

DRDO NEWSLETTER



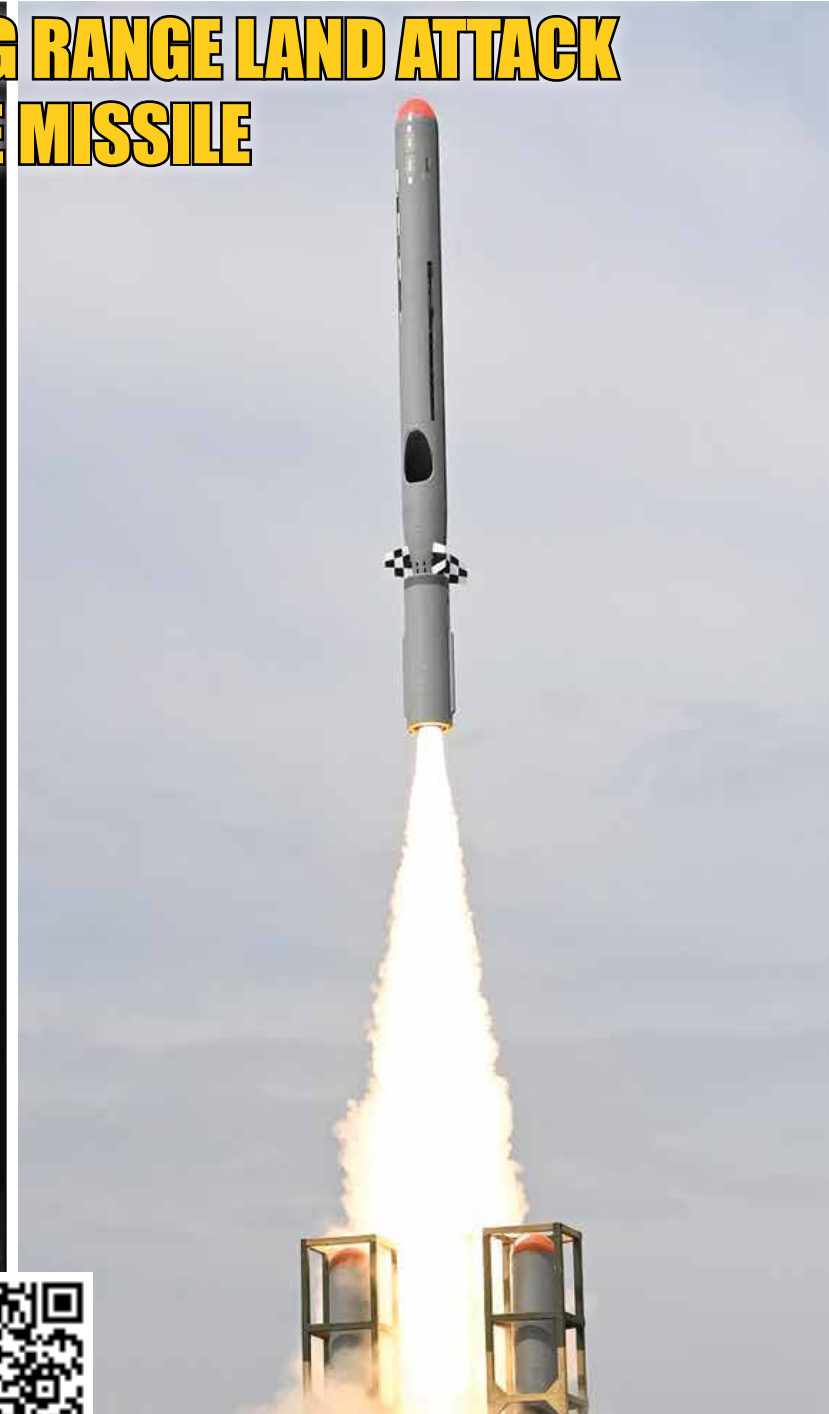
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SUCCESSFUL FLIGHT-TRIAL OF INDIA'S FIRST LONG-RANGE HYPERSONIC MISSILE AND MAIDEN FLIGHT-TEST OF LONG RANGE LAND ATTACK CRUISE MISSILE



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DRDO CARRIES OUT SUCCESSFUL FLIGHT-TRIAL OF INDIA'S FIRST LONG-RANGE HYPERSONIC MISSILE OFF THE ODISHA COAST

The Defence Research and Development Organisation (DRDO) conducted a successful flight-trial of India's first long-range hypersonic missile from Dr APJ Abdul Kalam Island off the coast of Odisha on 16 November 2024. This hypersonic missile is designed to carry various payloads for ranges greater than 1,500 kms for the Armed Forces.

Various range systems, deployed in multiple domains, tracked the missile. The flight data obtained from downrange ship stations confirmed the successful terminal manoeuvres and impact with a high degree of accuracy.

The missile has been indigenously developed by the laboratories of the Dr APJ Abdul Kalam Missile Complex, Hyderabad, along with various other DRDO laboratories and industry partners. Senior scientists from DRDO and officers from the Armed Forces witnessed the flight trial.

In a post on X, Raksha Mantri Shri Rajnath Singh described the flight trial as a historic achievement that has put India in the group of select nations with the capabilities of such critical and advanced military technologies. He congratulated DRDO, the Armed Forces, and the industry for the successful flight trial.





DRDO CONDUCTS MAIDEN FLIGHT-TEST OF LONG RANGE LAND ATTACK CRUISE MISSILE OFF ODISHA COAST

The Defence Research and Development Organization (DRDO) conducted the maiden flight test of the Long Range Land Attack Cruise Missile (LRLACM) from the Integrated Test Range (ITR), Chandipur, off the coast of Odisha, on November 12, 2024, from a mobile articulated launcher. During the test, all subsystems performed as expected and met the primary mission objectives. Several range sensors, including radar, an optical tracking system, and telemetry deployed by ITR at various locations, monitored the missile performance to ensure complete coverage of the flight path.

The missile followed the desired path using waypoint navigation and demonstrated its capability to perform various maneuvers while flying at different altitudes and speeds. Advanced avionics and software equip the missile for enhanced and dependable performance.

The Aeronautical Development Establishment (ADE), Bengaluru, has developed LRLACM with contributions from other DRDO laboratories and Indian industries. The two development-



cum-production partners for LRLACM, Bharat Dynamics Limited (BDL), Hyderabad and Bharat Electronics Limited (BEL), Bengaluru, are actively involved in the missile development and integration. Senior scientists from various DRDO laboratories, along with representatives from the three services and system users, witnessed the test.

LRLACM is a Defense Acquisition Council-approved, Acceptance of Necessity-sanctioned Mission Mode Project. The system can be launched from the ground using a mobile articulated launcher, and from frontline ships using a universal vertical launch module system.

Hon'ble Raksha Mantri Shri Rajnath Singh has complimented DRDO, the Armed Forces, and the industry on the successful maiden flight test. It paves the way for future indigenous cruise missile development programs, he said.

Dr Samir V Kamat, Secretary, DD R&D & Chairman, DRDO, congratulated the entire team of DRDO on the successful maiden launch of LRLACM.



DRDO HANDS OVER AHSP OF P-7 PARACHUTE SYSTEM TO DGQA

The Aerial Delivery Research and Development Establishment (ADRDE), Agra, has handed over the Authority Holding Sealed Particulars (AHSP) of the P-7 Parachute System to the Directorate General of Quality Assurance (DGQA). Dr Samir V Kamat, Secretary, DD R&D & Chairman, DRDO, handed over the AHSP in a ceremony held at DRDO Bhawan, New Delhi, on 11 November 2024. ADRDE has successfully designed, developed, and qualified the P-7 Parachute System. Gliders India Limited (Ordnance Parachute Factory), GIL (OPF), Kanpur has fabricated the parachute



system, which is capable of safely dropping payloads of up to 9.5 tons from IL-76 aircraft at an altitude of up to four km. The Indian Army can rapidly deploy their light field gun and Jeep at the border and conflict areas by

airdropping with this system. Army has placed an indent for supply of 146 P-7 Heavy Drop Parachute System. The system has successfully completed General Staff Evaluation and been inducted into the services.

INDIGENOUS DEVELOPMENT OF SILICON CARBIDE WAFERS AND GAN HEMT-BASED MMIC TECHNOLOGY UP TO X-BAND APPLICATIONS

The Solid State Physics Laboratory (SSPL), Delhi, has successfully created its own methods for creating 4-inch Silicon Carbide (SiC) wafers, Gallium Nitride (GaN) High Electron Mobility Transistors (HEMTs) up to 150W, and Monolithic Microwave Integrated Circuits (MMICs) up to 40W for use at X-band frequencies. GaN/SiC technology is a critical enabler of next-generation applications across defence, aerospace, and clean energy sectors.

This advanced technology offers improved efficiency, reduced size and weight, and enhanced performance, making it essential for future combat systems, Radars, electronic warfare systems, and green energy solutions. With rising demands for lighter and more compact power supplies in future combat systems, GaN/SiC technology provides a vital foundation for communications, intelligence, reconnaissance,

and unmanned systems for both military and commercial sectors, including electric vehicles and renewable energy.

GAETEC, Hyderabad, successfully established indigenous GaN on SiC-based MMICs with limited production capability. These state-of-the-art multifunctional MMICs cater to wide applications in next-generation strategic systems, space, aerospace, and 5G/satellite communications.



DRDO SUCCESSFULLY COMPLETES FLIGHT TESTS OF GUIDED PINAKA WEAPON SYSTEM

DRDO successfully completed the flight tests of Guided Pinaka Weapon System as part of Provisional Staff Qualitative Requirements (PSQR) validation trials. The flight tests were conducted in three phases at different field firing ranges on 14 November 2024. During these tests, the PSQR parameters, viz., range, accuracy, consistency, and rate of fire for multiple target engagements in salvo mode, have been assessed by extensive testing of rockets. Twelve (12) rockets from each production agency from two in-service Pinaka launchers upgraded by the launcher production agencies have been tested.

The precision strike variant for the Pinaka Multiple Launch Rocket System was designed and built by the Armament Research



and Development Establishment (ARDE), Pune, the Research Center Imarat (RCI), Hyderabad, the Defence Research and Development Laboratory (DRDL), Hyderabad, the High Energy Materials Research Laboratory (HEMRL), Pune, and the Proof & Experimental

Establishment (PXE), Balasore. Munitions India Limited and Economic Explosives Limited are responsible for ammunition production, while Tata Advanced Systems Limited and Larsen & Toubro are responsible for the Pinaka launcher and Battery Command Post.

PIVOTAL BREAKTHROUGH IN DEF. TECHNOLOGY

Solid State Physics Laboratory (SSPL), Delhi, Research Centre Imarat (RCI), Hyderabad, along with Industry partner M/s Techno Craft Industries India Limited successfully demonstrated high performance miniature Joule-Thomson cooler under the scheme of Technology Development Fund. The component is a vital part for IR seekers used in missile. Enquiries for export have also been received for the product.





DMSRDE TRANSFERRED KEY TECHNOLOGY ON PCS SYNTHESIS

The Defence Materials and Stores Research & Development Establishment (DMSRDE), Kanpur, has developed a technology known as 'A process for synthesis of Poly Carbo Silane (PCS).' PCS is a precursor material for the development of a strategic material called Silicon Carbide (SiC). Anabond Limited, Chennai, received the technology transfer. During an event at DMSRDE on 22 October 2024, Dr Kingsuk Mukhopadhyay, Sc 'G' & Associate Director, formally handed over the technology transfer document and license agreement to the industry. The document was received by Shri K Adhinarayanan, Director (R&D)

of the company, in the presence of Shri Alok Kumar Dixit, Sc 'G' and Associate Director; Dr Suresh Kumar, Sc 'G'; Shri

Raghvesh Mishra, Sc 'F'; Dr Rakesh Kumar Gupta, Sc 'F'; Dr Mohit Katiyar, Sc 'E' and other team members.



LATOT OF MK-II ICCP SYSTEM TO M/S ELCOME PVT. LTD.

The Naval Materials Research Laboratory (NMRL), Ambarnath, has developed a MK-II Impressed Current Cathodic Protection (ICCP) system for protecting the underwater hull of a naval ship from corrosion. The Indian Navy, after ship trials, recommended ICCP MK-II for induction. M/s Elcome Pvt. Ltd., Navi Mumbai, has acquired the ToT of the MK-II ICCP system. The LAToT documents for this product were formally handed over to M/s Elcome Pvt. Ltd. by



Shri PT Rojatkhar, OS & Director NMRL, and Dr G Gunashekar,

Project Director, on 18 October 2024, at NMRL.

NPOL SIGNED A CONTRACT WITH GRSE FOR ACOUSTIC RESEARCH SHIP

The Naval Physical and Oceanographic Laboratory (NPOL), Kochi, has signed a contract worth Rs. 490.98 crore with M/s Garden Reach Shipbuilders and Engineers (GRSE) Limited, Kolkata, for the design and construction of an Acoustic Research Ship, Sagar Spandan'. Dr Duvvuri Seshagiri, Director, NPOL, and Cdr. Shantanu Bose, Director (Shipbuilding), GRSE, signed the contract on 29 October 2024 in NPOL, Kochi, in the presence of senior officers from NPOL and GRSE.

The ship will be designed as acoustically silent with minimum underwater radiated noise, and this is the first time a silent class ship is being built in the



country. The ship will be capable of deploying and towing various equipment, such as acoustic modules, generating sound velocity profiles, collecting ocean data, and deploying underwater moored systems. The ship will have a dynamic positioning system and will be capable of speeds ranging from 4 knots to 12 knots. At its top speed, the ship will endure for

30 days or 4500 nautical miles in a single mission. Special test facilities, including a moon pool, gondola, drop keel, and on board handling equipment, will equip the ship for various sea trials.

GRSE will deliver the ship in three years. The realisation of the ship equipped with state-of-the-art oceanographic equipment will be a major milestone for NPOL.

MEMORANDUM OF UNDERSTANDING BETWEEN SAG AND NIT-DELHI

On November 26, 2024, the Scientific Analysis Group (SAG), Delhi, has signed Memorandum of Understanding (MoU) with National Institute of Technology (NIT), Delhi for five years to collaborate in R&D activities in areas of mutual interest, which would address multi-disciplinary scientific and technological issues of national relevance.

SAG and NIT-Delhi will cooperate in joint research projects and manpower training mainly in the areas of cyber and

network security, AI/ML, big data analytics, post quantum cryptography & quantum computing/ communication,

blockchain technology, advance mathematics and cryptology, cloud computing, wireless communication & security, etc.





BHASKAR FACILITY AT DLJ

Bhaskar Facility was inaugurated on 19 October 2024 by Prof. Ajay Kumar Sood, Principal Scientific Adviser to Govt. of India, and Dr Samir V Kamat, Secretary DD R&D & Chairman DRDO, in the presence of Shri RV Hara Prasad, DG NS&M, and Dr Manu Korulla, DG (R&M) and Dr Sreenivas Rao, Former DG (NS&M).

The facility comprises of the following:

- The Engine Bay is equipped with a test bench that houses a mini gas turbine engine, nozzles of various geometries, and a spatial and radial contact probe measurement array, all of which are mounted on a 360 degree rotating platform for angular measurements.
- IR Simulation Laboratory with indigenously developed prediction and analysis tool.
- The System & Measurement Laboratory is equipped with various blackbody sources that range from 50 to 3000 degrees Celsius, an IR imaging system that covers mid and long wave bands, and an IR spectral radiometer.
- Mobile Infrared Laboratory for field IR measurements.
- The facility will create modular Thermal Target Systems (TTS) to simulate the IR signature of tanks.



INAUGURATION OF LAND BASED SUBMARINE LI-ION BATTERY TEST FACILITY AT NSTL, VISAKHAPATNAM

Dr Samir V Kamat, Secretary, DD R&D & Chairman, DRDO, inaugurated the state-of-the-art and one of its kind land-based submarine battery test facility at Naval Science and Technological Laboratory (NSTL), Visakhapatnam, on 4 October 2024. The indigenously designed facility caters for

testing submarine batteries based on lithium-ion technology developed by NSTL. The ToT holder and industry partner, M/s HBL Power Systems, Hyderabad, product-ionized the required cells and modules integrated with their captive battery management system. The cell chemistry is so chosen that it is extremely

safe in storage, transport, and exploitation. While speaking on the occasion, Dr Kamat said that the Navy is very keen on adopting the indigenous battery for retrofit in existing platforms as well as to deploy in their future platforms due to the advantages of safety and a better indiscretion ratio. Shri RV Hara Prasad, DG



(NS&M), emphasized the speedy completion of realizing the full-scale batteries and testing them thoroughly prior to offering them to the Navy. Dr Abraham Varughese, Director, NSTL, expressed his confidence about realization of the battery meeting

all the qualitative requirements of the Navy by the team comprising members from NSTL, the Navy, and industry. Dr Y Sreenivas Rao, former DG (NS&M), and Dr Manu Korulla, DG (R&M), DRDO HQrs spoke on the occasion. The inaugural function commenced

with Dr TVSL Satyavani, Sc 'G' & Project Director, giving the complete technical overview of the project. Many retired and serving senior scientists from NSTL and officers from the Indian Navy and industry took part in the function.





RAISING DAY CELEBRATIONS

ASL, Hyderabad

Advanced Systems Laboratory (ASL), Hyderabad, celebrated its 23rd Annual Day on 16 October 2024. Dr Samir V Kamat, Secretary, DDR&D & Chairman, DRDO, was the Chief Guest, and Vice Adm. Suraj Berry, AVSM, NM, VSM C-in-C, HQ SFC, was the Guest of Honour.

Shri L Parida, Sc 'G', Chairman, Organizing Committee, welcomed the august gathering.

Dr Gowri Shankar Wuriti, Sc 'F', Director of Management Services, presented the Annual Report of ASL. Shri BV Paparao, DS & Director, ASL, in his address highlighted various achievements and milestones achieved, particularly the MIRV mission and progress of several ongoing project activities, as well as put forward goals of the laboratory for the coming years. Vice Adm. Suraj Berry appreciated the dedicated work done by all employees of ASL and highlighted the importance of new technologies like AI and ML in today's war scenario.

Dr Kamat congratulated the ASL fraternity and appreciated the effective and efficient work done by ASL to make the country proud. Laboratory-level commendation certificates and mementos to employees who have completed 30 and 35 years of service were presented. We organized a cultural program that showcased our in-house talents. The vote of thanks was proposed by Shri S Seetha Raman, Sc 'G'.



CFEES, Delhi

The Centre for Fire Explosive and Environment Safety (CFEES), Delhi, celebrated its Raising Day on 10 October 2024. Dr Samir V Kamat, Secretary, DD R&D & Chairman, DRDO, graced the occasion as the Chief Guest, and Dr Subrata Rakshit, DS & DG (SAM & TM), and AVM R. Guruhari, ACAS (WPN), Air HQrs, were the Guest of Honour. Sh Arvind Kumar, OS & Director,

CFEES, highlighted in his address various achievements, milestones achieved, and the progress of ongoing project activities. In his address, the Chief Guest expressed his appreciation for the work that CFEES is doing for MoD. This occasion also witnessed the release of the CFEES Compendium of Technologies (सन्निहता) by the dignitaries.





PARTICIPATION IN INTERNATIONAL EXHIBITION – ADAS - 2024

A delegation from DRDO led by Shri Arbind Kumar Singh, Sc 'G', Centre for Airborne Systems (CABS), Bengaluru, with four members, Lt Col Abhinav Kumar, (DPI, HQ), Shri Eldho Jacob, Sc 'F' (NPOL), Shri Subhash Mukane, Sc 'F' (ARDE, Pune), and Shri Dosala Sridhar, Sc 'E' (DRDL), participated in showcasing the products of DRDO at "Asian Defence and Security (ADAS)" during 24-27 September 2024 at Manila, Philippines. The team displayed flag ship technologies of DRDO, such as the Airborne Early Warning & Control (AEW&C) System, the IFF Mk



XII(S) system, the submarine, the MBT Arjun, the Akash missile, the Pinaka multi barrel rocket, etc., as part of the Indian

pavilion. Shri Harsh Kumar Jain, Ambassador of India to the Republic of the Philippines, inaugurated the India Pavilion.

AFRICA AEROSPACE AND DEFENCE - 2024

A delegation from DRDO with Shri Gokul Depuk TP, Sc 'E', Centre for Airborne Systems (CABS), Bengaluru, with four other officers, Shri Sumanta Pal, Sc 'F' (LRDE), Shri Intekhabur Rahman Ansari, Sc 'F' (DPI, DRDO HQ), Shri Suvash Kumar, Sc 'F' (ARDE), and Shri Srijan Tripathi, Sc 'E' (DRDL), participated in showcasing the products of DRDO at 'Africa Aerospace & Defence (AAD-2024)' during 18-22 September 2024 in City of Tshwane, at Airport Force Base Waterkloof, South Africa. The team displayed flag ship technologies from DRDO, such as the Airborne Early Warning & Control (AEW&C) System, Akash missile, WLR-

Swathi, and ATAGS, as part of the Indian pavilion. Shri Prabhat Kumar, High Commission of India, South Africa, inaugurated the India Pavilion. The exhibition

provided a platform for various countries to showcase their technologies and exhibits. Both indoor and outdoor exhibits made up the exhibition.





MOCK DRILL BY FORCE ONE AND LOCAL POLICE AT NMRL

Naval Materials Research Laboratory (NMRL), Ambarnath, hosted a mock drill in collaboration with Force One (Special Action Team, Thane Police) and local law enforcement units on 15 October 2024. This mock drill aimed to assess and enhance the security protocols, readiness, and crisis-response capabilities of NMRL. The mock drill commenced with an NMRL briefing on the facility layout, key infrastructure, and potential threat scenarios to Force One's tactical unit. Coordinating closely with local police, Force One performed a mock drill to handle hostage rescue, surveillance, and



containment, showcasing their specialized training in handling high-risk scenarios. The drill was observed critically for performance parameters such as response time, communication

efficacy, and tactical coordination. This mock drill highlighted the commitment of NMRL and local security forces to maintaining stringent safety measures and operational readiness at NMRL.

NPOL RECEIVES MEMENTO FROM BUREAU OF INDIAN STANDARDS

The Naval Physical and Oceanographic Laboratory (NPOL), Kochi, received a memento for the effective implementation of ISO 9001:2015 (QMS) certification from the Bureau of Indian Standards (BIS), Chennai. Dr Kochaleema KH, Sc'G', and Shri Sreekumar B, Technical Officer 'B', NPOL, received a memento from Dr J Radhakrishnan, IAS, Additional Chief Secretary to the Government of Tamil Nadu, Cooperation, Food, and Consumer Protection Department, during the World





Standards Day 2024 program on October 14, 2024.

The World Standards Day 2024 program was conducted by the BIS, Chennai branch office, at Kalaivanar Arangam

in Chennai. Various industry partners, government officials, academicians, and BIS stakeholders graced the function.

BIS, Chennai unit conducted ISO 9001:2015 re-certification

audit of NPOL in July 2024, and during the audit, the auditors highly appreciated the standardisation activities carried out in various divisions and projects of NPOL.

RUN FOR UNITY AT NSTL

Naval Science and Technological Laboratory (NSTL), Visakhapatnam, organised 'Run for Unity' on the occasion of Rashtriya Ekta Diwas on 31 October 2024, in commemoration of the 149th birth anniversary of Sardar

Vallabh bhai Patel.

More than 200 employees participated in the run, held inside the NSTL residential campus. Dr Abraham Varghese, OS & Director NSTL, flagged off the run. Associate Director Dr HN Das, scientists, officers,

staff, DSC personnel, and leaders of the NSTL Works Committee and Civil Employees Union participated in the run and took the Rashtriya Ekta Diwas pledge. NSTL meticulously conducts Run for Unity every year.





VIGILANCE AWARENESS WEEK 2024

DL, Jodhpur

Vigilance Awareness Week was observed during 28 October 2024 to 3 November 2024 and Director administered the pledge to the employees of the laboratory. An invited talk on 'Culture of Integrity for Nation's Prosperity' was delivered by Shri Om Prakash Chaudhary, ASP, Anti Corruption Bureau, Jodhpur on 29 October 2024. Dr MK Patra, Sc 'G' & Vigilance Officer, DLJ, organised the event.



DLRL, Hyderabad

Defence Electronics Research Laboratory (DLRL), Hyderabad, observed vigilance awareness week during 28 October 2024 to 3 November 2024. As a part of vigilance awareness campaign, vigilance awareness banners were placed at main gate and prominent locations of all the three campuses of DLRL, namely, DLRL, ELSEC, and NOAR. DLRL conducted tri-lingual (Telugu, Hindi, & English) essay and slogan writing competitions for the employees in 'Culture of Integrity for Nation's Prosperity' theme. The laboratory also organised a seminar on 30

October 2024 on Conduct Rules by Shri AP Ghosh, Joint Director, Admin, DLRL; Brief Aspects on Physical security by Lt Col Prashant Kishore Mishra, Sr Security Officer, DLRL; Cyber Hygiene & Security by Shri Ch Narasimhachari, Sc 'F', Head-MIS. Dr M Chakravarthy, OS & Officiating Director felicitated the speakers and awarded the winners.



DMSRDE, Kanpur

Defence Materials and Stores Research & Development Establishment (DMSRDE), Kanpur, observed Vigilance Awareness Week 2024 during 28 October 2024 to 3 November 2024. Dr Mayank Dwivedi, OS & Director, DMSRDE, administered the vigilance integrity pledge to all DMSRDE personnel. During his address, he advised to be constantly vigilant while carrying out day-to-day activities. Dr Harish Kumar, Sc 'F' & Vigilance Officer, gave a brief introduction and significance of the occasion and elaborated on the theme 'Culture of Integrity for Nations Prosperity'. This was followed by lectures on 'Cyber Security—An Important Pillar of

Vigilance and Security' by Shri Vinay Verma, Sc 'E' and 'Security' by Shri Sanjeevan K Agarwal, TO 'C'. As part of the event various activities were also conducted like essay writing, slogan and poster competition for all the employees.



ISSA, Delhi

Institute for Systems Studies & Analyses (ISSA), Delhi, celebrated the Vigilance awareness week during 28 October 2024 to 3 November 2024. Vigilance awareness week was initiated by taking the individual citizen integrity pledge and organizational integrity pledge.

Shri Anurag Pathak, Sc 'E' delivered a talk on 'Culture of Integrity for Nation's Prosperity' on 1 November 2024. All employees of ISSA enthusiastically participated during the event.





MTRDC, Bengaluru

Vigilance awareness week was observed at the Microwave Tube Research and Development Centre (MTRDC), Bengaluru, during 28 October 2024 to 3 November 2024, on the theme 'Culture of Integrity for Nation's Prosperity'. Shri SK Srivastava, Chief Admin Officer (Ex-LRDE) delivered a talk on 29 October 2024; all the officers and Staff of MTRDC took part in the celebration.



NPOL, Kochi

Naval Physical and Oceanographic Laboratory (NPOL), Kochi, observed 'Vigilance Awareness Week' from 28 October to 03 November 2024. The event's activities began with the administration of the vigilance integrity pledge to all employees by Shri S Vasudevan, OS & Officiating Director, NPOL. An invited talk by Shri PA Mohammed Arif, IPS, SP, Special Cell, Vigilance and Anti-Corruption Bureau, Ernakulam, was organised on 29 October 2024. Dr Duvvuri Seshagiri, OS & Director, NPOL, graced the occasion with his presence.

A 'Walkathon 2024', a



mini rally by a team of NPOL employees to spread awareness of the importance of vigilance among the public, was organised on 01 November 2024. Smt. Rameetha K, OS & Officiating Director NPOL, flagged off the walkathon. Shri Jose Kurian, Sc 'F' and Group Director (Vigilance and Security), coordinated the activities of the event.

NMRL, Ambernath

Vigilance Awareness Week 2024 was observed at NMRL, Ambernath, during 28 October 2024 to 3 November 2024 with great enthusiasm and zeal. The theme of the program was 'Culture of Integrity for a Nation's Prosperity'. All the employees received an integrity pledge from Shri PT Rojatkar, OS & Director, NMRL. Shri Sanjay Shintre, IPS, Dy. Inspector General (DIG) of Police, Cyber Security Maharashtra State,



who graced the occasion as the Chief Guest, delivered a lecture on 'Cyber Crime Awareness'. In his talk, he covered various types of cybercrimes taking place and explained the measures to stay away from such crimes and criminals. About 120 NMRL employees actively participated in the program.

NSTL, Visakhapatnam

Naval Science and Technological Laboratory (NSTL), Visakhapatnam, celebrated Vigilance Awareness Week 2024 during 28 October 2024 to 3 November 2024. As part of the celebration, various programs which included distribution of pamphlets, briefing to the school children, and elocution competitions for NSTL employees and students of Ramanath Secondary School. Integrity pledge was also taken by all the employees during the occasion. At the conclusion of the event an awareness lecture on the theme 'Culture of Integrity for Nation's Prosperity' was organised where Shri K Srinivasu, DGM Vigilance HPCL, Visakhapatnam shared his expertise.





WORLD QUALITY WEEK 2024

ACEM, Nasik

November 11-15, 2024 was designated as World Quality Week, with the theme 'Quality: From Compliance to Performance'. Advanced Centre for Energetic Materials (ACEM), Nasik, joined this global campaign to raise awareness about the value of quality management and its revolutionary role in promoting organizational excellence in propellant production. Considering the importance of Quality Assurance (QA) in the journey of growth and excellence in propellant production, Shri Md Ziyaur Rahman, Sc 'E', Group Head of the Quality Assurance with his QA team organized the event. Shri TV Jagadeeswar Rao, OS & GM, ACEM and Shri RS Rana, Joint Director, ACEM attended the concluding ceremony of the program.



DL, Jodhpur

World Quality Week 2024 was celebrated at Defence Laboratory (DL), Jodhpur, during 11-15 November 2024. A series of invited talks were organised as part of the celebration. Dr Sushma Verma, Sc 'G', DQR&S, delivered a talk on QA Audit: from Compliance to Performance; Prof. Milind K Sharma, Dept. of Prod & Industrials Engg., MBM University Jodhpur, gave a talk on 'Lean Management; and Shri

Jitendra K Goyal, Sc 'E', shared his experience on reliability engineering in electronic design. The event was organised by Shri SK Sharma Sc 'F' and his team.



NMRL, Ambernath

World Quality Day 2024 was organized at NMRL, Ambernath, on 18 November 2024 with the theme 'Quality: from Compliance to Performance'. Shri BS Gurav, Sc 'F', ARDE, Pune, was invited as a guest speaker to deliver a lecture on the subject relevant to improvement in the quality of work. Shri PT Rojatkar, OS & Director NMRL, welcomed the Guest.

Shri Gurav delivered a lecture on 'Failure Report Analysis A Corrective Action System (FRACAS) Case Studies PINAKA MLRS. He briefly highlighted the importance of failure analysis in quality management during the development and production stages.



TBRL, Chandigarh

Terminal Ballistics Research Laboratory (TBRL), Chandigarh, celebrated World Quality week 2024 at TBRL Ramgarh Ranges, Ramgarh on 20 November 2024. Shri JB Singh, TD, R&QA, TBRL, gave a brief on relevance of the event in context of the organisation and various activities conducted at laboratory-level on quality management. Dr M Raghavendra Rao, OS & Director, TBRL, delivered keynote address and emphasised on importance of QA and documentation towards successful and timely completion of projects. Shri Adapa Madhusudhan Rao, Sc 'G', GD, DRDL Hyderabad, Shri AK Swamy, Dy General Manager, Tata Advance Systems, Bangalore, and Shri Vivek Kalotra, Sc 'F' Regional Director RCMA, Chandigarh graced the occasion and delivered the talks.





TWO-DAY DRDO DIRECTORS' CONCLAVE 2024 AT ARDE

The two-day DRDO Directors' Conclave 2024 commenced at Armament Research & Development Establishment (ARDE), Pune, on 25 October 2024. The annual event of DRDO was inaugurated by Dr Samir V Kamat, Secretary DD R&D & Chairman DRDO. In his address, the DRDO Chairman stressed the criticality of technology leadership in today's evolving global scenario. He emphasized the need for DRDO to reform, perform, and transform as an organisation to realise Hon'ble Prime Minister Shri Narendra Modi's government's vision of Aatmanirbhar and Viksit Bharat.

General Officer Commanding-

in-Chief, Southern Command Lt Gen Dhiraj Seth, delivered a plenary talk on harnessing next-gen technologies for future conflicts and the role of DRDO in building a self-reliant defence ecosystem.

The conclave held various sessions under the theme 'Transforming DRDO for Redefined Defence R&D'. The aim was to inform the participants about the series of DRDO reforms that have been implemented or are under implementation in order to make DRDO a more efficient organization.

The event featured deliberations on developing a robust R&D ecosystem by

extensively engaging the industry and academia towards making the country a leading nation in defence technology. Various brainstorming sessions and plenary talks for capacity enhancement in defence R&D through the participation of academia and industry were organised. The conclave concluded with the sharing of ideas and suggestions towards setting a path forward.

Top officials of DRDO, including DGs of various technology and corporate clusters, Directors and Programme Directors of the laboratories, corporate directors of headquarters and Integrated Financial Advisers, participated in the event.





CYBER SECURITY WORKSHOP

DMSRDE, Kanpur

Cyber security workshop was conducted at Defence Materials and Stores Research & Development Establishment (DMSRDE), Kanpur on 22 October 2024 to celebrate National Cyber Security Awareness Month-2024. This year's campaign theme is 'Cyber Surakshit Bharat-Satark Nagrik' with the aim to provide cyber awareness amongst the people. A lecture on 'Cyber Security' was delivered by Shri Vinay Verma, Sc 'E' & ISO. To spread cyber awareness among DMSRDE officials two live cyber-attack were also demonstrated on the occasion.



MTRDC, Bengaluru

A cyber security awareness lecture was organised at the Microwave Tube Research & Development Centre (MTRDC), Bengaluru, on 21 October 2024. Shri Shashidhar TK, Principal Consultant, Data Security Council of India (DSCI) delivered a lecture on "Cyber Security

Awareness". All the MTRDC personnel attended the lecture enthusiastically.



NMRL, Ambernath

Naval Materials Research Laboratory (NMRL), Ambernath, organized a lecture on 'Cyber Security Awareness' on 21 October 2024 as part of the National Cyber Security Awareness Month celebration. The event aimed to raise employee awareness about the growing importance of cyber security, address potential threats, and promote best practices in safeguarding sensitive information. Cyber security expert Shri Mangesh Khatarkar, Senior Technical Consultant, 9USRCRAFT (a cyber security consultant company), Mumbai, led the session and provided a comprehensive overview of current cyber threats, including phishing, ransomware, and potential breaches that can compromise organizational and personal security.



RAC, Delhi

On 29 October 2024, the Recruitment and Assessment Centre (RAC), Delhi, commemorated National Cyber Security Awareness Month (NCSAM) with a specialized workshop focusing on emerging cyber security threats and best practices. The event featured expert sessions delivered by Shri Amit Verma, Director, EY; Shri Dilnawaz Ahmed, Senior Manager, EY; and Shri Rajeev Thaman, Sc G & Director SQR, O/o DG MCC, DRDO, who provided in-depth insights into contemporary challenges in digital security.

Key topics included the rising threat of digital arrest, wherein unauthorized entities seize control of sensitive data, compromising privacy and security. The session also emphasized the critical role of the mAadhaar app in securing Aadhaar authentications and utilizing masked Aadhaar for enhanced digital identity protection.

The workshop concluded with a call to action for heightened cyber vigilance, urging the adoption of best practices in email security, digital identity management, and public Wi-Fi usage to safeguard national digital assets in alignment with the National Security Council Secretariat (NSCS) objectives.



SKILL DEVELOPMENT PROGRAM ON ANSYS MECHANICAL & CFD AT DTTC, LUCKNOW

A two-day specialized workshop under skill development program on 'Ansys Mechanical and CFD Modules' was organised by Defence Technology & Test Centre (DTTC), Lucknow, during 15-16 October 2024. The workshop aimed to provide concept based hands-on training to industry professionals and students.

The workshop was inaugurated by Shri Alok Kumar Dixit, Sc 'G' & Associate Director, DMSRDE. He emphasized the efforts being taken by DRDO to develop skilled workforce required at various defence and aerospace industries. He encouraged the students for learning technical skills during their professional studies. Dr Ashish Dubey, Sc 'F' & PD,



DTTC delivered the welcome address and brought out the role of DTTC for strengthening MSMEs and start-ups. He made participants aware about various technical facilities at DTTC and its mandate for providing technical support. Shri Amit Kumar, Sc 'F', DTTC discussed the importance of skill development for aerospace

and defence sector.

During the valedictory function, Chief Guest, Dr Mayank Dwivedi, OS & Director DMSRDE, interacted with participants and took the feedback. He stressed upon learning basic concepts and also geared up the participants to become industry ready by developing technical skills.

WORKSHOP ON TRAIL BLAZERS – LEADERSHIP OFFSITE

Naval Materials Research Laboratory (NMRL), Ambarnath, organized an activity-based leadership training program, "Trailblazers – Leadership Offsite", for NMRL scientists during 8-10 November 2024, at Alibaug, facilitated by Wizion People Solutions LLP, Mumbai. The program covered various aspects of emotional intelligence, stress management and situational leadership to enable



NMRL scientists to perform better in handling technical projects in the workplace. A total of 18 NMRL scientists participated in the workshop with great enthusiasm

and spirit. All sessions were indeed helpful in emerging and growing stronger as leaders. The workshop concluded with a vote of thanks and the distribution of certificates.



COURSE ON SAFETY FOR DRDO STAFF AT DRDL

A Continuing Education Programme (CEP) course on 'Basic Training Program on Safety for DRDO Staff' was organized at Defence Research & Development Laboratory (DRDL), Hyderabad during 22-24 October 2024 where staff from ACEM, ASL, ADE, ADRDE, BRAHMOS, BDL, ITR, RCI, and DRDL participated.

The event was inaugurated by Dr JVR Sagar, OS & Officiating Director, DRDL, Cmdr. (Rtd.) ML Narayana, Director Management Services, DRDL, Shri GV Siva Rao, Group Director Testing & Safety, Course Director. Shri N Vijay, Sc 'F', Head, Safety, Fire & Environmental Engineering



Division briefed on various topics of the course. Experts from different laboratories like

ASL, RCI, ITR, and DRDL were invited for delivering lectures.

COURSE ON LATEST ADVANCEMENTS IN DEVELOPMENT OF COMPOSITES AT ASL

Advanced Systems Laboratory (ASL), Hyderabad organised three-day Continuing Education Programme (CEP) on 'Latest Advancements in Development of Composites' during 11-13 September 2024. Shri S Seetha Raman, Sc 'G', Technology Director, ACC delivered welcome address and gave an overview of the course content. The Chief Guest, Shri U Raja Babu, DS & DG (MSS) in his address, appreciated the work done by ASL in the area of composites and emphasized developing strong industry base for composites





products. Shri BV Paparao, DS & Director, ASL highlighted achievements of ASL in the area of composites in his address. Smt R Sheena Rani OS & Programme Director, AGNI, emphasized

using eco-friendly and green composites and ensured quality in the development of composites products.

Dr Manoj Kumar Buragohain, OS & Associate Director (M),

Dr Anil Kumar, OS & Associate Director (A) graced the occasion and addressed the gathering. Vote of thanks was delivered by Shri KV Aneesh, Sc 'F', Course Director.

WORKSHOP ON INFORMATION WARFARE AT DIPR

The Defence Institute of Psychological Research (DIPR), Delhi, conducted a one-day workshop on information warfare (IW) on 4 November 2024. Twenty-seven senior officers from Army War College (AWC) participated in the workshop.

Dr Arunima Gupta, Director, DIPR, while welcoming the participants, highlighted the range of R&D contributions of the laboratory in military psychology, officer selection, training, placement, and providing psychological support to the Indian Armed Forces and also emphasized the need to focus on the emerging areas in



cognitive domain operations. The workshop highlighted key areas in the domain of IW and Cognitive Warfare (CW), such as perception management, negotiation with conflict environments, narratives, and

counter narratives.

The workshop also covered a wide range of emerging issues, including the applicability of propaganda strategies and understanding individuals and groups in conflict environments.

10TH ORATION OF KALAM MEMORIAL LECTURE SERIES-2024 AT DMSRDE

Defence Materials and Stores Research & Development Establishment (DMSRDE), Kanpur, organised 10th Oration of Kalam Memorial Lecture Series-2024 on 15 October 2024 to commemorate the 93rd Birth Anniversary of Bharat Ratna Dr APJ Abdul Kalam. The event started by garlanding the





Dr APJ Abdul Kalam statue at the DMSRDE main gate, followed by a tree plantation. In his opening remarks, Dr Mayank Dwivedi, OS & Director DMSRDE, shared his memories and experiences of working with Dr Kalam during his

early DRDO career. Dr Avinash Chander, Former Secretary DD (R&D), SA to RM and DG DRDO, was the Chief Guest of the event. He delivered the lecture on 'Dr APJ Abdul Kalam: A Multi-faceted Personality'. He gave a

broad overview of the various attributes in the personality of Dr Kalam. Mohd Imamuddin, Sc 'F' spoke about Dr Kalam's journey to becoming the 'Missile Man of India'. Shri Amit Saraiya, Sc 'F', proposed the vote of thanks.

COURSE ON DIRECTED ENERGY WEAPON SYSTEMS AT MTRDC

Microwave Tube Research and Development Centre (MTRDC), Bengaluru, organised a three days course on 'Directed Energy Weapon Systems' during 23-25 October 2024. The course was meant to inculcate the concept of Directed Energy Weapon Systems; High Power Laser and Microwave DEW Systems; Ultra wide band DEW systems; Explosive based HPM DEW systems; High Power EM & International EMI; RF pulse compressor systems; High power microwave sources; pulse power supplies; antennas for DEW system; mode converter for high power devices; recent trends in drones and their uses in defence



applications; role of EOTS for DEW systems; and performance verification using ANSYS & HFSS and STK.

Dr Ashok Bansiwala, Sc 'F' and Shri Khilawan Chaudhry, Sc 'F', were the Course Director

and Associate Course Director, respectively. Training course was inaugurated by Dr Sudhir Kamath, Director, DIA-RCoE, IISc, Bangalore, Dr Kamath was also the keynote speaker of the course.

TECHMA 2024 AT ITM

Chief of Defence Staff General Anil Chauhan virtually inaugurated a two-day National Conference on Technology Management (TECHMA 2024) on 24 October 2024 with the theme, 'Technology Management in Defence Sector for Vision India @ 2047'. The conference was organised at the Institute of

Technology Management (ITM), Mussoorie, with the aim to align the country's defence technologies with the national objective of becoming self-reliant by 2047.

In his address, the Chief of Defence Staff urged the industry, R&D organisations and the services to embrace fusion and synergy in order to achieve

'Aatmanirbharta' in defence and make India a 'Sashakt, Surakshit, and Viksit Bharat'. Stressing the need to change the mindset to keep pace with the evolving times, he called for coming up with innovative and unique ideas that can prove advantageous to the Armed Forces and, in turn, the nation.



The conference began with a roundtable discussion on 'Harnessing Futuristic Technologies and Strengthening Indigenous Capabilities for Vision India @ 2047'. Dr Samir V Kamat, Secretary, DD R&D & Chairman, DRDO, attended the inaugural function as Guest of Honor. The themes of TECHMA-2024 are futuristic defence technologies, technology management with strategic vision for 2047, project management excellence in defence and value engineering and commercialization.

The insights gained from TECHMA-2024 were to strengthen India's indigenous R&D ecosystem, identify multi



disciplinary research areas, improve project management processes, and develop solutions for future defence technologies

to overcome technical, logistical, and implementation challenges, ensuring India becomes a global leader by 2047.

TRAINING ON MANAGEMENT OF DOUBLE HUMP CAMELS AND YAKS FOR OPERATIONAL LOGISTICS

Defence Institute of High Altitude Research (DIHAR), Leh, conducted a specialized training capsule on 'Management of double hump camels and yaks for operational logistics in 14 Corps zone area of responsibility for nursing assistant (VETS) of Indian Army and ITBP' during 07-11 October 2024, focusing on the management of Ladakhi double-hump (Bactrian) camels and Ladakhi yak for operational logistics in high altitude and rugged terrains. The training programme was designed to provide key stakeholders, including military personnel,



veterinarians and logistical managers, with the necessary knowledge and skills to optimize the use of pack animals in

operational logistics in high-altitude terrains. Total 12 soldiers from Army and ITBP attended the training capsule. The primary



goal of the training was to enhance operational readiness to manage camels and yak efficiently for transport, performing loads and performing essential logistics tasks in high altitude

and extreme environments. The training program included hands on training sessions where all the participants practiced animal restraining, training commands, farm managements, etc. Trainees

were involved in mock logistics missions where they coordinated the use of animals to transport supplies, demonstrating the practical application of training in real world military operations.

NATIONAL CONFERENCE ON ENERGIZING & SYNERGIZING ACADEMIA AND INDUSTRY AT DRDE

Defence Research & Development Establishment (DRDE), Gwalior organized a national conference on 'Energizing & Synergizing Academia & Industry for Accelerating Pace of Technology Development in Chem-Bio Defence' during 20-21 October 2024. Dr AK Goel, Sc 'G' & Organizing Secretary gave the conference introduction. Dr MM Parida, Director, DRDE delivered the welcome address. Dr UK Singh, DS & DG (LS) and Chief Guest in his oration highlighted the necessity of collaboration with Industries and Academia to provide the technological solutions in the realm of Chem-Bio Defence. Padam Bhusan



Dr Krishna Ella, Executive Chairman of Bharat Biotech delivered the keynote address. More than 200 delegates participated in the conference from Industries, Academia and DRDO labs. A book of abstracts including summary of all the lectures was released by the

Chief Guest during the inaugural function. A compendium of DRDE developed products was also released.

Dr SI Alam, Sc 'F' and Dr Sonam Sihag conducted various technical sessions of the conference. Dr MK Meghvansi, Sc 'F' & Jt Organizing Secretary gave the vote of thanks.

PROF. DAULAT SINGH KOTHARI MEMORIAL ORATION AT DLJ

The Prof. Daulat Singh Kothari Memorial Oration event was organized at Defence Laboratory (DL), Jodhpur, on 19 October 2024. The Chief Guest and orator of the event, Prof. Ajay Kumar Sood, delivered the oration on

'India @ 2023: S&T Opportunities and Challenges'. Prof. Sood, in his deliberation, mentioned the need for basic research in the Indian context. He motivated young researchers to take up the research work associated

with quantum computing, sensing and detection, and artificial intelligence-based technologies. He also highlighted the requirement of sustained innovations in S&T for the holistic growth of the nation.



Dr Sameer V Kamat, Secretary DD R&D & Chairman DRDO, in his presidential address emphasized the need for cutting-edge solutions as per the changing nature of warfare scenari. Shri RV Haraprasad, DS & DG (NS&M) & Director DLJ, highlighted the current science and technology work carried out by the laboratory.



FAMILIARIZATION PROGRAMME ON EFFECTIVE UTILISATION OF E-RESOURCES BY DESIDOC AT DRDL

Defence Information & Documentation Centre (DESIDOC), Delhi, in Collaboration with Defence Research & Development Laboratory (DRDL), Hyderabad, organised a 'Familiarization Programme on Effective Utilisation of eResources Subscribed through DRDO Consortium' for Library Professionals working in the Hyderabad-based DRDO laboratories at DRDL on 29 November 2024. Shri GA Srinivasa Murthy, OS & Director, DRDL and Shri ML Narayana, Commodore (Retd.) graced the occasion as Chief Guests.

Dr K Nageswara Rao, Director, DESIDOC in his inaugural speech, provided a brief overview of the program's purpose and talked about the DRDO Digital Library. Dr Murthy in his address appreciated the efforts



of DESIDOC in providing the information services to the scientific community of DRDO.

Presentations were given by DESIDOC team on DRDO eLibrary Platform; eResources Subscribed under DRDO Consortium & DRDO Institutional Repositories; Demo of Scopus Database & Jane's Database; DRDO Journals &

Monographs; and on Scholarly Communication. The Dignitaries also released a book 'Management of Digital Information Resources- A Festschrift in Honour of Dr K Nageswara Rao'.

The book is a compilation of papers authored by eminent library professionals, and published by Allied Publisher Private Limited.



COURSE ON ASSEMBLY AND PACKAGING OF HIGH POWER SEMICOND. DEVICES AT SSPL

Solid State Physics Laboratory (SSPL), Delhi, organised a course on 'Assembly and Packaging of High Frequency & High Power Semiconductor Devices' during 23-25 October 2024. The objective of the course was to get importance and insights of assembly and packaging for strategic high frequency and high power semiconductor devices. Dr Meena Mishra, Director, SSPL inaugurated the course. Total 40 participants were registered from SSPL, DRDL, ADE, and Brahmos aerospace. Lectures on various topics covered in concurrence with the course where faculties from IISC Bangalore, IIT Bombay, BITS Pilani, SCL Chandigarh, GAETEC



Hyderabad, IIT Hyderabad, SAMEER Mumbai, CMTI Bangalore and STARC Bangalore were invited to deliver lecture. Apart from academia, experts from various industries like TATA defence, Paras anti drone

systems, Kyocera, Japan were also among faculties. The course was successfully completed under the leadership of Dr SK Tomar, Sc 'G' as Course Director and Shri Subodh Chandra Sc 'E', as Course Coordinator.

COURSE ON MITRA AT ITM

The Institute of Technology Management (ITM), Mussoorie, organized a course on 'Mid Career Training Augmentation (MITRA 4.1)' for newly promoted Sc'D' from September 23, 2024, to October 18, 2024. Gp Capt. MP Kundran was the course Director of this course. A total of 28 participants from different clusters of DRDO attended the course. The objective of the course was to orient the newly promoted Sc 'D' towards project management, technology management, material management, group dynamics and team building, design of experiments,



new product development, and various corporate functions of DRDO. The course was inaugurated by Chief Guest Dr Shashi Bala Singh, Former DG (LS), and Shri SP Dobhal, Director ITM. Shri SP Dobhal,

Director ITM, deliberated upon the importance of the MITRA course in the new DRDO training policy and urged participants to take full advantage of the training and interact freely with faculty during sessions.



'LAB TO LEADER' TRAINING PROGRAM AT RCI

Research Centre Imarat (RCI), Hyderabad, organized a three-day training program on 'Lab to Leader' for 50 senior scientists 'F' and 'G' of Missile Cluster Laboratories at the DRDO Assessment Centre (DAC), RCI, Hyderabad, during November 12–14, 2024. The Professional Institute for Strategy,

HR, and Analytics (PRISHA) conducted the course. The program covered a wide range of topics, including vision, mission, strategy, leadership, supply chain management, and R&D project management. Additionally, it included case studies related to DRDO scenarios, to which all

participants could relate and actively participate in discussions. The participants have appreciated the program to a great extent and felt confident enough to handle day-to-day situations in an empathetic manner in light of the new learning they acquired from the course.



AWARENESS PROGRAMME ON GENDER SENSITIZATION AT ASL

Advanced Systems Laboratory (ASL), Hyderabad, organized 'Awareness Programme on Gender Sensitization and Implementation of POSH Act 2013' on 24 October 2024. Smt Amruta Shivane, Sc, 'G', Chairperson, ICC welcomed the gathering. In his address Shri BV Paparao, DS & Director, ASL appreciated work culture of ASL where the women employees work together and take part in each activities. Smt R Sheena Rani, Sc 'H' emphasized on gender equality in DRDO. Dr AL

Sharada Chief Guest, Trustee and Former CEO of Population were resource person. She highlighted

the importance of POSH Act and gender sensitization programme at work place.





GENDER SENSITIZATION WORKSHOP AT CAIR

Centre for AI & Robotics (CAIR), Bengaluru, conducted Gender Sensitization workshop on 20 September 2024. Dr Jyoti Ganga, Deputy Director, National Institute of Public Cooperation and Child Development (NIPCCD), Regional Centre Bangalore delivered a talk on gender sensitization. In her talk she presented her views on understanding gender, gender equality, awareness and sensitivity among the society, workplace and at organization level. She also talked on “POSH at Workplace” and discussed a few case studies. The workshop was attended by employees of CAIR.



9TH TECHNOLOGY COUNCIL MEETING

The 9th Technology Council Meeting (TCM) under MHA-DRDO collaboration was held at DRDO Bhawan on 4 November 2024, chaired by Dr Chandrika Kaushik, OS & DG (PC & SI) while Members from MHA, CRPF, BSF, NSG, ITBP, CISF, SSB, NDRF, Assam Rifles, IB, Delhi Police, and officers from DRDO HQrs attended the meeting. DRDO laboratories involved in development of LIC product also attended through VC.

Shri Sangita Rao Achary Director, DLIC and Member Secretary of the Technology Council presented progress on various developments being taken, viz UBG with SD mechanism, LMG, CQB, ASMI pistol, OTLs, weaponised HHTI, Dazzlers, Anti miner boot, Perimeter



intrusion detection system (SUMITRA), ROVs, Counter drone systems, GPRs, Man pack SDR, Exoskeleton, Psychological screening test tools, Acoustic sensor based Gun locator, CBRN Mini UGV, Facial Recognition system, BAMI, Tunnel Detector

System, BOSS, OPX-Revilator, etc. New developments by various laboratories were also presented, Assault Rifle (Ugram), BPJ Level 6, Ergonomically designed Combat Boot, ECWCS, Compact Tran horizon Commn System (CTCS), etc.



HINDI DAY AND HINDI FORTNIGHT 2024 AT GTRE

Hindi Fortnight program was organized at Gas Turbine Research Establishment (GTRE), Bengaluru, during 18 September 2024 to 1 October, 2024. Various competitions were held including Hindi calligraphy, Look at the picture and write a story in Hindi, essay competitions, Hindi Noting, Translation, Quiz, speech competition, and Antakshari. The concluding ceremony was held on 23 October 2024 with Shri Lakshmi Kant Dash, Post-master General, Bengaluru Hqr., as the Chief Guest and Dr AN Vishwanath Rao, Sc 'H' presided over the program as Director's representative. Smt Supriya Anil, Assistant Director (Rajbhasha) gave the welcome speech. Shri Prakash Kumar Yadu, Sc 'F' and Vice-Chairman of the Official Language Implementation Committee, presented the annual report on Rajbhasha.



Following this, Shri Sujit Kumar Singh, Sc 'G' & Technical Director (Hindi Section), read out the messages received from Home Minister and the Chairman of DRDO on the occasion of Hindi

Diwas. Subsequently, all the dignitaries and officials present on the dais released the 21st edition of the Hindi house magazine 'Hansa'. Awards were also distributed to the winners of the Hindi competitions.

WORKSHOP ON NOTING AND DRAFTING SKILLS

Two days Workshop on 'Noting and Drafting Skills' was organized by Directorate of HRD (DHRD) DRDO-HQrs during 21-22 October 2024 at DRDO Bhawan. The workshop was inaugurated by Smt U Jeya Santhi, OS & DG (HR). Expert Speakers from Defence Headquarter Training Institute (DHTI) and Institute of Secretariat and Training Management (ISTM) delivered the lectures and ensured a comprehensive understanding of Noting and Drafting skills.

The workshop was meticulously



planned and concluded with a group of thirty-five participants

from various directorates of DRDO HQrs.



HIGHER QUALIFICATION ACQUIRED

NPOL, Kochi



Sri Roni Francis, Sc 'F', Naval Physical and Oceanographic Laboratory (NPOL), Kochi, has

been awarded PhD from Indian Institute of Technology, Madras, for the thesis titled, "Numerical Analysis of Turbulent Boundary Layer Wall Pressure Fluctuations Using Large Eddy Simulation".

NSTL, Visakhapatnam



Shri Md. Kareem Khan, Sc 'F', Naval Science & Technological Laboratory (NSTL), Visakhapatnam

has been conferred with PhD for the thesis submitted by him titled 'Experimental Investigation on the Hydrodynamic Loads and Flow Features Over and Underwater Body' from IIT, Kharagpur.

Smt M Ratna Kumari, Principal Private Secretary has been conferred with PhD for the thesis submitted by her titled 'E-Human Resource Management Practices In Public Sector- A Study On Select Public Sector Organizations' from Andhra University, Visakhapatnam on 9 Oct 2024.

DRDO INTRA-ZONAL CRICKET TOURNAMENT 2024-25

The Naval Materials Research Laboratory (NMRL), Ambernath, cricket team won the west zone intra-zonal cricket tournament (2024-2025) organised by R&DE (E), Pune, during 11-15 November 2024 at Kings Sports Club & Cafe, DN Parande Park Sports Club, Pune. Western Zone

DRDO Laboratories (HEMRL, ARDE, NMRL, R&DE, VRDE, and ACEM) participated in the tournament.

Shri PM Naik, Senior Scientist, R&DE (E), Pune, felicitated the NMRL, Ambernath team, for winning the Champion Trophy in the tournament.





VISITORS TO DRDO LABORATORIES

ARDE, Pune

⌘ Forty seven students (JCOs/ NCOs) undergoing Long Gunnery Staff Course Sr Field 6001 at School of Artillery Deolali along with three directing staff members visited Armament Research & Development Establishment (ARDE), Pune on 4 November 2024. The visitors were briefed about ARDE and presentation was given on Infantry Weapon by the concerned group. A Visit to static exposition hall and ATAGS Gun Bay was also arranged during the visit.



Students (JCOs/NCOs) of Long Gunnery Staff Course at School of Artillery Deolali along with three directing staff members at ARDE, Pune

⌘ Maj Gen Roopesh Mehta, SM, VSM, ADG CD (B), IHQ of MoD visited ARDE on 29 October 2024. Shri Ankathi Raju, OS & Director, ARDE, welcomed him and had a discussion on on-going ARDE projects. A detailed presentation was made by Group Directors on work and activities of ARDE on this occasion. His visit concluded with presentation of memento by Director, ARDE.



Maj Gen Roopesh Mehta, along with senior scientists of ARDE at ARDE, Pune

CAIR, Bengaluru

⌘ Rear Admiral Peush Pawsey, Joint Chief Hydrographer visited Centre for Artificial Intelligence & Robotics (CAIR), Bengaluru, on 5 September 2024. There was a briefing by Dr Rituraj Kumar, OS & Director, CAIR followed by discussion and demonstration of various technologies developed by CAIR in the area of Geographical Information



Rear Admiral Peush Pawsey, Joint Chief Hydrographer visit during his visit at CAIR, Bengaluru

Systems and Command Control technologies for naval systems.

✂ Air Vice Marshal Rajiva Ranjan, VM ACIDS (ICT) and team visited CAIR on 23 October 2024. There was a briefing by Dr Rituraj Kumar, OS & Director, CAIR followed by discussion and demonstration of various technologies developed by CAIR in the area of Geographical Information Systems, Intelligent System and Robotics, Secure communication and Command Control technologies for naval systems.



Air Vice Marshal Rajiva Ranjan, in discussion at CAIR, Bengaluru

DMSRDE, Kanpur

One hundred and fifty senior secondary students from Air Force School Chakeri, Kanpur, visited Defence Materials and Stores Research & Development Establishment (DMSRDE), Kanpur, on 25 October 2024. The students along with their faculty members were briefed about the various R&D activities being carried out by the laboratory. The students were demonstrated various products and technologies developed by DMSRDE in the area of ceramics & Ceramics Matrix Composites (CMCs), stealth & camouflage materials, nano materials, coatings, and personal protection systems. Dr Gobardhan Lal, Sc 'F' coordinated the visit.



Air Force School Chakeri, Kanpur, students' visit at DMSRDE, Kanpur

DRDO HQrs

Shri Daljit Singh Chawdhary, IPS, Director General, Border Security Force (BSF) visited DRDO HQrs on 20 November 2024 along with his team. BSF is



Dr (Mrs) Chandrika Kaushik, DG (PC&SI) presenting memento to Shri Daljit Singh Chawdhary, IPS, Director General, Border Security Force

one of the key paramilitary force under Ministry of Home Affairs which is responsible for guarding

India's borders with Pakistan and Bangladesh. During the visit, the officers interacted with Dr (Mrs)



Chandrika Kaushik, DG (PC & SI) and team of Directorate of Low Intensity Conflicts (DLIC), and deliberated over niche technology areas where DRDO can assist BSF under DRDO-MHA Collaboration. Director DLIC gave a detailed presentation on the on-going engagements with BSF. Detailed discussions on technological solution for border management challenges were held. The meeting ended with felicitation of the guest by DG (PC & SI).

NPOL, Kochi

Dr Samir V Kamat, Secretary, DDR&D&Chairman, DRDO visited

Naval Physical and Oceanographic Laboratory (NPOL), Kochi on 21 October 2024. At the outset, Dr Duvuuri Seshagiri, OS & Director, NPOL welcomed Chairman.

Subsequently, Chairman reviewed the ongoing projects. Shri RV Hara Prasad, DS & DG (NS & M) and Dr Manu Korulla, OS & DG (R&M) were also present for the review meetings.

Chairman and other guests visited Shore Integration Facility (SIF) and the exhibits of various products and technologies developed by NPOL.

Dr Kamat released Sagarnaad Ver.3 an interactive oceanographic

visualization tool in the presence of Shri Hara Prasad, DG (NS&M), Dr Korulla, Dr Seshagiri, and Dr A Raghunatha Rao, Group Director, Ocean Sciences, and other senior scientists.

Sagarnaad Ver. 3, designed and developed by NPOL, Kochi in association with Naval Operations Data Processing and Analysis Centre (NODPAC), SNC and Academia (MES college, Marampally).

The Sagarnaad Ver. 3 software tool was handed over to the DRDO following the successful completion of the evaluation by the user.



Dr Samir V Kamat, Secretary, DD R&D & Chairman, DRDO taking keen interest in NPOL products during his visit at NPOL, Kochi on 21 October 2024