

Unmanned Capabilities Front and Center During Naval Exercise



An ADARO unmanned system interacts with the Navy's newest Independence-variant littoral combat ship USS Oakland (LCS 24) during U.S. Pacific Fleet's Unmanned Integrated Battle Problem (UxS IBP) 21. UxS IBP 21 integrates manned and unmanned capabilities into challenging operational scenarios to generate warfighting advantages. *U.S. NAVY / Mass Communication Specialist 2nd Class Alex Perlman*

ARLINGTON, Va. – Chief of Naval Research Rear Adm. Lorin Selby declared “the state of our naval unmanned capabilities is truly unmatched,” and vowed continued support for the nation's ongoing transition to a hybrid manned-unmanned force in the future, the Office of Naval Research (ONR) Corporate Strategic Communications said in an April 22 release.

Speaking during a visit to San Diego for the U.S. Pacific Fleet-led Unmanned Integrated Battle Problem 21 (IBP21), Selby said the exercise, which puts into operation different unmanned vehicles “Above the sea, on the sea and below the sea,” demonstrates that America's growing focus on autonomous capabilities is showing impressive results.

“We are not yet where we want to be,” said Selby, “but we are getting closer. As our potential adversaries go all-in on unmanned platforms, we must and will maintain a dominant force that can meet and defeat any challenge.”

During the exercise, a large number of multi-domain unmanned platforms – including unmanned aerial, surface and underwater vehicles (UAVs, USVs and UUVs, respectively) – are being put into real-world, “blue-water” environments, working in sync with manned platforms in actual combat drills designed to

support Pacific Fleet objectives in the Indo-Pacific region.

Many of the platforms in IBP21 are supported by the Naval Research Enterprise (NRE), which Selby commands. Comprising the ONR; the Naval Research Laboratory; and the Office of Naval Research Global (ONR Global), the NRE is tasked with providing the capabilities and long-term vision ensuring U.S. naval dominance today and into the future.

While many platforms in IBP21 are classified, officials are highlighting the Medium Displacement Unmanned Surface Vehicles (MDUSV) Sea Hunter and its new sister craft, Sea Hawk, as well as a long-endurance UAVs, all of which can be used for surveillance, anti-submarine warfare and other missions.

Sea Hunter is already a proven player in the Navy's unmanned portfolio. In 2019, the vessel completed an autonomous trip from San Diego to Pearl Harbor, a distance of over 2,000 nautical miles, and returned, demonstrating credible and relevant naval capability.

Both MDUSVs can host multiple payloads and perform multiple missions to support Sailor and Marine objectives, and both are seen as game-changers.

Indeed, the performance of many new unmanned technologies are leading the Navy and Marine Corps to rethink concepts of operations, as noted in the widely publicized naval document "Unmanned Campaign Framework," recently released by the Department of the Navy.

The Unmanned Campaign Framework notes autonomy will complement, not replace, manned assets, and will provide warfighters far more options in combat.

Dr. Marcus Tepaske, who leads ONR Global's Experimentation and Analysis program and is coordinating many platforms in use during IBP21, confirmed naval unmanned capabilities are accelerating. He said these kinds of large-scale exercises are

essential to ensure what works in theory will work in the fleet.

“The best test you can put a technology through is one where the warfighters get to work with it,” Tepaske said. “Real-world applications are messier, dirtier, wetter and absolutely more beneficial than anything we can test in a lab. “Getting the warfighters’ feedback on using these unmanned systems will be one real measure of success for IBP21.”

Coordinating multi-domain manned and unmanned teaming efforts with so many different systems is in itself a daunting challenge. That job is being led by Pacific Fleet crews aboard USS Michael Monsoor (DDG-1001), one of three Zumwalt-class guided missile destroyers with unique advanced capabilities for command and control.

Ultimately, experts say, autonomous systems are here to stay.

Dr. Jason Stack, ONR’s technical director and autonomy lead, is encouraged by the forward thinking and real-world forward movement represented by IBP21. Intelligent autonomous systems, he said, will be an essential part of the Navy and Marine Corps in the near term.

“When you read the Unmanned Campaign Framework, the serious challenge we face from well-funded, highly-motivated, competitive naval forces around the world – all accelerating their autonomous capabilities – is clear,” he said.

Stack noted that the U.S. and allied partners have a more robust commitment to the ethical use of unmanned systems and artificial intelligence when compared to some other nations.

“Our goal is to operationally integrate and continuously improve the types of intelligent and autonomous technologies that Pacific Fleet is testing right now,” he said. “We will do this ethically and responsibly by always ensuring our Sailors

and Marines can exercise the appropriate levels of human judgement over our machines. This will be our enduring competitive advantage.”

The IBP21 exercise is the initial step in the Navy’s commitment to operational experimentation with autonomous systems in the fleet. Following its completion, the Navy and Marine Corps will assess what worked, what didn’t, and how to accelerate unmanned capabilities for the fleet and force.