

# Development of Russian PRS-1M missile continues

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**Russia's next generation Anti-Ballistic Missile (ABM) system has finished a series of test launches and is believed to have been successful in both its performance and capabilities. *Malcolm Claus* assesses the information presented on this missile, the reasons for its development, and its potential role in Russia's air and space defence**

## Key Points

- The Russian military confirmed in June 2019 that a successful test launch of an anti-ballistic missile interceptor had taken place at the Sary-Shagan test site in Kazakhstan.
- The A-235 'Nudol' system is due to replace the existing A-135, providing defensive coverage to the Moscow region.
- Although open-source information on the system is limited, the missile element of the system – PRS-1M – is assessed to be able to engage targets travelling at up to Mach 10, with a maximum speed of up to Mach 12.

TASS reported on 4 June that the Russian Aerospace and Defence forces had conducted another successful test launch of a new interceptor missile. This test launch was one of the latest in a series of such tests conducted during 2019 on various missile defence systems. All were reported as being successful but had no mention of the name of the missile being tested. A total of four firings were carried out in 2018, as reported by TASS. All of the test launches have taken place at the Sary-Shagan test site located in Kazakhstan. The Ministry of Defence reported on the day of the test that the target was hit by a missile "with a given accuracy". A TASS report covering the launch of the new interceptor missile quoted the commander of the missile defence unit, Vladimir Sergiyenko, as saying, "After a series of trials, the new interceptor missile confirmed its characteristics and successfully completed the task by striking an assigned target with precision." The test launches of this new missile and the identification of a number of new hypersonic weapons systems indicate that the role and potential use of these high-speed weapons systems have not been lost by the Russians. Previously, a TASS report on 15 May 2019 quoted President Vladimir Putin as saying, "Russia should develop systems against hypersonic weapons before such weapons are developed in other countries," coming at a time with increased funding for the US hypersonic programmes. He also said, "So far, only Russia possesses hypersonic weapons." Putin continued, "One of the key tasks is to increase control over the aerospace." The race for offensive and defensive hypersonic systems is now actively being pursued within Russia and its defence industry.

## Russian ABM systems and their development

The testing on the new interceptor missile and the retention of an Anti-Ballistic Missile (ABM) capability by the Russian Federation with the signing of the ABM Treaty in 1972 and its continued development since has shown a commitment to provide a level of defence against incoming

intercontinental ballistic missiles (ICBMs). There have been two paths taken by the signatories of the original treaty to develop a system of defence against ICBMs. Although the Soviet Union and subsequently the Russian Federation has undertaken a process of development work on its ABM systems, the United States has fielded the Safeguard system, but deactivated it shortly after it became operational in 1975. This was due to the effectiveness of the system which was then regarded as questionable and at best would only offer limited protection against a Soviet strike. Both systems consisted of interceptors providing a level of defence capability. The initial Soviet system featured the use of large A-350/5V61 (SH-04 Galosh) interceptors (this system being referred to as ABM-1 by NATO). The US deployed two missiles, for both low- (endo-atmospheric) and high-altitude (exo-atmospheric) interceptions in the form of Sprint and Spartan (LIM-49). All of these interceptors were equipped with a nuclear warhead. Russia maintained its system and introduced successive upgrades to maintain a workable system. The original ABM system, designated A-35, was replaced by an upgraded version, the A-35M (ABM-1B), which consisted of a further development of the original A-925/5V61 (SH-04 Galosh) missiles. The A-35M entered service in 1977 and was replaced by the A-135 Amur in 1990.



*A test launch of the Russian Aerospace Forces' new ballistic defence interceptor missile for trials at the Sary Shagan ballistic defence missile testing range. (TASS\TASS via Getty Images)*

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The A-135 ABM system comprised two interceptors – the low-altitude, short-range 53T6 (SH-08 Gazelle) and the high-altitude, long-range 51T6 (SH-11 Gorgon). These missiles were given the NATO designations ABM-3 and ABM-4, respectively. As with the previous interceptors, both of these were armed with a nuclear warhead. The high-altitude component of A-135, the 51T6 (SH-11

Gorgon), was deactivated around 2005 due to the drawbacks associated with nuclear interception and the end of their service life as stated by the Marshall Institute. The remaining component of the A-135 system, the 53T6, used nuclear warheads up until the mid-to-late 1990s. These were then replaced by a conventional high explosive (HE) fragmentation warhead. The A-135 missile defence system covers Moscow and the central industrial region from Bryansk, in the southwest to Kostroma, northeast of Moscow. The A-135 Amur will be replaced by the A-235 Nudol; however, open sources have referred to the missile element as the PRS-1M (45T6).

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