

## **Maiden Test of Undersea K-4 Missile from Arihant Submarine**

Balasore: Notwithstanding international pressures India has secretly conducted the maiden test of its nuclear capable undersea ballistic missile, code named K-4, from homegrown submarine INS Arihant at an undisclosed location in the Bay of Bengal.

A reliable source on Friday told 'The New Indian Express' that the test conducted on March 31 nearly 45 nautical miles away from Vishakhapatnam coast in Andhra Pradesh was highly successful. The indigenously developed weapon with a dummy payload was reportedly launched from the submarine in full operational configuration.

The trial was carried out with the support of the personnel of Strategic Forces Command (SFC) while the DRDO provided all logistics. The missile was fired from 20-meter deep and it pierced into the sky after breaking the water surface. INS Arihant had first successfully fired a prototype of K-15 (B-05) missile in November last year.

The K-4 missile was fired from onboard silos of the ship submersible ballistic, nuclear (SSBN) submarine demonstrating the capability of the newly built underwater warship to fire long range nuclear capable missiles and the killing efficiency of the most advanced state-of-the-art weapon system.

"Having an operational range of nearly 3,500 km, the missile was fired towards north for a shorter range. It covered more than 700 km before zeroing on the target with high accuracy reaching close to zero circular error probability (CEP)," informed the source.

DRDO officials however refused to speak on the mission. While the officials associated with K-4 mission and Arihant project were tight-lipped, Director General of DRDO Selvin Christopher did not respond calls from this paper.

On March 7, this missile was test fired from a submerged pontoon (replica of a submarine) positioned nearly 30 feet deep sea offshore Vizag coast. Although, the DRDO didn't officially confirm about the secret mission, it was learnt that the test was a roaring success.

Even as the DRDO had reportedly conducted the first test of the missile system, which was developed under a secret project, in 2010, it officially admitted to have a missile named K-4 with a video footage of the missile launch in the Aero-India show in January last year.

Reports indicated the K-4 missile with the features of boost-glide flight profiles is designed to defeat any anti-ballistic missile systems. Equipped with the satellite updates to modify accumulated errors from its inertial navigation system, the weapon system is claimed to be quite dangerous and one of its kind in the world.

The 111-metre-long INS Arihant has four vertical launch tubes, which are capable of carrying 6 torpedoes of 533 mm and 12 B-05 (K-15) missiles or 4 K-4 missiles.

Powered by an 85 MW capacity nuclear reactor with enriched uranium fuel, this submarine can achieve surface speeds of 12 knots to 15 knots, and submerged speeds of up to 24 knots, carrying a crew of 95.

Apart from Arihant, the K-4 will also arm another Arihant class submarine INS Aridhaman which is currently under construction along with two others. These submarines will have eight launch tubes each.

## **DRDO's nuclear capable K-4 underwater missile test-fired again, this time from INS Arihant**

The Defence Research and Development Organisation (DRDO) has test-fired the nuclear capable K-4 missile from the indigenous nuclear-powered ballistic missile submarine, INS Arihant, the New Indian Express reported, citing a reliable source Friday. According to the report, it was a "highly successful" test, carrying a dummy payload but in full operational configuration from INS Arihant.

The test was conducted with due support from Strategic Forces Command (SFC). The missile was reportedly fired from the onboard silos of INS Arihant from a depth of 20 metre.

The K-4 missile is a 17-tonne submarine-launched ballistic missile (SLBM) with an operational range of 3,500 km and can carry conventional and nuclear warheads weighing over 2,000 kg. It belongs to the K-series of missiles that also includes the K-15 missile (B-05) with a range of 750 km.

"Having an operational range of nearly 3,500 km, the missile was fired towards north for a shorter range. It covered more than 700 km before zeroing on the target with high accuracy reaching close to zero circular error probability (CEP)," the report's source was quoted as saying.

The K-4 features boost-glide flight profile, and is so designed that it is claimed that it can defeat any anti-ballistic missile systems. It is also reported to be "one of its kind in the world."

The report noted that while the DRDO officials "refused to speak," other officials linked with the project were "tight-lipped" about it.

Previously, the missile was test-fired from a submerged pontoon March 7, which was a "roaring" success, meeting all the critical parameters, the New Indian Express had reported.

The K-4 and the K-15 missiles are an important part of India's nuclear triad, which provides India with retaliatory nuclear strike capability.

Last year, INS Arihant had successfully conducted test firing of the K-15 missile. Reports have suggested that the homegrown submarine can carry four K-4s and 12 K-15s. Arihant completed its deep sea trials and weapons launch tests February 2016 paving the way for its induction into Indian Naval fleet, the Economic Times reported.

Apart from INS Arihant, India is also constructing INS Aridhaman, which will be followed by another two of the same class of submarines.

## **The Undersea K-4 Ballistic Missile was fired from INS Arihant Nuclear Submarine**

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## **DRDO official conferred with Dynamic Indian of Millenium award**

Asian region could not register due growth as it was driven by conflicts and faced several barriers based on caste, religion and various other factors, a top official in DRDO, said today. India could boast of having 60 per cent of the entire population in Asia and as such its revenue collection was quite enormous which in turn would contribute to its prosperity, DRDO Director General, Aeronautical System, K Tamilmani said here.

However, the Asian region could not register due growth because it was driven by conflicts and facing many barriers based on caste, religion and so on, Tamilmani said after accepting the "Dynamic Indian of the Millenium' award instituted by K G Foundation here.

Citing the example of European Union, Tamilmani said it the EU had agreed to have a single currency inorder to remove all the trade and economic barriers.

Stating that India's knowledge power had been well recognized all over the globe, he said it prompted Microsoft founder Bill Gates to announce that if the US denied jobs to Indian IT professionals he would be compelled to shift the headquarters of his company to India.

It was no exaggeration to state that Indians constituted 30 per cent of manpower in the medical, engineering and research fields in the US, Tamilmani added.

The Foundation Chairman Dr G Bakthavathsalam said that 15 years ago the foundation had given the Dynamic Indian of the Millenium award to Dr APJ Abdul Kalam, well before he became the President of India.

He said the award was being given periodically by the Foundation to those personalities who had made extraordinary contributions for the well being of the country.

It was also intended to motivitate and inspire the awardees to put in their best in the chosen fields.

Tamilmani released a booklet on World Bank's appreciation of KG Group's contributions towards the growth and development of India.

The Foundation Managing Director, Ashok Bakthavathsalam said the report had recognised Coimbatore as the only city in India that had major contributions for the country's economic prosperity.

Above all, World Bank had attributed such development mainly due to the strivings of KG Group, he said.