

## **India Test Fires Nuke Capable SLBM K-4 Secretly**

BALASORE (ODISHA): India has reportedly conducted a test of its home grown intermediate range Submarine Launched Ballistic Missile (SLBM) K-4 secretly from an undersea platform in the Bay of Bengal in a bid to boost its deterrence capability by strengthening the second strike fire power.

Even as the authorities of Defence Research and Development Organisation (DRDO) are tightlipped about the secret test, a reliable defence source on Tuesday confirmed 'The Express' that this nuclear capable missile was fired from a submerged pontoon positioned nearly 30 feet deep sea offshore Vizag coast on Monday.

Launched underwater, the missile developed indigenously by the DRDO, surged to the surface leaving behind a ribbon of thick smokes. Although the result of the test was not known, the source claimed it's take off was smooth as a powerful gas generator successfully ejected it from the pontoon.

The first test of the missile was also conducted secretly on March 24, 2014 and the DRDO admitted it officially only in January last year in the Aero-India show. The K-4 missile is best in the world in its class and it is faster and stealthier. Once operational, the two-stage missile will equip the country's first nuclear-powered submarine ANS Arihant.

Working very covertly under the secret K-project for last nearly two decades, prime focus of the DRDO was to make the weapon system lighter and faster having both cruise and ballistic variants. A very few countries have the triad of firing nuclear tipped missiles from air, land and undersea. Other countries, which have the capability, include Russia, USA, France, Britain (UK) and China.

A defence scientist said the K-4 missile will supplement its cousin 750-km range K-15 missile (renamed as B-05). Nuclear powered INS Arihant submarine which is likely to be commissioned in the Navy shortly will be equipped with four K-4 missiles or 12 K-15 missiles. The missile has to go for three/four more trials before being inducted in the navy.

As reported by 'The Express' earlier this manoeuvrable missile having an innovative system of interlacing in three dimensions can also cruise at a hypersonic speed. This exceptional feature of the weapon system makes it difficult to be tracked easily and destroyed by any anti-ballistic missile defence systems. The missile has a high accuracy of close to zero circular error probability (CEP).

The underwater launched ballistic missile is about 12 metres long with a diameter of 1.3 metres. It weighs around 17 tonnes and is capable of delivering two tonne warhead up to a distance of over 3,500 km. The missile is powered by solid rocket propellant. High power long range tracking systems were spread along its trajectory to track the flight path.

## **Achievements made by DRDO**

Defence Research and Development Organisation (DRDO) is a Mission Mode Organisation, which is primarily engaged in design and development of strategic, complex and security sensitive systems for the Armed Forces. DRDO has developed number of systems/products/ technologies, a large number of which have already been productionised. The value of systems/products/technologies developed by DRDO and inducted into Services or in the process of induction stands at over Rs. 1,90,000 Crore.

These include combat vehicles; missiles; multi-barrel rocket launcher; unmanned aerial vehicles; radars; electronic warfare systems; sonars; torpedos; bridging systems; combat aircraft; sensors; NBC technologies; parachutes; combat free fall systems; propellants and explosives; detonators; communication systems; armaments systems; cyber systems, etc. These are helpful in the long run for the country to achieve self-reliance in defence sector.

### **Significant achievements of DRDO:**

Some of the major products/systems developed by DRDO and accepted/inducted by Armed Forces are:

#### **Platforms:**

- Light Combat Aircraft 'Tejas'
- Remotely Piloted Vehicle 'Nishant'
- Pilotless Target Aircraft 'Lakshya-I'
- Main Battle Tank 'Arjun Mk-I'
- Armoured Amphibious Dozer Mk-I
- Armoured Engineer Recce Vehicle
- NBC Recce Vehicle
- Bridging Systems 'Sarvatra'

#### **Sensors:**

- Airborne Early Warning & Control (AEW&C)
- Integrated Sonar System for EKM Submarine.
- Hull Mounted Sonar.
- Short Range Battle Field Surveillance Radar
- Weapon Locating Radar 'Swathi'
- 3D Low Level Light Weight Radar 'Aslesha' Mk-I
- 3D Surveillance Radar 'Revathi'
- Electronic Warfare System for Navy 'Sangraha'
- Electronic Warfare System for Army 'Samyukta'
- Electronic Warfare System 'Divya Drishti'
- Electronic Support Measure 'Varuna'
- Commander's Thermal Imager Mk-II for T-72, T-90 and BMP tanks
- Holographic Sights for Small Weapons

#### **Weapon Systems:**

- Akash Weapon System
- Prithvi Missile for Army and Air Force
- Supersonic Cruise Missile 'BrahMos'
- Multi Barrel Rocket Launcher System 'Pinaka' Mk-I

- Torpedo Advanced Light
- Heavy Weight Ship Launched Torpedo 'Varunastra'

**Soldier Support Systems:**

- Computerised Pilot Selection System for Indian Air Force
- Telemedicine System for Navy
- Submarine Escape Suit
- Flame Retardant Gloves
- NBC products

DRDO has been making all possible efforts to increase indigenous content in DRDO products. The percentage of import content in some of the major DRDO systems are given below:

<b>System</b>	<b>Import Content (in %)</b>
Airborne Early Warning & Control (AEW&C) System (excluding Aircraft)	16
Pilotless Target Aircraft (PTA), Lakshya	05-Jul
Remotely Piloted Vehicle (RPV), Nishant	10
Aircraft Arrester Barrier	5
Light Combat Aircraft (LCA)	40
Combat Free Fall System	35
Parachutes	0
Heavy Drop System	10
Agni Missile	15
Prithvi Missile	15
Akash Missile	10
Nag Missile	30
Supersonic Cruise Missile, BrahMos	65
Long Range Surface to Air Missile (LR-SAM)	60
Multi Barrel Rocket System-Pinaka	10
MBT Arjun	55
Radars	10
Electronic Warfare Systems	5 – 30
Sonars	May-30
Pocket Dosimeter	12
Portable Dose Rate Meter	9
Roentgenometer	6
NBC Recce Vehicle	5

This information was given by Defence Minister Shri Manohar Parrikar in a written reply to Shri Tarun Vijay in Rajya Sabha.