

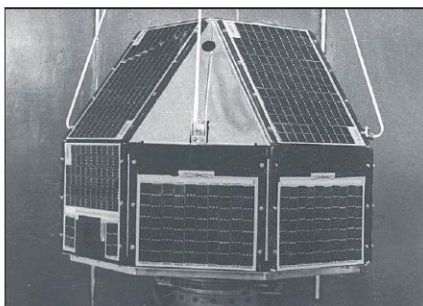


Hindustan Times

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LAUNCH OF ROHINI (RS-1), 1980



Rohini satellite (RS-1) ahead of its launch from Sriharikota space centre.

HT ARCHIVE

India successfully launches Rohini on indigenous rocket

HT's report on the day India became the 6th nation with satellite launching capabilities

HT Correspondent

India on July 18, 1980, became the sixth nation with satellite-launching capability when its 17-tonne four-stage rocket SLV-3 successfully put a 35kg Rohini satellite (RS-1) into an earth orbit.

The indigenously developed SLV-3, fabricated at the Vikram Sarabhai Space Centre at Trivandrum, blasted off at 8:04am from the Indian Space Research Organisation's Sriharikota Range, 106km north of Madras, and the satellite, RS-1, was in perfect orbit eight minutes later. Rohini is orbiting the earth once in 90 minutes.

It was a flawless launching with all the stages of the carrier rocket performing excellently after the blast-off. The satellite is being tracked by the Iro's tracking stations.

Rohini is the third Indian satellite, after Aryabhata and Bhaskar. They, however, were launched aboard Soviet rockets from foreign land. Rohini will have a 100-day life span.

The success of the SLV-3 launch culminates an almost decade-long effort at perfecting India's own launch vehicle. All the major systems in this vehicle including its propellant are indigenous, which is a tribute to the multidisciplinary R&D effort of Iro.

Future launch vehicles will be more versatile and capable of putting payloads of 600kg and above and satellites will be multifunctional, helping communications, meteorology, TV and resource mapping.



#LEGACY OF TRUTH

A four-stage rocket, SLV-3 weighed 17 tonnes before lift-off. The propellants for the four stages weighed 13 tonnes. On the launching pad, SLV-3 stood over 22 metres high, comprising the four solid-propellant rocket stages interconnected with inter-stages and separation systems.

The satellite RS-1 was lodged on top of the fourth stage. This stage, which provided almost half of the speed of 28,000 kmph required to place the satellite in orbit, accounted for barely two per cent of the weight.

SLV-3 left Earth with a form of 57 tonnes. While the media was barred from the space centre during the launch, some had a grandstand view of the carrier rocket from 5km away as it rose vertically leaving behind a cloud of white smoke.

There were 44 major systems and 250 subsystems in SLV-3, its components numbered 100,000. About 40,000 fasteners were used. Several thousand electrical and electronic components were used in the 560 functional units of the vehicle. There were about 800 integrated circuit chips, 300 transistors, 450 diodes, 2,000 capacitors and 3,000 resistors interconnected through 1,300 multi-pin connectors.

A million meticulously soldered joints held the electrical network together. Electrical signals rushed back and forth through 25km of wire inside the vehicle.

Apart from Iro's own units, 46 industries and institutions spread throughout India contributed to the building of SLV-3.

This was the second test flight of SLV-3. The first experimental flight, on August 10 last year, was officially described as "partially unsuccessful" after the rocket plummeted into the Bay of Bengal with the small technological payload which was to have been orbited.

The Rohini satellite has on board an instrument pack that is powered by a five-watt solar battery.

Right from lift-off, the vehicle's trajectory was monitored by four long and medium range radars. Other systems such as long-range interferometer and optical line theodolites provided additional tracking support.

Four major computer systems received trajectory information from the tracking sources and processed the data simultaneously. They also displayed the vehicle's path on plot boards in the range safety room of the control centre at Sriharikota.

The Iro's closed circuit television network, said to be the largest of its kind in the country, monitored the launching operations.

A network of ground stations located at Sriharikota, Car Nicobar, Trivandrum and Ahmedabad joined in providing tracking and telemetry support for the RS-1 satellite.

The exact orbital parameters such as the satellite's inclination and height are not known at present. The Sriharikota space centre will see two orbits of the satellite for the first time tonight only after which the parameters will be computed.

Thereafter every 12 hours two more such orbits will be seen in regular periodicity.



HT put the news of Rohini's launch on the front page of its July 19, 1980 edition.