

# Naval Vessel Technical Data — Project 21B

**Class:** Destroyer

**Designation:** INS Trishul

**Displacement:** 6,500 tonnes (full load)

**Length:** 163 meters

**Beam:** 17.4 meters

**Draft:** 6.5 meters

**Propulsion:** Combined Gas and Gas (COGAG)

**Engines:** 4 × General Electric LM2500 gas turbines

**Maximum Speed:** 30 knots

**Range:** 4,500 nautical miles at 18 knots

**Crew:** 325 including 35 officers

## Armament

- 8 × BrahMos Block II Supersonic Cruise Missiles
- 1 × 76 mm Otobreda Super Rapid Gun Mount
- 2 × AK-630 CIWS
- 2 × Twin 533 mm Torpedo Launchers
- Barak-8 Surface-to-Air Missile System (32 vertical launch cells)

## Sensors & Radars

- MF-STAR AESA multifunction radar
- HUMSA-NG sonar suite
- ELTA EL/M-2238 STAR surveillance radar
- Electronic Warfare Suite: Shakti ESM/ECM system

## Aircraft Facilities

- Hangar and flight deck for 2 helicopters (typically HAL Dhruv or Sea King)
- Full refueling and rearming capabilities for embarked helicopters

## Communication & Control

- Integrated Combat Management System (CMS-21)
- Link II tactical data link for fleet coordination
- Satellite communication suite for long-range command operations

# Submarine Project — Kilo-Class Refurbishment

**Designation:** INS Sindhurakshak

**Type:** Diesel-Electric Attack Submarine

**Displacement:** 3,100 tonnes (submerged)

**Length:** 72.6 meters

**Beam:** 9.9 meters

**Speed:** 19 knots submerged

**Endurance:** 45 days

**Depth:** Operational up to 300 meters

## Systems

- 6 × 533 mm torpedo tubes (capable of launching Club-S missiles)
- Sonar: MGK-400EM
- Fire Control: LAMA-EKM suite
- Noise Reduction: Anechoic tile coating
- AIP (Air Independent Propulsion): Not installed

## Crew

52 personnel (including 10 officers)

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## Operational Capabilities

- Both vessels capable of integrated network-centric warfare
  - INS Trishul can track and engage aerial, surface, and submarine threats simultaneously
  - INS Sindhurakshak provides stealth reconnaissance and torpedo attack capability
  - Typical mission endurance:
    - Destroyer: 45 days
    - Submarine: 30–45 days
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## Maintenance Notes

- Trishul hull requires drydock inspection every 36 months.
  - Sindhurakshak battery modules require overhaul every 5 years.
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## Classification

**Level:** Confidential — For Naval Research and Testing Only

**Distribution:** Directorate of Naval Design (DND), Indian Navy