

**GOVERNMENT OF INDIA  
SPACE  
LOK SABHA**

UNSTARRED QUESTION NO:4059  
ANSWERED ON:19.02.2014  
DEVELOPMENT OF CRITICAL TECHNOLOGIES  
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**Will the Minister of SPACE be pleased to state:**

- (a) whether the Indian Space Research Organisation is preparing to carry out a space capsule recovery experiment to test some of the critical technologies for manned space missions in future;
- (b) if so, the details thereof;
- (c) whether the ISRO is considering to develop a crew vehicle and space suit for astronauts; and;
- (d) if so, the details thereof?

**Answer**

MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PG & PENSIONS AND IN THE PRIME MINISTER'S OFFICE (SHRI V. NARAYANASAMY):

(a)&(b) Government of India has approved two projects SRE-I and SRE-II under Space Capsule Recovery Experiment. SRE-I was successfully flown and recovered by Indian Space Research Organisation (ISRO) in January 2007. Development of SRE-II is under progress.

In SRE-1 mission, a capsule, put into orbit for ten days to carry out micro-gravity experiments, re-entered Earth's atmosphere and was recovered from the Bay of Bengal. The SRE mission has provided valuable experience in fields like navigation, control and guidance during re-entry, thermal protection system, recovery through deceleration and floatation. This has paved way for the development of some of the critical technologies required for future manned space missions.

(c)&(d) As part of pre-project activity, ISRO has initiated development of Crew Module and Space Suit for astronauts. Configuration design, ergonomic model, thermal protection system, water impact tests and plasma wind tunnel tests of the Crew Module have been completed. Development model of flight suit is in progress. Pressure and mobility tests, vacuum chamber tests for leak rate assessment and material compatibility have been completed.