

23rd National Convention of Aerospace Engineers

Theme : Infrastructure Development for Growth of Civil Aviation and Aerospace Technology in India

Bangalore

November 26-27, 2009

The Karnataka State Centre hosted the 23rd National Convention of Aerospace Engineers on the theme entitled “**Infrastructure Development for Growth of Civil Aviation and Aerospace Technology in India**” on November 26-27, 2009 under the aegis of the Aerospace Engineering Division Board of the Institution of Engineers (India).

Dr. L.V. Muralikrishna Reddy, Chairman, Karnataka State Centre welcomed the invitees and **Dr. S. Parthan**, Member, Aerospace Engineering Division, IEI, KSC spoke on the theme of the Convention.

The Convention was inaugurated by **Dr. K. Radhakrishnan**, Chairman, Indian Space Research Organisation on **Thursday, 26 November, 2009** at 9.30 am and **Sri Ashok Nayak**, Chairman, Hindustan Aeronautics Ltd graced the occasion as Guest of Honour. **Lt Gen (Dr.) V.J. Sundaram**, Advisor (Micro & Nano Systems), National Design & Research Forum delivered **Dr. Vikram Sarabhai Memorial Lecture**. **Dr. A.K. Chatterjee**, Chairman, Aerospace Engineering Division, the Institution of Engineers (India) presided over the function. **Dr. S.B. Ganjigatti**, Honorary Secretary, Karnataka State Centre proposed vote of thanks.

In his Inaugural Address, Dr. K. Radhakrishnan highlighted on the birth of Indian Space Programme from Ahmedabad to Thumba. He briefed on the growth of the Launch Vehicle technology from SLV to GSLV with thrust on development of indigenous cryo upperstage.

Dr. Radhakrishnan emphasized on the area of infrastructure developed in the country for the advanced space technology. He also touched upon the various supporting technologies in the area of avionics and other areas. He informed of the immediate programmes on the anvil for GSLV MK – III programme like static testing of the world’s third largest solid motor and the hot test of the liquid engine.

He also mentioned the forthcoming programmes of Human Space Flight Programme (HSP) to take off in the coming seven to eight years and the technologies to be developed.

Delivering his address, Sri Ashok Nayak said, globally, aviation industry has till recently been driven by technology developed for military purpose and the technology so developed used to be adapted to the civil aviation. But in modern times, civil aviation requirements are driving dedicated technology development in addition to the adaptations from military aviation

He explained the role played by HAL in the civil aircraft. Design and development capabilities have been established for military trainer aircraft, light helicopters and fighter aircraft at HAL. Infrastructure for Wind tunnel tests, Ground tests, System tests, fatigue tests and laboratory facilities have been set up. All the developmental tests required during the airframe, systems, helicopter rotors, transmission and other components are indigenously carried out HAL. HAL caters to civil aircraft requirement Avro, DO-228 and Chetak helicopters. HAL has also drawn up plans to augment its infrastructure and to start new divisions to handle the final assembly operations, assemblies involving critical technology and other core components.

HAL with its associate private industries would participate in future civil aircraft design and production project. The greatest challenge for Indian industries in the civil aviation sector will be to overcome the competition from well established global players, whose aircraft have already proven in the market. Effective use of the existing collective infrastructure in public and private domain and infusion of capital in new areas would definitely contribute to the successful execution of future aviation projects in the country.

Delivering the Dr. Vikram Sarabhai Memorial Lecture, Lt Gen (Dr.) V.J. Sundaram on “**National Programme – Micro Air Vehicles**” said, research and development activity in mini and micro air vehicles was suggested in 1998 at a Seminar of The Aeronautical Society of India in Hyderabad. This activity has since been actively promoted by the National Design and Research Forum (NDRF) of The Institution of Engineers (India) with the support of Aeronautical Research and Development Board (AR&DB). DRDO, CSIR, educational institutions and private groups have participated enthusiastically in these activities including flying competitions, both national and international.

Mini Air Vehicle technology has matured in India to meet many user requirements while considerable R&D is still required for its micro cousins. The missions, specifications and applications for disaster management, defence/security have been studied and a 5 year National Programme has been proposed for fixed, rotary and flapping wing micro air vehicles limited to a maximum dimension of 300 mm

Sensors, biomimetics, brain-machine interface, vision based control-navigation-guidance, simulation, swarm operations, cooperation with surface/submerged unmanned vehicles and technical support facilities have been identified as critical technology areas. Appropriate integration of micro, nano, bio, cogno and information technologies for sensors as well as power supplies based on light weight batteries and fuel cells are essential.

It is proposed to have project centers at NAL, IISc, IIT (Bombay), IIT (Kanpur) and NDRF with a central Programme Center and Executive/Apex Boards for overall coordination and direction. The project centre at NDRF would be a consortium involving academic institutions and R&D groups involved in micro air vehicles. The programme has been approved by AR&DB and is being processed for sanction of the Government of India

It is the convention of the Institution of Engineers (India) to present awards to eminent personalities for their meritorious contribution to the cause engineering in their fields of specialization. The following such specialists in the aerospace engineering field were conferred with awards as enumerated below.

`Eminent Engineer' Award

- * Air Cmde (retd) Joseph Varkey, Hon. Secretary General, SIATI
- * Sri T. Mohana Rao, Director, Gas Turbine Research Estt, DRDO
- * Prof P.N. Murthy, former Advisor, Tata Consultancy Services
- * Sri J.K. Sharma, former Chief Executive (A), CEMILAC

`Platinum Jubilee Award' of IEI, KSC

- * Dr. Parminder Singh, Joint Director (Aeronautics), DRDO, HQ

`42nd Engineers' Day Celebration' – Eminent Engineer Award (to mark 149th birth anniversary of Bharat Ratna Sir M. Visvesvaraya)

- * Dr. T.S Prahlad, former Director, NAL

In his Presidential Address, Dr. A.K. Chatterjee spoke about the Institution of Engineers (India), particularly about Aerospace Engineering Division Board and the growth of membership. He also mentioned about the growth of aerospace infrastructure development in India.