

Zircon hypersonic cruise missile

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In news- Recently, Russia has successfully test fired a Zircon missile from a nuclear submarine.

About Zircon missile-

- It is a **scramjet powered maneuvering anti-ship hypersonic cruise missile.**
- It can **travel more than five times the speed of sound and manoeuvre in mid-flight,** making them much harder to track and intercept than traditional projectiles.
- It **could hit targets at sea and on land with a range of 1,000 kilometres (620 miles).**
- The Zircon looks set to join Avangard hypersonic glide vehicles that were put into service in 2019 and the air-launched Kinzhal (Dagger) missiles in Russia's arsenal.
- Russia had placed into service its first Avangard hypersonic missile in December 2019, making it the first country to claim an operable hypersonic weapon.

Hypersonic technology in India-

- India has also **developed Hypersonic Technology as the DRDO successfully launched the Hypersonic Technology Demonstrator Vehicle (HSTDV) in its maiden test.**
- The HSTDV was an **unmanned scramjet demonstration aircraft for hypersonic speed flight.**
- It could **cruise at a speed of Mach 6** and move up to an altitude of 32.5 km in 20 seconds.
- According to DRDO, besides its utility for long-range cruise missiles of the future, the dual-use technology will have multiple civilian applications also.
- It can be used for launching satellites at a low cost too.

What are hypersonic missiles?

- A hypersonic missile is a **vehicle that achieves a speed five times faster than the speed of sound, crossing Mach 5.**
- These missiles **travel at a speed of around 6,115 km per hour, with a combination of technology and manoeuvrability of ballistic missiles and cruise missiles.**
- These systems are one of the more recent warfare technologies being **developed by China, North Korea, Russia and the United States.**
- They are more agile than the typical intercontinental ballistic missiles or ICBM.
- They **can travel much faster than current nuclear-capable ballistic and cruise missiles** at low altitudes, can switch direction in flight and do not follow a predictable arc like conventional missiles, making them much harder to track and intercept.