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ISRO'S SATURDAY TEST FLIGHT TO SHOWCASE CREW ESCAPE SYSTEM

Indian Space Research Organisation (Isro), with the help of Indian Navy, on Saturday will conduct the first-ever test vehicle development flight (TV-D1) for India's maiden human spaceflight Gaganyaan. A look at what the test comprises, and how it takes the space agency a step closer to sending the first batch of astronauts to space. **By Soumya Pillai**

GAGANYAAN: THE MISSION

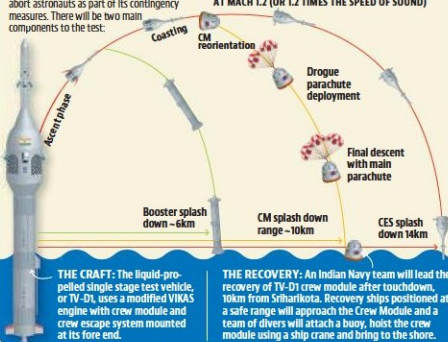
The Gaganyaan, India's first human spaceflight mission, envisages to demonstrate human spaceflight capability by launching a crew of three members to an orbit of 400km for a three-day mission and bringing them back safely.

The prerequisites for the mission include development of critical technologies including human-rated launch vehicle, life support system to provide an Earth-like environment to the crew, emergency escape provisions, among others.

WHY IS THE TEST BEING CONDUCTED?

Since this is the first time a mission will be carrying astronauts, Isro is testing how it will abort astronauts as part of its contingency measures. There will be two main components to the test:

- 1 THE NEWLY DEVELOPED TEST VEHICLE
 - 2 CREW MODULE SEPARATION & SAFE RECOVERY
- ACCORDING TO ISRO, THE TEST WILL BE CARRIED OUT AT MACH 1.2 (OR 1.2 TIMES THE SPEED OF SOUND)



THE CRAFT: The liquid-propelled single stage test vehicle, or TV-D1, uses a modified VIKAS engine with crew module and crew escape system mounted at its fore end.

THE RECOVERY: An Indian Navy team will lead the recovery of TV-D1 crew module after touchdown, 10km from Sthirarkota. Recovery ships positioned at a safe range will approach the Crew Module and a team of divers will attach a buoy, hoist the crew module using a ship crane and bring to the shore.