

**18– 09 – 2024**

**News: INS Arighat**

- Recently, India commissioned its second nuclear-powered ballistic missile submarine (SSBN); INS Arighat (S-3) built under the Advanced Technology Vessel (ATV) project.

**INS Arighat**

- INS Arighat is an upgraded variant of the Arihant-class submarine.
- It is the second nuclear-powered ballistic missile submarine being built by India under the Advanced Technology Vessel (ATV) project to build nuclear submarines at the Ship Building Centre in Visakhapatnam.
- It has the code name S3.
- The submarine was quietly launched in 2017 and little has been publicly announced about its capabilities and current status.
- The sea trials of the vessel have been completed and been commissioned to the Navy in August 2024.
- INS Arighat, despite matching INS Arihant in size and displacement, can carry more K-15 missiles.

- **Power:** 83 MW pressurised light-water reactors, developed with Russian assistance propels the submarine.
- Arighat has four large vertical launch system (VLS) tubes that carry the Sagarika SLBMs (K-15) - a hybrid propulsion, two-stage, solid-propellant missile with a range of more than 700 km.
- **Future developments:** Third submarine INS Aridhaman, a 7,000 tonne vessel, capable of carrying K-4 missiles with a range of 3,500 km will be commissioned next year.
- SSBN stands for "Ship, Submersible, Ballistic, and Nuclear" and refers to a type of submarine that carries nuclear-tipped ballistic missiles.
- SSBNs are crucial for deterrence because they are difficult to detect and can escape a surprise first strike by an enemy to launch retaliatory strikes.

## **Arihant (SSBN – 80)**

- INS Arihant (SSBN 80) is the designated S2 Strategic Strike Nuclear Submarine, is the lead ship of India's Arihant class of nuclear-powered ballistic missile submarines.
- INS Arihant is propelled by an 83 MW pressurised light-water reactor at its core with enriched uranium fuel.

- The 6,000 tonne vessel was built under the **Advanced Technology Vessel (ATV) project at the Ship Building Centre in the port city of Visakhapatnam.**
- It was **launched in 2009 and was commissioned in August 2016.**
- The Arihant class (of 4 vessels) is equipped with **K-15 Sagarika Missiles (750 km range).**
- Later, it will also be armed with **K-4 missiles** (successfully test fired in January 2020), being developed by the DRDO, which are capable of striking targets at a distance of up to **3,500 km.**
- These 'K' series of missiles are **named after former President APJ Abdul Kalam.**