The Ship Motion Platform at Naval Air Warfare Center Aircraft Division Lakehurst can recreate sea conditions up to sea state 4 with wave heights of 4 to 8 feet. It can also be used to evaluate "Beyond-Visual Line of Sight" operations, flying a UAV to the limits of the Lakehurst airspace while being controlled from the SMP test site. (U.S. Navy photo)

Lakehurst Announces Capability Expansion At Ship Motion Platform

Joint Base McGuire-Dix-Lakehurst • Published September 3, 2024
www.navair.navy.mil/news/Lakehurst-announces-capability-expansion-Ship-Motion-Platform/Tue-09032024-1447

After two years of establishing the core capabilities of the Ship Motion Platform (SMP) at Naval Air Warfare Center Aircraft Division (NAWCAD) Lakehurst, test engineer Rob Pellegrino said he and his team have expanded and integrated the site capabilities with the surrounding test sites to provide a multifaceted development tool for military and commercial customers.

Since its commissioning in 2020, the SMP has been used to develop and train Unmanned Aerial Vehicles (UAVs) for launch and recovery to and from ships at sea. The hulking metal structure, complete with hydraulic pumps and conex boxes mounted on top, allows the team to simulate the movement of both aircraft carriers and guided-missile destroyers in waves up to sea state 4 with wave heights of 4 to 8 feet.

"When we talk about the Motion Platform, I always say it is quantifiable, repeatable and tailorable," Pellegrino said. "Now, the idea isn't just land to and from the Ship Motion Platform to mimic and teach landings but to execute multipurpose missions within Lakehurst. It's not just flying to and from the ship. If you want to figure out a ship-to-shore scenario, we can utilize our sites around the platform, and we can fly to different locations and create a mini mission within Lakehurst and execute that."

The SMP team's latest work, resulting in an expanded Concept of Operation (CONOPS), aims to allow UAVs greater flexibility in and around the Lakehurst test sites for a wider variety of mission replication.

Pellegrino was one of the key people who brought the SMP from Aberdeen Proving Ground to Lakehurst. The goal was to provide a place to repeatedly and reliably test Unmanned Air Vehicles (UAVs) to see how they would work on a ship at sea.

The platform can replicate the pitch, roll and heave of a ship at sea and hold a static tilt as part of the testing, saving customers valuable time and money.

After their initial UAV tests in 2022, the SMP team conducted internal reviews to analyze the site performance and identify areas where its mission and performance could be improved.

A year later, the team leveraged their partnership with the Air Test and Evaluation Squadron (UX-24) and worked with mission safety and JB MDL air traffic control to develop and ultimately execute a plan to evaluate "Beyond-Visual Line of Sight" operations, flying a UAV to the limits of the Lakehurst airspace while being controlled from the SMP test site.

This progress expanded UAV operation into the larger test department airspace, including successfully landing a UAV launched from the SMP test site to Lakehurst's Runway Arrested Landing Site (RALS) test runway.