

NAL is 44

NAL's Foundation Day function (NAL was founded on 1 June 1959) was held on 29 July this year. Mr N Vedachalam, Director, Liquid Propulsion System Centre (LPSC), Thiruvananthapuram delivered the 17th NAL Foundation Day lecture on *Challenges in cryogenic rocket propulsion*. Ms Padma Madhuranath, Flight Mechanics and Control Division, delivered the NAL Technology Lecture on *Air traffic management and simulation*.



Dr R V Krishnan, Adviser (M&A) and Head, Materials Science Division, welcomed the gathering (as always, there wasn't a single vacant seat in the S R Valluri Auditorium) and paid a rich tribute to NAL's former Directors ("the foundations that they laid have stood the test of time"). Dr Krishnan also announced that teams at NAL's Flight Mechanics and Control Division have won the 2003 CSIR Technology Shield in Engineering Sciences. Mr Vedachalam's hour-long lecture proved to be a richly deserved tribute to ISRO's GSLV programme. It was a compelling narrative that covered wide ground: the merits of liquid propulsion systems (higher specific impulse, longer burning duration, multiple start

and stop capability, precise guidance termination etc.), the design concepts in GSLV development, the critical materials, the test facilities and the future challenges. Mr Vedachalam's presentation also contained some truly remarkable video clips: GSLV Mk2's flawless lift-off and the dramatic moment when the engine successfully completed a 1000-second run.

In his presidential remarks, Dr B R Pai, Director, thanked Mr Vedachalam for his "delightful lecture" that explained liquid propulsion systems so lucidly ("we weren't aware of all these intricacies"). Dr Pai (braving a bad throat) also briefly described NAL's R&D highlights during 2002-03. The NAL Director then invited his LPSC counterpart to release NAL's annual report for 2002-03, and give away the NAL Foundation Day awards in various categories.



Ms Padma Madhuranath's talk was a wonderful introduction on air traffic



management (ATM): she traced the history of air traffic control, developments in America and Europe and the challenges that lie ahead of ATM R&D teams in India. The lecture also described a modelling and simulation experiment conducted at Bangalore airport ("the airport is capable of handling today's traffic densities, problems could start if traffic increases by over 50%").

Dr S Ramamurthy, Head, TS, proposed the vote of thanks. As always, TS had organized the function very well.