

## पाकिस्तान तक दिखाई देगी के-4 की दहाड़

एजेंसी/भुवनेश्वर

भारत एक और परमाणु मिसाइल के परीक्षण के लिए तैयार है। भारत शुक्रवार (8 नवंबर) को आंध्र प्रदेश के तट से पनडुब्बी के जरिए के-4 परमाणु मिसाइल का परीक्षण करने जा रहा है। समाचार एजेंसी एएनआइ ने इस बात की जानकारी दी है। पनडुब्बियों से अपने दुश्मन के ठिकानों को मार गिराने की क्षमताओं को और मजबूत करने के लिए भारत शुक्रवार को एक और कदम आगे बढ़ाएगा। के-4 परमाणु मिसाइल की मारक क्षमता 3500 किलोमीटर बताई जा रही है। यह मिसाइल प्रणाली रक्षा एवं अनुसंधान विकास संस्थान (डीआरडीओ) द्वारा अरिहंत श्रेणी की परमाणु पनडुब्बियों के लिए विकसित की जा रहा है। अरिहंत परमाणु पनडुब्बियां भारत द्वारा विकसित की जा रही हैं। यह पनडुब्बियां भारत के परमाणु परीक्षण का मुख्य आधार होंगी।

- भारत द्वारा विकसित के-4 परमाणु पनडुब्बी मिसाइल की मारक क्षमता 3500 किलोमीटर है
- इसे न्यूक्लियर पनडुब्बी अरिहंत पर तैनात किए जाने की तैयारी है।



### परीक्षण का लक्ष्य

सरकारी सूत्रों ने कहा कि, 'डीआरडीओ शुक्रवार को आंध्र प्रदेश के विशाखापट्टनम कट से एक अंडरवॉटर प्लेटफॉर्म से के-4 परमाणु मिसाइल का परीक्षण करेगा। इस परीक्षण के दौरान डीआरडीओ मिसाइल प्रणाली में उन्नत प्रणालियों का टेस्ट करेगा। के-4 दो परमाणु पनडुब्बी मिसाइलों में से है, जिसे भारत द्वारा विकसित किया जा रहा है। एक अन्य मिसाइल बी 0-5 है, जिसकी मारक क्षमता 700 किलोमीटर से भी अधिक है।

### कितनी रेंज का होगा परीक्षण ?

हालांकि अभी यह स्पष्ट नहीं है कि डीआरडीओ पूरी रेंज पर मिसाइल का परीक्षण करेगा या कम दूरी पर। हालांकि, हालांकि, भारत द्वारा नियोजित टेस्ट-फायरिंग के लिए लंबी दूरी की मिसाइल परीक्षण के लिए नोटिस टू एयरमेन और समुद्र को लेकर चेतावनी पहले ही जारी की जा चुकी है।

### कई और मिसाइलों के परीक्षण की तैयारी

के-4 मिसाइल के परीक्षण की योजना पिछले महीने बनाई गई थी, लेकिन इसे स्थगित कर दिया गया था। डीआरडीओ आने वाले कुछ हफ्तों में कुछ और मिसाइलों का भी परीक्षण करने जा रहा है। भारत अग्नि-3 और ब्रह्मोस मिसाइलों के परीक्षण की योजना बना रहा है। सरकारी सूत्रों ने स्पष्ट किया है कि के-4 मिसाइल का परीक्षण पानी के भीतर के पट्टन से किया जाएगा, क्योंकि अभी भी मिसाइल का परीक्षण किया जा रहा है और एक पनडुब्बी से लॉन्च केवल एक बार किया जाएगा जब तक यह तैनाती के लिए तैयार ना हो जाए।

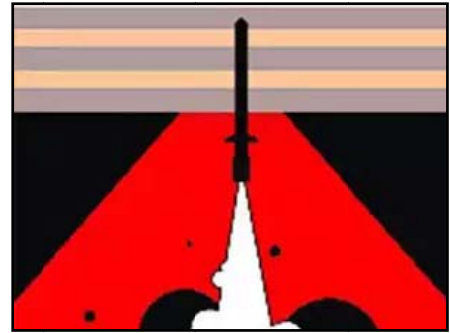
## India to test-fire 3,500 km range K-4 nuclear missile

*The missile system is being developed by DRDO for the Arihant class nuclear submarines which are being built. "As per plans, the DRDO will carry out test-firing of the K-4 nuclear missile from an underwater platform off the Vishakhapatnam coast. D..*

Bhubaneswar: To further strengthen its capabilities of hitting enemy targets from submarines, India is planning to test-fire the 3,500 kilometre strike-range K-4 nuclear missile from an underwater platform off the coast of Andhra Pradesh on Friday.

The missile system is being developed by the DRDO for the Arihant class nuclear submarines which are being built by India. These submarines would be the mainstay of India's nuclear triad.

"As per plans, the DRDO will carry out test-firing of the K-4 nuclear missile from an underwater platform off the Vishakhapatnam coast on Friday. During the trial, the DRDO will test the advanced systems in the missile system," government sources said here.



K-4 is one of the two underwater missiles that are being developed. The other one is the over 700 kilometre strike range BO-5 missile.

It is not yet clear whether the DRDO will test the missile at the full strike range or shorter ranges. However, NOTAM (Notice to Airmen) and marine warnings for long-range missile test have already been issued by India for the planned test-firings.

The K-4 missile test was planned for last month but was postponed.

DRDO also plans test-firing of the Agni-3 and BrahMos missiles in the coming few weeks.

Government sources clarified that the test-firing of the K-4 would be done from an underwater pontoon as the missile is still being tested and launch from a submarine would only be done once it is ready for deployment.

<https://economictimes.indiatimes.com/news/defence/india-to-test-fire-3500-km-range-k-4-nuclear-missile/articleshow/71934973.cms>

Thu, 07 Nov 2019

## At least 28 pieces of debris from India's A-SAT missile test still floating in space

NASA has found that at least 28 pieces of debris from India's ambitious anti-satellite (A-SAT) missile test are still in the low Earth orbit — over seven months after India successfully test-fired the missile, thereby joining an elite group to possess such capability.

After the missile test, NASA had said it created around 400 pieces of debris that could threaten the International Space Station (ISS) as well as future space missions.

India's Ministry of External Affairs had, however, then said "whatever debris was generated will decay and fall back onto the earth within weeks". Even DRDO chief G. Satheesh Reddy had said all the fragments would decay within 45 days of the test.

But Jonathan McDowell, an astrophysicist at the Harvard-Smithsonian Center for Astrophysics, Tuesday told ThePrint that NASA has tracked at least 101 pieces of debris from the A-SAT test initially, of which 28 still remain in low Earth orbit.



"We don't know the size of the debris but most pieces are probably less than a metre in size, maybe 10 cm," McDowell told ThePrint.

McDowell explained that some of these fragments travel at high speed of over 28,000 km/hour and thus pose a risk to satellites.

"In particular, the orbits (debris) can intersect with that of the International Space Station. The risk of collision is low, but not completely negligible," he said, adding that computer models show some of the debris could last in the orbit until 2022.

### Concern over space debris ::

Debris in the low Earth orbit slowly starts decreasing their altitude due to friction in the atmosphere. Once these fragments re-enter the Earth's atmosphere, they burn up.

According to NASA, over 5,00,000 pieces of debris or "space junk" are tracked as they orbit the Earth. They travel at such high speed that even a small piece of orbital debris can damage a satellite or a spacecraft.

Increasing space debris has been a cause of concern across the globe as it threatens astronauts aboard the ISS. The threat of a collision in space has also increased significantly with space-faring countries launching more and more satellites.

<http://www.defencenews.in/article/At-least-28-pieces-of-debris-from-India%e2%80%99s-A-SAT-missile-test-still-floating-in-space-757839>

## **ITR pavilion dazzles in Kolkata int'l Sc fest**

Baleswar: The Integrated Test Range (ITR) demonstrated its technical superiority and India's prowess in a four-day international event, 'India International Science Festival (IISF)-2019', which began in Kolkata on Tuesday.

The technology exhibition organised at Science City, Kolkata was inaugurated by Union Minister of Science and Technology Harsh Vardhan. DRDO, ISRO, CSIR and several other organisations are participating in the mega exhibition.

The ITR received high appreciation in the most immaculate manner.

DRDO with its indigenous products and state-of-the-art defence technologies, made its presence felt at the event. Major products and technologies of DRDO, developed by its various laboratories over the years like MBT Arjun, Missiles (BrahMos, LRSAM, ASTRA, Akash etc), Missile onboard instruments, AEW & C System, SONARS and indigenous radars were demonstrated through models and stunning visual aids.

“The spectacular design of the DRDO pavilion has been conceived and executed in a picture-perfect manner by ITR team. The pavilion was well planned to cater to laboratories from all the technology clusters of DRDO. A well-crafted photo gallery demonstrating key DRDO achievements has attracted a lot of visitors including the young minds inspiring them to embrace science for the growth of the nation,” said Director ITR Dr BK Das , adding, “The Minister of Science and Technology visited the DRDO pavilion after the inaugural function and appreciated DRDO's effort towards making India self-reliant in defence technologies. The technical marvel coupled with lucid demonstration to the visitors has made the DRDO pavilion a crowd puller of the event.”

<https://www.dailypioneer.com/2019/state-editions/itr-pavilion-dazzles-in-kolkata-int-l-sc-fest.html>