

DRDO NEWSLETTER

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**Raksha Mantri dedicates Akash
Missile System to the Nation**

Handing Over Ceremony of Akash Missile System



Akash Weapon System



Dr S Christopher, Secretary, Department of Defence R&D and DG DRDO presenting memento to Hon'ble Raksha Mantri Manohar Parrikar



Shri SK Sharma, CMD, BEL, handing over the key of the Akash Weapon System to Shri Manohar Parrikar



Raksha Mantri with Team Akash



35th year of Publication

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Raksha Mantri dedicates Akash Missile System to the Nation

Hon'ble Raksha Mantri Shri Manohar Parrikar dedicated indigenous surface-to-Air Akash Missile System (AMS) to the Nation at Indian Air Force (IAF) Station Gwalior on 10 July 2015. The system has been designed and developed by DRDO and produced by Bharat Electronics Ltd (BEL) and Bharat Dynamics Ltd (BDL). The culmination of Akash Missile System is a hallmark of sustained concentric jointmanship of DRDO, BEL, Indian industries and IAF. Indigenous development of the system has given impetus to the defence industrial base in the country and generated business of more than Rs 20,000 crore.

Akash system is the outcome of partnership of Defence Research and Development Laboratory (DRDL), the nodal DRDO laboratory along with 13 other DRDO laboratories, 19 Public Sector Units (PSUs), five Ordnance Factories (OFs), three national laboratories, six academic institutions and more than 265 private sector industries across the country. The induction of Akash system has increased the self-reliance index of defence technologies in the country.

Akash is a very potent supersonic mobile multi-directional multi-target point/area air defence system and can engage several air targets simultaneously using sophisticated multifunction phased array and surveillance radars in fully autonomous mode. The seamless integration of hardware and software of various elements permits automated management of air defence functions such as programmable surveillance, target detection, target acquisition, tracking, identification, threat evaluation, prioritisation, assignment and engagement. Equipped with advanced electronic counter countermeasures features at various levels, Akash system provides secure communication links with other air defence command and control networks to handle the counter electronic warfare scenario.

Air Chief Marshal Arup Raha, PVSM, AVSM, VM, ADC, Chief of the Air Staff, IAF, Dr S Christopher, Secretary, Department of Defence R&D and DG DRDO, Shri SK Sharma, CMD, BEL, other senior officers of IAF, DRDO, BEL, BDL, MSQAA, industry partners and project teams were present during the event.



Akash Missiles



CFEES transfers Process Technology for Heptafluoropropane

Centre for Fire, Explosive and Environment Safety (CFEES), Delhi, has developed commercially viable technology for the production of Heptafluoropropane (HFC-227ea). HFC-227ea is a highly effective, non-corrosive, non-conductive, non-Ozone depleting environmentally acceptable fire extinguishing agent less toxic than Halon and leaves no residue on application. It is ideally suited for suppression of critical fires and has become the market leader in providing rapid and safe fire protection for high value assets in both occupied and unoccupied facilities.

The process involves hydro fluorination of HFC-227ea with anhydrous hydrofluoric acid using Chromium, Aluminium, and Zinc-based catalyst. The performance of HFC-227ea vis-à-vis Halon 1301 has been proved under retrofitment trials in fire suppression experiments in T-72 tank meeting the requirements of GSQR and NFPA for fire suppression timing in both crew and engine compartments. CFEES has transferred the technology to M/s Gujarat Fluorochemicals Pvt. Ltd under DRDO-FICCI-ATAC programme.

World over, HFC-227ea is commonly used as a gaseous fire suppression agent for protection of occupied space as per NFPA 2001 (2012 edition). All international standards are now specifying HFC-227ea



Trials in derelict T-72

in their fire safety regulations, both in civil and military applications. Due to strict implementation of Montreal Protocol, which prohibits production and use of Halons as fire suppressing agents, HFC-227ea has a very good commercial value.

More than 80 per cent of the fire protection uses are with the civil sector industries such as Oil, Power, Telecommunication, etc. Cost of the indigenous HFC-227ea is expected to be much lower than the imported HFC-227ea. Use of HFC-227ea by civil sector shall generate large demand leading to reduction in the cost of the product appreciably.

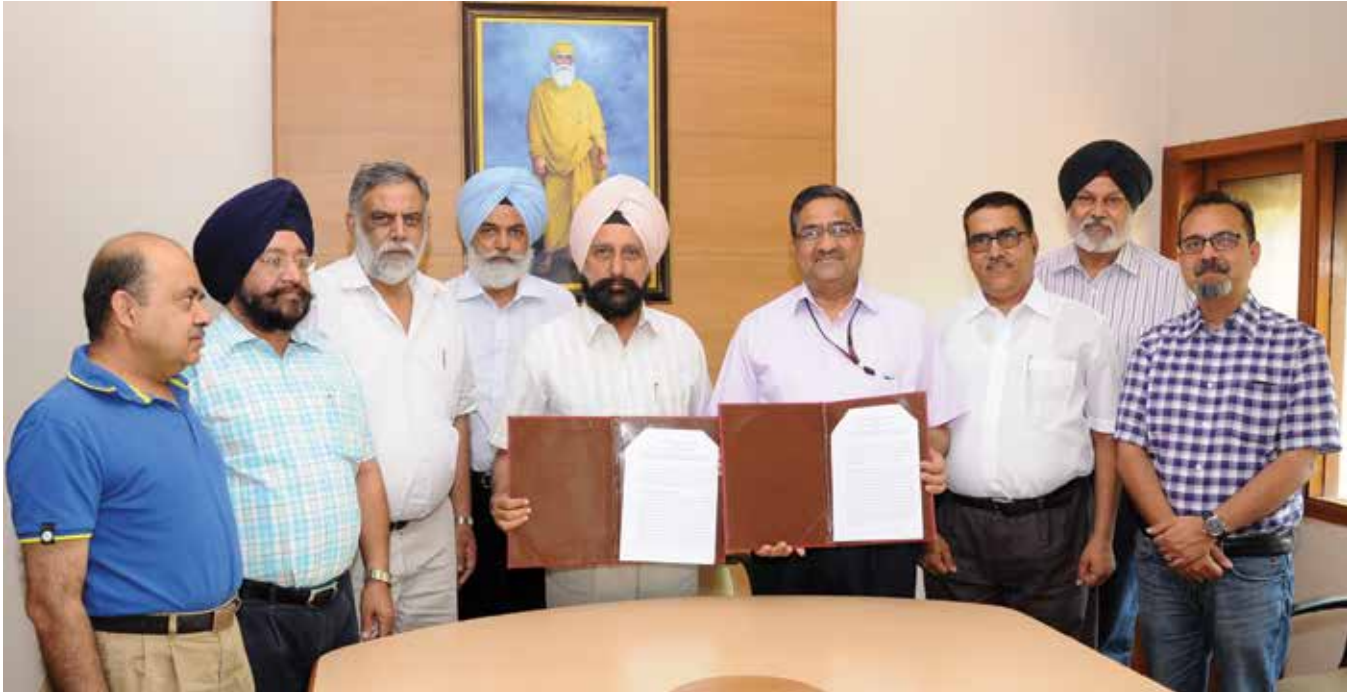
INMAS inks MOU with Guru Nanak Dev University

On 3 July 2015, Institute of Nuclear Medicine and Allied Sciences (INMAS), Delhi, signed a Memorandum of Understanding (MoU) with Guru Nanak Dev University (GNDU), Amritsar, for enhanced academic interaction, applied research, and biomedical product development programmes for a period of five years. Dr Rajendra Prashad Tripathi, OS, Director, INMAS and Prof. AS Brar, Vice Chancellor, GNDU, signed the MoU.

The MoU will encourage interactions between INMAS and GNDU and enhance the value of research and training at both places by undertaking collaborative research projects. The collaboration will be implemented

in a manner that supplements the resources of both the institutions to facilitate research and training. There will be exchange of scientists, teaching faculty and students. Research students working at INMAS will be able to register for PhD degrees to be awarded by GNDU, under the supervision of INMAS scientists. Likewise PhD students of GNDU will be able to carry out a part of their research work at INMAS.

Speaking on the occasion, Prof. Brar said that under the MoU, INMAS scientists and GNDU faculty and scholars should use the research facilities of the two institutes and contribute for the benefit of the society, and added that engineers and biomedical scientists



Prof. AS Brar and Dr Rajendra Prasad Tripathi exchanging the MoU

should work together to enhance indiginisation in order to produce better products and services.

In his address, Dr Tripathi said that the collaboration will mutually benefit both the institutes. Under the MoU, INMAS will try using GNDU further for basic research while INMAS will prefer applied research activities. The

collaboration under MoU will result in enhanced “Make in India” products and the joint collaboration would help Indian Armed Forces in particular and benefit the society at large, added Dr Tripathi. Dr Rajeev Vij, Sc F, INMAS, coordinated the event and proposed the vote of thanks.

World Environment Day Celebration

The World Environment Day was celebrated at Integrated Test Range (ITR), Chandipur, on 5 June 2015. Dr BK Das, Sc G, Officiating Director, ITR and Chairman Works Committee, emphasised the importance of environment safety awareness for society. He highlighted 10 Environment Management Programmes, for implementation in the Range for creating a safe and healthy work place. Shri BK Patnaik, IFS, Ex-PCCF (Wild life) and Chairman, State Environment Impact Assessment Authority, Govt of Odisha, Bhubaneswar was the Chief Guest on this occasion. He delivered a talk on Environment Safety Management for New Defence Projects. Shri RK Behera, Chairman, Safety & Environmental Committee gave the welcome address and highlighted the Environmental Safety Measures



under taken in the Range. A video film on Environment Protection and Forest Right Act of Tribal Communities was shown to the audience.

Parliamentary Sub-Committee on Official Language visits SASE

The first Sub-Committee of the Parliament Committee on Official Language inspected Snow and Avalanche Study Establishment (SASE), Manali; 2 Battalion Indo-Tibetan Border Police (ITBP), Babeli, Distt Kullu; 17 Battalion ITBP, Reckong Peo; Sashttra Seema Bal, Samshi; Kendriya Vidyalaya, Mandi; and Nehru Yuva Kendra, Kullu during 11-13 June 2015. Overall coordination of the visit was conducted by SASE.



The first Sub-Committee of the Parliament Committee on Official Language at SASE

The Committee comprised Hon'ble Shri Satyavrat Chaturvedi, Chairman, MP (Rajya Sabha); Shri Ajay Mishra Teni, MP (Lok Sabha); Smt Ranjeet Ranjan, MP (Lok Sabha); Smt Santosh Ahlawat, MP (Lok Sabha); Shri Suraj Bhan, Secretary; Shri BN Saxena, Section Officer; Shri Devender Prasad Kukreti, Assistant and Shri Devender Singh, Reporter. SASE was represented by Shri Ashwagosh Ganju, Director SASE; Shri RN Dubey, Joint Secretary, Ministry of Defence; Shri Sunil Sharma, Director, Directorate of Rajbhasha and OM, DRDO HQ; Shri MC Mishra, Deputy Director, Rajbhasha,

Ministry of Defence; and Dr Harendra Singh Negi, Sc E, Dr Yogesh Chander Nagar, Sc D and Dr (Ms) Anuja Kumari, Sc C, SASE RDC, Chandigarh.

On the occasion, Hon'ble Chairman of the Committee presented a compilation of "Orders of the President" on the first eight parts of the report of the Committee and offered his comments/suggestions for the betterment of the official work in Hindi. Dawal-2014, 19th Edition of SASE Hindi magazine, was also released on the occasion.

ISO 9001: 2008 Certification for NPOL

Naval Physical and Oceanographic Laboratory (NPOL), Kochi—a premier DRDO laboratory in the areas of sonar systems, underwater surveillance technologies, and study of ocean environment and underwater materials—has been certified ISO 9001:2008. The quality management system is applicable to design, development and manufacture of prototypes of underwater sensors and surveillance systems and transfer of technology for naval applications. The ISO 9001:2008 certificate was presented to Shri S Kedarnath Shenoy, Director, NPOL, by Shri Vivekanandan B, Director Technical Business Assurance, Intertek India Pvt. Ltd, in a function at NPOL on 17 June 2015.



Shri S Kedarnath Shenoy (centre) receiving ISO 9001:2008 certificate from Shri Vivekanandan B



Manpower Development Activities

Conferences/Seminars/Symposia/Training Courses/Meetings

Training Programme on Effective Leadership

Armament Research and Development Establishment (ARDE), Pune, organised a training programme on Effective Leadership for senior scientists in association with M/s HR Muscle, Pune, during 2-4 July 2015. The aim of the programme was to nurture leadership for performance enhancement and to improve organisational effectiveness. Twenty-three senior scientists participated in the programme.

Course on Advances in Precision Manufacturing

Defence Electronics Applications Laboratory (DEAL) Dehradun, organised a course on Advances in Precision Manufacturing under Continuing Education Programme (CEP) of DRDO during 8-12 June 2015. Shri RC Agarwal, OS, Director, DEAL inaugurated the course. Twenty-five participants from Advanced Systems Laboratory (ASL), High Energy Materials Research Laboratory (HEMRL), Solid State Physics Laboratory (SSPL), Instruments Research and Development Establishment (IRDE) and DEAL attended the course.

The topics covered under the course included: Micro Manufacturing, Jigs and Fixtures, Optical Fabrication, DFX, Machining of Composites, Materials and their Processing, Green Manufacturing, QA Tools, CAD/CAM, Reliability, HASS/HALT and Nonconventional Machining. Dr VP Dutta, Sc G, was the Course Director and Shri Atul Dev, Sc F, and Shri Rakesh Bhardwaj, Sc E, were the Course Coordinators.

Course on Reliability and Quality Assurance

Gas Turbine Research Establishment (GTRE), Bengaluru, organised a three-day CEP course on Reliability and Quality Assurance during 15-17 June 2015. Twenty-two participants from various DRDO labs participated in this event. Cmde (Retd) Saroj Kumar Patel, Director, Quality, Reliability and Safety, DRDO HQ, was the Chief Guest of the inaugural function. Cmde Patel in his inaugural address, stressed upon the inescapable need to enhance the levels of quality, reliability and safety in the aerospace industry. Case studies related to electronic and mechanical failure of various aircraft, their mitigation and implementation were discussed by experts during the course.



Course participants and faculty with Director DEAL (sitting fifth from right)



Workshop on Design, Manufacturing, Testing and Certification of Small Gas Turbine Engines

GTRE organised a two-day workshop on Design, Manufacturing, Testing and Certification Aspects of Small Gas Turbine Engines during 15-16 June 2015. Practicing engineers, scientists, students and researchers from various organisations and institutes participated in the workshop. Dr CP Ramnarayanan, OS, Director, GTRE, in his welcome address, spoke about the theme of the workshop and highlighted the versatile applications of small gas turbine engines. Dr KVL Rao, Chairman, Executive Board, Gas Turbine Enabling Technology (GATET), emphasised on the need to continuously think about how to make small engines better, reliable and cheaper.

In his inaugural address, Dr K Tamilmani, DS, DG (Aero), DRDO, elucidated the requirements of gas turbine engines in the country and stressed on the need to explore new class of materials, and to achieve highest degree of product reliability.



Dr K Tamilmani inaugurating the workshop on Design, Manufacturing, Testing and Certification Aspects of Small Gas Turbine Engines

Course on Certificate in Project Management with Soft Skills

A CEP course on Certificate in Project Management (CIPM) with Soft Skills was conducted by **Institute of Technology Management (ITM), Mussoorie**, in collaboration with International Institute of Projects and Programme Management (I2P2M) during

1-7 June 2015. Objective of the course was to acquaint scientists with fundamentals and various tools and techniques of project management to enable them in achieving quality goals and contribute more effectively in time-bound projects of DRDO. Key areas covered in the course included: Project Management Framework, Project Charter, Stakeholder Expectation Analysis and PM Success Criteria, Scope and Deliverables, Duration Compression, PERT, Cost and Finance, Quality Control Tools and Risk, and Quality Management. A special session on soft-skill development was also conducted.

Dr Manjit Singh, OS, Director, Terminal Ballistics Research Laboratory (TBRL), Chandigarh, was the Chief Guest of the inaugural function. Dr SB Singh, OS, Director, ITM, in his welcome address, urged the participants to utilise the course for enhancement of their knowledge and project management skills. Dr Manjit Singh, in his address, opined that all DRDO laboratories should encourage young scientists to participate in such courses conducted by ITM. The course was followed by CIPM certification examination. Twenty-three DRDO scientists attended the course.



Dr Manjit Singh delivering the inaugural address

Hindi Workshop for Administrative Cadre

Proof and Experimental Establishment (PXE) Chandipur, organised 61st Hindi Workshop for the Administrative Cadre during 22-26 June 2015. Shri R Appavuraj, OS, Director, PXE, inaugurated the workshop. In his inaugural address, Shri Appavuraj expressed that the workshop would help in discharging administrative work in Hindi. The working methodology on Hindi was discussed in detail by Shri SK Ray, Hindi Officer, and Kumari Pooja Singh, Hindi Assistant.

Dr AK Sannigrahi, Additional Director, encouraged the participants to implement Hindi in the official work. A debate was also organised on the problems of implementation of Hindi in official work and their probable solutions were discussed.



Shri Appavuraj, Director, PXE, inaugurating the workshop

Course on Self Improvement for Technical Officers

Naval Physical and Oceanographic Laboratory (NPOL), Kochi, organised a special training course on Self Improvement Programme for Technical Officers. The aim of the programme was to keep the officers abreast of the activities and new technological developments in various groups through a group learning exercise. Shri S Kedarnath Shenoy, Director, NPOL, in his inaugural address, emphasised the relevance of the effective knowledge sharing and enhancement of

presentation and communication skills. He also highlighted the significance of continuous learning for knowledge acquisition. The programme served as a platform for sharing knowledge and refinement of presentation skills.

Course on GIS and Oracle-based Ocean Database Design and Management

A CEP course on GIS and Oracle-based Ocean Database Design and Management was conducted by NPOL during 8-12 June 2015. The course was aimed to strengthen the knowledge of the participants on geographical information system and Oracle, for the design and development of ocean environmental, acoustic and sonar database at NPOL. Thirty-one participants attended the course.

The topics covered focused on features and applications of GIS and Oracle-based Database Management including ocean environmental and geo-acoustic data acquisition, processing and analysis besides a few important GIS and Oracle applications. Other topics covered were on the role of ocean environmental database for sonar development and naval applications, namely, sonar range prediction, acoustic data storage and archival, sonar array data archival, understanding of ocean environment in sonar design, environmental database for futuristic submarine sonar suite, meteorological data analysis and dissemination, ocean database for naval operations. Dr Jaganath Swain, Sc F, was the Course Director.



Participants of course on GIS and Oracle-based Ocean Database Design and Management at NPOL

International Yoga Day Celebrations

Advanced Systems Laboratory

Advanced Systems Laboratory (ASL), Hyderabad, celebrated International Yoga Day on 21 June 2015. Fifty employees participated in the event. Yog Shiromani Dr P Sudarshan Reddy explained the benefits of yoga and stressed upon practicing yoga as it improves physical as well as mental strength of an individual. He also demonstrated different yoga asanas, which were followed by the participants.



Yoga session in progress at ASL

Defence Laboratory

Defence Laboratory, Jodhpur (DLJ) celebrated the International Yoga Day on 21 June 2015 with full vigour and gusto on lush green lawn of its Training Institute. Dr SR Vadera, OS, Director, DLJ along with scientists, staff, Defence personnel and their families participated



Yoga session in progress at DLJ

in the programme. Various asanas were performed and their benefits were explained by the Yoga Instructor Dr Mahesh Chandra Vyas. Dr Vadera, also explained the benefits of yoga and asked employees to practice this as their regular habit. He also elaborated how yoga purifies mind, body and soul.

Institute of Technology Management

International Yoga Day was celebrated on 21 June at Institute of Technology Management (ITM) playground with great enthusiasm. Yoga instructors guided different asanas to ITM family and a large number of participants from Landour Cantonment. Dr SB Singh, OS, Director, ITM, in his address, highlighted the role of yoga in the development of body, mind and soul and urged all to incorporate yoga in daily life. He also emphasised the importance of yoga on relieving stress and in the spread of peace and harmony.

Naval Science and Technological Laboratory

Naval Science and Technological Laboratory (NSTL), Visakhapatnam, celebrated International Yoga Day in a festive manner. Dr V Bhujanga Rao, DS, Director General (Naval Systems & Materials), DRDO, was the Chief Guest on the occasion and inaugurated the function. He expressed his happiness on participation of NSTL fraternity with lot of enthusiasm. He wished all the



Yoga session in progress at NSTL



employees to make Yoga a part of their daily activities. Shri CD Malleswar, OS, Director, NSTL, explained the greatness of ancient Indian culture. Guest Speaker, Yoga Guru Shri Ramakrishnanda, explained the usefulness of yoga and its importance in making a person physically and mentally fit. The participants performed selected yoga asanas under the guidance of Shri A Visweswara Rao, Security Assistant C.



RClans performing yoga on International Yoga Day

Research Centre Imarat

Research Centre Imarat (RCI), Hyderabad, conducted yoga classes from 17-21 June 2015 to

celebrate International Yoga Day. Shri Jitendra Singh, Sc E, Advanced Systems Laboratory (ASL), Hyderabad, conducted the yoga sessions. A large number of scientists and staff participated in the programme.

Dr G Satheesh Reddy, DS, Director, RCI presided over the International Yoga Day celebrations.

Swachh Bharat Abhiyan

Institute of Technology Management

Institute of Technology Management (ITM), Mussoorie, organised Swachh Bharat Abhiyan on 26 June 2015. All ITM employees took part in the programme with great zeal and enthusiasm. Three teams undertook cleaning of office and surrounding technical area. Long unused items, metal scrap, etc., were segregated for disposal. Dr SB Singh, OS, Director, ITM, participated actively with the teams. The programme involved cleaning up of office complex, store and the surrounding areas.



Cleanliness drive at ITM

Proof & Experimental Establishment

As a part of Swachh Bharat Abhiyan week-long activities like upkeep and cleaning of buildings were carried out during 22-26 June 2015 at Proof and Experimental Establishment (PXE), Balasore. Cleanliness of block houses of firing points were also done. Dr AK Sannigrahi, Sc F, delivered a talk on Energy Conservation in relation to Swachh Bharat Campaign.



Dr Sannigrahi delivering talk on Swachh Bharat Abhiyan



Personnel News

Appointments

Director, DESIDOC



Shri Gopal Bhushan is appointed as the Director of Defence Scientific Information and Documentation Centre (DESIDOC), Delhi, with effect from 16 June 2015. Prior to this appointment, Shri Bhushan was the Director for International Cooperation (DIC) at DRDO HQ—the position he took over on 1 January 2010.

As DIC, Shri Bhushan pursued DRDO's international affairs with foreign countries at the government level and represented DRDO in various multilateral and outreach meetings on disarmament and international security. He has a vast experience of working with various Department/Ministries of Government of India and International defence research laboratories, military organisations, defence industry, and foreign academia. He worked with the foreign exports regulatory authorities to resolve export and trade restrictions and impediments. Throughout, Shri Bhushan has been guided by pragmatism and his belief in the boundless opportunities. He worked tirelessly to contribute to the ideas, policies, and innovations that assured widening of DRDO's International defence R&D cooperation. Due to his momentous efforts, DRDO's International defence R&D cooperation is seeing a tremendous growth and expansion with greater openness.

In his career since 1986, he has served in DRDO in a variety of positions. From April 1986 to July 1997, he worked as a software engineer at DRDO Computer Centre and at the Directorate of Advanced Computing and Systems Analysis. In July 1997, he joined Institute of Systems Studies and Analyses (ISSA) where he was involved in the development of wargame software for the Indian Army. In May 2000, he was appointed as the Staff Officer to Scientific Adviser to Defence Minister which followed his appointment as Counsellor (Defence

Technology) at the Embassy of India in Washington D.C., USA. As a diplomat, he served in the Indian Mission from July 2006 to October 2009. On his return, he was appointed, the Officer on Special duty (International Affairs) to SA to RM. On 1 January 2010 he took over as the Director for International Affairs at DRDO HQ.

Shri Bhushan has a Bachelor's degree in Science and Post-graduation in Operations Research and Master's in Computer Sciences (Systems Software). He is the recipient of "Best Scientist of the Year-2010" Award for his unique and distinguished services to International Cooperation in DRDO. In 2012, he attended "Senior Executives in National and International Security" Program at the John F Kennedy School of Government at Harvard University, USA.

Director, MTRDC



Dr Sudhir Kamath, Sc G, has taken over as Director, Microwave Tube Research and Development Centre (MTRDC), Bengaluru, on 1 July 2015. He holds an MTech degree in Electronics and PhD in Electronics with specialisation in Microwave Tubes both from Institute of Technology, Banaras Hindu University (BHU), Varanasi. He joined MTRDC as Sc B in September 1985.

Handling various responsibilities as Project Manager, Group Head, Divisional Head and Project Director, he has contributed to a number of projects and technologies for development of microwave tubes such as Gridded Electron Guns, Collectors, Electronic Power Conditioners, etc. He has been involved in the design and development of various types of Helix- and Coupled-Cavity Traveling Wave Tubes (TWTs) for Defence Systems. As Project Director, he has successfully developed Microwave Power Modules (MPM) and MPM-based Transmitters for Radar, EW and Communication.

He is a senior member of IEEE; Fellow of Institution of Electronics and Telecommunication Engineer (IETE); Fellow and Vice President of Vacuum Electron Devices



and Applications Society (VEDAS); and member of Magnetic Society of India (MSI) and Society of EMC Engineers India.

He is the recipient of the DRDO Agni Award for Self-Reliance in 2003 and 2013, and DRDO Scientist of the Year Award in 2009 for significant contribution in the field of Microwave Tubes. He is also the recipient of a number of DRDO laboratory-level awards including the Laboratory Scientist of the Year Award in 2003.

SA to CNS



Shri Bhaskar Burman, has taken over as Scientific Adviser to Chief of Naval Staff (SA to CNS) on 17 June 2015. He holds a Bachelor's degree in Electronics and Telecommunication Engineering from Bengal Engineering College, Calcutta University and an MTech degree in Computer Engineering from IIT, Kharagpur.

Shri Burman joined DRDO as Sc C at Defence Electronics Application Laboratory (DEAL), Dehradun, in 1991 and worked in the field of image processing and imaging surveillance and reconnaissance and published many technical papers in India and abroad. During 2004-2006, he was privileged to work directly with SA to RM as a team member of Group for Forecasting and Analysis of Systems and Technologies (GFAST). At GFAST he was member of many Task Forces that paved way towards launching of system-level projects in DRDO labs. Thereafter, he was posted to Defence Terrain Research Laboratory (DTRL), Delhi, and was associated in terrain database management and terrain intelligence activities for the Services. Since 2008, Shri Burman has been working in the office of the SA to CNS and is involved in providing scientific and technical guidance to the Indian Navy in addition to monitoring of Naval projects in DRDO. He is instrumental in rejuvenation of Sahayak Mk 1, Air Droppable Container project, which has been successfully steered through confirmatory trials, capability demonstration and acceptance by Indian Navy. He has contributed towards formulation of Indian Navy-DRDO Synergy Policy and has been actively facilitating initiation of many new Naval projects in DRDO.

Shri Burman has 12 technical papers to his credit and has delivered many invited lectures in India and abroad. He is the recipient of the DRDO Technology Award in 1996 and is a Life Member of the Institution of Electronics and Telecommunication Engineers (IETE), India.

Awards

Dr Biren Roy Space Science and Design Award

Dr PC Jain, Sc F, Defence Research and Development Laboratory (DRDL), Hyderabad, has won prestigious Dr Biren Roy Space Science and Design Award. Shri Vajubhai Vala, Hon'ble Governor of Karnataka, conferred the award on Dr Jain, an alumnus of IIT Roorkee, IIT Bombay and BOYSCAST (DST) Fellow from Pennsylvania State University, USA.



Dr PC Jain (left) receiving Dr Biren Roy Space Science and Design Award

SALIS Best Librarian Award

Dr Rajeev Vij, Sc F, Institute of Nuclear Medicine and Allied Sciences (INMAS), Delhi, has been awarded Dr Harish Chandra-Sushila Chandra Best Librarian Award in recognition of his meritorious service to the profession. Prof. R Thandavan, Vice Chancellor, University of Madras and Dr VM Periasamy, Vice Chancellor, BS Abdur Rahman University, Chennai, jointly presented the award to Dr Vij during the inaugural function of the National Conference on Advancement in Library and Information Science and Technology:





Challenges and Opportunities (ALIST 2015) organised by the Society for the Advancement of Library and Information Science (SALIS) at BS Abdur Rahman University, Chennai, on 10 July 2015. The award has been constituted by SALIS and sponsored by late Dr Harish Chandra, former Librarian, Indian Institute of Technology-Madras, Chennai, to encourage library professionals.

◀ Dr Rajeev Vij (left) receiving SALIS Best Librarian Award

Visitors to DRDO Labs/Esstt

Armament Research & Development Establishment

✧ Shri Rao Inderjit Singh, Hon'ble Union Minister of State for Planning (Independent Charge) and Minister of State for Defence visited Armament Research and Development Establishment (ARDE), Pune, on 8 June 2015. Dr KM Rajan, OS and Director, ARDE, briefed Shri Rao about ongoing projects in ARDE. Shri Rao witnessed firing demo of small arms at Pashan range. He also showed interest in Pinaka Multi Barrel Rocket Launcher System. A visit to the display of ARDE products was also arranged.



Shri Rao Inderjit Singh examining the Modern Sub Machine Carbine

✧ Air Vice Marshal Sunil J Nanodkar, VM, VSM, ACAS Ops (Off) visited ARDE on 26 June 2015. A presentation of posters and hardware covering Corner Firing

Weapon, Joint Venture Protective Carbine, Underbarrel Grenade Launcher, Multi Calibre Weapon, Airburst Grenade was made to the visitor. Firing demonstrations of Corner Firing Weapon and JVPC were also arranged.

Centre for Artificial Intelligence & Robotics

Lt Gen Gurmit Singh, UYSM, AVSM, VSM, DCOAS (IS&T), Maj Gen Arup Sen, VSM, ADG IS (A), Maj Gen Girish Kumar, Commandant, ADMC, Brig AS Gerwal, DDG, PMO ACCCS and team visited Centre for Artificial Intelligence and Robotics (CAIR), Bengaluru, on 11 June 2015. The team was briefed by Shri Sanjay Burman, OS and Director, CAIR, about the technologies developed by CAIR in the area of command and control.



Shri VC Ravi, Sc E (1st from right, front row), giving demonstration on Robotic Platforms to the visitors



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Demonstrations on multi-agent robotics systems related technologies, semantic big-data analytic and robotic platforms were also given.

Centre for High Energy Systems & Sciences

Cmde Puneet Chadha, PDSR, and Capt Manish Dhakray, DSR, of Indian Navy and Shri Bhaskar Burman, Sc G, SA to CNS, visited Centre for High Energy Systems and Sciences (CHESS), Hyderabad, on 25 June 2015. Shri Suranjan Pal, OS and Director, CHESS, briefed the visitors about the CHESS. The team also visited High Power Laser Laboratory and test benches.

Defence Electronics Application Laboratory

Shri SK Sharma, CMD, BEL visited Defence Electronics Application Laboratory (DEAL), Dehradun, on 15 June 2015. He was briefed by Shri RC Agarwal, OS, Director, DEAL, on the project activities of the Laboratory. CMD, BEL, actively deliberated the technical aspects and appreciated the progress of these projects. He also visited various project centres like Software Defined Radio (SDR), GSAT-6 Integrated Coastal Surveillance System (ICSS), Tropo-scatter communication, VLF Communication, etc.



Shri SK Sharma being briefed about the SDR Project by Shri RC Agarwal

DIPAS, Delhi

Dr S Christopher, Secretary, Department of Defence R&D and DG, DRDO, visited Defence Institute of Physiology and Allied Sciences (DIPAS), Delhi, on 27 June 2015. Dr (Smt) Shashi Bala Singh, OS, Director,

DIPAS, made a presentation on the work of DIPAS. Dr Christopher discussed ongoing projects and visited various facilities including Environmental Simulation Chamber.



Dr Shashi Bala Singh briefing DG DRDO about DIPAS products

Institute of Technology Management

Ms Vandana Srivastava, FA (DS) visited Institute of Technology Management (ITM), Mussoorie, on 3 June 2015. She was accompanied by Ms Vandana Kumar, IFA (R&D), Dr VV Rao, Project Director A3 and Shri Abhay Kumar, CCE (North).

Electronics & Radar Development Establishment

Lt Gen Rajiv Bhatia, AVSM, DG AAD, visited Electronics and Radar Development Establishment (LRDE), Bengaluru, on 30 June 2015. Various radars developed by LRDE, were shown to DG AAD.



Shri SS Nagraj, OS, Director, LRDE briefing the visitors about LRDE products

