

**Sea-Air-Space: New Pit-Stop  
Approach Can Cut Engine  
Overhaul from Months to Days,  
FMD Says**



Fairbanks Morse Defense workers overhaul an engine using the "pit stop" method. *Photo credit: Fairbanks Morse Defense*  
Imagine if a Navy ship could pull into a pit stop like a race car, get its engine overhauled and be back on the seas in less

than a month. That's what the team at Beloit, Wisconsin-based Fairbanks Morse Defense (Booth 1537) envisioned years ago, and now it's a reality.

"Maintenance has traditionally taken way too long and cost too much money," said Keith Haasl, FMD's president of service and technology.

Haasl notes that a traditional Navy ship engine overhaul, including disassembly, inspection, repair, and reassembly, can take up to nine months. But FMD's pit-stop approach can take as little as 26 days for ship service generators and 38 days for main propulsion engines.

Haasl said FMD did its first pit stop in early 2024 on a ship service generator. Since then, FMD has overhauled eight generators and three main propulsion engines on landing ship, dock-class vessels using the new approach.

"It's been really successful. The fleet likes it. Our partners at NAVSEA [Naval Sea Systems Command] like it, and we sure like it," Haasl said. "It's revolutionized the way the Navy is doing maintenance and how NAVSEA is structuring their Class Maintenance Plans."

## **Rethinking Strategy**

Basically, FMD's pit-stop approach involves rethinking the entire engine overhaul strategy.

Historically, ship engines have been overhauled using an "open and inspect" method. "It was really like incremental discovery. You open up the engine on the ship, take the measurements, inspect it, write the report, go to the customer for approval, get the replacement parts, install them, and then reassemble the engine," Haasl said. "All of this is going on while there's sanding and painting and welding on the ship, which increases the risk of engine contamination."

The pit-stop approach begins with technicians bringing a standardized kit of original equipment manufacturer parts, which are replaced onsite no matter what the engine's condition. These parts are included in the kit because they're essential to engine performance.

The parts that are removed from the ship's engine are taken to the FMD facility, where they're refurbished, inspected, and certified in a controlled environment. These parts are then used in the next standardized kit for an engine overhaul on another ship. This helps save time and costs by avoiding supply-chain issues and ensuring replacement parts are always available as needed.

The pit-stop approach also reduces engine overhaul time and costs in other ways.

"We're doing work pier side, so there are no docking costs. The costs of parts are significantly lower because we're remanufacturing parts that might have been replaced with new parts under the old method," Haasl said. "All of those efficiencies we can gain are tremendous."