



KAMARAJ IAS ACADEMY
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Rohini Sounding rocket

Published On: 22-11-2022

Why is in news? ISRO to attempt 200th successful launch of sounding rocket in a row

Sounding rockets are **one or two stage solid propellant rockets** used for probing the upper atmospheric regions and for space research.

Sounding rockets take their name from the nautical term "to sound," which means to take measurements.

They also serve as easily affordable platforms to test or prove prototypes of new components or subsystems intended for **use in launch vehicles and satellites**.

The **Thumba Equatorial Rocket Launching Station (TERLS)** was established on 21st November 1963. Its **southern tip is close to earth's magnetic equator**.

The launch of the **first sounding rocket** (American Nike-Apache) from Thumba in 1963, marked the beginning of the Indian Space Programme and was the bedrock of all the vehicles built.

ISRO began with the launch of **indigenously built sounding rockets** from 1965. The ISRO launched its own version - **Rohini RH-75 - in 1967**.

In 1975, all sounding rocket activities were cluttered under the **Rohini Sounding Rocket (RSR) Programme**.

The series of sounding rockets are called **Rohini series with RH 200, RH 300 and RH 560** being the most important among them.

RH-200:

RH-200 is a two-stage rocket capable of **climbing to a height of 70 km** bearing scientific payloads.

The first and second stages of RH-200 are **powered by solid motors**.

For years, the RH-200 rocket had **used a polyvinyl chloride (PVC)-based propellant**.

The first RH-200 to **use a new propellant** based on hydroxyl-terminated Polybutadiene (HTPB) was successfully flown from the TERLS in September 2020.

As compared to PVC based propellants, HTPB based propellant is more energetic, higher mechanical & interface properties and has less defects due to lower processing temperature.

The '200' in the name denotes the diameter of the rocket in mm. Other operational Rohini variants are RH-300 Mk-II and RH-560 Mk-III.

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