

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE**

LOK SABHA

UNSTARRED QUESTION NO. 520

TO BE ANSWERED ON WEDNESDAY, 03 DECEMBER, 2025

INTEGRATED MAIN PARACHUTE AIRDROP TESTS (IMAT)

520. SHRI SURESH KUMAR SHETKAR:

SHRI VIJAYAKUMAR ALIAS VIJAY VASANTH:

Will the PRIME MINISTER be pleased to state:

- (a) whether the Government will explain the manner in which learning from the recent Integrated Main Parachute Airdrop Tests (IMAT) will influence the final mission readiness timelines for the Gaganyaan programme;**
- (b) if so, the detailed schedule thereof and if not, the reasons for uncertainty in mission planning therefor;**
- (c) whether the Indian Space Research Organisation (ISRO) has conducted any independent third-party validation, international peer review or expert audit of the Crew Module Parachute System design and associated test results;**
- (d) if so, the details thereof and if not, the reasons for avoiding external oversight in a human-rated mission;**
- (e) whether the Government proposes to publicly release safety certifications, technical validation reports and qualification documentation of the Gaganyaan Crew Module parachute system prior to the first manned launch and if so, the timeline**

and if not, the reasons for withholding transparency from Parliament and the public therefor;

- (f) whether the Government will provide Assurance that all lessons from IMAT and other integrated tests are incorporated into astronaut training, emergency protocols and ground recovery operations, if not, the details of the reason for crew preparedness potentially being compromised; and**
- (g) whether the Government will issuing a detailed risk assessment report to Parliament?**

ANSWER

**MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND IN THE PRIME MINISTER'S OFFICE
(DR. JITENDRA SINGH):**

(a) & (b)

The recent successful accomplishment of Integrated Main Parachute Air Drop Test (IMAT) is part of ongoing series of tests for the qualification of parachute system for Gaganyaan Missions. In the recent IMAT, one of the possible extreme scenarios of delay in the disreefing between the two main parachutes was successfully demonstrated validating the main parachutes for the maximum design. The test evaluated the system's structural integrity and load distribution under asymmetric disreefing conditions-one of the most critical load scenarios expected during actual mission descent. Successful accomplishment of this test is an important milestone

towards the human rating of the Gaganyaan Crew Module's parachute-based deceleration system and therefore, enable the launch of the first crewed Gaganyaan mission which is targeted by Q1 of 2027.

(c) & (d)

Yes, ISRO conducts expert reviews of the Crew Module parachute system design and associated test results in forums such as Design Review Team (DRT), Independent Assessment Committee and National Advisory Panel (NAP) for Human Rating & Certification comprising of eminent national experts.

(e) ISRO has been periodically publicly disseminating the information related to outcome of the major tests & missions including the recently conducted IMAT and will continue to do so in future also.

(f) Crew safety is of paramount importance in Gaganyaan mission. All systems undergo intensive qualification and testing. Test plan and results of each qualification tests are reviewed by expert committee. Observations/lessons, if any during the qualification tests are analysed and necessary changes are incorporated in the systems and revalidation is carried out through repeat test and re-qualification.

Handling of emergency situations in the mission is part of crew training. Various anticipated emergencies and mitigation procedures will be practiced by the Gaganyatris in the Training Simulators. The training will also address survival scenarios to ensure preparedness for off-nominal landing and the utilisation of onboard Emergency Survival Kit. During training, periodic

psychological interactions are being conducted as part of the holistic health management of the Gaganyatris.

(g) ISRO has institutionalised mechanism for assessment and mitigation of risks involved in the Gaganyaan Missions. This is being carried out following established risk assessment processes, procedures and standards. Human Rating Certification Board and National Advisory Panel have been constituted for the above. This mechanism will ensure overall risk is within the acceptable limit.

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