

## NAL Foundation Day

NAL is now 45 going on 46. The Foundation Day was celebrated with customary enthusiasm, with the highlight of the Foundation Day function, celebrated on 23 July 2005, being the Nineteenth NAL Foundation Day lecture by Mr M Natarajan, Scientific Adviser to the Raksha Mantri. The DRDO chief spoke on *Opportunities and challenges in defence programmes and projects*.

The programme opened with a brief welcome address by Dr A R Upadhyya, Director, NAL. Dr Upadhyya explained why this was the most important day on NAL's annual calendar: "This is a day to celebrate our existence, and our successes. It is also the day when we can greet and thank NAL's past Directors for their visionary leadership and remarkable commitment", he said. Dr Upadhyya ended his address by introducing Mr Natarajan, and his many notable contributions to defence R&D.

Mr Natarajan's lecture – that went on for almost an hour – covered very wide ground. Starting with the DRDO "timeline", he discussed how the organization made the progression from an inspection agency in the 1960's and 1970's to attain the 2005 R&D level featuring production and delivery of sophisticated products such as aircraft, missiles, unmanned aerial vehicles and power plants.

Since he was speaking at NAL, Mr Natarajan chose to talk at greater length about DRDO's aerospace programmes. Talking of the Tejas (LCA) aircraft he declared: "there's no question of LCA not succeeding". Talking of the effort to design and develop aeroengines, Mr Natarajan acknowledged that R&D teams were grappling with serious R&D challenges. Talking of his general philosophy for R&D, the DRDO chief said that it was essential to quickly build up technological platforms: "we must identify what we can do fast and what we need to source".

Looking at the future, Mr Natarajan identified the following niche areas in aerospace: subsonic cruise vehicles, airborne early warning systems, hypersonic aircraft, multi-spectral stealth, smart materials and adaptive structures. In each of these areas, the challenges include: international competition, demanding users, tight delivery schedules, large number of programmes, diverse areas, technology seeding and intelligent collaboration.

Mr Natarajan also voiced some of his serious concerns: lack of trained manpower, the tendency to be individualistic instead of being a team person, time delays (often because of inadequate partners), insufficient digitization of technology work packages, lack of technology assessment and manufacturing plans of action. At one point, he even indicated that strategies were as important as development itself.

It was therefore a very thoughtful lecture by Mr Natarajan. Dr S Viswanath's accompanying lecture on *Trends in modeling and simulation of aerospace structures* was equally illuminating.

The function also featured the distribution of the NAL Foundation Day awards, release of the NAL annual report for 2004-05 and the launching of ICAST's new website with its associated services. Dr M R Nayak, Adv (M&A), orchestrated the function and proposed the vote of thanks.



Mr Natarajan Scientific Adviser to Raksha Mantri, Secretary, Dept. of Defence Research, Ministry of Defence



Dr S Viswanath, Head, Structures Division, NAL



Dr A R Upadhyya and Mr Natarajan releasing NAL's annual report

