



Shaurya Missile

Why in News

Recently, a successful trial of the nuclear-capable **Shaurya missile** was conducted by India.

- Also, [Brahmos land attack cruise missile](#) was tested a few days before this testing.

Key Points

▪ Shaurya Missile:

- Shaurya is a **land variant of short-range** Submarine Launched Ballistic Missile ([SLBM](#)) [K-15 Sagarika](#), which has a range of at least 750 kilometers.
- It is capable of carrying payloads of 200 kg to 1000 kg.
- It is a **surface-to-surface** tactical missile.
- These [ballistic missiles](#) belong to the **K missile family - codenamed** after late Dr. APJ Abdul Kalam - which are launched from [Arihant class](#) of nuclear submarines.
- Shaurya, like many of the modern missiles, is a **canister-based system**, which means that it is **stored and operated from specially designed compartments**.
- The missile is **less vulnerable to anti-ballistic missile defence systems** due to its high **maneuverability**.

▪ The K Family of Missiles:

- The K family of missiles are **primarily Submarine Launched Ballistic Missiles (SLBMs)**.
- These have been **indigenously developed** by [Defence Research and Development Organisation \(DRDO\)](#).
- The development of these missiles **began in the late 1990s** as a step towards completing India's **nuclear triad**.
 - Nuclear triad is the capability of launching nuclear weapons from land, sea and air-based assets.
- Because these missiles are to be launched from submarines, they are **lighter, smaller and stealthier** than their land-based counterparts - the [Agni series](#) of missiles which are medium and intercontinental range nuclear capable ballistic missiles.
- India has also developed and successfully tested multiple times the [K-4 missiles](#) from the family which has a range of 3500 km.
- The early development trials of K-15 and K-4 missiles had begun in the early 2010s.
- K-5 and K-6 with ranges of 5000 and 6000 km are also under development.

▪ Strategic Importance of SLBMs:

- **Nuclear Deterrence:** The capability of SLBMs has great strategic importance in the context of achieving a [nuclear triad](#), especially in the light of [the 'no first use' policy of India](#) which acts as [a deterrent](#).
 - These submarines can not only survive a first strike by the adversary but also can launch a strike in retaliation thus achieving Credible Nuclear **Deterrence**.

- The development of these capabilities is **important in light of India's relations with the two neighbours China and Pakistan.**

Ballistic Missile

- It is a **rocket-propelled self-guided** strategic-weapons system that follows a **parabolic trajectory** to deliver a payload from its launch site to a predetermined fixed target.
- Ballistic missiles can carry conventional high explosives as well as chemical, biological, or nuclear munitions.

Ballistic Missile Defence System in India

- A **Ballistic Missile Defence system (BMD)** is a missile defence system that acts as a shield against ballistic missile attacks.
- India's BMD development began in **1999**, after the Kargil war.
- The primary aim was to augment India's defence against possible nuclear attack from Pakistan.
- India seeks to deploy a functional 'iron dome' ballistic missile defence (BMD), incorporating both low-altitude and high-altitude interceptor missiles.
- India's BMD is primarily developed by **DRDO** with help of many public and private firms like BEL, Astra Microwave, L&T, etc.
- **Ballistic missiles of India:** [Agni](#), [K-4](#) (SLBM), [Prahaar](#), [Dhanush](#), [Prithvi](#) and [Trishul](#).

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