim high. He also advocated for developing engineers for defence sector suggesting a Hyderabad-Bangalore defence industrial corridor to encourage investment and development in defence related start-ups.

Secretary DDR&D & Chairman DRDO, Dr Samir V Kamat; National President AeSI, Dr G Satheesh Reddy; Director General (MSS), Shri U Raja Babu; Director DRDL, Dr GA Srinivasa Murthy and other dignitaries addressed the student gathering.

DRDO exhibited technologies and products from Missiles and Strategic Systems (MSS), Aeronautical Systems (Aero), Electronics & Communication Systems (ECS), Naval Systems and Materials (NS&M), Armament & Combat Engineering Systems (ACE), Soldier Support Systems (SSS), Human Resources (HR) and Technology Management (TM).

Indian Navy, Indian Airforce, ISRO, NGRI, CCMB, IICT, BEL, BDL, ECIT, MIDHANI, HAL, BrahMos Aerospace and Shipping Corporation of India are the major organizations participated in the



exhibition in addition to several private companies such as Solar Industries, VEM Technologies, Electro Circuit Systems, DataPatterns, Paras Defence, Apollo Micro Systems, ICOMM Tele, Anuvega Technologies, Dome Dynamic Technologies, Phillips Machine Tools India, HBL Engineering Ltd., RR Industries, Ananth Technologies, LPSIS Pvt Ltd., Apollo Computing Labs, DigiLogic Systems, Zeta Tek, Accurate Industrial Controls, etc.

Students and teachers were attracted by real missiles, towering artillery guns, majestic tanks, and radars. Some of the major products on display were recently tested hypersonic missile, Pralay missile, Pinaka missile system, short-range ballistic glide missile system, Agni 5, Akash Missile, Rudram - II (Anti-Radiation Missile) and Rudram - III, Main Battle

Tank Arjun, Advanced towed artillery gun system, 155 mm guns, Space on Wheels, BrahMos Missile System, LCA, Drones and Advanced Radar Systems.

One of the main goals of the three-day exhibition was to engage young people and raise awareness about career opportunities in Defence and Aerospace by exploring new technologies and gain insights into their future career paths. Interactive sessions with industry experts were available allowing students to questions and learn more about the research fields.

The three-day event witnessed more than one 1.2 lakh footfall.





CONFERENCE ON INTERNAL SECURITY & DISASTER RELIEF OPERATIONS--MHA-DRDO COLLABORATION

The Directorate of Low Intensity Conflicts (DLIC), functioning under the PC&SI Cluster at DRDO HQs organized a two-day conference on 'Internal Security and Disaster Relief Operations' during 4-5 March 2025 at DRDO HQs, New Delhi. The conference's goal was to introduce a wider range of CAPF officers (mainly field officers) to the skills and knowledge that can be found at DRDO laboratories, as well as the products that have been made to help these forces with the technological problems they face in their work. These products are used for internal security, law and order, and disaster relief.

The conference was graced by Hon'ble Raksha Mantri Shri Rajnath Singh as the Chief Guest. Senior officers from the MoD and MHA, viz., the Chief of Army Staff, Secretary DP, Secretary Border Management, and several other dignitaries, attended the inaugural event. Hon'ble RM appreciated DRDO for organizing such a conference for discussion on internal security and disaster relief operations, which are of paramount importance as national security is concerned. He expressed his satisfaction that the DRDO is now customizing and using its developed technologies for internal security applications.

Three compendiums of

DRDO-developed products were also released, namely Compendium for Low Intensity Conflicts, Compendium for Police Operations, and Compendium for Disaster Relief Operations.

Secretary DD R&D & Chairman DRDO, in his welcome address, apprised that DLIC has been established as a single-window corporate directorate to liaise between MHA security forces and DRDO for meeting the technical requirements of these forces with DRDO technologies.

The Secretary of Border Management brought out that under MHA-DRDO collaboration, a significant number of products were inducted while new

developments are at various stages of induction into MHA services, and he urged all the stakeholders to work closely in meeting the emerging challenges.

During the two-day event, seven technical sessions were organized with moderators from MHA and DRDO. An exhibition of DRDO-designed technologies and products developed through DRDO industry partners was organized.

A large number of industries showcased their products ranging from small arms, communications, surveillance, crowd control applications, soldier protection and safety, CBRN equipment, drones, and anti-drones, etc.



DEVELOPMENT OF PASSIVE FOURIER TRANSFORM INFRARED SENSOR BY IRDE

The Instruments Research & Development Establishment (IRDE), Dehradun, indigenously developed a passive Fourier Transform Infrared (FTIR) chemical sensor that provides fingerprint spectroscopic signatures of chemical clouds for detection and identification. The features of the sensor are passive detection/covert operation, IOT enabled and GIS overlay of cloud image, low false alarm rate, local/remote connectivity, day/night operability, and built-in Self-test (BIST).

The sensor's technical specifications include Spectral range: 8 to 12 μm , spectral resolution: 4 cm^{-1} , detection range: 500 m, testing chemicals of simulants of CW agents (SF_6 , DMMP, TDG, etc.), detection time: 1 sec, detectivity: 100 ppm, Environmental qualification: IP 65 and JSS 55555. Size: 65 cm x 45 cm x 40 cm and weight: 25 kg. The field trial successfully detected chemical clouds at a distance of 500 m. The development partner for FTIR is M/s Optics and Allied Engineering, Bengaluru.

The team leader for the development of FTIR is Dr NR Das, Sc 'G' while Dr Deepak Kumar, Sc 'F' and Shri Anjesh Kumar, Sc 'E' are the Project Director and Deputy Project Director, respectively. The team members include Rajni Malhotra, Sc 'F'; Het Ram Swami, Sc 'F'; Arvind Bansal, Technical Officer 'B'; Pradeep Sharma, Technical Officer 'B'; and Prakash Singh, Technical Officer 'A'. Dr



Ajay Kumar, OS & Director IRDE, congratulated the team leader, Project Director, Deputy Project

Director and all team members for the successful development of this sensor.



DRDO & INDIAN NAVY SUCCESSFULLY CONDUCT FLIGHT-TRIALS OF FIRST-OF-ITS-KIND NAVAL ANTI-SHIP MISSILE

DRDO and the Indian Navy carried out successful flight trials of the first-of-its-kind Naval Anti-Ship missile (NASM-SR) from the Integrated Test Range (ITR), Chandipur, on February 25, 2025. The trials demonstrated the missile's capability against ship targets while launched from an Indian Naval Seaking Helicopter.

The trials have proven the missile's Man-in-Loop feature and scored a direct hit on a small ship target in sea-skimming mode at its maximum range.

The missile uses an Indigenous Imaging Infra-Red Seeker for terminal guidance. The mission also demonstrated the high-bandwidth two-way data-link systems, which are used to transmit the seeker's live images back to the pilot for in-flight retargeting.

After launching in launch mode, the missile engaged in bearing-only lock-on, selecting one target from a close vicinity. The missile initially locked on to a large target within a specified zone of search, and during the terminal phase, the pilot selected a smaller hidden target, resulting in its being hit with pinpoint accuracy.

The missile has an Inertial Navigation System (INS) based on a fiber optic gyroscope and a radio altimeter for guiding its midcourse. It also has an integrated avionics module, electromechanical actuators for controlling its aerodynamics and jet vane, thermal batteries, and a PCB warhead.

It uses solid propulsion with an in-line ejectable booster and a long-burn sustainer. The trials

met all the mission objectives.

The missile is developed by different laboratories of DRDO, including Research Centre Imarat (RCI), Defence Research and Development Laboratory (DRDL), High Energy Materials Research Laboratory (HEMRL), and Terminal Ballistics Research Laboratory (TBRL).

The missiles are currently being produced by development-cum production partners with the help of MSME's, start-ups, and other production partners.

Hon'ble Raksha Mantri Shri Rajnath Singh congratulated DRDO, the Indian Navy, and the industries for the successful flight tests. The tests for man-in-loop features are unique, as they give the capability of in-flight retargeting, he said.





INDIA ACHIEVES MILESTONE WITH SUCCESSFUL HIGH-ALTITUDE TRIAL OF INDIGENOUS INTEGRATED LIFE SUPPORT SYSTEM IN LCA-TEJAS

The successful flight testing of the indigenously developed On-Board Oxygen Generating System (OBOGS)-centric Integrated Life Support System (ILSS) was carried out aboard the Light Combat Aircraft (LCA) PV3. The significant trial subjected the DEBEL-developed ILSS to a comprehensive airworthiness certification process, including altitudes up to 50,000 feet AMSL and acceleration forces up to 6 g, marking a pivotal technological advancement in India's aerospace technology. With this technological achievement, India joins an elite cohort of five nations possessing such advanced life support capabilities, reaffirming the nation's steadfast

commitment to self-reliance in cutting-edge defence technologies and reinforcing the present Government's goal of Vikas Bharat 2047.

The system is conceptualized and developed by the Defence Bioengineering and Electromedical Laboratory DEBEL, Bengaluru. The system's manufacturing was undertaken by M/s Larsen & Toubro as development-cum-production partner, showcasing a successful collaboration between DRDO and private sector.

The ILSS features an On-Board Oxygen Generating System (OBOGS) along with another 10 Line Replaceable Units (LRU). The OBOGS plays the role of the primary breathing gas source for

the pilot. It utilizes the bleed air from the aircraft's Environment Control System (ECS) as the input to twin beds of molecular sieves and generates Oxygen enriched air through Pressure Swing Adsorption, ensuring a continuous supply of breathing gas throughout the flight.

To enhance the pilot safety and operational reliability, the ILSS is equipped with a gaseous Backup Oxygen System, which is activated upon OBOGS under performance or malfunction, ensuring uninterrupted Oxygen supply. The Emergency Oxygen System Provides Oxygen during ejection scenarios, safeguarding the pilot in critical situations. An onboard Solid-State Zirconia Oxygen





Sensor continuously monitors the Oxygen concentration, feeding data to an Electronic Control Unit that oversees the operation of all the LRUs of ILSS. The ECU also communicates with the mission computer to display ILSS status on a dedicated Multi Function Display (MFD) page.

The ILSS embarked on its maiden flight on February 1, 2023, and has since undergone a series of rigorous test points, culminating in the recent high-altitude trial.

During the flight testing of the ILSS, the pilot performs a series of evaluations to assess its performance across different flight conditions. The test aircraft, LCA PV3, is also

equipped with onboard Flight Test Instrumentation sensors at critical locations, continuously monitoring system parameters and providing real-time feedback to designers for further optimization and certification. These efforts are part of the comprehensive airworthiness certification process, paving the way for the ILSS's integration into future fighter aircrafts, Advanced Medium Combat Aircraft and Twin Engine Deck based Fighter.

The successful development of the ILSS reflects the seamless synergy between following organizations, each contributing their domain expertise:

- Aeronautical Development

Agency (ADA), Bengaluru

- Centre for Military Airworthiness and Certification (CEMILAC), Bengaluru
- National Flight Test Centre (NFTC), Bengaluru
- Directorate General of Aeronautical Quality Assurance
- Institute of Aerospace Medicine (IAM), Bengaluru
- Hindustan Aeronautics Limited

The successful development and testing of the ILSS will not only enhance the operational capabilities of the Indian Air Force but also lay a robust foundation for future advancements in life support technologies for combat aircraft.

COMBAT FREEFALL JUMP OF MILITARY COMBAT PARACHUTE AT ADRDE

In a significant achievement, combat freefall jump of Military Combat Parachute System developed by Aerial Delivery Research and Development Establishment (ADRDE), Agra, was carried from altitude of 27000 feet with full combat load making it only parachute system capable of deployed above 25000 feet currently in use by Indian armed forces.

The jump was carried out by Wg Cdr Vishal Lakhesh VM (G), MWO RJ Singh, MWO AA Baidya, demonstrating the effectiveness of the indigenous combat parachute system. The system offers improved tactical features, including a lower rate of descent and enhanced steering capabilities.

It enable paratroopers to jump



from aircraft and deploy their parachutes at predetermined

altitudes, navigate and safe landing to designated areas.



TEJAS LCA AF MK1 TEST-FIRES BEYOND VISUAL RANGE AIR-TO-AIR MISSILE

The Aeronautical Development Agency (ADA), Bengaluru, successfully conducted a test launch of the homegrown ASTRA, Beyond Visual Range Air-to-Air Missile (BVRAAM), from the LCA AF MK1 prototype fighter aircraft. The test launch was carried out on 12 March 2025 off the coast of Chandipur, Odisha.

The test-firing successfully demonstrated the direct hit of the missile on the flying target. All the subsystems performed accurately, meeting all mission parameters and objectives. The ASTRA missile is designed and developed by DRDO, capable of engaging targets over 100 km and equipped with advanced guidance

and navigation capabilities that allow the missile to destroy targets with greater accuracy. The Indian Air Force has already accepted the missile.

The successful test-firing is a significant milestone towards the induction of the LCA AF MK1A variant. The success is the result

of hard work by the integrated team of scientists, engineers, and technicians from ADA, DRDO, and Hindustan Aeronautics Limited (HAL), along with support from CEMILAC, DG-AQA, IAF, and the test range team. Further trials are planned towards the performance evaluation.



MOU BETWEEN DRDO AND INDIAN ARMY

A significant Memorandum of Understanding (MoU) was signed between the Indian Army and the DRDO to facilitate the transfer of technical expertise from the Solid State Physics Laboratory (SSPL) to the 509 Army Base Workshop. The collaboration aimed to advance the production of 0.5-watt Stirling cryocoolers, an essential component in the thermal imaging devices used by the Indian Army.

This groundbreaking MoU will not only enhance the Indian Army's indigenous manufacturing capabilities but also reduce dependence on imports. It signifies a major step toward strengthening domestic technological innovation

and will yield substantial cost savings in defence production.

The indigenous Stirling Cryocooler developed by SSPL has critical features like low weight, low

steady-state power consumption, and precise temperature control. Handheld thermal imagers and tank thermal sights use it for cryogenic cooling.





HANDING OVER OF AEROSOL LIDAR SYSTEM TO INDIA MET DEPT

Dr BK Das, DG (ECS) handed over indigenously developed Aerosol Lidar system to Dr Mrutyunjay Mohapatra, DG, Indiametdept in the presence of Shri LC Mangal, DG (TM), on 12 March 2025 at DRDO Bhawan, Delhi. The system is developed by Instruments Research & Development Establishment (IRDE), Dehradun. The system can measure aerosol profiles upto 20 km and water vapour profile upto 5 km. It will help in atmospheric research, climate studies, air



quality, monitoring and enhancing weather predictions model.

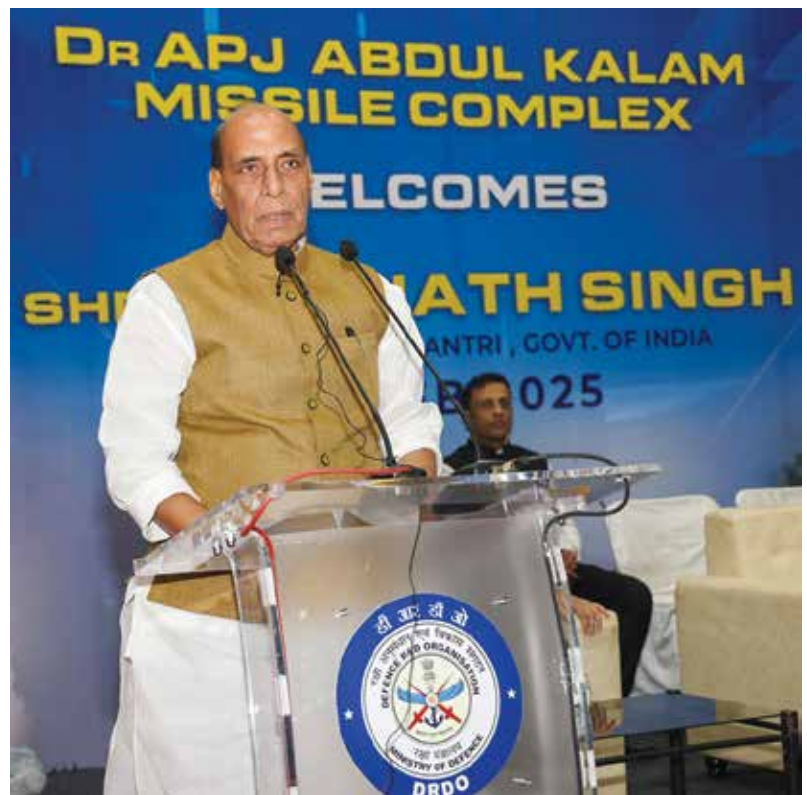
RAKSHA MANTRI VISITS DRDO'S DR APJ ABDUL KALAM MISSILE COMPLEX, HYDERABAD

Hon'ble Raksha Mantri Shri Rajnath Singh visited DRDO's Dr APJ Abdul Kalam Missile Complex, the nerve center for the design and development of indigenous missile systems, in Hyderabad, Telangana, on 28 February 2025.

He was briefed about the missile technologies and related programs being carried out by Research Centre Imarat (RCI). Dr Samir V Kamat, Secretary, DD R&D & Chairman, DRDO, and senior scientists and officials of RCI were present on the occasion.

Shri Rajnath Singh also felicitated the team of the Long-Range Hypersonic Anti-Ship Missile project, successful flight-trials of which took place in November 2024. The successful testing positioned India among the select group of nations with hypersonic missile capabilities.

Interacting with the scientists, Hon'ble Raksha Mantri commended them for their unparalleled contribution to India's





defence capabilities and exuded confidence that, with concerted efforts, India will find itself among the top three economies by 2027. He called upon them to continue factoring in the rapidly evolving technological transformation into their projects while working with dedication and honesty.

Shri Singh also paid glowing tributes to Dr APJ Abdul Kalam on the occasion. He asserted that we will never forget the former president's contributions to science and technology, particularly missile development. In his address, the DRDO Chairman reiterated the organisation's

commitment towards developing critical technologies and ensuring that India becomes Aatmanirbhar as well as a technology leader. "DRDO will strive to realise Hon'ble Prime Minister Shri Narendra Modi's vision that defence systems are made in India and made for the world", he said.

NATIONAL SCIENCE DAY CELEBRATION

National Science Day (NSD) is celebrated annually to commemorate the discovery of the scattering of photons by Indian scientist Sir Chandrasekhara Venkata Raman in 1928. This phenomenon, later known as the 'Raman Effect,' earned him the Nobel Prize in Physics in 1930. The theme of NSD 2025 was 'Empowering Indian Youth for Global Leadership in Science and Innovation for Viksit Bharat,' which focuses on encouraging young minds, recognising groundbreaking contributions, and celebrating India's scientific achievements. NSD is observed to promote the significance of science in everyday life and highlight the various activities, endeavours, and accomplishments in the scientific field for the betterment of humanity. The following laboratories of DRDO celebrated NSD 2025 at their respective locations.

ARDE, Pune

The Armament Research & Development Establishment (ARDE), Pune, celebrated National Science Day 2025 (NSD 2025) on 3 March 2025. On the occasion, Shri A. Raju, OS & Director, ARDE, addressed the ARDE

fraternity and highlighted the benefit of science for society and the celebration of NSD as a festival by the scientific community. Ms Nikita Mittal, Sc 'F' delivered the NSD oration on 'Effect of Internal Ballistics on Aerodynamics of Artillery Rocket.' Prof. Suresh Gosavi, Vice-Chancellor, Savitribai Phule University, Pune, was the Chief Guest. In his address, he highlighted the application of S&T to the design and development of defence products. The event concluded with the distribution of prizes to the winners of various competitions organized as part of the celebration. A vote of thanks was given by Dr S Premkumar, Sc 'F' & chairman of the organizing committee.



CAIR, Bengaluru

Centre for Artificial Intelligence & Robotics (CAIR), Bengaluru celebrated NSD 2025 on 28 February 2025. Smt Manupriya

Srivastava Sc 'F', welcomed CAIR fraternity conveying the historical importance of the event. Prof. Urbasi Sinha from Raman Research Institute, Bangalore was the Chief Guest. Dr Rituraj Kumar, OS & Director, CAIR presided the event and addressed the gathering, emphasizing the role of science in the progress of nation and human evolution in general. This was followed by a talk by the Chief Guest on 'Light, Camera, Action' covering her work in quantum computing and secure quantum communication. Shri VC Ravi Sc 'F', delivered the NSD oration on 'Tracked Platform Motion Modelling for Autonomous Robot Navigation'. He discussed the need for modelling the mobility characteristics of the physical platform for effective trajectory control.



CASDIC, Bengaluru

Combat Aircraft Systems Development & Integration Centre



(CASDIC), Bengaluru, celebrated NSD 2025 on 28 February 2025, with an oration by Shri Saurav Halder, Sc 'D' on 'The Design of Broadband Vivaldi Antenna Array and Polarizer on EW Applications.'

The basic parts of antennas, antenna arrays, active phased antenna arrays, the design philosophy of Vivaldi antennas, the design of planar Vivaldi antenna arrays, the design of broadband polarizers, the needs of broadband planar Vivaldi antenna arrays, and polarizers for EW applications were all talked about. Shri Rajeev Marathe, Sc 'H' & OS, Centre Head, CASDIC, bestowed upon him the NSD medal and certificate.



CVRDE, Chennai

The Combat Vehicles Research and Development Establishment (CVRDE), Chennai, celebrated NSD 2025 on February 28, 2025. Shri L Balaji, Sc 'E' delivered the welcome address by emphasizing the significance of the day. To mark the occasion, Shri NS Prasad, Sc 'F', presented the NSD oration on 'Design & Development of High-Power Density AFV Engine' and highlighted various technologies utilized in the design and development of the AFV engine. Shri J Rajesh Kumar, OS

& Director, CVRDE, addressed the gathering and honoured the orator. During his speech, the Director recalled the invaluable contributions of scientists and stressed fostering a spirit of scientific curiosity for delivering quality products under Make in India.



DIBT, Mysuru

Defence Institute of Bio-defence Technologies (DIBT), Mysuru, celebrated NSD 2025 on 28 February 2025 with a series of insightful sessions highlighting advancements in bio-defence research. Dr N Ilaiyaraja, Sc 'E', delivered the welcome address, setting the stage for the keynote oration by Dr G Phanikumar, Sc 'F'. Dr Phanikumar delivered a talk on 'Algal Toxins as Biological Warfare Agents and their Bio-defence Importance'. He elaborated on the adverse effects of biological warfare agents, their impact on national security, and their potential to disrupt social and economic progress. His oration also covered harmful algal blooms, the toxicity of various algal toxins, their lethality, and existing global defence mechanisms to counteract these threats.

Dr VA Sajeew Kumar, Sc 'G', presented the NSD medal and certificate to Dr Phanikumar.



DEAL, Dehradun

NSD 2025 was celebrated at Defence Electronics Applications Laboratory (DEAL), Dehradun, on 28 February 2025. On the occasion, a presentation was given by Dr Bhupendra Suman, Sc 'F', on 'Free Space Optical Communication (FSOC)-An Overview of Technologies and Applications'. FSO communication is emerging rapidly as a reliable, high-speed, and secure solution for broadband connectivity. Utilizing free space as the transmission medium, FSO offers numerous advantages, including high data rates, and enhanced security making it an appealing choice for both civilian and military applications. The oration paper was written on the topic 'Advances in Free Space Optical Communication: Enabling High Capacity Wireless Connectivity for Military Networks'.





DEBEL, Bengaluru

Defence Bio-engineering and Electromedical Laboratory (DEBEL), Bengaluru, celebrated NSD 2025 on 28 February 2025. Prof. Jitendra Singh, Commercial Astronaut Candidate & Professor of Practice-Aerospace Engineering Flight Research & Industry Cooperation, RV College of Engineering, Bengaluru, delivered a lecture on 'Astronaut Training for Commercial Space Missions'. He is the first Indian selected in the first batch of Commercial Astronaut Candidates among six global crew and has successfully completed Track 1 of Technical & Survival Training in France in December 2024.

Mr Dibakar Panda, Sc 'E', delivered the oration on 'Electro-Pneumatic Pressure Regulator for High Pressure Gaseous Oxygen Source of Life Support Systems for Airborne Applications'. Dr R Indushekar, Director, DEBEL highlighted the significance of the day and brought out DEBEL's recent scientific accomplishments and the future vision that the laboratory is planning to embark.



DLRL, Hyderabad

The Defence Electronics Research Laboratory (DLRL), Hyderabad, celebrated NSD 2025 by organizing two technical talks by Dr Samrat L Sabat, Professor, University of Hyderabad, and Sri

RK Rudheesh, Sc 'F', DLRL, on 28 February 2025. Sri T Srikanth, Sc 'F' gave opening remarks, and Smt Nidhi Verma, Sc 'E', introduced the guests. Dr Sabat spoke on 'Spectrum Sensing Techniques for Cognitive Radio Network.' Sri Rudheesh spoke on 'Mobile Terminal Localization and its Applications in Crowd Sensing.'. He talked about cellular EW capabilities, mobile technology generations, EW technologies against mobile communications, localization, and applications in crowd sensing. The talks concluded with a vote of thanks by Sri T Abhilash, Sc 'E'.



DMRL, Hyderabad

The Defence Metallurgical Research Laboratory (DMRL), Hyderabad, celebrated NSD 2025 on 4 March 2025. The audience was warmly welcomed by Dr Sarabjit Singh, Sc 'F', who also introduced the distinguished orator for the day, Dr M Manivel Raja, Sc 'G', DMRL. The event was presided over by Dr R Balamuralikrishnan, OS & Director, DMRL. Dr Raja delivered an insightful oration on 'Development of Spintronic-based Magnetic Field Sensors for Detecting the Magnetic Signature of Naval Systems.' Dr Raja also shared the latest research on quantum materials for spintronics, Heusler alloys, and

the fabrication of magnetic field sensors, captivating the audience with his detailed exploration of this cutting-edge science. Dr Balamuralikrishnan felicitated Dr Raja with the NSD 2025 medal and certificate in recognition of his excellent oration. Notably, Dr Raja's submission was selected as one of the top four orations in DRDO, leading to an invitation to deliver his talk at the NSD celebrations at DRDO Bhawan, New Delhi, on 27 February 2025. There, the Secretary DDR&D and Chairman DRDO honored him with a Silicon medal and commendation certificate.



DRL, Tezpur

Defence Research Laboratory (DRL), Tezpur, celebrated NSD 2-25 on 28 February 2025. Shri Naveenkumar R, Sc 'B', gave an oration on 'Prospect of Biodegradation of Synthetic Polymer Waste'. He spoke on the possibility of degradation of





plastic by lepidopteran larvae of wax moth (*Galleria mellonella*). Dr Kamboj, Centre Head, felicitated the speaker by presenting the NSD medal, a citation and potted-plant as memento.

INMAS, Delhi

Dr Maria M D'souza, Sc 'G', delivered the NSD 2025 oration on 'Deciphering Traumatic Brain Injury through Advanced Multimodality Imaging' at INMAS, Delhi, on 6 March 2025. In her oration the orator paid tribute to Sir CV Raman, whose scientific contribution in the form of the Raman Effect brought India onto the global scientific map. The talk of the day focused on understanding the pathophysiology of Traumatic Brain Injury (TBI) through advanced MR imaging. The orator highlighted the value of novel MR techniques in diagnosing and prognosticating TBI and discussed the challenges therein.



IRDE, Dehradun

The Instruments Research & Development Establishment (IRDE), Dehradun, celebrated NSD 2025 on 28 February 2025. Dr Ajay Kumar, OS & Director, IRDE, inaugurated the event. The Chief Guest of the event was Dr RP

Singh, Director, Indian Institute of Remote Sensing (IIRS), Dehradun. He delivered a keynote lecture on 'Search of Life Beyond Earth.'. Dr G Unnikrishnan, Sc 'G', IRDE, delivered the NSD oration on 'Quantum Imaging Technology: Opportunities and Challenges.'. On this auspicious occasion, Dr Ajay Kumar remembered Dr CV Raman's discovery. He congratulated the scientific community of IRDE for its quest to achieve excellence and self-reliance.



ISSA, Delhi

The Institute for Systems Studies & Analyses (ISSA), Delhi, celebrated NSD 2025 on 28 February 2025. The event featured an insightful lecture by Ms Chitra Kushwaha, Sc 'B' on 'Privacy Preserving IoT Attack Detection Leveraging Federated Network.'. All the officers and staff of the laboratory attended the event. The paper by Ms Kushwaha was also



selected as one among the four best oration papers of DRDO presented during NSD 2025 celebrations at DRDO Bhawan, New Delhi, on 27 February 2025.

ITM, Mussoorie

NSD 2025 was celebrated at Institute of Technology Management (ITM), Mussoorie on 28 February 2025. Gp Capt. MP Kundran gave oration on 'Adoption of AI in Defence: Unique Road Blocks to Overcome'. Shri SP Dobhal, Director ITM felicitated Gp Capt. Kundran with medal and commendation certificate. Shri Dobhal in his address highlighted the relevance of this year's theme and emphasized that scientific temperament and the spirit of inquiry are the key points for moving towards leadership. The event concluded with vote of thanks by Smt Anita Mohindra, Sc 'F'.



LRDE, Bengaluru

NSD 2025 was celebrated at Electronics & Radar Development Establishment (LRDE), Bengaluru, on 28 February 2025. The event was inaugurated by Shri Gampala Viswam, DS & Director, LRDE. Following the inauguration, Shri Jayabrata Chakrabarty, Sc 'F' delivered the oration on 'Sea-based Large Aperture Radar for Air Situation Awareness.'. Director LRDE felicitated Shri Jayabrata Chakrabarty, Sc 'F' with a medal and commendation certificate.



A prize distribution ceremony concluded the event, recognizing the officers who had significantly contributed to training-related activities for the year 2024.



MTRDC, Bengaluru

NSD 2025 was celebrated at the Microwave Tube Research & Development Centre (MTRDC), Bengaluru on 28 February 2025. Shri K Venkateswara Rao, Sc 'F', was the orator of the event. He delivered a talk on 'Analysis of Attenuation Characteristics of Graphene-based EM Wave Transmission Lines at Sub-THz Frequencies.' He received a silicon medal and commendation certificate from Dr SK Datta, OS & Centre Head, MTRDC.



NPOL, Kochi

Naval Physical and Oceanographic Laboratory (NPOL), Kochi celebrated the SD 2025 on 28 February 2025. Dr A Raghunadha Rao, Sc 'G' welcomed the gathering. Science Day address was given by Smt G Miny, Sc 'G' & Director (S&T), NPOL. The NSD oration was given by Dr Satheesh Kumar S, Sc

'F' on 'Listening to the Sea Floor: the Science of Bottom Bounce Propagation'. Dr D Seshagiri, OS & Director, NPOL presented NSD medal and citation to the orator. The oration focused on the importance of bottom bounce propagation in Indian ocean region. The presentation covered an extensive review on similar works around the globe. The necessity of understanding the characteristics of sea bottom for acoustic propagation has been brought out.



NSTL, Visakhapatnam

Naval Science & Technological Laboratory (NSTL), Visakhapatnam, celebrated NSD 2025 on 5 March 2025. The Chief Guest of the occasion, Dr Avinash Chander, Former SA to RM, garlanded the statue of Bharat Ratna Dr APJ Abdul Kalam along with Dr Abraham Varughese, OS & Director NSTL and senior scientists of the laboratory. Chief Guest Dr Chander gave an insightful talk and elaborated the spirit of science in Indian tradition. Mr K Udayanand, Sc 'D' was awarded silicon medal and commendation certificate for his oration on 'Design and Evaluation of Acoustics Performance of Parallel Baffle Silencer for Diesel Engine Intake of Ship'. On the occasion, Chief Guest along with Director NSTL and Technology Director launched AI-enabled

Database 'Gyankosh' which will be a knowledge repository of all the hydrodynamic model test data of marine vehicles. The database was developed by NSTL in association with a start-up TridAI.



PXE, Chandipur

NSD 2025 was observed at Proof & Experimental Establishment (PXE), Chandipur on 28 February 2025 with Dr Mrutyunjay Mohapatra, Director General (Meteorology), India Meteorological Department (IMD) as the Chief Guest. Shri A Bose, Sc 'G' & Associate Director briefed about the reason behind the celebration of the Day. The Chief Guest delivered a talk on 'Science of Climate Change'. Shri Aveek Dutta, Sc 'E' received NSD medal and certificate from the Chief Guest for his oration titled 'Drone-based Photogrammetry for Fall of Shot Measurement in all Artillery Test Range'. Shri Subodha Kumar Nayak, OS & Director PXE encouraged the S&T community for new research activities in addition to the day to day firing.





RAISING DAY CELEBRATION

INMAS, Delhi

The Institute of Nuclear Medicine and Allied Sciences (INMAS), Delhi, celebrated its 64th Raising Day on 13 February 2025. Dr Upendra K Singh, DS & DG (SSS), was the Chief Guest on the occasion. Directors from corporate HQs and Delhi-based laboratories also attended the event. The event saw the culmination of weeklong scientific, sporting, and cultural activities, which were held at the institute. Dr Sudhir Chandna, OS & Director, INMAS, welcomed the guests and highlighted the momentous efforts made by and explained the major core capabilities of INMAS in radiation and nuclear emergency preparedness, R&D in radiation countermeasures, radiation decontamination, and allied biomedical technologies for tactical battlefield operations. He also discussed the laboratory's recent accomplishments and its future plans.

The Chief Guest, Dr Singh in his address, appreciated the contribution of INMAS in the field of R&N emergencies and biomedical research in obscure areas related to human health. He also emphasised on collaboration with academic institutes and the involvement of futuristic technologies like AI and space radiation biology in addition to their current R&D activities.

On the occasion, the Director felicitated meritorious employees of INMAS for their outstanding contributions. INMAS employees who completed 25 years of service were also felicitated.



UARF, NPOL, Kochi

Underwater Acoustic Research Facility (UARF), Idukki, a field unit of Naval Physical and Oceanographic Laboratory (NPOL), Kochi celebrated its Annual Day on 20 February 2025. Dr D Seshagiri, OS & Director NPOL, delivered the presidential speech in which he appreciated all UARF employees for their effort and hard work to complete the tasks.

In his inaugural speech, Dr Manu Korulla, OS & DG (R&M), mentioned the importance of the UARF test facility for the development of the Sonar system. The dignitaries Dr. Bishwajeet Choubey, Sc 'G' & Director DCW&E; Shri Mohan Kumar, GM HMT; Dr Remadevi M, Chairperson, Works Committee;

Shri Tinto Chacko, Secretary, Works Committee; and union representatives Shri MK Abhilash and Shri Virendra Kumar Soni delivered felicitation speeches during the function.

Mr Shaji Peeter, Sc 'E' and Officer in Charge, UARF, welcomed the gathering and presented the achievements of the past year, acknowledged the challenges overcome, and presented the future plan. He emphasized the successful conduct of a record number of 35 trials spanning 127 days, the commissioning of the SPACE platform, the maintenance of watercrafts and machinery, the renovation of the office building, and other infrastructure developments during 2024. Shri Vinod PR, TO 'B' delivered the vote of thanks.



DRDO CELEBRATES INTERNATIONAL WOMEN'S DAY 2025

DRDO celebrates International Women's Day (IWD) every year to recognise the contributions of women employees of DRDO in all cadres. It further aims to commemorate the achievements of women in all spheres of life including social, economic, cultural, and political.

This year, Solid State Physics Laboratory (SSPL), Delhi, hosted the International Women's Day celebrations during 7-8 March 2025 at DRDO Bhawan, Delhi.

The two-day event with the theme 'SAMPURNA' - Scientific Altruists Making Positive Upliftment in Research through New Achievements was inaugurated by Dr Samir V Kamat, Secretary, DD R&D & Chairman

DRDO in the presence of Dr Suma Varughese, DS & DG (MCC) and Dr Meena Mishra (Chairperson IWD-25) OS & Director, SSPL, Delhi and distinguished guests and esteemed invited speakers including Mr R Venkataramani, Attorney General of India, Dr Soumya Swaminathan, Chairperson, MS Swaminathan Research Foundation & Principal Advisor, National Tuberculosis Elimination Programme (NTEP), Delhi and Dr Poonam Gupta, DG at National Council of Applied Economic Research (NCAER).

The special guest of the event, Mr Venkataramani, delivered his inaugural address deliberated about the importance of women's role and contribution in nation-building. Dr Soumya

Swaminathan talked about the role and contribution of women in policy making. She also gave a glimpse of govt policies that are being made to make their work life smooth.

Dr Poonam Gupta spoke about the multifaceted role played by women, the patriarchal challenges the women have to face in all spheres of life and introduced many real-life experiences with her interesting statistical data analysis.

Release of Souvenir was done in the form of a book titled 'SAMPURNA' comprising of 31 Poems with the theme 'Women empowerment' and 37 Articles on 'Developing to Developed India 2047'. The event was attended





by 350 participants from various DRDO laboratories.

The IWD-25 event featured plenary sessions on critical themes like Health and Well-being: The Way Forward to Empowered Women and Women Leadership in a Changing World. These sessions were expertly chaired by Dr Chandrika Kaushik, DG (PC&SI), Ms Varughese, and Ms U Jeya Santhi, DG (HR). The respected DGs were also speakers of the sessions. A distinguished panel of speakers graced the event, including Prof. Nilofer Khan, VC; University of Kashmir, Prof. B Nanda; Principal Miranda House, Dr Geeta Kadayaparth; Senior Oncologist, Max Hospital, Tanu Kashyap; Director General of NIFT and Talish Ray; Advocate Supreme Court.

Each shared their thought-provoking insights and perspectives which added great depth to session discussions. The sessions turned out to be not only comprehensive but also interactive, leaving participants deeply engaged.

For the first time in the history of IWD celebrations,

felicitation of Women Patent Grantees, was carried out marking a groundbreaking moment for recognizing their innovative contributions. This milestone session was chaired by Dr Manu Korulla, Director General (R&M), who also highlighted the pivotal role of women in S&T through his presentation.

Another highlight of the event was the recitations of the best poems which captivated the audience followed by an awards ceremony recognizing the authors of the best poems and articles. The designer of the official event theme, 'SAMPURNA' was also honoured for her artistic contribution.

The cultural programme was inaugurated by Ms Smita S Kamat, President of Mahila Kalyan Manch (MKM), DRDO. The performances were a beautiful blend of tradition, creativity and expression, showcasing the power of women along with diversity and unity of the country. Highlights of the evening included Rhythms of India, a mesmerizing showcase of traditional dances from various states, and Wajood, a performance symbolizing the

strength and resilience of women. One of the key moments of the D celebration was the historic trail to Sunder Nursery; the heritage early morning walk. Participants, accompanied by DG (MCC), DG (PC&SI) and Director SSPL enjoyed a scenic walk through the park's serene landscapes. It was a refreshing and memorable experience to all.

Video clippings and messages from women achievers across various parts of India as well as within DRDO laboratories were also screened to highlight the contributions of women in various fields. In the end, the mega event was concluded with vote of thanks by the convener of the event Dr Somna S Mahajan, Sc'G'.

Besides celebrations at DRDO HQrs, the following laboratories of DRDO also celebrated IWD 2025 at their respective locations:

DL, Jodhpur

IWD 2025 was celebrated at Defence Laboratory, Jodhpur (DLJ) on 7 March 2025. Mrs Binita Thakur, IPS, ADG POLICE Housing, Rajasthan Police, was the Chief Guest and Shri VS Sheno, Chief Guest and Shri VS Sheno,





OS & Director, DLJ, presided over the function. Dr Anuradha Bera, Sc 'F', Chairperson of the Women's cell gave the welcome address. Mrs Thakur highlighted the importance of women contribution in the different fields. She highlighted about the multidimensional role of women in society, the challenges faced, and techniques to balance work and stress in life.

ISSA, Delhi

The Institute for Systems Studies & Analyses (ISSA), Delhi, celebrated IWD 2025 on 10 March 2025. On the occasion, Dr Meghna Goswami, from FMS, University of Delhi, Delhi, delivered a talk on 'Emotional Intelligence.' In her speech, she stressed the importance of recognizing, understanding, managing, and influencing both our own emotions and those of others.

Ms Deepakshi Shah, Director addressed the gathering to maintain gender equality within the workforce. All the officers and staff attended the event and actively participated in the event.

PXE, Chandipur

IWD 2025 was celebrated



at Proof and Experimental Establishment (PXE), Chandipur on 12 March 2025. On the occasion, a Workshop was organised on 'Accelerate Action for Women Equality'. Shri SK Nayak, OS & Director addressed the gathering and talked about the role of women at various capacities in the organisation as well as in personal front.

He highlighted the contribution of women in the dynamic test and

evolution of armament stores. The Chief Guest Lt. Col Nidhi Singh elaborately described on the theme of IWD 2025 and motivated the participants. Chief speaker Shri BK Piyush, Zonal coordinator, Scientist Engineer Architect (SEA) Wing, New Delhi, delivered a special talk on 'Rajyoga Meditation' with practical demonstration. A total of 90 employees participated in the workshop.





FIRE SAFETY AWARENESS PGM AT DIBT

The Defence Institute of Biodefence Technologies (DIBT), Mysuru, organized a Fire Safety Awareness Programme on 17 January 2025 to enhance awareness among employees, contractual staff, and students about fire hazards, safety protocols, and emergency fire-fighting measures. The program was conducted by Shri Mahesh Gowda, station fire officer, Bannimantap, Mysuru, along with his team from the Karnataka Fire and Emergency Services. The event commenced with a welcome address by Dr DD Wadikar, Sc 'F' & Chairman, Fire & Industrial Safety Committee, who briefed the gathering on the objectives of the program. Dr VA Sajeev Kumar, Sc 'G' & Associate



Centre Head, DIBT, presided over the function and emphasized the significance of fire safety training in ensuring the well-being of the institute's personnel and infrastructure. A mock drill was

conducted, demonstrating the practical use of fire extinguishers for different fire scenarios. The event concluded with a vote of thanks by Mr SS Manjunath, Sc 'E' & Security Officer, DIBT.

NATIONAL SAFETY WEEK CELEBRATION

DRDO HQrs

Safety Week is celebrated every year from 4 to 10 March to spread awareness about workplace safety. This year the theme is 'Safety and Well-being Crucial for Viksit Bharat' which is in line with the nation's vision of achieving Viksit Bharat by the year 2047. Directorate of Quality, Reliability and Safety (DQR&S) organized a webinar on the theme on 6 March 2025 at DRDO HQrs. Dr Chandrika Kaushik, DG (PC&SI) graced the occasion as the Chief Guest. Two eminent speakers from field of Safety, Dr Lalit R Gabhane, DG & Chief Executive, NSCI and Dr KC Wadhwa, Former OS, CFEEs delivered lectures. At the outset, Vice Admiral Ranjit



Singh, Director DQR&S welcomed the Chief Guest and spoke about the importance of safety and the role of DQR&S in building robust safety culture in DRDO through the process of safety audits and trainings.

DG (PC&SI) praised the efforts

of DQR&S in the upholding the commitment towards safety by conducting periodic safety audits and urged all the participants to actively participate in these audits and give honest feedbacks and suggestions on improving the safety environments.



DEBEL, Bengaluru

The National Safety Week was organized at Defence Bio-engineering and Electromedical Laboratory (DEBEL), Bengaluru, during 4-10 March 2025 to enrich the safety awareness among the employees. As a part of the awareness program, various events like essay writing and quiz competition were organised. Shri Sathyaseelan, Sc 'E', co-ordinated the events. On the concluding day, the 'Safety Pledge' was taken by all employees followed by an invited lecture by Shri MU Vincy, SO/H, Chief Engineer (Safety), HQ Nuclear Power Corporation of India Limited (NPCIL), Mumbai, on various safety practices. Dr R Indu Shekar, Director, DEBEL, distributed the prizes to the winners of the competitions.



DESIDOC, Delhi

Defence Scientific Information & Documentation Centre (DESIDOC), Delhi celebrated 54th National Safety Week 2025 during 4-10 March 2025 with enthusiasm, engagement and a collective commitment to providing a safe and secure working environment for all. The highlight of the event was the poster competition where

their creativity and understanding of safety protocols vibrant and informative posters. The creativity displayed was truly inspiring and each poster served as a reminder of the importance of safety in every aspect of our work.

All the officers and staff of DESIDOC attended the online safety lecture session organized by DQR&S on 6 March 2025. In addition, a five-minute video on 'How to put off fire when fire starts in domestic LPG cylinder' was also showcased.



DL, Jodhpur

54th Safety Week 2025 was celebrated at Defence Laboratory, Jodhpur, during 4-10 March 2025. Shri VS Shenoi, OS & Director,

DLJ inaugurated the event. A fire safety drill, quiz competition on safety and various talk was organised during the week. Dr Lalit R Gabhane, DG & CEO, NSIC Mumbai delivered a talk on Safety & Well-being Crucial for Viksit Bharat" another talk on 'Vision Viksit Bharat: Ensure Fire Safety & Contribute towards Nation building' delivered by Dr KC Wadhwa Former OS, CFEES.

ISSA, Delhi

The Institute for Systems Studies & Analyses (ISSA), Delhi, commemorated National Safety Week 2025 from during 4-10 March 2025. The event commenced with an opening ceremony, where all employees took the safety pledge, reaffirming their commitment to a secure and healthy workplace. Various activities were conducted, including two evacuation mock drills and first-aid awareness programs, aimed at enhancing preparedness and response to emergencies. Shri Deepak Kumar, Safety Officer & Technical Officer 'B', delivered a lecture on fire





safety protocols and best practices, followed by an engaging quiz session.



NSTL, Visakhapatnam

The 54th National Safety Week was celebrated at Naval Science & Technological Laboratory (NSTL), Visakhapatnam, during 4-12 March 2025. Shri N Ravi Kumar, Sc 'F' & Head (Safety) reiterated the fact that NSTL is 'Zero Accident-Zero Incident Industry',

with all the safety measures inside NSTL technical area. Dr Abraham Varughese, OS & Director, NSTL stressed on the importance of safety at the work place and narrated various initiatives taken up to strengthen safety aspects at the laboratory. Guest of Honour Sri

V Suresh, Deputy Chief Inspector of Factories, Government of Andhra Pradesh emphasized on the preventive measures to avoid hazards and also brought out various safety measures required and explained the importance of safety.



BRAINSTORMING CUM DISCUSSION SESSIONS FOR NDRF PERSONNEL AT INMAS

A two-day brainstorming and discussion session on Chemical, Biological, Radiological, and Nuclear (CBRN) emergency management was held at the Institute of Nuclear Medicine & Allied Sciences (INMAS), Delhi, to enhance preparedness and response capabilities of National Disaster Response Force (NDRF) officers in managing CBRN emergencies. The event was inaugurated by Dr Chandrika Kaushik, OS & DG (PC&SI), along with Shri Sangit Rao Acharya, Sc 'G' & Director, DLIC, and Dr Sudhir Chandna, OS & Director, INMAS, and featured a specialized exhibition showcasing innovative technologies for CBRN mitigation. Besides, an interactive session of



all NDRF participants was held under the chairmanship of Dr UK Singh, DS & DG (SSS). The valedictory session was honored by Shri Narendra Bundela, Inspector General, NDRF, and

Director INMAS. The event was concluded with a commitment to strengthening the nation's resilience against CBRN threats through ongoing training and innovation.



COURSE ON Q&R CHALLENGES FOR NEXT GENERATION EW SYSTEMS AT DLRL

The Defence Electronics Research Laboratory (DLRL), Hyderabad, conducted a course on 'Quality and Reliability Challenges for Next Generation EW Systems' during 3-7 February 2025. The course was inaugurated by Shri N Srinivas Rao, DS & Director, DLRL, in the presence of Dr M Chakravarthy, OS & Associate Director, Shri K Murali, OS & Associate Director, Smt Soma Vashishta, Sc 'G' Additional Director, Directorate of P&C, HRD; Smt Viraja V, Sc 'G' Additional Director, Directorate of QA, Shri JRC Sarma, Sc 'G', HRDC; and Shri S Krishna



Mohan, Sc 'G' Course Director. 15 sessions, including two visits to DLRL test facilities and the ELSEC test range, comprised the course schedule. The course commenced with the keynote address by Dr Akhilesh Pathak, OS & Regional

Director, RCMA, Hyderabad, on 'Airworthiness Certification: Ensuring Survivable Systems—New Enablers' and guest lectures by experts from URSC, ISRO, 2 from sister laboratories, 6 from industry, and the rest from DLRL.

COURSE ON ADVANCED ANALYTICAL TOOLS & TECHNIQUES OF TOXIC CHEMICALS AT DRDE

The Defence Research and Development Establishment (DRDE), Gwalior, organized a course on 'Advanced Analytical Tools and Techniques for Characterization of Toxic Chemicals' during 5-7 February 2025. The objective of the program was to disseminate the knowledge regarding verification of the Chemical and Biological Weapons Convention and enhance the nation's preparedness capabilities. Thirty-four participants from various DRDO laboratories, participated in the course.

The inaugural program was graced by Dr Manmohan Parida, OS & Director, DRDE; senior



scientists; faculty members; participants; and research scholars. The three days featured a series of lectures from domain experts. Practical demonstrations were held at VERTOX laboratory, a 'Designated' laboratory by the

Organization for the Prohibition of Chemical Weapons Conventions for the verification of chemical warfare agents and their markers in both environmental and biomedical samples. Dr Vijay Tak, Sc 'F' was the Course Director.



INVITED TALK ON DEFORMATION, FATIGUE, FRACTURE BEHAVIOUR OF SHEET STEELS AT DMRL

The Defence Metallurgical Research Laboratory (DMRL), Hyderabad, organized an invited talk on 'Glimpses of Research at Jadavpur University on Deformation, Fatigue, and Fracture Behavior of Sheet Steels' by Prof. Pravash Chandra Chakraborti, Jadavpur University, on 4 March 2025. The session, attended by DMRL scientists, provided a platform for engaging discussions on advanced materials research.

Dr Chandan Mondal, Sc 'G', welcomed the gathering and introduced the distinguished speaker. Prof. Chakraborti's talk



focused on three key areas: micro-tensile deformation, low-cycle fatigue, and fracture toughness of sheet steels. He also introduced the concept of 'Ratcheting Ductility' for assessing material damage and presented a novel approach to evaluating fracture

toughness in thin sheet metals, addressing the lack of ASTM standardization. In addition, Prof. Chakraborti shared an overview of ongoing research projects and facilities at Jadavpur University's Department of Metallurgical and Materials Engineering.

INHOUSE COURSE FOR RETIRING EMPLOYEES OF NPOL

In-house Course for Retiring Employees of NPOL (INCREON) was conducted during 18-19 February 2024. The participants gained valuable insights into managing their health, finances, and government benefits effectively.

Dr Jino Joy, Consultant Geriatrician, Medical Trust Hospital, Kochi delivered a lecture on age-related health disorders, and Dr Manu Melwin Joy, Assistant Professor, CUSAT; K. Vijayalkshmi Amala, a renowned yoga practitioner; Dr Mary Matilda, former Principal of Maharajas College, Ernakulam;



and Shri Noufal GK, a well-known financial planner, conducted different insightful and inspiring sessions. In-house experts provided in-depth information

on Pension Pay Order (PPO) and pensionary benefits as well as CGHS and medical reimbursement schemes.



AWARENESS PROGRAMME ON PUBLIC PROCUREMENT POLICY AT IRDE

The Instruments Research & Development Establishment (IRDE), Dehradun, organized an awareness program on public procurement policy on 3 February 2025. The program was targeted to make the participants aware of the detailed procedure being followed in DRDO for the procurement of goods and services, keeping in mind its organization-specific requirements. DRDO HQs invited a representative from the Directorate of Finance and Material Management (DFMM) to deliver a lecture. Shri Jagdeep, Sc 'G' & Associate Director, DFMM,



was the key resource person for this program. He delivered a lecture on 'Public Procurement Policy and Common Issues of Procurement by DRDO laboratories and establishments.

In his talk, Shri Jagdeep covered different procurement policies and procedures that are essential for DRDO laboratories. He also discussed the various issues arising during the procurement and suggested actions to overcome them. On behalf of Director IRDE, Dr Shailendra Singh Yadav, Sc 'G' IRDE facilitated Shri Jagdeep.

DGRE IN SYNTECH2.0 AT CHITKARA UNIVERSITY, PUNJAB

SYNTECH2.0: Symposium on Disruptive Technologies was scheduled on 5 February 2025 organized by Chitkara University Research & Innovation Network (Adv Res), Chitkara University, Punjab. Dr PK Satyawali, OS & Director, DGRE, was the Chief Guest and gave the inaugural address of the symposium. Shri Sachin Kumar, Sc 'F' DGRE, gave an invited talk on 'Defence at the Frontier: Leveraging Immersive Technologies for Tactical Advantage' in the symposium, which was attended by students and faculties of academia and institutes across the nation.





TRAINING PROGRAMME ON MANAGEMENT OF SPECIALISED ANIMAL TRANSPORT AT DIHAR

A seven-day training program on the management of specialized animal transport (Bactrian Camels And Ladakhi Yaks) for OP LGS IN 14 Corps Zone AOR for Combatants of IA and ITBP was organized at the Defence Institute of High Altitude Research (DIHAR), Leh, during 24 February 2025 to 2 March 2025. Twelve soldiers from the Indian Army and the Indian Border Police Bureau (ITBP) attended the event. The DRDO and RVC staff of DIHAR, Animal Division, taught the trainees how to handle animals, house them, feed them, prevent diseases, treat common illnesses and injuries, load and unload them, transport them, and use the right methods for deployment in r/o specialized



AT. Besides a detailed theoretical brief, stress was given on practical handling and management of the specialized AT to in still confidence

amongst the trainees to optimally handle, train, treat, manage, and deploy the specialized AT in the challenging terrain.

INTERNATIONAL CONFERENCE ON BIOLOGICAL EFFECTS OF SPACE RADIATION AT INMAS

The Institute of Nuclear Medicine & Allied Sciences (INMAS), Delhi, hosted a three-day International Radiobiology Conference on Biological Effects of Space Radiation, Heavy Ions & Human Space Missions—Mechanisms & Biomedical Countermeasures at Manekshaw Centre, New Delhi, from 27 February 2025 to 1 March 2025. Dr Sudhir Chandna, Director, INMAS, introduced the conference, highlighting its relevance to India. The event was inaugurated by Chief Guest Prof. Ajay Kumar Sood, Principal Scientific Adviser





to the Government of India, with Dr Samir V Kamat, Secretary, DDR&D & Chairman, DRDO, as the Guest of Honour. Special guests included Surg. Vice Admiral Arti Sarin, AVSM, VSM, Director General, Armed Forces Medical Services; Dr Upendra Kumar Singh, DG, Soldier Support System, DRDO; Prof. Albert J Fornace Jr., Georgetown University, USA; and Dr Dinesh Kumar Singh, Director, Human Space Flight Centre, Bengaluru, represented ISRO.

The conference hosted lectures by 35 foreign scientists from nine countries, including the USA, Germany, Czech Republic, France, Singapore, Republic of Korea, and Sweden, who discussed advancements in space radiobiology. The conference was attended by more than 200 delegates Prof. Sood

emphasized the risks of space radiation for astronauts, while Dr. Kamat highlighted the need for interdisciplinary collaboration to develop protective technologies. He stressed that space exploration is a modern necessity, with advances like long-term ISS missions

paving the way for future deep-space endeavors. The conference paved a major path for India's future radiobiology programme by initiating significant international participation and collaboration amongst leading laboratories across the world including India.



COURSE ON PRIME1: ESSENTIAL SKILLS IN R&D MANAGEMENT (BASIC)

The PRIME-1 (Basic) course designed to equip future Project Directors and Deputy Project Directors from DRDO with essential skills in Project and R&D Management was conducted by the Institute of Technology Management (ITM), Mussoorie, during 20 January 2025 to 14 February 2025. The course led by Course Director Shri Prithpal Singh, Sc 'D' was attended by forty one participants from eight DRDO clusters. The course commenced with a inaugural address by Prof. Prateek Kishore, OS & DG (ACE). In his address, Prof. Kishore shared his critical views on



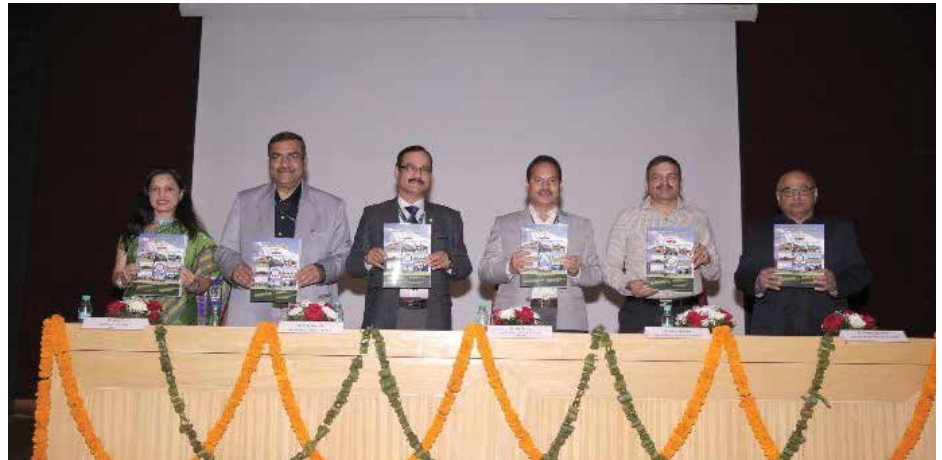
project management practices within DRDO and discussed the internal review committee's recommendations aimed at addressing the weaknesses in current processes.

His insights motivated the scientists to proactively identify and resolve these challenges, thereby fostering a culture of continuous improvement and innovation.



NATIONAL JOINT S&T RAJBHASHA SEMINAR AT DGRE

During February 13-14, 2025, the Defence Geoinformatics Research Establishment (DGRE) in Chandigarh put together the 'National Joint S&T Rajbhasha Seminar 2025' on Armament & War Engineering: Rising Technologies & Future Directions' and was put together with the help of all the ACE cluster DRDO laboratories, including ARDE, HEMRL, PXE, CVRDE, R&D (Engrs.), VRDE, ACEM, and MSC. The seminar was inaugurated by Chief Guest Shri Anakthi Raju, OS & Director, ARDE, and Guest of Honor Dr Anil Prasad Dash, Director, HEMRL, and Dr Makrand Ganesh Joshi, R&D (Engrs.). Dr Pramod Kumar Satyawali, Director, DGRE, welcomed all the delegates and participants and expressed his best wishes for



the success of the seminar. The Chief Guest released the souvenir of the seminar and commended the efforts made by DGRE to organize a national seminar to promote the usage of Hindi in scientific works. More than 100 participants and delegates from 15 DRDO laboratories across the

country attended the seminar. Dr Snehmani, additional director of DGRE and seminar coordinator, thanked the directors of the participating laboratories of the cluster for the cooperation and expressed gratitude towards all the participants and representatives of the seminar.

HINDI WORKSHOPS

DESIDOC, Delhi

Defence Scientific Information & Documentation Centre (DESIDOC), Delhi organised a one-day Hindi workshop on 'Scientific and Technical Writing in Hindi' on 21 March 2025. The workshop was chaired by Ms Kiran Chauhan, Director, DESIDOC who also addressed the gathering during the inaugural session. Dr Anant Narayan Bhatt, Sc 'F', Institute of Nuclear Medicine and Allied Sciences (INMAS), Delhi was the guest speaker of the occasion. He spoke on how to write technical papers in Hindi so a common man



can get the major benefit out of it. He requested all the participants to follow the rules and guidelines

related to Rajbhasha as given in the constitution of India. Shri Tapesh Sinha, Sc 'F' & Rajbhasha



Adhikari also presented the report of the work carried out in the laboratory in Hindi. Shri Sanjeev Kumar, Assistant Director (Hindi) coordinated the workshop.

DMRL, Hyderabad

On 21 February 2025, the Defence Metallurgical Research Laboratory (DMRL), Hyderabad, conducted a Hindi workshop reaffirming its commitment to promoting the use of Rajbhasha in the workplace. Shri Pawan Kumar, Assistant Director (Official Language), DMRL, welcomed the speaker, Shri Santosh Kumar, Assistant Director, Hindi Shikshan Yojana, Department of Official Language, Ministry of Home Affairs.

In his address, Shri Santosh Kumar emphasized the importance of Rajbhasha policies, rules, and regulations, highlighting the role of personnel in their effective implementation. Dr M Manivel Raja, Sc 'G' motivated the participants to actively learn and apply Hindi in their routine tasks. The workshop witnessed enthusiastic participation from 60 DMRL personnel across various cadres, who expressed a keen interest in more such enriching sessions. The event was successfully coordinated by Shri Pawan Kumar, Assistant Director (OL), with support from Shri Jai Prakash, TO 'A'.

DRL, Tezpur

Defence Research Laboratory, Tezpur organized one day Hindi workshop on 20 February 2025. There were two sessions in the workshop. First session was covered by Sh Amartya Banerjee, SRF, on Good Laboratory Practices (GLP)



Hindi wokshop at DMRL, Hyderabad

while second session was covered by Dr Yangchen Doma Bhutia, Sc, 'E', on Traditional Medicines. Traditional Medicines lecture aimed at the value, traditional methods and treatment added to the amelioration of the existing and newly emerging diseases. More than 50 participants were in attendance.

INMAS, Delhi

To promote the use of Rajbhasha, a one-day Hindi workshop was organized on 27 January 2025 on 'Awareness Session on Information Security' delivered by Mr Ajay Kumar, Sc 'E'. A total of 120 officers participated in the workshop. The main objective of the workshop was to educate the participants about the organization's responsibility to protect the confidentiality, availability, and integrity of information. The welcome speech was delivered by Dr Rashmi Aggarwal, Sc 'F' & Rajbhasha Adhikari of the Institute. Mr Ajay



Hindi workshop at INMAS, Delhi



Kumar, keynote speaker, shared information to raise awareness about information security.

IRDE, Dehradun

The Instruments Research & Development Establishment (IRDE), Dehradun, conducted a one-day Hindi workshop on 25 February 2025 on ‘Information about Unicode and Various Tools for Hindi Typing as well as Hindi Correspondence.’

Shri Punit Vashisth, Sc ‘G’ & Additional Director, IRDE, inaugurated the workshop and emphasised the importance of the use of Hindi in day-to-day official activities. Smt Manju Dhasmana, TO ‘C’, delivered a lecture on ‘Information about Unicode,’ while Shri Anuj Kumar Ruhela, TO ‘B’ and Shri Prakash Neerav, Senior Translation Officer from IRDE, discussed the topics ‘Typing of Hindi Using Computer and Information about Various Tools’ and ‘Different Forms of Hindi Translation and Correspondence,’ respectively. Dr LM Pant, Sc ‘F’ & Vice-chairman, Rajbhasha,, introduced the participants and workshop.



NPOL, Kochi

Naval Physical & Oceanographic Laboratory (NPOL), Kochi, conducted the fourth Hindi workshop of the financial year 2024–25 on March 3, 2025,



Hindi workshop at NPOL, Kochi

focusing on the Parliamentary Committee on Rajbhasha, IT Tools, and Rajbhasha Policy. The workshop was inaugurated by Dr Duvvuri Seshagiri, OS & Director NPOL. Dr Madhusheel Ayilliath, Assistant General Manager, RBI was the faculty and he provided valuable insights into the effective use of Hindi in official work along with official language policy.

NSTL, Visakhapatnam

To enhance the interest of officers and staff in Rajbhasha Hindi and to remove the hesitations

occurring while using Hindi in the official duties, a Rajbhasha workshop was organized on 4 March 2025 at NSTL, Visakhapatnam. The invited speaker Dr Lalan Kumar, General Manager & OIC (Rajbhasha and Administration), Visakhapatnam Steel Plant delivered a talk on ‘Journey of Rajbhasha’.

A total of 36 participants from all cadres participated enthusiastically in the workshop. Shri Vivek Sharma, Sc ‘F’ & Rajbhasha Adhikari coordinated the workshop.



Hindi workshop at NSTL, Visakhapatnam



INFRA DEVELOPMENT AT NSTL

Foundation Stone for Construction of Family Welfare Centre

The foundation stone for construction of the Family Welfare Centre at Naval Science & Technological Laboratory (NSTL), Visakhapatnam, was laid by Dr Samir V Kamat, Secretary DD R&D & Chairman DRDO on 17 January 2025. The event was graced by dignitaries that include Shri RV Hara Prasad, DS & DG (NS&M); Dr Abraham Varughese, OS & Director NSTL, Dr Bishwajeet Choubey, Sc 'G', Director (DCW&E); Shri I Mani Prasad, Chief Engineer (R&D) Secunderabad; and officers and staff of NSTL.



Inauguration of Officers Accommodation

Dr Manu Korulla, OS & DG (R&M), inaugurated 16 Nos. of New Officers Married Accommodation (Type V) on 16 January 2025 at NSTL, Visakhapatnam. The event was graced by Dr Abraham Varughese, OS & Director NSTL; Dr Bishwajeet Choubey, Sc 'G', Director (DCW&E); Shri I Mani Prasad, Chief Engineer (R&D), Secunderabad; and many others. Dr Manu Korulla said that the newly constructed married accommodation is one of the best in the entire DRDO.





Memorial Oration Award



Sh AS Rathore, Sc ‘H’ & OS, Defence Laboratory, Jodhpur was honoured by Shri A Nagarathnam Memorial Oration Award-2025. Sh DK Shukla, Chairman, Atomic Energy Regulatory Board presented him the award during the 35th Indian Association for Radiation Protection National Conference (IARPNC-2025) held during 29-31 January 2025 in Mumbai.

Higher Qualification Acquired



Shri Mahesh Kumar Kumawat, Sc ‘E’ of Defence Metallurgical Research Laboratory (DMRL), Hyderabad, has been awarded PhD for his thesis entitled “Uniaxial Fatigue Behaviour of Freestanding Platinum-Aluminide (PtAl) Bond Coat” from IISc, Bengaluru.



Shri G Sukumar, Sc ‘E’ of Defence Metallurgical Research Laboratory (DMRL), Hyderabad, has been awarded PhD for his thesis entitled “Thermo Mechanical Processing, Dynamic Deformation and Ballistic Performance of Ti-4Al-2.5V-1.5Fe-0.250 Alloy” from IIT, Madras.

DRDO SOUTH ZONE & ALL INDIA INTER ZONE VOLLEYBALL TOURNAMENT

The DRDO South Zone Volleyball Tournament for the year 2024-25 was conducted by the Combat Vehicles Research & Development Establishment (CVRDE), Chennai, during 17-19 February 2025. A total of 11 teams participated in the tournament. NPOL, Kochi, and ADE, Bangalore, secured the winners and runners-up positions, respectively. CVRDE also organized the DRDO All India Inter Zone Volleyball Tournament during February 20-21, 2025.

A total of 4 teams (viz., North, South, Central & West) participated. South Zone and Central Zone secured the winners and runners-up positions, respectively. Shri J Rajesh Kumar,



OS & Director, CVRDE, graced the inaugural function, and Dr V Balamurugan, OS & Associate

Director, CVRDE, attended the valedictory function of both the tournaments.



VISITORS TO DRDO LABORATORIES

CAIR, Bengaluru

General Anil Chauhan, PVSM, UYSM, AVSM, SM, VSM Chief of Defence Staff (CDS) and team visited CAIR on 13 February 2025. There was a briefing by Dr Rituraj Kumar, OS & Director, CAIR followed by discussion and demonstration of technologies developed by CAIR in the area of Intelligent Systems & Robotics, Command and Control technologies for land and naval forces, Information Security, Communication Security and Geographical Information Systems.



Dr Rituraj Kumar felicitating General Anil Chauhan at CAIR, Bengaluru

DIBT, Mysuru

Maj Gen Mohit Mahendroo, DCCI, ASC Centre & College, Bengaluru, visited the Defence Institute of Bio-defence Technologies (DIBT), Mysuru, on 3 March 2025. He was welcomed by Dr R Kumar, Centre Head, DIBT, and senior scientists of the institute. During his visit, Dr Kumar presented a comprehensive presentation highlighting DIBT's mission, state-of-the-art infrastructure, and ongoing research activities. The presentation underscored the institute's role in advancing bio-defence technologies and developing innovative nutritional requirements for the Armed Forces.



Maj Gen Mohit Mahendroo at DIBT, Mysuru

DGRE, Chandigarh

Dr UKSingh, DS&DG(SSS), and the team of officers of O/o DG (SSS) visited Defence Geoinformatics Research Establishment (DGRE), Chandigarh, on 6 March 2025.

Dr PK Satyawali, OS & Director, DGRE, welcomed Dr Singh and briefed him on various DGRE ongoing R&D, technical activities, operational activities, and support

services. Dr Singh also visited the static display of exhibits and the VR facility and products and was briefed about the models of DGRE. DG (SSS) interacted with

the scientists of DGRE, delivered his first official address to DGRE personnel during the visit, and assured them that the Office of DG (SSS) will continue to support DGRE in the future.

DMRL, Hyderabad

The Defence Metallurgical Research Laboratory (DMRL), Hyderabad, hosted an industrial tour for 140 students, accompanied by 4 faculty members from the Department of Mechanical Engineering, National Institute of Technology (NIT), Warangal, during 20-21 February 2025.

The students were given a warm welcome, followed by an introductory video showcasing DMRL's journey, research focus, and technological achievements. Dr Sarabjit Singh, Sc 'F' addressed the gathering, highlighting the laboratory's key advancements and emphasizing the significance of collaboration between research institutions and academia.

As part of the visit, students explored various technical divisions, gaining firsthand exposure to DMRL's state-of-the-art infrastructure and ongoing research activities.

ISSA, Delhi

Students of the Centre for Automated Military Survey (CAMS) visited the Institute for Systems Studies & Analyses (ISSA), Delhi, on 21 February 2025, to get exposure to ISSA-developed wargame software for the Army, Navy, and Air Force. The technical presentation-cum-demonstration of wargame software was given by Shri Arvind Kumar Mahla, Sc 'G', Shri Harinder Kumar Dholta, Sc 'E', Shri Gaurav Gupta, Sc 'E' and Shri Anurag Pathak, Sc 'E'.



Dr UK Singh, DS & DG (SSS) during his visit at DGRE, Chandigarh



Students from NIT Warangal at DMRL, Hyderabad



Students from Centre for Automated Military Survey at ISSA, Delhi