

Successful trials of DRDO developed AEROSTAT (AKASHDEEP) at IIT, Kanpur, Oct-Nov 2012

AKASHDEEP, a medium size Aerostat system indigenously designed and developed by Aerial Delivery Research and Development Establishment (ADRDE), Agra, a DRDO laboratory, has been put into skies at IIT Kanpur airstrip.

Aerostat is a system of systems comprising of indigenous development of many systems including high performance PU Coated Nylon fabrics, Aerostat Balloon, Electro-Optical Tether, Electro-Hydraulic Control System, Smart-Active Pressure Control System, Helium Gas Management System etc. This indigenous development is a result of dedicated team of Scientists involved in designing and evaluation of the system and fabrication at Indian Industries.

The prime objective of trials at IIT, Kanpur to demonstrate endurance of the system constantly for 05 days at an altitude of 1 km without Helium top-up. The other objectives were improvising of integration methodologies to reduce integration time, testing of the new balloon, inflation using improved & modified Aerostat inflation safety net assembly and validation of dynamic stability data through instrumentation. Trails at IIT, Kanpur facilitated students and faculty of IIT Kanpur to have good exposure and Lighter-Than-Air Systems & its associated technologies. There was a great response during the trials both from students & faculties to work on these technologies.

The trials at IIT Kanpur commenced on 16th Oct 2012 and were completed on 07th Nov 2012. During this duration, six numbers of trials were carried out including an endurance trial of 05 days at 1 km and trials also with Electro-Optic (EO) payload. IIT Kanpur also conducted a few experiments with their own instrumentation package as payload to study and validated dynamic stability model of the Aerostat generated by IIT & ADRDE. The experimental data was acquired at different altitudes.

On 25th Oct 2012, former President and former DRDO Chief Dr. APJ Abdul Kalam visited the Aerostat trial site and appreciated the development efforts. He also enquired about the indigenous control system, payload and flexible PU Coated Nylon materials used in the system.

These successful endurance trials for 05 days have demonstrated the significance of the system as a reliable aerial platform. A 25% reduction in the integration time is also achieved during the trials. It is being planned to demonstrate the system at AERO-INDIA 2012 at Bengaluru.

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