

INS Aridaman - India's Third Nuclear Submarine

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Why in News?

India has inducted INS Aridaman, strengthening the country's sea-based nuclear deterrence and completing a fleet of three operational SSBNs at sea for the first time.

- **Type** - Nuclear-powered ballistic missile submarine (SSBN).
- **Role** - Strategic deterrence, second-strike capability.
- **Part of** - India's nuclear triad (land, air, sea).
- **Objectives**
 - Enhance survivability of nuclear deterrent forces.
 - Provide assured second-strike capability under India's "No First Use" doctrine.
- **Displacement** - 7,000 tonnes.
- **Launching System** - 8 vertical launch tubes (compared to 4 on Arihant and Arighaat).
- **Missile Capability** - K-15 SLBM - Range 750 km and K-4 SLBM - Range 3,500 km.
- **Reactor** - Advanced nuclear reactor, upgraded for longer submerged endurance.
- **Construction** - 90% Indigenous project with support from DRDO and Russian collaboration.
- **Key Features** -
 - **Long submerged endurance** - Months underwater without surfacing.
 - **Stealth** - Nuclear propulsion ensures low detectability compared to diesel-electric submarines.
 - **Strategic Payload** - Larger missile capacity than INS Arihant and INS Arighaat.
- **Operational Roles** -

- **Strategic Deterrence** - Retaliatory nuclear strike capability.
- **Maritime Security** - Strengthening India's presence in the Indian Ocean Region.
- **Nuclear Triad** - Completes Sea-based leg of India's deterrence.
- **Other Submarines**
 - **INS Arihant** - Commissioned 2016, India's first SSBN. Conducted deterrence patrol in 2018.
 - **INS Arighaat** - Commissioned 2024, technologically advanced compared to Arihant.
 - **INS Aridaman** - Inducted 2026, larger, and more capable, doubling missile launch capacity.

Quick Facts

- **4th SSBN under construction** - Larger size, capable of carrying more K-4 missiles.
- **Project-75I** - Indo-German collaboration to build 6 advanced AIP-equipped conventional submarines.

References

1. [Indian Express | INS Aridaman](#)
2. [Economic Times | INS Aridaman](#)

