



KAMARAJ IAS ACADEMY
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YARS Nuclear Missile

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Context:

Russia tests Yars missiles in drills near Moscow, signaling nuclear deterrence amid Ukraine conflict and raising concerns of nuclear escalation.

YARS MISSILE



About the Yarsmissiles

- Only a few confirmed tactical and technical characteristics of the Yars system are available.
- It was developed by the Moscow Institute of Thermal Engineering.
- The Yars missile is called SS-29 by NATO.
- The missile weighs around 49,000 kg and is 20.9 metres long.
- The missile relies on a guidance upgraded system of the inertial and Glonass system used in the Topol-M missile.
- Its accuracy is around 250 m Circular Error of Probability (CEP).
- The Yars missile has an operational range of 12,000 km.
- Yars can carry a payload of up to a dozen times more than the bomb the Americans dropped on Hiroshima.
- It can be prepared for launch within seven minutes.

Kamaraj IAS Academy

Plot A P.127, AF block, 6 th street, 11th Main Rd, Shanthi Colony, Anna Nagar, Chennai, Tamil Nadu 600040
Phone: 044 4353 9988 / 98403 94477 / Whatsapp : 09710729833

History

- An upgraded version of the Topol-M ballistic missile, the RS-24 was first tested in 2007.
- The Yars was inducted by the Russian Strategic Missile Forces in 2010 and production of the missiles began that same year.
- By 2016, the Russian Strategic Missile Forces had 63 mobile and 10 silo-based Yars ICBMs in position alongside the Topol-M systems.
- Unlike the Topol-M, the Yars missile is equipped with Multiple Independently-targetable Reentry Vehicles (MIRVs).

About Ballistic Missiles

- Ballistic missiles are **powered initially by a rocket or series of rockets in stages, but then follow an unpowered trajectory that arches upwards before descending to reach its intended target.**
- Ballistic missiles can carry either nuclear or conventional warheads.

Classification

- There are four general classifications of ballistic missiles based on their range, or the maximum distance the missile can travel:

Short-range: less than 1,000 kilometers, also known as “tactical” ballistic missiles.

Medium-range: between 1,000 and 3,000 kilometers, also known as “theater” ballistic missiles.

Intermediate-range: between 3,000 and 5,500 kilometers

Long-range: more than 5,500 kilometers, also known as intercontinental or strategic ballistic missiles.

Intercontinental ballistic missiles (ICBMs) can fly much further than the minimum range; for example, Russia could hit Chicago with an ICBM launched from the Krasnoyarsk ICBM base, which is located 9,156 kilometers away.