

**GOVERNMENT OF INDIA
DEFENCE
LOK SABHA**

UNSTARRED QUESTION NO:1086
ANSWERED ON:28.11.2011
VULNERABILITY OF SUBMARINES
Dhruvanarayana Shri R.

Will the Minister of DEFENCE be pleased to state:

- (a) whether the Defence Research and Development Organisation (DRDO) proposes to develop a technology to reduce vulnerability of the submarines available with the Indian Navy;
- (b) if so, the details thereof; and
- (c) the time by which the said technology is likely to be developed?

Answer

MINISTER OF DEFENCE(SHRI A.K. ANTONY)

(a) Yes, Madam.

(b) Naval Material Research Laboratory (NMRL), Ambarnath, under Defence Research and Development Organisation (DRDO), is progressing a technology demonstration project "Development of Land-based Prototype for Air Independent Propulsion (AIP)" for submarine propulsion. Vulnerability of a submarine can be reduced by increasing its underwater endurance (dived conditions). Normally diesel electric generators are used to charge the batteries that provide propulsion power when the submarine is in dived conditions. To run the generators the submarines has to surface for taking in air and throwing out the exhaust. Using AIP system, submarine can charge the batteries without surfacing.

(c) The full scale operations of such system is likely to be demonstrated by 2015.