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What is BrahMos missile's latest upgrade?

The successful testing of air-platform of BrahMos has further strengthened the tactical cruise missile triad land, sea and air for India

By Sushant Kulkarni

Pune: Last week, the Defence Research and Development Organisation (DRDO) carried out two successful tests of the latest variant of the BrahMos missile, one from the land platform and the other from air. BrahMos, developed through a collaboration between India and Russia, is one of the most advanced weapons in India's armoury.

The missile

BrahMos is a cruise missile, meaning it can be guided towards a pre-determined land- or sea-based target. With a capability to attain speeds 2.8 times that of sound (Mach 2.8), BrahMos is classified as supersonic cruise missile. A newer version under development is aimed at flying at speeds greater than Mach 5. These are called hypersonic cruise missiles. Besides decreasing the reaction time of the enemy, higher speeds also substantially reduce the chances of the missile getting intercepted.

An amalgam of the names of the rivers Brahmaputra and Moskva, BrahMos is being produced by BrahMos Aerospace, a joint venture company set up by DRDO and Mashinostroyenia of Russia in 1998. The first version of the BrahMos supersonic cruise missile was inducted into the Indian Navy in 2005, meant to be fired from INS Rajput.

The test

While the missile has been in India's arsenal for long, it is continuously upgraded and updated with new hardware and software. This is what necessitates periodic tests of the missile.

DRDO scientists said that in every such exercise of a specific variant of BrahMos, different parameters are put to test. Though the exact details are not disclosed, additional hardware and software systems are tested based on the inputs from the user, against more complex targets, and under different atmospheric conditions. The test results and observations are important for future analysis and further advancement.

"India's missile development programme has made sure that its missiles are upgraded and new systems are also developed. BrahMos has undergone development through the early 2000s till date. Its land-to-land, submarine-fired and now air-fired variants have been developed stage by stage. Each new version has something additional compared to the previous version," said a DRDO scientist.

Air-based test

One of the tests last week was carried out from air, using the Sukhoi-30 MKI fighter jets of the Indian Air Force as the base. The missile destroyed a target at sea. This was the third air-based test of the missile and marked the completion of the integration of BrahMos missile with the Sukhoi-30 MKI aircraft.

In November 2017, the Indian Air Force had become the first in the world to successfully air-launch a Mach 2.8 supersonic surface-attack missile of this category from a fighter jet. It had destroyed an at sea-target in the Bay of Bengal at that time. This year, on May 22, an air-launch was tested again, this time against a land-based target in the Car Nicobar Islands region.

The BrahMos Air-Launched Cruise Missile (ALCM), as it has since been called, has been a significant addition in IAF's air combat capability from stand-off ranges. Stand-off range missiles are

ones that are launched at a distance sufficient to allow an attacking party to evade defensive fire expected from the target area. Officials said that stand-off range missiles, of which cruise missiles are a type, have been in the arsenal of all the major powers of the world.

Last week's test has again validated the ship attack capability of the ALCM. During the test, the missile was gravity-dropped from the fuselage of a Su-30 and the two-stage missile's engine fired up. Subsequently, the missile propelled towards a target ship at the sea, destroying it with pinpoint accuracy.

The successful testing of air-platform of BrahMos has further strengthened the tactical cruise missile triad — land, sea and air — for India.

https://indianexpress.com/article/explained/what-is-brahmos-missiles-latest-upgrade-6186558/

INDIAN DEFENCE NEWS

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DRDO readies India's next generation XRSAM-long range air defence missile system

Saurav Jha a prominent Indian Defence Journalist in his latest tweet has confirmed the development of very long range Surface to air missile with a reported range of 250 km dubbed as XRSAM by DRDO. The entire system shall be designed for transportability. Indian Air Force has accepted the Configuration.

XRSAM will be used to bridge the gap between MR-SAM (70 km) and S-400 (400 km) Air Defence System and will be using spin-off technologies developed for countries Anti-Ballistic missile Defence system-SAM will complement the S-400 systems in their role and filling the need for a robust Multi-Layered Air Defence System and a family of Ground Based Air Defence Weapon Systems (GBADWS).

The total system will be consisting of two different surface to air missiles. One will have 250 km range another will have 400 km range.

XR-SAM is actually a spin-off of the AAD-1 Endo-atmospheric interceptor with a service ceiling of 120 km and has supposedly Anti-Ballistic Missile features though its not confirmed.

India is buying two different type of surface-to-air missile for its S-400 system: 40N6 (Range: 400 km) and 48N6 Range: 250 km). XR-SAM will have active radar homing guidance GaN (Gallium Nitride) based UHF radars aimed at engaging Aircraft, Cruise Missiles, Unmanned Drones and even ballistic targets.

DRDO is yet to confirm if XRSAM Air Defence Missile system will consist of one or two different type of missile system yet but there are unconfirmed reports indicating that system will be capable of simultaneously engaging cruise missiles, aircraft and ballistic targets, hinting of using two slightly different missile configuration of same type.

XRSAM Air Defence Missile system might utilise same network grid deployed for Anti-Ballistic missile Defence system and might be working as part of large umbrella air defence network grid consisting of ABM, S-400 and XRSAM surveillance, guidance, tracking network of radars.

The other air defence missiles being developed by DRDO are QR-SAM - Quick Reaction SAM, MR-SAM - Medium Range, Barak-8 and LR-SAM (Long Range) SAM.

XRSAM might be ready for developmental and engineering trials by 2020.

http://www.indiandefensenews.in/2019/12/drdo-readies-indias-next-generation.html