

# DRDO NEWSLETTER

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**Prime Minister pays homage to Dr APJ Abdul Kalam**



Prime Minister Narendra Modi inaugurating photo exhibition titled A Celebration of Dr Kalam's Life and releasing commemorative postal stamp on Dr Kalam (bottom)





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Cover: Prime Minister Narendra Modi unveils the bust of Dr APJ Abdul Kalam on his Birth Anniversary at DRDO Bhavan

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## Prime Minister Narendra Modi pays tribute to Dr Kalam on his Birth Anniversary



Prime Minister garlanding the bust of Dr APJ Abdul Kalam on his Birth Anniversary at DRDO HQ

On 15 October 2015 Hon'ble Prime Minister unveiled the statue of former President Dr APJ Abdul Kalam at DRDO HQ in New Delhi and opened a Photo Exhibition – "A Celebration of Dr Kalam's Life". Addressing a large gathering, PM described Dr APJ Abdul Kalam as one who was a "Rashtra-Ratna" before a "Rashtrapati" and not only he had risen from a humble beginning to the highest office in India but also built great institutions virtually from scratch and that all of us should draw inspiration from his example. PM said that a memorial would be built at Rameswaram to inspire future generations and encouraging the innovation in India. On the occasion PM also released a book, a compilation of tributes by scientists who have worked with Dr Kalam and released a commemorative postage stamp in his memory. Hon'ble Minister of Urban Development Shri M Venkaiah Naidu and Hon'ble Raksha Mantri

Shri Manohar Parrikar also addressed the audience. Hon'ble Minister of Communication and Information Technology Shri Ravi Shankar Prasad and Hon'ble Minister of Science and Technology Dr Harsh Vardhan were also present on the occasion.



Prime Minister releasing book Incredible Kalam

## INS Astradharini commissioned in Indian Navy

Indigenously built torpedo launch and recovery vessel 'INS Astradharini', was commissioned on 6 October 2015 by Vice Admiral Satish Soni, Flag Officer Commanding Eastern Naval Command at a ceremony held at the Naval Base, Visakhapatnam. Dr V Bhujanga Rao, DS and DG (NS&M), DRDO, Shri CD Malleswar, OS and Director Naval Science and Technological Laboratory (NSTL), Visakhapatnam, Shri Sahay Raj, CMD, M/s Shoft Shipyard Pvt. Ltd, Bharuch, Gujarat, and various other dignitaries were also present during the commissioning ceremony.



Shri Sahay Raj delivered the inaugural address. Vice Admiral Satish Soni congratulated NSTL for partnering M/s Shoft Shipyard through the ship building and trials processes. "The induction of INS Astradharini adds thrust to the Nation's ongoing endeavours at indigenisation and achieving the nation's goal of self-reliance in underwater weapons development", added Vice Admiral Soni. Dr V Bhujanga Rao and Shri CD Malleswar also spoke on the occasion.

Astradharini, built with indigenous steel, is a collaborative effort of NSTL, M/s Shoft Shipyard and IIT Kharagpur and has a unique design of a catamaran hull form, which significantly reduces its power requirement. The 50 m length vessel is capable to do speeds up to 15 knots. It can operate at high sea states and has a large deck area with torpedo launchers for deploying and recovering various kinds of torpedoes during

the trials. The ship has modern power generation and distribution, navigation and communication systems. The unique hull form of the ship demonstrates the country's ship design and shipbuilding capabilities. Ninety-five per cent of the ship's systems are of indigenous design.

INS Astradharini will be used for carrying out technical trials of underwater weapons and systems developed by NSTL. It is an advanced replacement for Astravahini, which was decommissioned on 17 July 2015. Astradharini has a complement of two officers, sailors and can accommodate 13 DRDO scientists. It has the capacity to undertake multiple trials during a single sortie.

The commissioning of INS Astradharini will add a powerful punch to DRDO's R&D capabilities and will accelerate the development of underwater weapons and systems.

## Dr Christopher inaugurates World's Highest Terrestrial R&D Centre

Dr S Christopher, Secretary, Department of Defence R&D and DG DRDO, inaugurated Extreme Altitude Research Centre at Changla at 17, 600 ft above mean sea level. The centre, 75 km ahead of Leh town towards Pangong Lake, is poised to be the world's highest terrestrial R&D centre under cold

desert of Ladakh where the temperature goes as low as -40 °C during winters (December-April), coupled with extreme weather conditions like reduced atmospheric pressure and humidity, high wind velocity, and ultraviolet radiation. Dr Christopher highlighted the utility for R&D in the frontal areas of food and agriculture

and bio-medical sciences for well-being of the soldiers deployed in high altitude cold desert. He informed that a large number of life sciences activities are proposed to be undertaken at this centre including human physiological work, long-term conservation of plant genetic resources, designing testing, validation and demonstration of mobile and portable greenhouses, soilless micro-farming technologies for fresh food in remote landlocked posts, conservation and propagation of endangered extreme altitude medicinal plants, shelf-life and acceptability studies for minimally processed fresh food, testing and validation of bio-medical equipment, bio-digestion of human waste, etc.

Speaking on the occasion Dr Bhuvnesh Kumar, Director, Defence Institute of High Altitude Research (DIHAR), Leh, said that the centre, besides undertaking life sciences activities, may provide unique opportunity to other laboratories/establishments of DRDO for testing and evaluation of electronics and communication devices and testing of materials for high altitude applications, batteries and fuel cells, high altitude clothing, etc. in natural extreme cold conditions.



Dr Christopher inaugurating Extreme Altitude Research Centre at Changla

Dr Manas K Mandal, DS and DG (Life Sciences), DRDO; Lt Gen BK Chopra, DG Armed Forces Medical Services; Lt Gen Velu Nair, DCIDS (Med); Shri Ajay Singh, Chief Executive, Civil Works and Estates, DRDO HQ; and scientists and officers from DIHAR were also present during the occasion.

## Missile Complex rechristened as Dr APJ Abdul Kalam Missile Complex

Shri Manohar Parrikar, Hon'ble Raksha Mantri renamed Missile Complex as Dr APJ Abdul Kalam Missile Complex at Research Centre Imarat, Hyderabad on 15 October 2015. Shri Manohar Parrikar felt the best tribute to Dr Kalam is timely development of missile projects and spread of science culture and technology benefits to all sections of society.

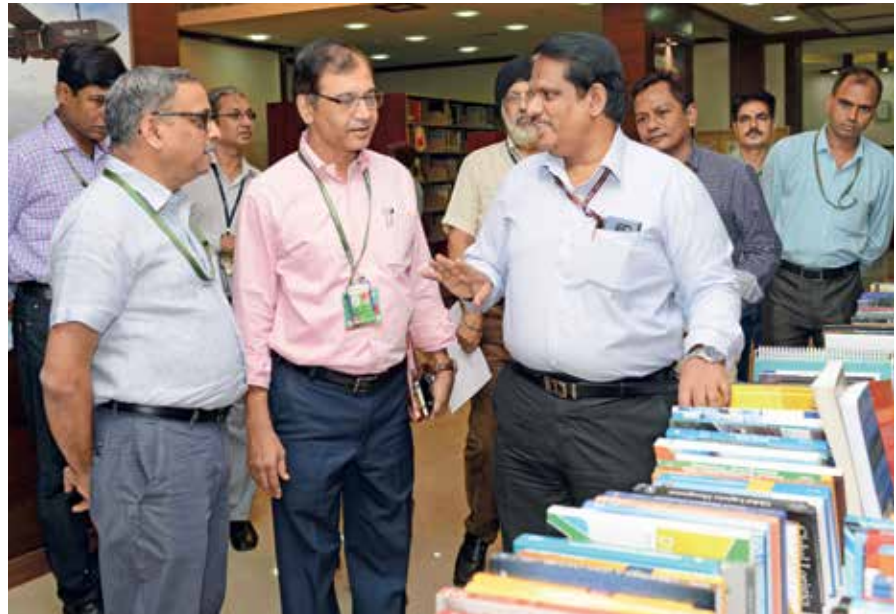
Dr G Satheesh Reddy, SA to RM and Director, RCI, in his welcome address spoke about outstanding contributions of Dr Kalam, rightly called as father of Missile Complex. Shri Parrikar also inaugurated Project ORANGE, an Outdoor Radar Cross Section (RCS) Test facility at Dundigal, Hyderabad and New Complex of Space Systems and Technology in RCI. The facility will enable India in designing new weapon systems with



extremely low cross section as well for carrying out vulnerability studies on existing platforms.

## Book Exhibition by DESIDOC

Defence Scientific Information and Documentation Centre (DESIDOC), Delhi, organised a Book Exhibition at Knowledge Centre, DRDO Bhawan, during 10-11 September 2015. Dr CP Ramanarayanan, DS and CC R&D (HR), inaugurated the exhibition. Dr S Christopher, Secretary Department of Defence R&D and DG DRDO, senior scientists, services officers, and other DRDO staff visited the exhibition. Shri Gopal Bhushan, Director, DESIDOC, welcomed Dr Christopher and apprised him about the exhibition.



Dr S Christopher in discussion with Shri Gopal Bhushan

More than 800 books on different subjects, viz., aeronautics, electronics, armaments, life sciences, materials science, naval science and management were put on display to update DRDO Scientists on the

latest editions of books available on their subject. The exhibition was appreciated by the visitors.

## GTRE-Industry Partners' Meet

Gas Turbine Research Establishment (GTRE), Bengaluru, organised a Partners' Meet on 8 September 2015. More than 50 representatives from reputed Indian private and public sector industries/organisations participated and expressed keen desire in manufacturing and module level assembly of 80 kN thrust class engine.

Shri MZ Siddique, OS and Director, GTRE, stressed upon the association of Indian industries for this challenging task. Shri P Jaypal, Chief Executive, Centre for Military Airworthiness and Certification (CEMILAC) and Shri K Doreswamy, Deputy Director General (South Zone), DGAQA, also shared their experiences on aero-engine certification and qualification methodologies.

Shri SP Suresh Kumar, Sc G, in his welcome address gave an overview of the programme. GTRE scientists gave technical appraisal of the critical engine components manufacturing and sub-system development requirements. The quality standards to



Shri MZ Siddique addressing the participants

which the products have to comply was also explained. The meet concluded with a visit to an exhibition where all major engine components and sub-systems were displayed.



## Manpower Development Activities

Conferences/Seminars/Symposia/Training Courses/Meetings

### Course on Software Defined Networking

**Centre for Artificial Intelligence and Robotics (CAIR), Bengaluru**, organised a course on Software Defined Networking (SDN): Bedrock of Next Generation Networking during 14-16 September 2015 under the Continuing Education Programme (CEP) of DRDO. Shri Saurabh Mandal, Sc D, briefed about the objective of the course. Focus of the course was on the current and futuristic trends in networking technologies with an emphasis on SDN and to bring awareness about SDN concepts and its applicability in military domain. The topics covered included: Planning and Transforming to SDN, Leveraging NFV and SDN for Securing Networks, Emerging Trends in Network Function Virtualisation, Security Aspects of SDN, Application awareness for enabling QoS using SDN, etc.

### Induction Course for Technical Assistants

**Centre for Personnel Talent Management (CEPTAM), Delhi**, conducted an induction course for newly recruited Senior Technical Assistants from 31 August 2015 to 11 September 2015. Dr (Smt) Hina A Gokhale, Director, DHRD and DOP, DRDO HQ, was the Chief Guest of the inaugural ceremony. Participants were imparted training on DRDO policies, basic computer skills, RTI, administrative topics such as CCS rules, welfare measures, etc. The course curriculum included lectures followed by practical/exercise. Shri Manish Gupta, Sc D, was the Course Coordinator.

### Training Programme on Budget, Finance and Accounts

A three-day training programme on Budget, Finance and Accounts was conducted by **CEPTAM, Delhi**, during 21-23 September 2015. Shri Rajiv Ranjan, IDAS, DCDA, inaugurated the programme. The topics covered included: DRDO Budget, Modern Budgeting, Formulation of Revised and Forecast Budget, Audit, Maintenance of Cash Assignment, Income Tax, TA/DA, LTC Rules and Leave Rules, etc. Smt Kartiki Mishra, Sc C was the Course Coordinator. Shri RC Singh, Sc F, Officiating Director, CEPTAM, distributed participation certificates to the participants.



Dr Vijaya Singh and Shri Rajiv Ranjan during the inaugural function of the course on Budget, Finance and Accounts

### CEP on Enabling EW Technologies

**Defence Avionics Research Establishment (DARE), Bengaluru**, conducted CEP on Enabling EW Technologies during 24-27 August 2015. The course was conducted with eminent speakers from DRDO labs, Indian Air Force, Industry, BEL and with encouraging participation from EW Range, SDI, HAL, BEL, LRDE, Office of DG Aero and ADE. The inaugural talk was delivered by Shri N Divakar, former Director, DLRL, on Trends and Development in EW, Existing EW Technologies and Future. Lectures on various topics such as Radar Finger Printing, Receivers for Airborne EW Applications, Direction Finding Methods, ECM Technology and Challenges, Cooling Systems for EW, and EW Simulation and its Analysis, etc., were delivered.

### Training Programme on Yoga

**Defence Institute of Physiology and Allied Sciences (DIPAS), Delhi**, conducted a training programme on Yoga from 31 August to 12 September 2015 for DRDO employees below 40 years of age. The course content included applied aspects covering preventive, promotive, curative, therapeutic and scientific approach of yogic benefits to maintain stress free health. Dr IV Basavaraddi, Director, MDNIY, Delhi; Prof. BN Gangadhar, NIMHANS; Dr A Balayogi, ACYER, Puducherry were among the eminent experts who delivered the invited lectures. Yoga classes comprising stretching exercises, yogic postures and meditation were conducted by the expert yoga teachers.



## Seminar-cum-Workshop on Integrated Skills Development for LIS Professionals

A two-day National Seminar-cum-Workshop on Integrated Skills Development for LIS Professionals was organised by **Institute of Nuclear Medicine and Allied Sciences (INMAS), Delhi**, during 21-22 September 2015. Shri Sudhir Gupta, Director, RAC, DRDO, Delhi, inaugurated the workshop. Dr Subash Khushu, Sc G, INMAS, delivered the welcome address. Dr Rajeev Vij, Course Director, briefed the participants about the need and purpose of the workshop. Around 110 delegates from various R&D institutions, industry and academia participated in the workshop. The objective of the workshop was to promote synergy amongst library professionals and publishers working in the field of library science with emphasis on development of innovative and emerging technologies for benefit of user scientists. The topics covered in the seminar included: New Skills for LIS Professionals, Integrated Skills Development for LIS Professionals, Communicate to Collaborate, etc.



Inaugural session of National Seminar on Integrated Skills Development for LIS Professional

## Seminar-cum-Workshop on Effective Presentation Skills

**INMAS, Delhi**, in collaboration with University College of Engineering (UCE), Osmania University (OU), Hyderabad, organised a National Seminar-cum-Workshop on Effective Presentation Skills on 7 September 2015 at Osmania University, Hyderabad. Dr Achala Munigal, Convener of the Seminar, welcomed the participants. Prof. S Ramachandram, Principal, UCE, inaugurated the Seminar. In his inaugural address, he emphasised on strong need to develop effective presentation skills. Dr Rajeev Vij, Sc F, Organising

Secretary, briefed about the workshop and stressed on the importance of learning presentation skills. Eminent resource persons from India presented informative lectures on topics related to theme.

## Course on Quality Management Systems in Projects

**Institute of Technology Management (ITM), Mussoorie**, conducted a course on Quality Management Systems in Projects during 7-10 September 2015 for middle-level DRDO scientists. The objective of the course was to highlight the issues important for enhancing the quality and reliability of products and services developed by DRDO. Key areas covered during the course included: Building Quality and Reliability in Design, QFD Approach in Design, Applicability of Six Sigma, etc. Commodore (Retd) SK Patel, Director, DQRS, DRDO, delivered the keynote address on Quality, Reliability and Safety Issues in DRDO.

## Course on Safe Storage, Handling, Transportation & Disposal of Explosives

**Integrated Test Range (ITR), Chandipur**, organised a CEP Course on Safe Storage, Handling, Transportation and Disposal of Explosives: Practices and Procedures followed in the Test Range from 14-18 September 2015 to impart basic knowledge on explosive safety. Shri MVKV Prasad, OS and Director, ITR, inaugurated the course. The syllabus of the course included topics on Safety during Processing and handling of High Explosives, Impact of Static Electricity and Precautionary Measures during Explosive Handling, Assessment of Safety Zone for Conducting



Inaugural session of CEP on Safe Storage, Handling, Transportation and Disposal of Explosives



Static and Dynamic Trials, Electrical Safety with EMI/ EMC Protection in an Explosive environment relevant to a Test Range, etc., Shri PC Routray, Sc G, was the Course Director and Shri Sukanta Das was the Course Coordinator.

## Course on Lidar Techniques for the Modern Battlefield

**Laser Science and Technology Centre (LASTEC), Delhi**, organised a CEP course on Lidar Techniques for the Modern Battlefield during 7-11 September 2015. Shri HB Srivastava, OS and Director, LASTEC, inaugurated the course. The aim of the course was to increase awareness about uniqueness of various lidar techniques used in modern battlefield. Topics covered under the course included: mobile lidar system for standoff sensing of chemicals, laser based techniques for explosive detection, design of lidar and its applications in defence, chem-bio threat scenario in modern battlefield, data acquisition system and data processing, TDLS-based fire detection system, etc. The course was followed by a multiple choice objective test which reflected level of understanding attained by the participants. Dr AK Razdan, Sc G, was the Course Director.



Shri HB Srivastava delivering inaugural talk

## Seminar on Disruptive Technology on Additive Manufacturing

A seminar on Disruptive Technology on Additive Manufacturing was organised by Central Tool Room and Training Centre (CTTC), Bhubaneswar, in collaboration with **Research Centre Imarat (RCI), Hyderabad**, at RCI on 21 September 2015. Dr SB Gadgil, OS and

Associate Director, RCI, inaugurated the seminar. The keynote address on Contribution by MSME Tool Rooms to Aerospace and Defence Sector was delivered by Shri Sibasis Maity, MD, CTTC, Bhubaneswar. Shri Maity also briefed on the scope of emerging technologies like Additive Manufacturing in the aerospace sector. Experts from Central Tool Room, Ludhiana and various organisations like M/s Mavrick IT, USA and M/s EOS e-Manufacturing Solutions delivered the lectures. The following topics related to Additive Manufacturing were covered during the seminar: 3D Printing and RPT, Laser Scanning and Reverse Engineering, Additive Manufacturing on Plastics and Additive Manufacturing on Metals. Dr S Karunanidhi, Sc G, was the Programme Coordinator.

## Programme on Cryptology and Information Security

**Scientific Analysis Group (SAG), Delhi**, organised a Special Training Programme on Cryptology and Information Security (CIS 2015) during 31 August to 11 September 2015 for the scientists of DRDO as well as user organisations. The aim of the programme was to make the participants aware about information security related issues and their cryptographic solutions for securing vital information and network infrastructure. Dr G Athithan, DS and CC R&D (SAM) and Director, SAG, inaugurated the programme. In his inaugural speech, Dr Athithan discussed the challenges of cyber security and emphasised on the need of such programme. Course Director Shri Ram Ratan, Sc F, presented overview of the course. The course covered basic as well as current topics in information security in an interactive manner.



Dr G Athithan releasing the course material

## Hindi Pakhwara Celebrations

### Aeronautical Development Establishment



Shri MZ Siddique addressing on the occasion of Hindi Diwas

Aeronautical Development Establishment (ADE), Bengaluru, conducted Hindi Pakhwara from 1-11 September 2015. Shri MZ Siddique, OS and Director, ADE, presided over the function and in his address said it is the statutory obligation to work in Hindi and exhorted all employees to contribute more in the implementation of official language. The programme concluded with a cultural programme by ADE Cultural Society.

### Centre for Artificial Intelligence & Robotics

Centre for Artificial Intelligence and Robotics (CAIR), Bengaluru, celebrated Hindi Pakhwara during 1-14



Hindi Diwas celebrations at CAIR

September 2015. Various competitions were organised for the Hindi speaking and non-Hindi speaking employees. Smt Manimozhi Theodore, Sc G, Officiating Director, CAIR, presided over the valedictory function. Shri KPM Bhatt, Sc G, Electronics and Radar Research and Development Establishment (LRDE), Bengaluru, was the Chief Guest for the event. The Chief Guest, in his speech emphasised the importance of official language Hindi and its relevance in Central Government Offices. Smt Manimozhi Theodore, in her address, elucidated the necessity of official language Hindi and requested officers and staff of CAIR to ensure the compliance of Official Language Policy. Smt TR Usha Kumari, Sc D, read out the message of SA to RM and also presented the Official Language Implementation Report.

### Defence Institute of High Altitude Research

Hindi Pakhwara was celebrated in Defence Institute of High Altitude Research (DIHAR), Leh, and its detachments at Partapur and Base Lab Chandigarh during 14-28 September 2015. Competitions in Hindi were organised in six categories in which all the employees participated with enthusiasm. Dr Bhuvnesh Kumar, Director, DIHAR, distributed awards to the winners.

### Defence Electronics Applications Laboratory

Hindi Pakhwara was celebrated in Defence Electronics Applications Laboratory (DEAL), Dehradun, with great enthusiasm during 14-28 September



Dr Pundir awarding the winners during Hindi Pakhwara

2015. Dr RS Pundir, Director, DEAL inaugurated the Pakhwara. The celebration concluded with vaad-vivaad event, where DEAL employees showcased their oratory skills. Individuals and groups were awarded for their meritorious efforts for promulgating the Rajbhasha in regular work.

## Defence Scientific Information & Documentation Centre

Defence Scientific Information and Documentation Centre (DESIDOC), Delhi, celebrated Rajbhasha Pakhwara from 14 September 2015 to 1 October 2015. Shri Gopal Bhushan, Director, DESIDOC, inaugurated the Pakhwara function. He emphasised the need of generating S&T literature in Hindi, and suggested that to popularise Rajbhasha the employees may adopt Hindi in routine official writing. During the Pakhwara 10 different competitions were organised. The winners were awarded in the valedictory function by Shri Gopal Bhushan.



Shri Gopal Bhushan inaugurating Hindi Pakhwara

## Integrated Test Range

Shri MV Bhaskarachary, Officiating Director, inaugurated Hindi Pakhwara on 1 September 2015 and addressed on the importance of Hindi in administration and technical activities. Various competitions in Hindi were organised to propagate Rajbhasha in Integrated Test Range (ITR), Chandipur.

## Naval Science & Technological Laboratory

Naval Science and Technological Laboratory (NSTL), Visakhapatnam celebrated Hindi Pakhwara during 3-14 September 2015. Shri CD Malleswar, OS and Director, NSTL, inaugurated the Pakhwara and suggested to use Hindi extensively in all possible ways. Shri KV Narayana Rao, Chief Administrative Officer, explained how Government is motivating employees towards increasing the usage of Hindi in daily office correspondence and informed that about 39 per cent of NSTL's correspondence is being done in Hindi. As part of the Pakhwara Celebrations, various competitions were conducted in which 145 employees of NSTL participated.



Shri CD Malleswar addressing the employees of NSTL during the inaugural of Hindi Pakhwara

## Proof & Experimental Establishment

Proof and Experimental Establishment (PXE), Chandipur, celebrated the Hindi Pakhwara during 3-16 September 2015 with various programmes. The function was inaugurated by the Shri R Appavuraj, OS and Director, PXE. Shri Appavuraj requested all employees to take part in various competitions with more and more enthusiasm. Dr AK Sannigrahi, Additional Director, expressed the importance of the Hindi Pakhwara, towards motivating employees for using more and more Hindi in official correspondence. Employees



Shri R Appavuraj releasing Kuch Khatta Kuch Meetha

participated in various competitions organised during the Pakhwara. A Kavi Sammelan was organised to commemorate 'Hindi Divas' on 14 September 2015 in which 30 participants recited their poems. To mark the occasion, a Kavita Visheshank, compilation of poems in Hindi, was released by Smt Appavuraj, first lady of PXE. A special issue of Kuchh Khatta Kuchh Mitha was also released by the Director.

## Research Centre Imarat

Research Centre Imarat (RCI), Hyderabad, organised Hindi Day on 12 October 2015. Dr G Satheesh

Reddy SA to RM and Director, RCI, was the Chief Guest of the inaugural function. Shri T Narasimha Rao, Sc G, and Vice Chairman, Official Language Implementation Committee (OLIC) gave an overview about Rajbhasha programmes held during the year. Dr IM Chhabra, Sc F, stressed on importance of training programmes in Hindi. Shri Kazim Ahmed, Senior Translator, presented a report on Hindi Pakhwaras. Dr G Satheesh Reddy felt effective Hindi implementation in all Divisions of RCI was the need of the hour. Smt R Anjani, PRO, proposed the vote of thanks.



Dr Reddy inaugurating the Hindi Diwas at RCI

## Swachh Bharat Abhiyan

### Armament Research & Development Establishment

In continuation with the Swachh Bharat Abhiyan set by the Hon'ble Prime Minister last year, Swachh



Swachta Abhiyaan at ARDE

Bharat Abhiyan was conducted at Armament Research and Development Establishment (ARDE), Pune, on 1 October 2015. Swachh Bharat Shapath was taken by the employees. Led by the Director, Dr KM Rajan, a rally for spreading the message of Clean India was conducted from ARDE campus to Pashan Circle. All the employees whole heartedly participated in the cleanliness drive carried out along the road.

### Defence Electronics Applications Laboratory

In accordance with the Swachh Bharat Abhiyan, a cleanliness drive was organised at Defence Electronics Applications Laboratory (DEAL), Dehradun, on 2 October 2015. DEAL employees led by their Director Dr RS Pundir participated in cleanliness drive around the campus with great enthusiasm. To sensitise the people



about cleanliness a rally was also taken out which covered all the localities around the DEAL campus.



Swachhta Abhiyaan surrounding DEAL campus

## Estate Management Unit

Shri MVL Narasimha Rao, Estate Manager, Estate Management Unit (R&D), Bengaluru, along with civilian and military staff conducted cleanness drive near DRDO Township at Nagavarapalya on 2 October 2015. The area was being used by the locals as a garbage dump. Local MLA and municipal corporator also took part in the exercise.

## Integrated Test Range

Integrated Test Range (ITR), Chandipur, organised Swachh Bharat Abhiyan on 2 October 2015. Shri R Appavuraj, OS and Director, ITR, administered



Swachhta Abhiyaan at ITR

the Swachh Bharat Pledge and exhorted employees to keep ITR and its surrounding clean and green to fulfill the mandate of Swachh Bharat Abhiyan. ITR has created awareness among all employees towards cleanliness, afforestation, healthy and a stress-free life, blood donation campaign, good governance, etc., through Swachh Bharat Abhiyan. "Our vision is to create a world class test range in harmony with nature and to build a committed manpower for the development of India", said Dr Appavuraj.

## Gas Turbine Research Establishment

Continuing the national mandate of Swachh Bharat, the employees of Gas Turbine Research Establishment (GTRE), Bengaluru, voluntarily took part in the Swachhata Abhiyan, organised during the month of September 2015 with great zeal and enthusiasm. Shri MZ Siddique, OS and Director, GTRE, actively led the programme. The volunteers cleaned several locations of the office premises.



Swachhta Abhiyaan at GTRE

## Naval Materials Research Laboratory

On the occasion of Gandhi Jayanti, Naval Materials Research Laboratory (NMRL), Ambarnath, organised laboratory cleaning programme as part of Swachh Bharat Abhiyan. Dr SB Singh, OS and Director, NMRL, appealed to the employees to join hands in the Swachh Bharat Mission by observing shram and samay daan. He also briefed the employees about five sigma, Japanese technique for keeping one's workplace in order.

## Personnel News

### Appointment

#### Director, Defence Material & Stores Research & Development Establishment



Dr Namburi Eswara Prasad, Sc G, has taken over as Director, Defence Materials and Stores Research and Development Establishment (DMSRDE), Kanpur. Dr Prasad obtained BTech and PhD in Metallurgical Engineering from Indian Institute of Technology, Banaras Hindu University, in 1985 and 1993, respectively. He joined DRDO as Sc B in Defence Metallurgical Research Laboratory (DMRL) in 1985 and worked there till he became Regional Director, RCMA (Materials) CEMILAC, Hyderabad, in September 2009.

Dr Prasad has been working on design, development, life prediction and production of structural and special materials (both primary and secondary products) and components for Indian Defence. His research contributions are principally in the development of Al x Al-Li alloys; advanced aerosteels and Ti alloys; Mo x Ti intermetallics; monolithic ceramics such as structural alumina, graphite and SiC; carbon and SiC-based continuous fibre-reinforced, ceramic-matrix composites (CFCCs).

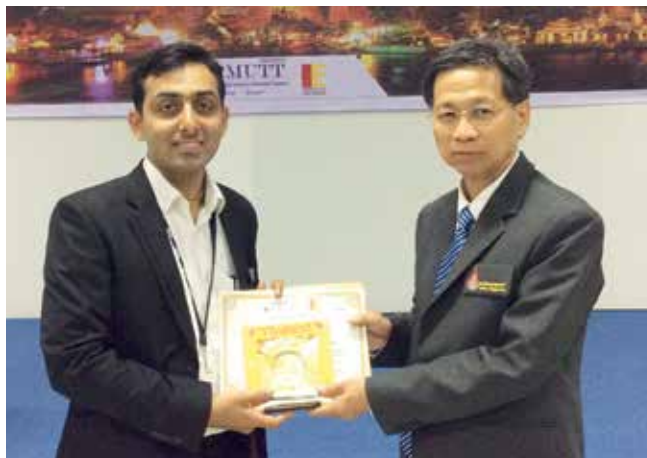
He has more than 170 peer-reviewed publications and over 300 confidential reports and airworthiness certification documents to his credit. Some of the important awards and recognitions that Dr Prasad received include: Young Scientist of ISCA (1991); Young Metallurgist of IIM (1994); Visiting Scientist of Max-Planck-Institute and Research Fellowship of Alexander-von-Humboldt Foundation of Germany (1998-1999); Binani Gold Medal of IIM (2006); IIM's Metallurgist of the Year 2010 by the Ministry of Steel, Government of India; and Dr VM Ghatge Award of the Aeronautical Society of India (2014). Apart from these, Dr Prasad has also been elected as Fellow of Institution of Engineers (2009), Fellow of Andhra Pradesh Academy of Sciences (2011), Fellow of Indian Institute of Metals (2011), Vice-

Chairman, Hyderabad Chapter of IIM (2012), and the AICTE-INAE Distinguished Visiting Scientist of Andhra University and MGIT (2013) as well as Distinguished Alumnus Award of IIT-BHU(MET).

### Award

#### Best Paper Award

Shri Amit Kalra, Sc D, Gas Turbine Research Establishment (GTRE), was awarded Best Session Paper Award, during the International Conference on Innovative Engineering Technologies held in Bangkok, Thailand. In his technical paper on Mathematical Modelling, Simulation and Validation of Brushless DC Motor Based Fuel Metering System with its Application to Marine Gas Turbine Engines, he brought out an innovative fuel control scheme for marine gas turbine engine application.



### Higher Qualification Acquired

#### Defence Material & Stores Research & Development Establishment

Miss Kavita Agarwal, Sc D, Defence material Stores Research and Development Establishment (DMSRDE), Kanpur has been awarded PhD by Defence Institute of Advance Technology (DIAT), Deemed University, Pune, for the thesis titled Development of Advanced Polymer Blends and Composites and their Characterization with Special Reference to Scanning Electron Microscope.



## Visitors to DRDO Labs/Estts

### Aerial Delivery Research & Development Establishment

Shri Mahendra Singh Dhoni, captain indian cricket team, visited Aerial Delivery Research and Development Establishment (ADRDE), Agra, on 21 August 2015. Dr SC Sati, OS and Director ADRDE, welcomed the Indian captain and explained him about various aspects of design, evaluation and manufacturing of various parachutes specially the man dropping parachutes and other products of ADRDE including Aerostats, Arrestor Barriers, etc.



Dr SC Sati explaining about parachutes to Shri Dhoni

### Defence Materials & Stores Research & Development Establishment

Shri Kiren Rijju, Hon'ble Union Minister of State for Home Affairs and a high level delegation of Ministry of Home Affairs headed by Shri V Vunlunmang, JS (PM), visited Defence Materials and Stores Research and Development Establishment (DMSRDE), Kanpur, on 4 September 2015. Demonstrations of Personnel Protection Systems, particularly the Bullet Proof Jackets (BPJ) with GSQR-1293 and GSQR-1318 specifications were given to the delegation. The Hon'ble Minister opined that there should be closer collaboration between DRDO and MHA and all the Personnel Protection Systems should be indigenised and produced to address the needs of MHA and paramilitary forces.

### Defence Terrain Research Laboratory

Seventeen Engineer Executive Trainees from BrahMos Aerospace visited Defence Terrain Research Laboratory on 7 September 2015. Dr MR Bhutiyan, Director, DTRL, gave an overview of the research work of DTRL.

### Institute of Nuclear Medicine & Allied Sciences

Lt Gen TK Bandyopahyay, PHDS, DGDS and Col Commandant, visited Institute of Nuclear Medicine and Allied Sciences (INMAS), Delhi, on 3 September 2015. He was briefed about the activities of the institute particularly about the Department of Dental Research and Implantology.

### Institute for Systems Studies and Analyses

Lt Gen PM Hariz, SM, VSM, GOC-in-C, HQARTRAC, along with Brig. Alok Kacker, Commandant WARDEC and a team of officers visited Institute for Systems Studies and Analyses (ISSA) on 12 September 2015. Dr Satish Kumar, DS and DG (MSS) was also present on the occasion. Shri SB Taneja, Director, ISSA, gave a brief overview of institute's capabilities in the field of wargaming, systems analyses and its endeavour in the area of strategic planning. Demonstration of SAMAR, a Division-level wargame with multiple thrust level and Army Air Defence Deployment Simulator System, a software deployed at Army Air Defence College Gopalpur, were given to the visitors.



Shri Taneja briefing about the activities of ISSA