

RLV-TD: India's first indigenous mini-shuttle

The Indian Space Research Organization (ISRO) has demonstrated its technology prowess once again

ISRO on 23rd May successfully tested India's first indigenous mini-shuttle.



India's first winged body aerospace vehicle, called the Reusable Launch Vehicle-Technology Demonstrator (RLV-TD) was successfully launched from ISRO's first launch pad in Sriharikota 80 km off Chennai on the east coast at 7.00 am on Monday.

The RLV-TD shuttle shaped like an aircraft was launched aboard the HS9 a seven-meter rocket with a booster, weighing 17 tons with nine tons of solid propellants. The rocket and shuttle made a successful flight of 91.1 seconds and the burnout of HS9 followed.

After the burn out the HS9 and RLV-TD were programmed to scale to a height of about 56 km. The RLV-TD separated from HS9 booster and further ascended to its peak altitude of 65km. Subsequently the RLV-TD was successfully steered through its descent by the vehicle's Navigation, Guidance and Control system. The shuttle successfully made its atmospheric re-entry at five times the speed of sound. It landed at its defined landing spot over Bay of Bengal, at a distance of about 450km from Sriharikota. The total flight duration from launch to landing of this mission was about 770 seconds. It was carried out in collaboration with the Indian Coast Guard and the National Institute of Ocean Technology.

With this successful mission India has joined the elite club of space-faring nations. The other countries are the USA, Russia and Japan, that developed and used RLVs for their space missions.

This mission has enabled ISRO to successfully collect data and validate such critical technologies and systems as hypersonic speed, autonomous navigation, guidance and control, reusable thermal protection system, powered cruise flight using air-breathing propulsion and re-entry mission management. According to experts, the reusable vehicle technology will reduce the costs of launches in the future by 80% percent.