The Engineering and Science of Gaganyaan Parachute Systems

ISRO detailed the complex engineering, testing, and deployment mechanisms of the parachutes designed for the Gaganyaan crew module.

An overview of the multi-staging parachute system used by ISRO to safely decelerate and land the Gaganyaan crew module during atmospheric re-entry.

KEY EXAM POINTS

- The Gaganyaan crew module uses **two drogue chutes** deployed by mortars to stabilize and slow down the spacecraft.
- **Three main chutes** are deployed in the terminal phase by mortar-ejected pilot chutes to ensure a gentle touchdown.
- Spacecraft entering **Earth's atmosphere** rely primarily on atmospheric drag to reduce velocity during initial aerobraking.
- Crewed space vehicle parachutes demand extraordinary engineering with **multi-staging**, redundancy, and high-performance materials.

DID YOU KNOW..!?

ISRO successfully conducted major tests of the Gaganyaan crew module systems to validate recovery and deceleration mechanisms.

URSC functions as the premier center for building satellites under the Indian Space Research Organisation.

REVISION FLASHCARD

The Gaganyaan crew module recovery system utilizes two mortar-deployed drogue chutes and three main chutes.

Syllabus Relevance: Crucial for Unit 1 (Science & Technology) and Unit 2 (Current Events - Space Missions) covering ISRO developments.

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