NAWCAD WOLF innovation ensures radar system readiness

Innovation at the Naval Aviation Warfare Center Aircraft Division Webster Outlying Field (NAWCAD WOLF) Air Traffic Control and Landing Systems (ATC&LS) division is saving time and money for the warfighter by providing organic sustainment services for the Navy’s primary Shipboard ATC air surveillance radar system, the AN/SPN-43C, in support of the Naval Air Traffic Management Systems Program Office (PMA-213).

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Faced with diminishing support from the original equipment manufacturer for the aging AN/SPN-43 radar system—a cornerstone of U.S. Navy aircraft carrier operations since the 1960s—NAWCAD WOLF developed advanced in-house capabilities to repair and overhaul critical components. These efforts have addressed obsolescence challenges head-on, keeping the radar system reliable and effective in supporting complex flight operations.

“Ensuring the operational readiness of our critical systems is a top priority for the Navy, and the AN/SPN-43 radar system is no exception,” said Capt. Walter Massenburg, PMA-213 program manager. “The innovative efforts of NAWCAD WOLF exemplify the dedication and ingenuity required to sustain mission-critical capabilities in the face of obsolescence challenges. Their proactive approach not only extends the service life of this essential system but also reinforces the Navy’s commitment to maintaining mission readiness and operational excellence.”

A key element of NAWCAD WOLF’s initiative is the complete overhaul of the AN/SPN-43C pedestal and antenna assembly—a critical subsystem responsible for the precise rotation and stabilization of the radar antenna. Historically a major source of system downtime and maintenance challenges, the pedestal underwent a transformative process involving full disassembly, detailed inspections, repair or replacement of worn components, and reassembly, followed by rigorous testing to ensure peak performance. This proactive maintenance strategy has extended the service life of the AN/SPN-43C, reduced catastrophic failures within the pedestal by 70 percent, and significantly improved system reliability while lowering maintenance costs.

“We continuously refine our processes to increase project efficiency with testing and minimizing outsourcing while

developing methods to keep repairs organic," said AN/SPN-43C government project lead, Tom Ackerson. "With our government team providing organic in-service engineering support, we keep both the repair time and cost low."

NAWCAD WOLF also acquired, at no cost, data rights for vital radar receiver components, enabling the team to independently manufacture, repair and modify these parts. This capability mitigates the risk of obsolescence and ensures a reliable supply of spare components, further enhancing the system's sustainability.

Today, NAWCAD WOLF performs the majority of all repair and overhaul activities for the AN/SPN-43C organically, in-house. This capability reduces reliance on external vendors, shortens turnaround times, and provides greater control over quality and cost.

"The ATC&LS division serves as organic repair depot for 92 items in support of the AN/SPN-43C radar," said NAWCAD WOLF executive director, Blaine Summers. "The ability to repair these items versus procuring new items provides a great cost savings to PMA-213 and the Navy."

By sustaining the AN/SPN-43C's operational readiness, NAWCAD WOLF ensures the system remains effective until its planned replacement, the AN/SPN-50, is fully fielded in the coming years.