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**News: Hypersonic Missile**

- Recently, Russia used a hypersonic missile for the first time in the ongoing conflict with Ukraine.

## **Hypersonic Missiles**

- A hypersonic missile is a weapon system which flies **at least at the speed of Mach 5 i.e. five times the speed of sound and is manoeuvrable.**
- The manoeuvrability of the hypersonic missile is what sets it apart from a ballistic missile as the latter follows a set course or a ballistic trajectory.
- Thus, unlike ballistic missiles, **hypersonic missiles do not follow a ballistic trajectory and can be manoeuvred to the intended target.**
- The two types of hypersonic weapons systems are Hypersonic Glide Vehicles (HGV) and Hypersonic Cruise Missiles.
- The HGV are **launched from a rocket before gliding to the intended target while the hypersonic cruise missile is powered by air breathing high speed engines or ‘scramjets’ after acquiring their target.**

## **Advantages of hypersonic missiles**

- They can enable responsive, long range strike options against distant, defended or time critical threats (such as road mobile missiles) when other forces are unavailable, denied access or not preferred.
- Conventional hypersonic weapons use only kinetic energy i.e. energy derived from motion, to destroy unhardened targets or even underground facilities.

## **Countries possessing hypersonic weapons**

- While the US, Russia and China are in advanced stages of hypersonic missile programmes, India, France, Germany, Japan and Australia too are developing hypersonic weapons.