

***Strategic Positioning of Pune as a Naval/Maritime Technology Hub* (May include facilities for Coast Guard and Shipbuilders)**

Pune has a strong and dedicated defence ecosystem focused on the Indian Army and the Indian Air Force (IAF), The city has Army's Southern Command Headquarters and College of Military Engineering, and the IAF's Air Force Station and BRD.

Though Pune plays a limited role in naval support activities, developing a naval ecosystem in Pune could be a strategic and beneficial move for both the Indian Navy and the broader defense industry. While Pune is already a key center for the Army and Air Force, it lacks a direct naval presence, and establishing a naval ecosystem could complement India's maritime defense needs, encourage technological innovation, and drive economic growth.

Pune is in close vicinity of Western Naval Command, Mumbai includes INS Shivaji in Lonavala , INS Tanaji in Trombay and Naval Store Depots in Ghatkopar, Sewri, Mankhurd and Naval Armament Inspectorate Khadki in Pune

Major Lakes in Pune : Pashan, Khadakwasla, Manas, Pawana, Mulshi, Bhushi dam, Vadaj Dam

Rivers in Pune : Mula Mutha, Mula, Bhima, Pawana, Indrayani, ,Kundali

Indian Navy has Agnibahu sailors training faculty at INS Chilka (Lake) Odisha

Strategic Positioning for Pune as a Naval/Maritime Technology Hub

- Pune's location in the West coast means it can act as an extension of coastal defense operations, playing a supporting role in research, training, and production for the Navy. Other coastal cities like Mumbai and Kochi already have naval facilities, but Pune could serve as a critical inland R&D and support hub.

- Proximity to Western Naval Command (Mumbai)

Proximity of Western Naval Command, the major Naval Base, to Pune is a strong advantage and it can collaborate and strengthen the Navy's operational and technological capabilities.

Enhancing Naval Research and Development

- Naval R&D Focus Areas: Pune could focus on areas that support the Navy's modernization and self-reliance goals. These could include:

- o Advanced Naval Propulsion Systems: Developing efficient and sustainable propulsion systems for ships and submarines.

- o Naval Cyber security/AI/Space /Drone/Aero Technology: Pune's Technology expertise could be leveraged to safeguard naval communications and systems from cyber threats.

- o Autonomous Underwater Vehicles (AUVs): Pune could become a center for developing AUVs, drones, and unmanned underwater vehicles (UUVs) for surveillance and reconnaissance.

- Shipbuilding and Repair Technology: While shipbuilding is primarily concentrated in coastal areas like Mumbai (Mazagaon Docks) and Visakhapatnam, Pune could contribute to developing supporting technologies for ship repair, maintenance, and logistical support for the Navy's fleet.

Naval Training and Education Facilities

- Naval Officer Training Institutes: Pune could host training centers for naval officers and sailors, focusing on navigation, operations, and electronics for modern naval systems. This may include ICG.

- Specialized Naval Academy or R&D Training: Pune's established educational infrastructure could be leveraged to create institutions dedicated to training naval personnel in cutting-edge technologies such as advanced radar systems, communications systems, and naval engineering.

*Pune has well established institutes and working in tandem with the Indian Army to develop courses like B Tech in Defence Studies and PG's in Defence and strategic studies. The Navy can partner with these institutes and DRDO and develop training programmes for marine needs.

Synergies with Pune's Defense Manufacturing

- Naval Systems and Component Manufacturing: Pune's existing defense manufacturers already produce military-grade components that could be adapted to the Navy. These include:

- o Marine Propulsion Systems (engines for ships, submarines)

- o Naval Artillery and Weapon Systems

- o Naval Platforms (logistics support vessels, smaller naval crafts)

- Public-Private Collaboration: Leveraging Pune's thriving private sector (especially in defense) could lead to increased collaboration with state-owned defense companies (like Mazagaon Docks, Garden Reach Shipbuilders, etc.) to create a thriving naval manufacturing ecosystem.

Economic and Employment Benefits

- **Job Creation:** Establishing a naval ecosystem would lead to job creation in areas like engineering, naval research, manufacturing, logistics, and maintenance. Pune already has a skilled workforce, especially in engineering, and could easily transition into meeting the Navy's demands.
- **Attracting Investment:** Pune could attract both national and international investments in the defense manufacturing sector, driving economic growth while helping achieve Atmanirbhar Bharat (self-reliant India) in defense.

Strategic National Defense Interests

- **Strengthening Maritime Defense:** Developing a naval ecosystem in Pune would enhance India's maritime defense capabilities, providing a stronger, more resilient defense infrastructure for securing the Indian Ocean Region (IOR). With increasing maritime trade routes and strategic importance in the region, a bolstered naval presence would improve India's maritime power projection.
- **Integrated Defense Strategy:** With a naval ecosystem in Pune, India would create an integrated defense strategy that connects land, air, and maritime defense capabilities, reinforcing the nation's defense-industrial base and technological edge.

Potential Steps for Developing Pune's Naval Ecosystem

1. **Establish Naval Research Institutes:** Set up dedicated research institutions focused on maritime technologies (e.g., Naval Research and Development Organization), with collaboration between the Indian Navy, private industry, and academic institutions in Pune.
2. **Incentivize Shipbuilding and Marine Manufacturing:** Encourage companies in Pune to develop naval manufacturing facilities for producing military-grade naval platforms, ship components, and underwater systems.
3. **Integrate with Existing Defense Initiatives:** Leverage Pune's connection to defense initiatives like Make in India and Atmanirbhar Bharat to promote the local production of naval systems and components.

4. Public-Private Partnerships: Develop collaborative ecosystems between public sector entities like Mazagaon Docks and private defense manufacturers in Pune to create a self-sustaining naval supply chain.

5. Educational Programs and Training Centers: Establish naval-specific training academies and R&D programs at Pune's universities and institutes to provide specialized education for naval officers, engineers, and researchers.

Considering these, developing a naval ecosystem in Pune could make it an integral part of India's broader defense strategy, bridging the gap between land, air, and maritime defense. With Pune's well-established industrial base, skilled workforce, and research capabilities, it is well-positioned to support the Indian Navy through naval manufacturing, technological innovation, and training. This would contribute not only to national defense but also to the growth of India's defense-industrial sector and self-reliance in naval technologies.