



Image 1. Vladimir Putin presents new hypersonic weapons to the world in 2018. Source: [El País](https://www.elpais.com).

RUSSIAN HYPERSONICS: FROM THE PODIUM TO THE REAL BATTLEFIELD

Juan Carlos Galindo Mateos

On March 18, Russia, through official representatives, recognized the use of the “hypersonic” Kinzhal missile. Two times during the conflict with Ukraine. But what is the Kinzhal? Since when does Russia have hypersonic weapons? We go back to 2018¹. A peaceful, everyday day dawns in Moscow. It is March 1, 2018. Only two weeks left for the next “elections” in Russia². Putin has called both chambers of parliament for the traditional annual speech (usually celebrated in December).

This is not going to be just another speech. The emotion is palpable in the atmosphere of the pavilion. Full of people. Putin’s supporters. Vladimir speaks from the podium: “In 2002 the US told us: <<We created an anti-missile system. Not against you, not against Russia. You do what you want>>. We call it Sarmat...”

¹ The Bell. <https://thebell.io/en/russia-s-new-weapons-putin-raising-nuclear-stakes/>

² CBC News. <https://www.youtube.com/c/CBCTheNational/featured>

And he will begin to describe the four most recent weapons developments of “his” Russia. Four developments that, in his words, put the country in an unattainable position in the military field. All four advances: Sarmat, Kinzhal, Nuke Torpedoes, and Avangard. According to the president, the world has changed after this speech. And let's be honest Mr Putin. The only new thing is the Avangard and no one has ever seen it.

Sarmat

Also called RS-28, it is an intercontinental ballistic missile (ICBM). It has an approximate range of 15,000 kilometres. What is a ballistic missile? It is a missile usually launched from the ground. It is focused on hitting targets also on the ground. It can carry nuclear bombs or other explosive charges.

In this ICBM, its size is 35.3 meters (in line with almost any ballistic missile). Just over 30 meters are power plant and the rest: explosives. (4)It is a nuclear missile very close to the common ones. With its slight improvements over previous missiles. But nothing that matters...

Putin highlighted that instead of a bomb it can carry an Avangard: No “cheating” Mr. Putin. The Avangard is another weapon.



Image 2. The Sarmat ICBM's March 2018 ejection test at Plesetsk Cosmodrone. Source: [Russian Ministry of Defence](#).

Avangard

Hypersonic glide vehicle that can reach 25 Mach. This is 25 times the speed of sound. It uses the force of gravity. Aerodynamic surfaces allow it to glide. Without motors. It is unstoppable against any defence system known so far.

It is placed on top of a ballistic missile. The Avangard is released into the atmosphere once the "other 30 meters of fuel" have been finished. Then it falls. The vehicle manoeuvres until it finds the target.

It has not been tested in Ukrainian battlefield. It was designed to be fitted to the RS-26 Rubezh. The Rubezh was delayed several times. So, the Avangard was equipped at RS-28 Sarmat for testing.

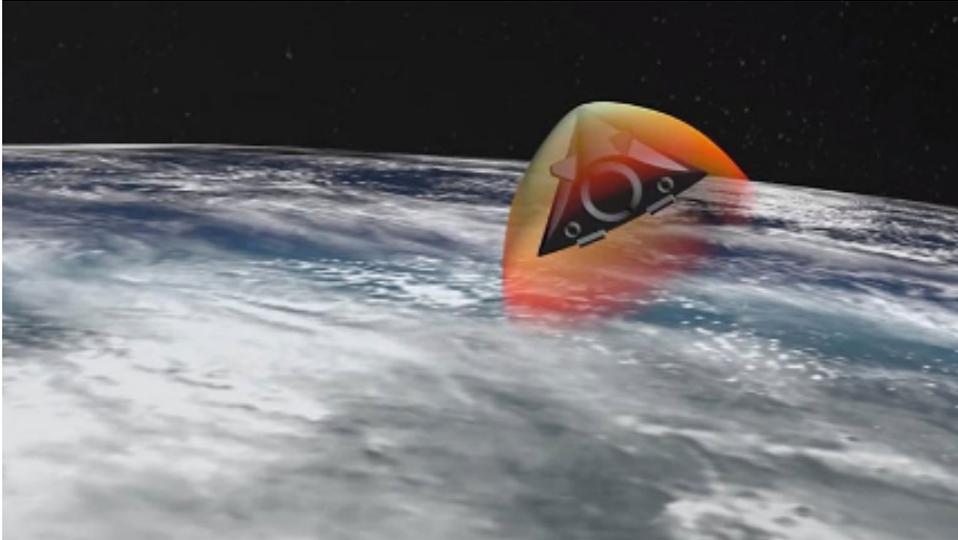


Image 3. Theoretical model of the Avangard showed by Vladimir Putin during March 1st speech at Moscow. Source: [CSIS](#).

Kinzhal

It's not a hypersonic weapon. Although, Putin says it is. Missiles have been reaching hypersonic speeds since the very beginning. We can't say that the Nazi's V2 missile is hypersonic. So, we can't say that the Russian 2022 Kinzhal is hypersonic either.

Any ballistic missile reaches hypersonic speeds. But a hypersonic weapon is a modern weapon that reaches these enormous speeds. We are talking about innovative technologies that also reach great speeds.

The Kinzhal is (with slight variations) a USSR ballistic missile. It is launched from an aircraft to ground instead of being launched from the ground. The Kinzhal is very close to be an Iskander M from the 1980s (USSR). This missile has been launched from MIG-31 fighters (also from the USSR).



Image 4. Kinzhal missile launched from a MIG-31 fighter. Source: [The Moscow Times](#).

Conclusions

Russia decided to deeply increase its investment in technology and Defence around fifteen years ago. Putin says its revolution is against what Europe and USA represents. Its main supporters for this process are Europeans and Americans. Among which France stands out.

Some of the main projects have been successfully developed as Avangard, Su-35, Su-57... Putin, in his "hero" mentality, has talked about these great achievements as if they were legends. Legends make people become heroes. Not the other way around.

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