

They hit different: Inside 'salvo test' of India's new chopper-launched naval missile

The DRDO and the Navy test-launched a salvo of NASM-SR missiles. Here's how the missile works, why salvo launches matter, and how it improves on the older Sea Eagle system.

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An NASM-MR missile is tested on Wednesday. (source: Ministry of Defence)

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Earlier this week, the Defence Research and Development Organisation (DRDO) and the Indian Navy successfully test-launched a salvo of short-range anti-ship missiles from a helicopter off the Odisha coast. These indigenously developed missiles, called

the Naval Anti-Ship Missile Short Range (NASM-SR), are meant to be deployed from ship-borne helicopters.

During the test on Wednesday (April 29), two such missiles were **launched** in quick succession from the same chopper, marking the platform’s first successful salvo test. While the Navy already has helicopter-launched missiles, the NASM-SR offers a potential upgrade over them. They also have two unique features —”man-in-loop” and “waterline hit”.

What are these two features? Why does a salvo launch matter? And, more importantly, why are helicopter-launched missiles important for the Navy? We explain.

First, what’s the role of helicopter-launched missiles>

A helicopter-launched system, such as NASM-SR, allows a navy to engage hostile vessels and ships from a safe distance — that is, without exposing their own ships to direct danger.

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This is an important factor during naval warfare, anti-surface operations and sea control missions.

The Indian Navy already possesses the British-origin Sea Eagle anti-ship missile, which it has equipped its Sea King 42B helicopters with.

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Simply put, these helicopters, which are stationed on ships, can take off, strike a target from a relatively close range, and then return to the ship.

This capability is, therefore, especially useful in highly contested maritime environments.

So why was the need for a new missile felt?

The Sea Eagles are 1980s-era missiles, lacking many modern capabilities. One of its key issues was its weight. A single missile weighs around 580 kg.

So, in the early 2010s, the DRDO began the development process of a lighter, modern and homegrown missile that could be carried in higher numbers in helicopters.

Also part of the development process were premier DRDO labs such as the [Hyderabad](#)-based Research Centre Imarat and Defence Research and Development Laboratory, [Pune](#)'s High Energy Materials Research Laboratory and [Chandigarh](#)'s Terminal Ballistics Research Laboratory. The NASM-SR's first successful flight test was conducted in May 2022. Wednesday's launches were a salvo test — multiple launches in quick succession.

The NASM-SR missiles are currently being produced by private sector partners with the help of MSMEs, start-ups and others.

Anatomy of the missile

The NASM-SR uses a solid propulsion booster rocket that gives the missile its first thrust and a long-burn sustainer engine that keeps it flying for longer.

One of its key subsystems include the seeker — a sensor that detects and tracks the target. It also has a radio altimeter device that measures height from the ground or sea. Another critical component is a high-bandwidth two-way data link system that allows real-time communication between the missile and operator sitting in the helicopter, the DRDO said..

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A single NASM-SR missile weighs around 380 kg — 200 kg lighter than the Sea Eagle. This means more of them can be carried in helicopters. Its 55-km range, however, is

lower than the Sea Eagle's 110 km.

When the NASM-SR missile is within a certain distance of its target, a radio proximity fuse detonates its explosive device.

The two key features: 'Man-in-loop' features and 'waterline hit'

Many modern navies have helicopter-launched missiles that have these two features: 'man-in-loop' and 'waterline hit'.

Let's take a look at the first one. Very simply put, 'man-in-loop' means that a human operator can change the missile's path, if required, even when it's mid-flight. In a crowded maritime environment, for instance, this feature reduces the risk of hitting non-combatants.

The 'man-in-loop' feature is implemented through the two-way data link that we mentioned above. The link transmits real-time data from the missile to the operator, who can then update the target. This also makes the missile more adaptable against evasive or moving targets — cases where automated guidance alone may fall short.

In contrast, the Sea Eagles are "fire-and-forget" missiles. The Navy and DRDO successfully tested this feature in February 2025.

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Now, let's come to the second term. A waterline hit means the missile strikes a ship at or just above the line where the hull meets the water.

This is one of the most vulnerable parts of a vessel. Damage here can cause devastating structural damage, causing water to rapidly flood the vessel and disable or sink it. The Sea Eagle has no specific waterline hit capabilities.

The salvo demonstration

The tests conducted earlier this week included a salvo launch of two missiles fired back to back from a single helicopter.

Demonstrating a salvo launch shows the ability to overwhelm shipborne defence systems. Such precision is achieved through advanced terminal guidance systems, including the seeker and low-altitude flight aided by the radio altimeter, which help the missile maintain a sea-skimming trajectory and accurately lock onto the most vulnerable part of the target. This combination enhances both lethality and survivability in real combat scenarios.

After the latest test, the Defence Ministry said that “users’ representatives from the Indian Navy and the Indian Air Force” witnessed the test. This indicates that the IAF, too, may also induct the missile in the coming years for its helicopter platforms.

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