

Preliminary Threat Assessment of Pakistan's Turkish MILGEM Class Corvette Acquisition

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Introduction

On 21 Dec 2025, Pakistan Navy Ship (PNS) Khaibar was commissioned by Pakistan Navy in Istanbul. It is second MILGEM class corvette built in Turkiye for Pakistan.¹ It is said to be a multi-mission corvette built for patrolling, escorting, maritime security, power projection into areas of the Arabian Sea, and Indian Ocean, and anti-surface, anti-air, and Anti-Submarine Warfare (ASW). In contrast to original Turkish design, Pakistani version places emphasis on standoff anti-ship attack capabilities to offer a reliable deterrence against its Indian competitors.² A preliminary threat assessment of this platform, its weapons and sensors will enable Indian navy to better strategise and be prepared any threat to India's security in future.

Reported features of PNS Khaibar

MILGEM corvettes are reported to be stealthy and have lower infrared, acoustic, and radar signatures. These 3,000-ton corvettes are equipped with Combined Diesel and Gas (CODAG) propulsion system consisting of two diesel engines and one General Electric LM2500 gas turbine. With an endurance of more than 15 days, this configuration is said to offer speeds of more than 26 knots and an operational range of over 4,000 nautical miles. Its Signaal Multibeam Acquisition Radar for Tracking, S-band (SMART-S) Mk2 3-D multi-beam radar with 250 kms range is tuned for medium-to-long-range littoral surveillance.³

Six surface-to-surface cruise missiles (SSM) with canister launchers are reported to be the primary weapon. Although precise nature of these SSMs is still unknown, Turkish media claim that hypersonic P-282 missile integration is expected which are claimed to successfully engage time-sensitive targets and breach enemy's multi-layer defences. In Surface-to-air domain, it could be equipped with Albatros New Generation Surface-to-Air Missile (NG-SAM) system. Two six-cell Guided Weapon System-26 Vertical Launch System (VLS) modules armed with Common Anti-air Modular Missile-Extended Range (Camm-ER) will provide air defence. This missile is said to provide local area defence against a vast spectrum of aerial threats with high single-shot probability and counter-saturation capability. Additionally, point air defence could also be provided by a Close-In Weapon System (CIWS).⁴

In order to combat undersea threats, it may carry contemporary ASW suite. These are outfitted with YAKAMOS-2020 Hull-Mounted Sonar System, which are claimed to operate at high performance over prolonged periods in both shallow and deep waters because of its flexible software design. This sonar is claimed to greatly improve survivability against undersea threats when used with torpedo countermeasures and ADVENT Combat Management System (CMS). 324-mm light-weight torpedoes are capable of engaging underwater threats.⁵ ADVENT CMS uses a mutual engagement capability to respond to demands of dynamic and quickly evolving air-warfare environment. This capability allows for a quick and effective planning for force's coordinated use of air-warfare efficiency with Network Enabled Capability, appropriate resource allocation, and coordination of this planning with other platforms.⁶

Sea trial performance

On May 2025, according to Turkish Ministry of Defence, PNS Khaibar executed synchronised manoeuvres during joint sea trials as part of its Sea Acceptance Tests.⁷ In October 2025, it was reported that it successfully completed live-fire tests where it is claimed that it has precisely struck targets at sea, on land, and air. The ship's 76-mm main gun is said to have directly hit a chosen land target during live-fire testing, while STOP 25-mm remote-controlled stabilised gun system engaged surface targets with comparable accuracy.⁸

Probing Türkiye indigenous claims

Although Türkiye claims that its warships are indigenous, but some of its components are outsourced from abroad. Italian Leonardo's (Oto Melara) 76-mm Super Rapid gun is installed in MILGEM class corvettes. All MILGEM vessels are propelled by a single LM2500 gas turbine in a combined diesel and gas turbine design with two diesel engines supplied by an American company General Electric (GE).⁹ The GE plant in Evendale, Ohio, produces LM2500 gas turbines for PNS Khaibar.¹⁰ Curtiss-Wright, another American company, developed its Aircraft Ship-Integrated Secure and Traverse (ASIST) helicopter handling and tracking system, which guarantees safe landing of helicopters.¹¹

Thales Naval Nederland SMART-S Mk2 air/surface search radar is used for detection and tracking which is from France. British origin twin British Aerospace (BAE) Systems Land and Armament Mk-32 torpedo tubes can launch Mk-46 torpedoes and make its torpedo launching system. Again, two BAE Systems Mk-36 Super Rapid Bloom Offboard Countermeasure launchers might offer it mechanical jamming for IR decoys and chaff.¹²

Looking at the above information it can be seen that Turkey is still far away from being independent in developing its domestic core naval capabilities.

Preliminary threat assessment

In 2023, another client of this corvette, Ukraine, had explicitly feared that because of the ongoing threat posed by Russian fleet, coastal missile systems, and aviation, this ship will not be able to operate outside of its home port with confidence. Open sources claim that Ukraine's Turkish built corvette's weaponry problem was still unresolved back then. Additionally, Ukrainian military sources have expressed concerns regarding this corvette's weapons.¹³ Another issue is with the outsourced nature of core components like gas turbine engine, weapons and sensors which could be stalled due to changing geopolitics.

Questions also remain regarding air defence capabilities of Turkish built corvettes as Ukrainian experts point out that European MBDA Missile d'Interception, de Combat et d'Auto-défense has a far wider range of capabilities than American Rolling Air Missile (RIM)-116, which is currently being fitted in Turkish corvettes. Because the RIM-116 is launched horizontally, it is far less effective against threats that are low flying over its host ship. This creates a sort of safety area where an attacking aircraft can operate without consequence.¹⁴ Independent defence experts have pointed out that even vertical SAMs aren't enough to protect against multiple threats. Single stage booster missile cannot provide protection beyond 100-120 kms. Modern fighter jets at higher altitudes could carry anti-ship missiles which could defeat air defence capabilities of vertically launched SAMs.

Since Pakistan's corvette is expected to be installed with (Camm-ER) built by MBDA for air defence, vulnerabilities will still exist. The usefulness of Camm-ERs in high-intensity scenarios may be limited by their inadequate range and interception speed versus, say, BrahMos's Mach 3 velocity and sea skimming profile. Camm-ERs radar-based systems may also struggle with any stealthy cruise missile.¹⁵ The range of Camm-ER missile is still unknown. A 500 square nautical mile coverage, has been reported. That is fine for a point defence substitute, but MBDA refers to both effectiveness against threats riding on water and air defence at ranges greater than 25 km.¹⁶

Conclusion

The upcoming Pakistan navy's Türkiye built PNS Khaibar's primary offensive weapon configuration like SSMs could be Rocketsan's ATMACA anti-ship missile which is not battle tested anywhere. The Turkish media hype of P-282 hypersonic weapon could be ignored

because Türkiye is far behind in development of such weapons at present due to lack of credible scram-jet engine technology. Further CAMM-ER air defence system will suffer limitations of detection of modern anti-ship weapons with sea-skimming and stealth features. Any X-band radar installed on these MILGEM corvettes will not be able to filter environmental clutter in sea-water conditions which is a complex challenge to any naval warship.

Also, nowadays CIWS onboard are mostly ineffective for large body projectiles with high kinetic strike ability. Further as we observe that sea trial reports did not accurately cover any news of SAM, SSM or VLS air defence firings or target hits, it could be best understood that this corvette is far from being formidable at present. Thus, Pakistan's acquisition of Turkish MILGEM class corvette could increase its Navy's vessel count but will not enhance any credible firepower.

Endnotes

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Uploaded on: 09-02-2026

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