GE Marine to Supply LM2500 Gas Turbine Engines in New Lightweight Composite Enclosure for Turkish I-Class MILGEM



İstif-Class Frigate Project, Photo courtesy of STM

Release from GE Marine

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July 25, 2023, Evendale, OH – GE Marine signed an agreement with TAIS OG-STM İş Ortaklığı in Istanbul, Türkiye, to provide the LM2500 marine gas turbine engine in a new lightweight composite enclosure for the İstif-Class frigates, numbers 6, 7, and 8 in the Turkish MILGEM Project. The lightweight enclosure debuted on the U.S. Navy's USS Santa Barbara in

April. Türkiye’s Navy converted from the steel engine enclosure for the redesigned frigates to benefit from the many features of the one-piece composite enclosure.

Between the Barbaros, Gabya, and İstif class frigates and the ADA class Corvettes, 31 LM2500 marine gas turbine engines currently power 18 Turkish ships. Under this project, the private shipyards of Türkiye will build a frigate class surface combatant for the first time. The ships will be built at Anadolu, Sedef, and Sefine shipyards in 36 months. GE will support this expedited timeline. The new I-Class Frigate will be 10 meters longer than previous models to account for the increased capabilities in weapons systems. One LM2500 will provide 22 MW of power to propel each new MILGEM frigate.

This engine selection builds on the April 2023 announcement of GE Marine’s newest collaboration in Türkiye with TEI (TUSAS Engine Industries, Inc.) as an in-country service provider for the maintenance, repair, and overhaul of GE’s LM2500 marine gas turbines. “We want GE Marine’s strong relationships in Türkiye, along with the new engine selection on the I-Class MILGEM, to demonstrate our commitment to supporting Türkiye’s naval programs, including domestic sustainment of naval capabilities,” said Mark Musheno, Vice President of Sales and Marketing for GE Marine.

GE’s new state-of-the-art composite gas turbine enclosure replaces its steel predecessor. It provides a safer engine room environment, improved access for sailors, and a significant weight reduction for ship designers. Other benefits include:

Reduced engine room noise: 60% (4dBA) less noise than steel enclosure

Cooler engine room temperatures: Enclosure wall temperatures are 25oF to 50oF degrees cooler, approximately 50% less heat is rejected into the engine room.

Superior operational and life cycle benefits: The composite walls are constructed from a single corrosion-resistant piece.

Significant weight reduction: The walls and roof assembly are 2,500 kg (5,500 lbs) lighter, which is a 50% weight reduction, allowing ship designers more flexibility for increased payload, fuel, or systems.

Better access to the engine: Improved crew access to inlet plenum and a lightweight main door for easy handling.

Ease of engine removal/reinstallation: The gas turbines can be removed and reinstalled through the intake path.

The LM2500 is renowned for its reliability onboard 638 naval ships and is the gas turbine of choice for 40 navies worldwide due to its superior performance on diverse military applications, from patrol boats, corvettes, and frigates to destroyers and aircraft carriers. As the new lightweight composite enclosure debut demonstrates, GE Marine offers a wide range of products backed by continual infusion of new technologies to meet ever-changing customer needs.