

## Chinese-Built Hangor Submarines Face Obsolescence Threat Amidst India's ASW Surge



Pakistan's significant investment in Chinese-built Hangor-class submarines, intended to bolster its underwater warfare capabilities, is facing a critical challenge from the rapidly advancing anti-submarine warfare (ASW) prowess of the Indian Navy. Experts are raising concerns that these new diesel-electric submarines, based on China's export-oriented Type 26 design, risk becoming outdated before fully deploying, potentially undermining Pakistan's naval deterrent in the Indian Ocean.

The Hangor-class submarines are part of a 2015 agreement between Pakistan and China for eight vessels, with four being constructed in Wuhan, China, and the remaining four at Karachi Shipyard & Engineering Works (KSEW) in Pakistan. These submarines feature air-independent propulsion (AIP) systems, which allow for extended submerged endurance. However, their design, derived from China's export-centric S26 model, is believed to lack the advanced noise reduction and sensor integration found in more modern, front-line submarines, including China's own Type 039A (Yuan-class) operational in the People's Liberation Army Navy (PLAN). This gap in technology could render them vulnerable to sophisticated detection systems.

In contrast, the Indian Navy has steadily built a formidable multi-layered ASW defense. This includes the long-range Boeing P-8I Poseidon maritime patrol aircraft, equipped with advanced sonar buoys and magnetic anomaly detectors (MAD). Additionally, India has inducted indigenously built Kamorta-class ASW corvettes, designed to counter submarines in littoral waters with hull-mounted sonars and towed array systems. Further strengthening its coastal defense, the Indian Navy is acquiring a fleet of specialized Anti-Submarine Warfare Shallow

Water Crafts (ASW-SWC), such as the recently commissioned INS Arnala, which are optimized for operations in shallower zones with advanced sonars and lightweight torpedoes. Complementing these assets are MH-60R Seahawk helicopters, acquired from the United States, offering crucial quick-response ASW flexibility.

"The Indian Navy's comprehensive ASW ecosystem, combining airborne, surface, and subsurface assets, presents a significant challenge to any potential adversary," noted a defense analyst. This robust network creates a dense detection and engagement capability that could severely limit the operational effectiveness of submarines with less advanced stealth and sensor integration.

The strategic disparity highlights the ongoing naval competition in the Indian Ocean region. While Pakistan seeks to modernize its fleet with the Hangor-class, the rapid advancements in India's ASW capabilities suggest these new additions may struggle to maintain a credible deterrent against a highly capable and evolving Indian naval force. The long-term efficacy of Pakistan's Chinese-built submarines will depend heavily on their ability to overcome the growing technological gap in the underwater domain.