



# DRDO NEWSLETTER

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# डीआरडीओ न्यूज़लेटर

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## SA to RM visits SASE

Dr VK Saraswat, Scientific Advisor to *Raksha Mantri*, Director General DRDO, and Secretary, Defence R&D, along with Shri S Sundaresh, DS and CC R&D (ACE) visited Snow and Avalanche Study Establishment (SASE), Manali, during 27–28 June 2010, and reviewed the XI-Plan projects. They evinced keen interest in the cold laboratory facility of SASE, which offers specialised snow and ice sample storage facility, environmentally-controlled walk-in cold chambers, equipment, instrumentation, and scientific expertise specifically designed for detailed scientific study of snow, ice, and related manifestations. He appreciated the efforts in

creating a 3-D model of the Himalayan terrain, which is an excellent training tool to familiarise soldiers with the nuances of negotiating harsh and hazardous terrain and snowbound avalanche-prone areas. The Virtual Reality Centre of SASE is extensively used for rescue-mission planning in rugged, hostile, and snowbound avalanche-prone areas, and the creation of such centres in the forward locations is on the anvil. Dr Saraswat motivated scientists to take challenging tasks so as to keep them abreast with state-of-the-art technologies in their areas of research.

SA to RM was also present on the occasion of inauguration of the Rohtang tunnel, the construction work of which was kickstarted by

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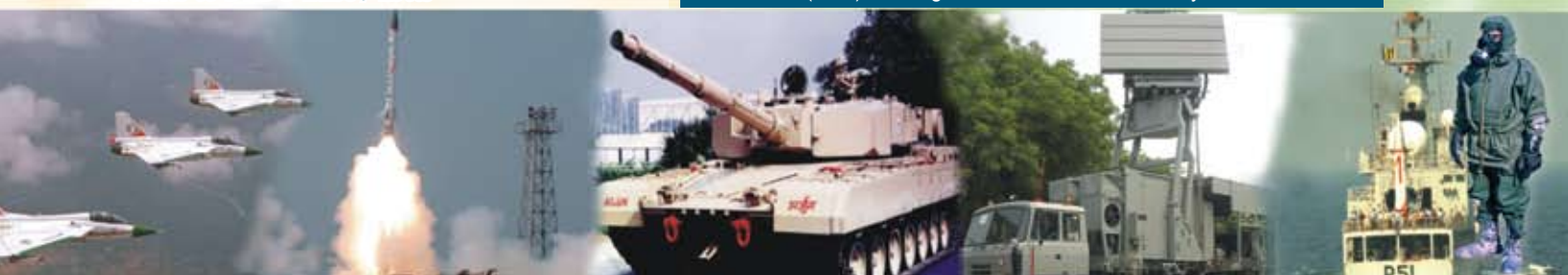
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Dr VK Saraswat, SA to RM and Shri S Sundaresh DS and CC R&D (ACE) evincing keen interest in the Himalaya Terrain Model





Ms Sonia Gandhi, Chairperson, National Advisory Council along with Hon'ble Raksha Mantri Shri AK Antony, Hon'ble Chief Minister, Shri PK Dhumal, Himachal Pradesh, and other dignitaries going for plantation of trees on SASE campus

Ms Sonia Gandhi, Chairperson of the National Advisory Council, in the presence of Hon'ble Raksha Mantri, Shri AK Antony. The prestigious Rohtang tunnel is a key step forward to make the Leh–Manali highway an all-weather passage to the strategic Ladakh

region that shares its boundaries both with China and Pakistan. The Rohtang tunnel is a step towards having an alternate link to Srinagar–Kargil–Leh highway. More than six to seven feet of snow is reported from the high altitude (13,044 ft), and Rohtang Pass remains closed for about six to eight months during the year. The horseshoe tunnel road, on completion, will be the longest road tunnel in the country, and will shorten the distance between Kullu valley and Lahaul valley by 46 km.

The stretch of the road up to the south portal of the Rohtang tunnel is infested with 13 avalanche sites. While SASE took up the challenging task of providing the avalanche control design of these avalanche sites, the Border Roads Organisation will take up the construction. This shall go a long way in providing the Armed Forces 'better connectivity to strategic areas' in the Ladakh region.

## Bulk Production Clearance for 40 mm UBGL



40 mm UBGL

The Army has accorded Bulk Production Clearance (BPC) to the 40 mm Under Barrel Grenade Launcher (UBGL). UBGL is designed and developed by the Armament Research and Development Establishment (ARDE), Pune, and manufactured at Ordnance Factory, Trichy.

ARDE developed this equipment as a result of the post Operation Vijay 'Brainstorming session on Mountain warfare' held in New Delhi. This equipment has successfully undergone rigorous user and troop trials at various locations, followed by Directorate

Rifle AK -47 with UBGL

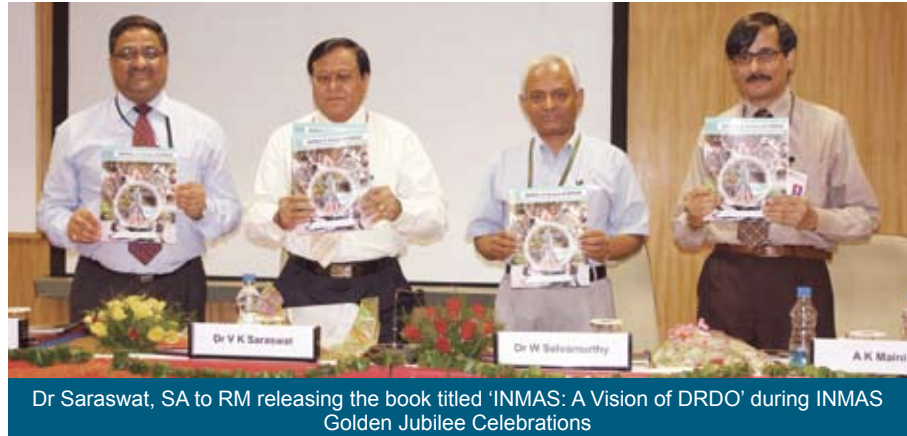
General Quality Assurance (DGQA) evaluations to assess the life of UBGL, and BPC trials for consistency in performance prior to induction.

On induction of UBGL, the fire power of rifles 5.56 mm INSAS and AK-47 (Romania) has been enhanced, and the tactical gap of the maximum range of hand grenade and the minimum range of mortar has been filled. The barrel of UBGL is made of aluminum alloy with micro arc oxidation coating process. The synergy between DRDO and DGOF is worth mentioning in this venture.

Rifle 5.56 mm INSAS with UBGL

# INMAS Golden Jubilee Celebrations

Dr VK Saraswat, Scientific Advisor to *Raksha Mantri*, Director General, DRDO and Secretary Defence R&D, launched the Golden Jubilee Year celebrations of the Institute of Nuclear Medicine and Allied Sciences (INMAS) on 01 July 2010. This was attended by Directors of DRDO HQrs and Labs/Estts, other experts in the area, and senior DRDO officials. Dr PS Goel, Chairman, RAC and Mrs Beant Mazumdar (Wife of Founder Director, INMAS) were among the prominent dignitaries present on this auspicious occasion. Dr W Selvamurthy, Distinguished Scientist and Chief Controller R&D (Life Sciences) delivered the opening address.



Dr Saraswat, SA to RM releasing the book titled 'INMAS: A Vision of DRDO' during INMAS Golden Jubilee Celebrations

INMAS was founded in 1961 on the advice of great visionary and the then Prime Minister Pandit Jawaharlal Nehru. Over the past five decades, INMAS has grown into a multidisciplinary Institute engaged in research and development in certain highly important areas of radiation sciences.

Dr RP Tripathi, Director, INMAS, welcomed Dr Saraswat, Dr Selvamurthy, and all invitees. Dr Saraswat, in his presidential address, emphasised the need to ensure widespread availability of nuclear medicine and related facilities. He said that INMAS has been entrusted with additional responsibility of providing training to medical and Armed Forces personnel in the areas of Chemical Biological Radiation and Nuclear (CBRN) Defence. He added that the Institute's R&D programmes in areas such as radioprotection, radiation dosimetry, medical management, and mitigation of radiation injuries will be given a boost. He also stressed on the need for collaboration with academic institutes of India with R&D activities of INMAS so as to increase awareness about nuclear medicine among younger generation. Commenting on the role of INMAS during the recent Mayapuri radiation leak case in Delhi, Dr Saraswat said, 'INMAS has the expertise of detecting nuclear

radiation and provided the fastest response to the casualties. INMAS sent the teams within four hours and also found out the level of radiation.' Dr Saraswat also released a booklet on INMAS and a book titled 'INMAS: A vision of DRDO' on this occasion.

Dr Selvamurthy, in his opening remarks said that INMAS has traversed a long way achieving excellence in various fields of radiation bio-sciences, radiation medicine, non-invasive imaging, endocrinology, and so on. He said, 'It is a matter of joy to watch this Institute grow from a small Thyroid OPD Centre for dispensing radioiodine to a multi-disciplinary R&D facility. I am hopeful and fully confident that INMAS will march ahead with full confidence and will meet all the challenges of the XI Plan'. He congratulated all scientific and technical staff for the excellent dedicated performance.

Dr KB Sainis, Director, Bio-Medical Group, Bhabha Atomic Research Centre, Mumbai, delivered an oration, 'From Radiobiology Concepts to Radiation Countermeasures' and Maj. Gen. NK Dhir (Retd.), Alphabet Teletec (P) Ltd, Gurgaon delivered 'Cultivating Emotional Intelligence and Creativity amongst DRDO Scientists'.

Dr BS Dwarakanath, Additional Director is the Convener, and Dr Rajeev Vij is the Secretary of the Golden Jubilee Celebrations Committee. The Golden Jubilee celebrations will continue up to 13 February 2011, i.e., when INMAS completes 50 years.

## DIHAR receives 'Innovation for India Awards 2010'

The third edition of the 'Innovation for India Awards 2010', instituted by the Marico Innovation Foundation, culminated its journey, honouring the achievements of a multitude of ingenious minds, behind 'India's Best Innovations'. This year's selection of awardees showed the very best face of Indian inclusive innovations. In addition, the 'Innovation for India Awards' also acknowledged breakthrough innovations, in various social and public service sectors.

Defence Institute of High Altitude Research (DIHAR) was felicitated for breakthrough innovation under 'Public Service Category' in recognition of its immense contributions in the development of various agro-animal technologies for the troops and civil population of cold desert in the Ladakh region.

Dr Shashi Bala Singh, Director, DIHAR, received a trophy and cash prize of Rs 1 lakh in the Award Ceremony that was held on 17 May 2010, at Grand Hyatt, Mumbai. Eminent guest speakers were Mr Sam Pitroda, Adviser to the Prime Minister on Public Information Infrastructure and Innovations, and Mr Rajan B Mittal, Vice Chairman and Managing Director, Bharti Enterprises along with other dignitaries.



Dr Shashibala Singh, Director, DIHAR, receiving the 'Innovations for India Awards-2010'

Out of 379 nominations received under the various categories, 34 nominations were shortlisted and audited by the jury based on information provided in the applications, and DIHAR was one among these. Mr Rajiv Narang, CEO and Director, Erehwon Innovation Consulting Inc., USA, was deputed by the Foundation to physically verify the claims made by DIHAR.



Winners of the 'Innovation for India Awards 2010' at the Award Ceremony at Grand Hyatt, Mumbai

## World Environment Day Celebrations at ARDE

Tree plantation was organised in the premises of Armament Research and Development Establishment (ARDE), Pune, to mark the celebrations of the World Environment Day. The programme was inaugurated by Shri S Sundaresh, DS and CC R&D (ACE). Shri Anil M Datar, Director, ARDE; Dr SN Asthana, Director of Armaments; and Mrs Jagadeeshwari Sundaresh are among the dignitaries.

Commemorating the event, about 2000 trees will be planted in ARDE campus. Efforts are being made to achieve the original local biodiversity by planting a variety of local trees and rare medicinal plants with the help of volunteers from the Shrushti Foundation working at ARDE.



Shri S Sundaresh, DS & CC R&D (ACE), inaugurating the tree plantation on the World Environment Day Celebrations

## Patents Granted

Two Patents, 'A lightweight fire protective material/fabric and process for preparation thereof' (Patent No. 438/DEU2010) and 'Fire protective lightweight fabric and process for preparation thereof' (Patent No. 439/DEU2010) have been granted by the Indian Patent Office, New Delhi, to the Centre for Fire, Explosive and Environment Safety (CFEES), Delhi. The inventing scientists for both the patents are Shri Rajpal Singh, Shri Praveen Rajput, Ms Monika Gandhi, and Shri Gautam Prakash Kashyab.

A Patent on 'Improved Process for Preparation of 2H-heptafluoropropane' (Patent No.1830IDEU2007) has been granted by the Indian Patent Office, New Delhi, jointly to the Indian Institute of Chemical Technology (IICT), Hyderabad and CFEES, Delhi. The inventing scientists from IICT are Shri PS Rao, Shri Sripathi Narayan Reddy, Shri Yalda Rambabu, Shri Banda Narsaiah, and Shri Punnamraju Venkata Satya Saryu Srinivas. The inventing scientists from CFEES are Shri Rajpal Singh and Shri Anand Kumar Kapoor.

## Students from Vidhya and Child visit Darpan

Students from Vidhya and Child, a non-governmental organisation visited the DRDO exhibition *Darpan*. This exhibition was organised at DRDO's Recruitment and Assessment Centre, Delhi. These students, mostly orphans and underprivileged, have been adopted by Vidhya and Child, for imparting education and training for their upliftment.

More than 25 visiting students (class 9 onwards) were exposed to the various science and technology achievements of DRDO. The students interacted with the Director and others at RAC, and were overwhelmed by their unique exposure to the defence setup. They showed keen interest in the exhibition.



Students from Vidhya and Child showing keen interest at *Darpan*

# MANPOWER DEVELOPMENT ACTIVITIES

## Courses/Workshops/Symposia

### CAIR, Bangaluru

A CEP course on 'Applied Pattern Recognition for Information Security' was held during 21–25 June 2010, at CAIR, Bangaluru. Mrs ManiMozhi Theodare, Sc 'F', inaugurated the course. About 27 scientists attended the course. The course was interdisciplinary covering topics related to Pattern Recognition and Information Security. Prof. RK Shyamasundar, Tata Institute of Fundamental Research, Mumbai, was the keynote speaker. Pioneering researchers from both academic and industrial establishments were invited to give lectures in addition to internal speakers from CAIR. Other speakers were from Indian Institute of Science, Indian Statistical Institute, and Microsoft Research, Bangaluru, and other organisations. There were about 18 lectures spread across 5 days.



Mrs ManiMozhi Theodare inaugurating the CEP course

### ISSA, Delhi

'ASTROIDS II Application Software Training' was held at the Institute for Systems Studies and Analyses (ISSA) test-bed environment from 31 May 2010 to 11 June 2010 to give a hands-on training to the users. Thirty officers/JCOs/ORs from Army HQ, MO, MI and OL Directorates; HQ Western Command, HQ 2 Corps and HQ 11Cops and CAMS, DIPAC, and AIC attended the training. The training covered introduction to ASTROIDS II, hardware/software/network, loading of ASTROIDS II and its service creation, functionality of ASTROIDS II GIS, and various database modules (Terrain, Operations, Counter Insurgency Operations, Intelligence, and Logistics). The course was appreciated by the participants for its content and the hands-on experience. The valedictory function was attended by ADG (IS) Maj. Gen. Rajesh Pant, VSM.



Participants at the ASTROIDS II Application Software Training

### INMAS Medical Team visits DESIDOC

The medical evaluation team of Institute of Nuclear Medicine and Applied Sciences (INMAS), Delhi, under the DRDO Health Project, visited DESIDOC between 15–17 June 2010 for medical check-up of DESIDOC officers and staff.



## APPOINTMENT

### Director, DTRL



Shri Gurinder Singh Malik obtained his MSc (Physics) with specialisation in Electronics in 1979 and MTech (Microwave Electronics) in 1981, both from the University of Delhi. He joined DRDO as Sc 'B' in July 1981 and was posted at Weapons and Electronics Systems Engineering Establishment (WESEE) of Indian Navy. At WESEE, he was responsible for the successful integration of weapons and sensors of various origins onboard six naval ships of Indian origin including INS Ganga, INS Gomati, and INS Godavari.

Later, from 1991 till August 2000, Shri Malik was involved in the design and development of computerised wargame systems for training of Battalion Commanders and above ranks at the Institute for Systems Studies and Analyses (ISSA), Delhi. In September 2000, he was tasked with the DRDO Rapid Online Network (DRONA) operation and developing application software for the network.

He took over as the Director, Computer Sciences (DCS) at DRDO HQrs on 1 April 2001, and subsequently on the merger of Dte of Electronics and Dte of Computer Sciences, he was appointed as Director, Dte of Electronics and Computer Sciences (DECS) wef 1 September 2005. He was also designated as Chief Information Security Officer (CISO) of DRDO wef 01 September 2006. From 27 January 2010, Shri Malik assumed charge of Director, Defence Terrain Research Laboratory, Delhi. Shri Malik has been awarded Commendation from the SA to RM in 1989 for successful system integration project of WESEE; DRDO Technology Award -1989 for project SHATRANJ; DRDO HQrs Technology Group Award - 2004, and Scientist of the Year Award in 2008.

## Palna : Day Care Centre in CAIR

Step into Centre for Artificial Intelligence and Robotics (CAIR), and you will encounter a small building that houses the bundle of joy and pride for many of the CAIR parents. *Palna*, a Day Care Centre in CAIR campus, is always filled with laughter, colors, and vibrant enthusiasm of toddlers.

The CAIR management, as a significant step towards providing facilities for CAIR employees, established a Day Care Centre for children in the CAIR campus recently. Shri VS Mahalingam, Outstanding Scientist and Director, CAIR, inaugurated the Centre. CAIR Day Care Centre boasts of a big play room, a bedroom, a fully equipped kitchen, and outdoor play equipment. It all began with a small strength of seven children within the age group of 6 months to 8 years, and the numbers growing each passing week.

A win-win situation, the parents on CAIR rolls have a more assuring time with the satisfaction that their kids are in safe hands at the Centre.



## VISITS TO DRDO LABS/ESTTS

### ARDE, Pune

Maj. Gen. Sanjeev Chopra, ADG (MF) and Brig. Sanjiv Mehra, DDG (MF), on 03 June 2010.



Shri Anil M Datar, Director, ARDE, presenting the memento to Maj. Gen. Sanjeev Chopra, ADG(MF)

### CAIR, Bangaluru

Shri Ashok De, Principal, Ambedkar Institute of Technology, New Delhi, on 27 May 2010.



Shri Ashok De interacting with the Director and senior scientists of CAIR

### RCI, Hyderabad

Shri Shiv Shankar Menon, National Security Advisor (NSA), on 22 May 2010.



Dr VK Saraswat, SA to RM, Secretary, Defence R&D & DG DRDO, presenting memento to Shri Shiv Shankar Menon, NSA

Dr SK Vasudeva, CC R&D (SS) and Director SPIC, on 04 June 2010.



Dr SK Vasudeva interacting with the Director and senior scientists of CAIR

**The editors thank all the DRDO Newsletter correspondents for their contributions.**

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