USS John P. Murtha to Support NASA’s Artemis II Mission

Sailors assigned to amphibious transport dock ship USS John P. Murtha (LPD 26) and NASA engineers prepare to release a crew module test article from the ship’s well deck, Jan. 26, 2026. John P. Murtha is underway in the U.S. 3rd Fleet area of operations performing a just-in-time training in support of U.S. Space Command’s human space flight recovery mission to retrieve NASA’s Artemis II crew and spacecraft following their splashdown in the Pacific Ocean. (U.S. Navy photo by MC1 Jomark A. Almazan)

From Petty Officer 1st Class Jomark Almazan, April 6, 2026

SAN DIEGO – Amphibious transport dock ship USS John P. Murtha (LPD 26) is slated to serve as the recovery ship for the Orion spacecraft and its crew upon their return from the historic Artemis II mission.

The ship is named in honor of the late and long-serving Pennsylvania Congressman John P. Murtha.

“It is a fitting tribute to Congressman Murtha, who dedicated his life to serving our nation, that the ship bearing his name will be integral to this historic moment in space exploration,” said U.S. Navy Capt. Erik Kenny, commanding officer of John P. Murtha. “He was a champion for our military and a visionary. We are honored to carry on his legacy by supporting NASA and the Artemis II mission.”

The Artemis II mission is the first crewed flight of NASA’s Space Launch System (SLS) rocket and Orion spacecraft, sending four astronauts on an approximately 10-day journey that will take them beyond the Moon. This mission will mark humanity’s first crewed voyage to the vicinity of the moon in over 50 years.

Upon completion of their mission, the Orion capsule will splash down in the Pacific Ocean, where John P. Murtha and its crew will be prepared to recover the astronauts and the spacecraft.

The U.S. Navy’s amphibious transport dock has unique advantages, including a well deck, helicopter pad, onboard medical facilities, and communication capabilities needed to support the mission. The platform gives NASA the ability to recover the Orion space capsule and collect critical data to help ensure it’s ready to recover the astronauts and capsule during future Artemis missions.

MH-60S Sea Hawk helicopters from Helicopter Sea Combat Squadron (HSC) 23 will provide imagery support for NASA by tracking the Orion space capsule as it travels through Earth’s atmosphere. After splashdown, HSC-23 helicopters will recover the astronauts once they exit the capsule and bring them to the ship for assessment and then transport them to shore.

Explosive Ordnance Disposal Group (EODGRU) 1 will provide Navy divers to recover and transport the Orion space capsule from the ocean to the ship’s well deck. Navy divers are experts in mobile diving, salvage, towing, and open water, small boat operations. In addition to the Navy divers, EODGRU-1 will support the recovery mission with a dive medical team to assess and assist the astronauts following their exit from the capsule.

Artemis II is NASA’s first crewed mission in a series of missions around and to the lunar surface where crew can build and test systems needed to prepare for the challenge of future missions to Mars. The mission launched from NASA’s Kennedy Space Center in Florida, April 1, with four astronauts onboard.

The (Other) Manhattan Project: Forgotten Island Had Front-Row Seat to Military History

The base is all that remains of the once-grand House of Taga. *Photo Credit: Nicholas Monck*

On a historical impact per square mile basis, few places on earth rival the island of Tinian. Almost completely forgotten today, this small, isolated speck of land in the Northern Mariana Islands – located about 125 miles north of Guam – has been the site of some of the most consequential events in human discovery, construction and annihilation.

Since first being inhabited 5,000 years ago, Tinian has served as a stopping point for explorers and a launch pad for invaders. Though now often relegated to a footnote in history, Tinian's story offers vital lessons to the U.S. Navy as it reorients for an era of great power competition and works to counter an increasingly aggressive China in the Indo-Pacific.

One of the earliest oceanic landmasses to be inhabited, seafaring people, likely originally from Southeast Asia, traveled thousands of miles across the open ocean in outrigger

canoes and arrived in the Mariana Islands around 3000 BC. Their settlements on Tinian are some of the oldest prehistoric sites in the United States and its territories. The Portuguese explorer Ferdinand Magellan is believed to have spotted Tinian during his 1521 circumnavigation of the globe. Magellan elected to bypass Tinian and instead landed on Guam after spending nearly 100 days at sea. Because of a misunderstanding of the size of the globe, he had expected the passage from South America to Asia to take three or four days and his crew was dehydrated and starving when they finally reached the Mariana Islands. The crossing was so treacherous that Antonio Pigafetta, the expedition's official chronicler, wrote "I believe that nevermore will any man undertake to make such a voyage."

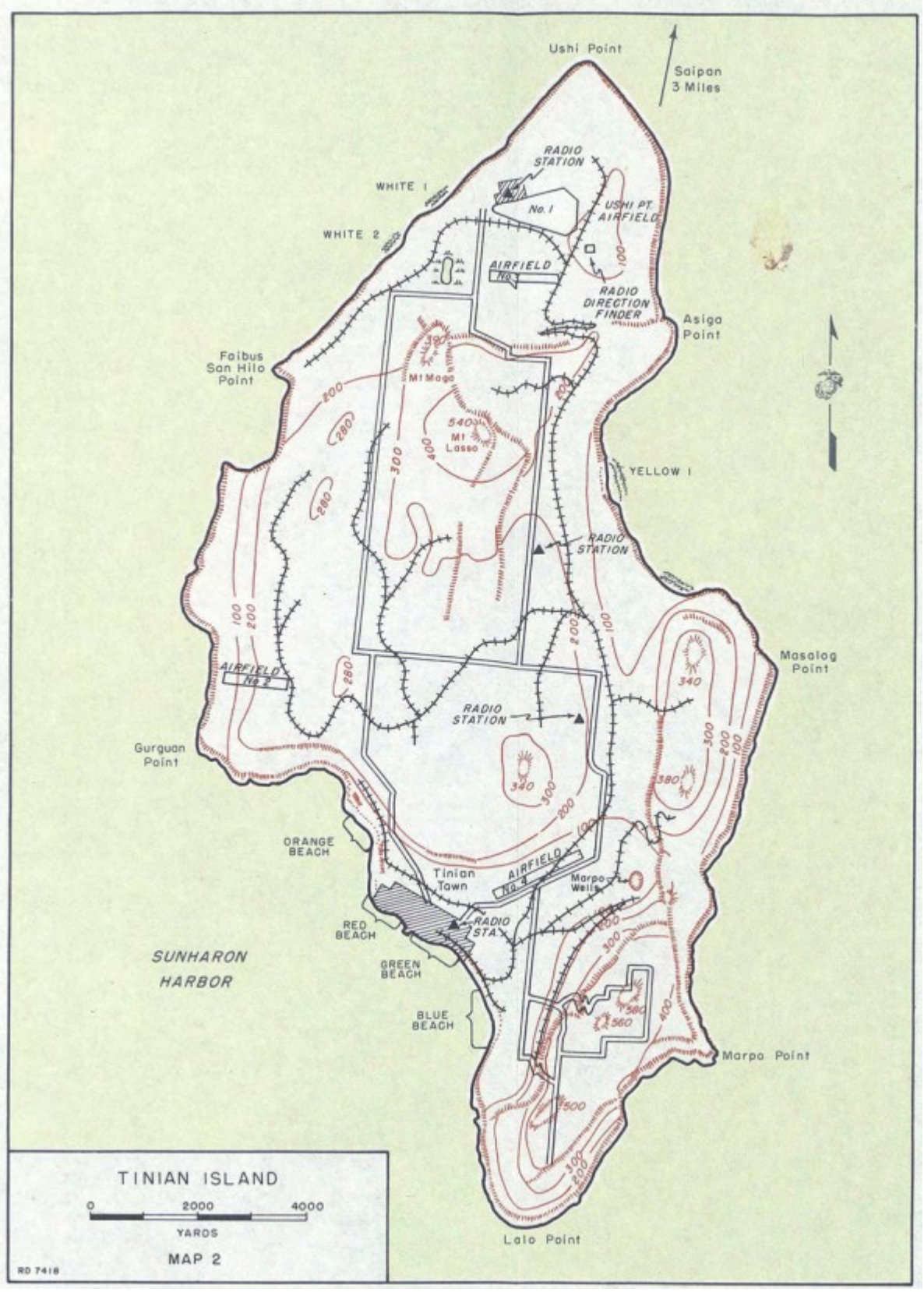
Despite the hardships of the initial voyage, Spanish explorers returned within five years and the 1529 Treaty of Zaragoza eventually placed the islands within Spain's sphere of control. Permanent Spanish settlement, however, did not begin until 1664, led by Jesuit priests and soldiers who arrived in Guam in 1668. Two priests traveled onward to Tinian, likely becoming the first Europeans to step foot there, but their presence inflamed tribal conflicts that forced a retreat five years later. Spain eventually secured the Mariana Islands in 1698 and forcibly removed the native population of the northern islands to Guam. Consequently, Tinian remained largely uninhabited for over a century, save for brief occupations by the crews of passing English warships in 1742 and 1765.

In April of 1898, following the sinking of the USS Maine in Havana Harbor, the U.S. declared war on Spain. The cruiser USS Charleston, under the command of Captain Henry Glass, was dispatched from California to Manila to support Commodore George Dewey's Asiatic Squadron in its attack on the Spanish-held Philippines. While resupplying in Honolulu, Glass received orders to detour to Guam and "use such force as may

be necessary to capture the port of Guam, making prisoners of the governor and other officials and any armed force that may be there. … These operations at the Island of Guam should be very brief and should not occupy more than one or two days.”

When Glass reached Guam on June 20, 1898, he found the island only lightly defended. The Spanish, unaware war had been declared, mistook his cannon fire on the fort at Santa Cruz as a military salute. Hopelessly outmatched, the Spanish governor surrendered without bloodshed the next day to two junior officers and four soldiers from the Charleston who had been sent ashore by Glass. The island was left under the authority of Francisco “Frank” Portusach, the only American citizen then residing in Guam, and the Charleston sailed onward to Manila.

While Spain ceded Guam to the U.S. in the Treaty of Paris, Tinian and the northern islands were left under Spanish rule in an apparent American oversight. Having lost the principal island, Spain saw little reason to keep the rump of its Micronesian possessions and quickly sold the lossmaking islands to Germany for 25 million pesetas (equivalent to $160 million in 2026). Nonetheless, they continued under the local control of Spanish landowners and the number of German nationals throughout the entire Mariana territory never reached double digits.



Landing Beaches and Japanese development on Tinian by 1944. *Image credit: U.S. Marine Corps*

Japan Takes Over

At the start of World War I, Japan captured the German-held Marianas pursuant to a secret agreement with Britain.

Following the war, the League of Nations formally appointed Japan to manage the islands as part of the South Seas Mandate. Under Japanese administration, Tinian was transformed into “Sugar Island,” featuring a massive sugar-plantation economy, 40 miles of railroad track and a mill capable of producing 1,200 tons of processed sugar daily.

In the opening days of World War II, Tinian remained relatively peaceful and was not garrisoned by the Japanese military. By 1943, American military leaders recognized the strategic importance of capturing Tinian to establish heavy bomber bases for the strategic bombing of the Japanese home islands. This objective was incorporated into Operation Forager, a massive undertaking involving 535 ships and 125,000 combat troops. Before the invasion could begin, the U.S. Navy neutralized the Japanese fleet in the decisive Battle of the Philippine Sea, famously known as the “Great Marianas Turkey Shoot,” where American pilots, submariners and gunners destroyed approximately 476 Japanese aircraft in two days.

Even with the Japanese fleet in shambles, Tinian still possessed formidable natural obstacles to a successful amphibious assault. The island was almost completely surrounded by cliffs ranging from six to 100 feet in height. Only one beach, near the main town in the southwestern part of the island, was large enough to support a full-scale landing. Two much smaller beaches in the north were judged too narrow to support a major invasion. The Japanese, once they belatedly realized the strategic vulnerability an American-held Tinian presented to their home islands, concentrated their defenses on the larger southern beach, fortifying it with mines and entrenched gun positions with interlocking fields of fire.

Following the Battle of the Philippine Sea, the Japanese on Tinian did not have to wait long for the expected invasion. The U.S. 4th Marine Division landed on Chulu Beach in Tinian’s northwest corner on July 24, 1944. Before the landing, the decision to use the northern beaches was the subject of

fraught controversy between the Marines and Navy. Vice Admiral Richmond Turner, in charge of the Forager invasion fleet, believed them too small to support the invasion force and flatly refused to land troops on them. Marine Lieutenant General Holland Smith, who led the ground element, characteristically retorted, “You’ll land any goddamned place I tell you to.” The Marines won and Smith ultimately was vindicated. By Aug. 1, the island had been declared secure. Admiral Raymond Spruance, 5th Fleet commander, described the invasion as “probably the most brilliantly conceived and executed amphibious operation of World War II.”

Even in the midst of the seven-day battle, Navy Seabees began developing Tinian for offensive operations. The island was roughly the shape and size of the island of Manhattan, so geographical place names were borrowed and streets were laid out similar to New York City’s grid. The former Japanese townsite near the southwestern end of the island became “the Village” after Greenwich. The two major roads which ran the length of the island were named Broadway and 8th Avenue. A large undeveloped area in the center was called Central Park.

The Seabees constructed two massive runway complexes with six 8,500-foot runways, creating the world’s busiest airfield by 1945. Between March and August 1945, daily bombing raids of more than 100 planes would be launched from the island. Tokyo, Osaka, Kobe, Nagoya and Yokohama would all be decimated by Tinian-based planes of the XXI Bomber Command. The greatest destruction, though, occurred on Aug. 6, 1945, when the B-29 Superfortress Enola Gay took off from Runway Able and dropped the first nuclear weapon used in combat on Hiroshima. Three days later, Bockscar, another B-29 bomber, would do the same to Nagasaki, killing a combined 200,000 people and bringing an end to the most devastating war ever waged.

Following Japan’s surrender, the military rapidly withdrew from Tinian, turning the island into a ghost town virtually overnight. In 1977, the Northern Mariana Islands approved a

constitution and established itself as a commonwealth in "political union" with the U.S. The federal government maintained control of the majority of Tinian's acreage via a lease agreement that made the land available for the military's use. These days, the single gas station on the island closes early on Sunday afternoons and only a handful of passengers pass through the cavernous, partially abandoned, airport terminal each day.

The bomb pit that held the "Little Boy" bomb before it was loaded onto the Enola Gay. *Photo credit: Nicholas Monck*

Lessons for Today

Even as it continues to be reclaimed by nature, Tinian still offers pertinent lessons to today's military leaders. A confrontation with the People's Republic of China, much like Japan 80 years ago, will require a complex system of forward bases to stage equipment and personnel. American military planners have noted "the Chinese concept of defending along a

first island chain and a second island chain is eerily reminiscent of Japan's defensive strategy in World War II."

The difficulty of defending remote forward bases across the Pacific remains as true today as 1941. Just as the Japanese Combined Fleet was able to launch a surprise attack against Pearl Harbor and capture Guam, the Philippines and Wake Island in World War II's opening days, China's DF-26 intermediate-range "Guam Killer" ballistic missile and DF-ZF hypersonic missile threaten United States bases in Guam, Japan and South Korea. With thousands of missiles and aircraft capable of targeting Guam, completely blocking a surprise attack has been described as "infeasible." In the days, hours or minutes before an attack, high-value assets will need to be dispersed to survive the initial barrage of missiles. Once again, Tinian may prove essential to control of the battlespace in the Western Pacific.

In his April 2023 remarks to the House Armed Services Committee, Admiral John Aquilino, then-commander of U.S. Indo-Pacific Command, listed "distributed force posture" as his number one priority because it "supports all elements of the joint force, enables our ability to seamlessly operate with our allies and partners, and demonstrates U.S. commitment to a stable and peaceful security environment … a widespread and distributed force posture west of the IDL [International Date Line] gives us the ability to more easily exercise and operate with our partners, increases survivability, reduces risk and sustains the force with a network of stores, munitions, and fuel to support operations in a contested environment." Expanding the Department of Defense's footprint on Tinian is a core component of fulfilling that theater mission.

The successful landing on Tinian also demonstrated the importance of integrated Navy and Marine Corps operations that included land, air and even long-range ground artillery components. Eight decades ago, strong inter- as well as intra-service operational capabilities were necessary to defeat the

Japanese. These cooperative capabilities remain essential to the Department of Defense's ability to project power across the Pacific. A small Marine unit equipped with long-range anti-ship missiles placed on Tinian or another Mariana Island could control thousands of square miles of waterspace, denying the Chinese Peoples Liberation Army Navy the ability to conduct blue water operations in the Western Pacific.

Much like WWII began with Japan's attempt to decapitate the U.S. Pacific Fleet, the next battle for control of the Indo-Pacific may start with attacks on critical naval installations in Guam, Okinawa and Japan. Building dispersed, survivable infrastructure in places like Tinian will be decisive in preventing a first strike from eliminating the U.S. Navy's ability to effectively operate in the South China Sea, the Sea of Japan or the Philippine Sea. In Europe, Russia's invasion of Ukraine has brought a return to trench warfare not seen for over a century. In the Pacific, an island-hopping campaign, much like Admiral Chester Nimitz's, Admiral William Halsey's, and General Douglas MacArthur's during World War II, may be required to secure supply lines to regional partners and maintain forward bases during the next conflict. Once again, Tinian could be the linchpin to American control of the Western Pacific.

Today, Tinian is virtually abandoned and difficult to get to. A skeleton of its former self, trees sprout through the roof of the old Japanese Communication Building, visitors can drive on the weed-strewn Runway Able, and only the foundations remain of the Army hospital's vast wards. The island has become a living legacy to the millennia of people who have gone before us and a haunting reminder of the human and environmental impact of war. The lessons Tinian offers – of exploration, human endurance, and sacrifice – aren't just for history books, but continue to offer value to today's, and tomorrow's, Navy.

Lieutenant Nicholas Monck is an Assistant Professor of

Military Law at the United States Naval Academy. He has previously been stationed in Hawaii and Guam. The views expressed in this article are those of the author and do not reflect the official policy or position of the U.S. Naval Academy, the Department of the Navy, the Department of Defense or the U.S. government. This article previously appeared in the February-March issue of Seapower *magazine.*

‘Let Foreign Yards Build U.S. Navy Auxiliary and Service Ships Now’

Military Sealift Command's newest fleet replenishment oiler, USNS Lucy Stone (T-AO 209), slides down the rails, and into the San Diego Bay, following its christening at the General Dynamics NASSCO shipyard in San Diego in 2024. *Photo credit: Military Sealift Command Pacific | Sarah Cannon*

There is much current discussion about having foreign shipyards build U.S. Navy warships as a way to increase production and fleet numbers. That sounds good on paper, but if the target is combatant ships, then there will be significant challenges.

First, U.S. Code (10 USC 8679 of 1993 states, "no vessel to be constructed for any of the armed forces, and no major component of the hull or superstructure of any such vessel, may be constructed in a foreign shipyard," unless a presidential waiver in the interest of national security is granted. Even with such a waiver in hand, every nation builds ships to their own standards and reaching commonality, even among close allies, has been historically difficult. The recent Constellation-class frigate debacle exemplifies some of the difficulties that foreign shipbuilders have faced in getting a ship to the U.S. Navy standard, even when such ships are being constructed in the United States. And few if any recent foreign built surface combatants have been actually tested in combat.

Fortunately, there is a U.S. market where foreign shipbuilders can immediately have impact, and that is the long list of badly needed auxiliary and service vessels that the U.S. Navy has also neglected building over the last 40 years; to include tenders, repair ships, hospital vessels, icebreakers and command ships. Building these units will allow foreign shipbuilders to develop the necessary experience to later compete for other U.S. Navy designs but the challenges with combatant warships will persist.

National standards for warship construction vary, and even relatively close allies such as those in NATO have experienced

challenges in creating common warship designs. Several attempts have been made over the last 60 years to create a common frigate design which all NATO nations might embrace.

The first of these began with a 1968 working group to build a common antisubmarine warfare frigate for the alliance. There were numerous arguments, however, over what systems the NATO frigate would incorporate, and which nations would provide them. The proposed "Type 70" NATO frigate became eight different national designs, with Belgium, the United Kingdom, France, West Germany, the Netherlands, Denmark, Italy, and the United States all pursuing different specifications. The 1990s saw another attempt to create a common NATO frigate, which also foundered on differing weapons outfitting and missions. Begun in January 1988, eight nations (U.S., U.K., Spain, France, Italy, Canada, Germany, and the Netherlands,) again tried to combine their national frigate requirements. The United States dropped out early in the process, with the U.S. Surface Combatant Force Requirement Study stating there was no need for a new U.S. frigate design, leaving the FFG-7 Oliver Hazard Perry class to soldier on into the 2010s. The British, French and Italians formed the "Horizon" program that ultimately produced air defense destroyers rather than low-end frigates, with the British breaking off of the group to produce what ultimately became the Type 45 destroyer.

Learning Priorities and Concepts

Getting navies to agree on common components is hard, and even when one navy buys another navy's ship, with a supposedly agreed design, the results can still be mixed. In the early 1990s the U.S. purchased the Italian navy's Lerici-class coastal mine hunter design, which became the Osprey class in U.S. service. While there is anecdotal evidence the ship's Voith Schneider propeller system, a major change from the Italian parent design, was not well received by U.S. Navy Sailors and officers, the ships were built and commission as planned and served well until retired (with less than 10

years’ service in some cases) in the mid-2000s to make way for the planned mine warfare capabilities of the littoral combat ship.

The problems of the Constellation-class frigate, and its alleged 85% deviation from its Italian/French FREMM design, are well known and need not be belabored. The FREMM has been a very successful design for the Italian, French, Tunisian and Algerian navies, but the vast number of changes imposed on the design by the U.S. Navy hints at the very different idea of what elements of ship design characterize a U.S. frigate. U.S. Naval Sea Systems Command (NAVSEA) representatives would need to monitor every step of design and construction as they do for ships built in the United States. It would take time for each side (foreign shipbuilder and NAVSEA) to learn the other’s priorities and operating concepts. The practicalities of that level of oversight are likely to make current standards impossible to guarantee.

Classification would be another issue even with a presidential waiver to build overseas in hand. Will large numbers of foreign shipbuilders need U.S. background checks and/or security classification to work with a U.S. surface combatant build? If no, would large numbers of U.S. workers need to move to foreign yards, probably with appropriate language expertise to work within an unfamiliar foreign shipyard environment? Such special considerations would need advanced coordination before any shipbuilding takes place and are likely to involve increased costs. Overlay the complexities of Union acquiescence and the difficulties fall into sharper focus.

The habitual relationships developed during associations between U.S. shipbuilders and the U.S. Navy contribute to generally a smooth building organization, notably in mature U.S.-design aircraft carrier, submarine, destroyer and amphibious vessel building programs. Regardless of other shipbuilding challenges with the littoral combat ship and the Constellation-class frigate, U.S. warships have performed to

design in naval combat in the Red Sea and other parts of the globe.

While there has not been sustained, high end naval warfare since 1945, few navies other than the United States Navy have engaged in anything approaching World War II combat. U.S.-built ships such as the Perry-class frigates Stark and Samuel B. Roberts, and the Arleigh Burke-class destroyers Cole, Fitzgerald and John S. McCain, all suffered significant battle or collision damage and survived to be repaired and rejoin the active fleet. Expert U.S. Navy damage control provided by well-trained, brave, and resolute U.S. Navy Sailors contributed to the saving of all these ships, but so too did their robust construction and durability in operations. Any foreign-built, U.S. Navy combatants would need to equal these high standards. Could they?

Hybrid Methods

This is not to suggest foreign yards could not make contributions to U.S. warships. There are some hybrid methods through which vessels can be partially built in foreign shipyards and then moved incomplete to a U.S. naval or civilian shipyard for final outfitting of government-furnished equipment. Australia's Landing Ship, Helicopter Dock (LHD) Canberra class of two ships (Canberra and Adelaide) were built as a joint project between Navantia shipbuilding (Spain) and then-Tenix Defence (now part of BAE Systems) from 2007-2015. Navantia produced the hull of the ship and associated machinery up to the flight deck, while BAE systems completed what was termed the "Australianization" of the ships and its supply chain systems after the hulls were moved from Spain to Australia via heavy-lift vessel.

Sweden similarly had its new intelligence gathering ship HSwMS Artemis partially built in the Polish Nauta shipyard, but the vessel was delivered earlier than planned due to business issues within the Polish yard and finished by Sweden's only

naval yard operated by Saab Kockums, with assistance from Polish shipworkers working at the Swedish yard. While this was not the intended plan to complete the vessel, it is an example of primary construction by a foreign yard that was finished in the vessel's own flag state.

These examples illustrate the challenges of building combatant ships of any navy in a foreign shipyard. It's not "mission impossible," but there are enormous challenges to overcome before such construction can take place. In the meantime, the United States Navy has significant requirements for its long-neglected service fleet and combat logistics force that can be met by foreign shipyards. The U.S. has purchased logistics vessels from other nations in the past, and much of the construction of tenders, repair ships, hospital vessels, and command ships could, like the Australian LHD vessels, be built largely in foreign yards and then outfitted as U.S. or Military Sealift Command ships in U.S. shipyards. Those ship types are good starting points for foreign yards seeking U.S. navy – specifically Military Sealift Command – business.

Projecting Power in Contested Regions: Marine Corps' EABO Moves from Paper to Reality

U.S. Marine Corps Pfc. Aiden Mcmahon carries an M224 60mm mortar during a field training exercise at the Central Training Area, Camp Hansen, Okinawa, Japan, May 14, 2025. The FTX allowed Marines to build tactical proficiency in support of expeditionary advanced base operations. *Photo credit: U.S. Marine Corps | Lance Cpl. Rodney Frye*

The Expeditionary Advanced Base Operations (EABO) concept debuted in 2019 as a new strategy for the U.S. Marine Corps to fight not only with the support of naval forces but also to defend and support those forces in turn, coordinated operations that project and hold power from sea to shore in contested littoral regions.

In a sense, the time honored-quip that Marines “aren’t retreating, just attacking in a different direction” reflects a new capability to attack in any direction from any island chain or coastline.

In March 2019, Marine Corps Commandant General Robert Neller and Chief of Naval Operations Admiral John Richardson jointly announced the development of the EABO strategy as a way to

hold a contested region and dissuade a potential adversary from detecting, much less engaging, in an area where flexible mobile bases would be an elusive target with high-tech capabilities.

Neller and Richardson approved and signed the previously classified Concept for Expeditionary Advanced Base Operations, beginning a development that in the past seven years has rapidly progressed from words on paper to hands-on exercises and innovations in the maritime environment.

The initial blueprint for the evolving concept was the Marine Corps' Tentative Manual for Expeditionary Advanced Operations, followed by a second edition in March 2023. The vision of the two service chiefs is described in the 134-page manual, which includes "a foundational naval concept to address challenges created by potential adversary advantages in geographic location, weapons system range, precision and capability," while also "integrating Fleet Marine Force (FMF) and Navy capabilities to enable sea denial and sea control, and support sustainment of the fleet."

EABO on the Move

The U.S. Navy has had the Marine Corps' back for more than 80 years of expeditionary warfare in the Pacific, but with EABO the Corps holds much more than the high ground. Instead, the vision is to cover an extensive, spread-out littoral region of coastline, island and choke points with advanced technology that can strike not only surface and aviation targets but also can direct surface forces on incoming threats. The concept also calls for quickly packing up and redeploying to a different austere location with equal firepower and air assets defending against aggressors who might not know where the Navy-Marine Corps team is.

Recent exercises halfway around the globe in the High Countries like Denmark demonstrated how NATO countries can

work in concert with Marines to quickly set up bases with advanced equipment airlifted onto remote fields with short runways and minimal facilities.

High Countries were an apt description for Marine Corps Europe taking part in a Norwegian-led Arctic operation that took place from Sept. 1-3, 2025, the latest test of Expeditionary Advance Based Operations. It demonstrated that NATO Allied forces from the United Kingdom Royal Air Force and Norwegian armed forces could work alongside Marines in a first-of-its kind mission to quickly insert military assets to a remote and austere location.

The prime focus of the operation was to practice real-world NATO sea denial and maritime domain awareness capabilities. In turn. the operation helped contribute the ability to quickly respond and defeat any crisis or threat to NATO allies.

The deadliest threat to adversary surface combatants was also tested with rapidly deployed Light Tactical Vehicles (LTVs) airlifted as a stand-in for launch bases of the U.S. Marine Corps special weapon for littoral regions and choke points, the Navy-Marine Expeditionary Ship Interdiction System (NMESIS), pronounced “Nemesis.”

The Marines also tested NMESIS anti-ship missile deployments earlier in the year in arguably the most highly contested area of future conflict, the Luzon Strait, a choke point for China to wage war against Taiwan and threaten merchant shipping.

The lethal component of the unmanned mobile launcher gives Marines the ability to sink warships and other maritime targets from land, one more aspect of the EABO doctrine.

U.S. Marine Corps Sergeant Brandon Arey, a Light Armored Reconnaissance Marine with White Platoon, Bravo Company, 2nd LAR Battalion, 2nd Battalion, 6th Marines, throws a Puma RQ-20B drone into flight during Expeditionary Advanced Base Operations aboard Marine Corps Base Camp Lejeune, Dec. 6, 2021. *Photo Credit: U.S. Marine Corps | Cpl. Armando Elizalde.*

Back to the Future

"Hit 'em where they ain't" was the Korean War motto of General of the Army Douglas MacArthur as he pulled an end run against Chinese and North Korean forces nearly encircling the South Korean capital of Seoul. EABO does something similar but more to the tune of, "Where we ain't you'll never know until it's too late."

The different between the classical island-hopping expeditionary operations and Expeditionary Advanced Base Operations is summed up on the Marine Corps website: "EABO support the projection of naval power by integrating with and supporting the larger naval campaign. Expeditionary operations imply austere conditions, forward deployment and projection of

power. EABO are distinct from other expeditionary operations in that forces conducting them combine various forms of operations to persist within the reach of adversary lethal and nonlethal effects."

All three Marine Expeditionary Forces have conducted exercises using the Stand-In Force concept and EABO in multiple regions globally.

"Our two Marine Littoral Regiments are reinforcing the Marine Corps' Force Design vision for distributed, lethal, maneuverable and purpose-built formations in the Indo-Pacific," said Marine Corps Combat Development Command's Lieutenant Colonel Eric Flanagan.

"Sustaining Marines in contested environments is just as critical as sensing the enemy or maintaining command and control. The Marine Corps is shifting from traditional supply chains to a more agile, resilient sustainment network – one designed to maneuver under threat, reinforce dispersed forces, and sustain operations across the vast distances of the Indo-Pacific," Flanagan said.

The U.S. Navy and Marine Corps are addressing a key gap in the Indo-Pacific by developing the Medium Landing Ship (LSM), designed for enhanced mobility, beach access and sustainment in contested littoral environments.

As part of this effort, the Navy has selected the Damen Naval Landing Ship Transport 100 (LST 100) design as the basis for the LSM program. The non-developmental design will reduce cost, schedule and technical risk. Feeling the need for speed, both the Navy and Marine Corps are eager for the urgently needed capability to reach the fleet thanks to accelerated timelines made possible with the proven design.

Critical Enablers

The rapid move from 2019 theory to present-day reality

includes the just-completed 2025 Aviation Plan, which provides a renewed focus on distributed operations and emphasizes sustained operational effectiveness in contested environments through enhanced logistics, sustainment strategies and expeditionary advanced base concepts.

Flanagan, from his perspective as director of communications strategy and operations, sees the future as present with the airborne forces of the Marine Corps.

“Our modern technologies like the ACV, MV-22, CH-53K and F-35B are all critical enablers of Expeditionary Advanced Base Operations, enabling forward-deployed, distributed operations. Years of wargaming, experimentation and study have matured our concepts for EABO,” Flanagan said, “so that our concepts align with the way the broader force will fight.” .

Jim McClure’s first exposure to the Marines was as a four-year scholarship Marine Option Midshipman at the University of Notre Dame. He is a Life Member of the Navy League of the United States and a frequent contributor to Seapower*. This story first appeared in the February-March, 2026, issue of* Seapower*.*

Hegseth: Iranian Warship Sunk by U.S. Submarine Torpedo

By Richard R. Burgess, Senior Editor

ARLINGTON, Va. — An Iranian warship has been sunk by a torpedo fired from a U.S. Navy submarine, the Secretary of War said. The action would be the first ship sunk by torpedo fired from a U.S. Navy ship since World War II.

Secretary of War Pete Hegseth said on March 4, 2026, that the Iranian ship was sunk in the Indian Ocean

According to the BBC, the sunken ship was the IRIS Dena, a guided-missile frigate that went down off the southern coast of Sri Lanka. The ship was one of six ships of the Moudge class.

According to Reuters, the Sri Lankan Navy rescued 32 people from the ship, of a crew estimated to number 180 members. At least 80 crew members died in the action.

The action represents the first sinking of an enemy warship by a U.S. submarine's torpedo since World War II.

During the Falklands War, on May 2, 1982, the Royal

Navy nuclear-powered attack submarine HMS Conqueror sank the Argentine Navy cruiser ARA Belgrano with a torpedo. The Belgrano was formerly the light cruiser USS Phoenix.

U.S. Navy submarines are armed with 21-inch Mark 48 21-inch diameter torpedoes.

Navy Announces 13 Fiscal 2026 Ship Retirements

By Richard R. Burgess, Senior Editor

ARLINGTON, Va. – The U.S. Navy has announced its plan to retire 13 ships during fiscal 2026, including two ships held over from last year.

In a Feb. 20 message released by Rear Admiral M. D. Behning, acting deputy chief of naval operations for Warfighting Requirements and Capabilities, the planned retirements included six warships and seven auxiliary ships. Most of the retirements are planned for the summer.

The two Ticonderoga-class guided missile cruisers on the list,

USS Shiloh (CG 67) and USS Lake Erie (CG 70), originally were to be decommissioned in fiscal 2025. Shiloh had transferred to Pearl Harbor, Hawaii, from Yokosuka, Japan, but was kept in commission with the change in presidential administrations. Lake Erie was deployed to the U.S. 4th Fleet supporting Operation Southern Spear and had remain deployed as fiscal 2025 expired. The ships will be stored as support assets and their retirement by September will leave the fleet with five cruisers.

One Los Angeles-class attack submarine, Newport News (SSN 750), was inactivated in January. Its inactivation will be followed in August by that of USS Alexandria (SSN 757), leaving the fleet with 18 Los Angeles-class boats. The submarines will be scrapped.

One of the early Freedom-class littoral combat ships, USS Fort Worth (LCS 3), will be decommissioned by July and will be scrapped. A Whidbey Island-class dock landing ship, USS Germantown (LSD 42), will be decommissioned by September and retained as a support asset, leaving the fleet with five other ships of the class.

Three Henry J. Kaiser-class fleet replenishment oilers are being removed from service with Military Sealift Command in 2026: USNS Big Horn (T-AO 198) by March and USNS John Ericsson (T-AO 194) and Pecos (T-AO 197) by July. The Big Horn and Pecos are being transferred to the Maritime Administration, and the John Ericsson will be retained as a support asset. These retirements will leave the fleet with ten oilers of the class. The ships are being replaced by the John Lewis class T-AOs, which first deployed in 2025.

Three Watson-class large, medium-speed, roll-on/roll-off ships will be transferred to the Maritime Administration: USNS Pomeroy (T-AKR 316) by April, USNS Watkins (T-AKR 315) by July, and USNS Red Cloud (T-AKR 313) by September. The

retirements will leave the Military Sealift Command with three ships of the class.

The singular VADM K.R. Wheeler (T-AG 5001) will be transferred from the Military Sealift Command to the Maritime Administration by July. It is equipped with an offshore petroleum distribution system uniquely designed to pump fuel ashore from up to eight miles.

Marine Corps to Retire Last AV-8B Harrier IIs in June

AV-8Bs of VMA-223 seen in flight in April 2023. (Marine Corps photo by Staff Sgt. Theodore Bergan)

By Richard R. Burgess, Senior Editor

ARLINGTON, Va. – The U.S. Marine Corps plans to retire its last Boeing AV-8B Harrier II vertical-takeoff and landing attack jets this summer, according to the 2026 Marine Corps Aviation Plan released Feb. 10, 2026.

The Corps operates only one remaining Marine attack squadron (VMA), VMA-223, which is based at Marine Corps Cherry Point, North Carolina. The squadron will conduct the last flight of a Harrier on June 3, during a series of ceremonies scheduled for June 1 through June 5.

VMA-223 currently has a detachment of AV-8Bs assigned to the 22nd Marine Expeditionary Unit deployed on board the amphibious assault ship USS Iwo Jima (LHD 7). The Iwo Jima has been operating in the U.S. Southern Command's area of responsibility in support of Operations Southern Spear and Absolute Resolve. This is the last scheduled deployment of the AV-8B.

VMA-223 is scheduled to be redesignated a Marine fighter attack squadron in fiscal 2027 as it trains to fly the F-35B Lightning II short takeoff/vertical landing strike fighter.

The Marine Corps began flying Harriers in 1971, beginning with the AV-8A and later AV-8C versions. The much-improved AV-8B Harrier II version entered service in January 1985. Further upgrades resulted in the night-attack AV-8B(NA) version, with many further upgraded with radar as the AV-8B Harrier II Plus version.

AV-8Bs served in numerous combat operations, including Operations Desert Storm and Desert Shield, Operation Allied Force, Operation Odyssey Dawn, Operations Enduring Freedom and Iraqi Freedom, Operations Inherent Resolve and Resolute Support, and most recently in Operation Southern Spear.

"Equipped with precision-guided munitions (PGMs), an advanced LITENING targeting pod, and LINK-16, the Harrier has a distinguished legacy of destroying surface targets and

escorting friendly aircraft, providing the Marine Corps with a relevant and survivable fight-tonight capability," the aviation plan said.

Coast Guard Gearing Up to Absorb Massive Investment, Commandant Says

Artist rendering of the Arctic Security Cutter (Bollinger)
By Richard R. Burgess, Senior Editor

ARLINGTON, Va. – With nearly $25 billion in reconciliation funding from Congress, the U.S. Coast Guard is moving out on some new programs and adding to others as it prepares for an expansion in numbers of cutters, aircraft, bases, and

personnel, the Coast Guard's commandant told Congress.

Adm. Kevin Lunday, commandant of the Coast Guard, testifying Jan. 29, 2026, before the Senate Committee on Commerce, Science, and Transportation, said the reconciliation law passed in 2025 was the "most significant investment in Coast Guard history."

Lunday told the committee that with the expanded force bought with the reconciliation law, the service would need congressional support for consistent, sustained funding to operate it.

The Coast Guard recently has awarded contracts to build six Arctic Security Cutters (ASCs) with plans to build a total of 11. Lunday said that – of the first six – four will be built in the United States by Bollinger Shipyards and two in Finland by Rauma Marine Construction Oy. The new icebreakers are based on the Multi-Purpose Icebreaker design by Seaspan Shipyards of Vancouver, Canada, developed with Aker Arctic Technology Inc of Helsinki, Finland. In service, the ASCs would greatly expand the Arctic capabilities of the Coast Guard.

The reconciliation law also funds 22 cutters, including three of the six contracted ASCs, nine new Offshore Patrol Cutters and 10 additional fast response cutters (FRCs), bringing the FRC program total to 77 cutters.

Lunday said the Coast Guard gas requested information from the defense industry regarding a new class of light and medium icebreakers to replace old icebreaking tugs. These cutters would be built in the United States, he said.

The commandant also said that a second Great Lakes Icebreaker was one of his top priorities.

He affirmed that the first Polar Security Cutter is on track for delivery in 2030.

The Coast Guard also is procuring six additional HC-130J Super Hercules maritime patrol aircraft and 40 additional MH-60 Jayhawk helicopters. The additional MH-60s will enable the service to replace MH-65 Dolphin helicopters and to have more MH-60s to deploy on the expanding force of cutters including Polar Security Cutters.

Lunday said the reconciliation law will enable the Coast Guard to accelerate phaseout of its MH-65 helicopter fleet before the originally planned retirement year of 2037.

The law also added procurement of some MQ-9 Reaper unmanned aerial vehicles.

Under the Force Design 2028, the Coast Guard is expanding its force by 15,000 personnel. Lunday pointed out that 13,000 personnel will be needed to crew the 11 Arctic Security Cutters.

Singapore, Denmark Plan to Join the P-8 Poseidon Club

A New Zealand Defence Force P-8A Poseidon maritime patrol aircraft. (Photo credit: Defence Public Affairs, Corporal Naomi James)

By Richard R. Burgess, Senior Editor

ARLINGTON, Va. — In recent weeks two more nations have been approved by the U.S. State Department for possible procurement of Boeing-built P-8 Poseidon maritime patrol aircraft (MPA).

The Defense Security Cooperation Agency (DSCA) has announced that Denmark and Singapore each have been approved by the U.S. State Department for possible Foreign Military Sales of three and four P-8A aircraft, respectively.

The procurement of the four P-8As and associated systems and support services for Singapore is estimated to total $2.316 billion. The sale also would include MK54 lightweight tordedoes drawn from existing U.S. Navy stocks, the DSCA announced on Jan. 20, 2026.

Earlier, the DSCA announced on Dec. 29, 2025, the State

Department approved the possible sale of three P-8As and associated systems and support to Denmark. The value of the sale is estimated at $1.8 billion.

The Defense Security Cooperation Agency delivered the required certification notifying Congress, the agency said.

Interestingly, the two nations have not traditionally operated long-range MPA. The acquisitions will strengthen the anti-submarine and surface warfare capabilities of allies of the United States and NATO allies.

The P-8A is operated by seven armed forces including the U.S. Navy, Royal Australian Air Force, Royal Air Force, Royal Norwegian Air Force, New Zealand Defence Force, Republic of Korea Navy, and German Navy. The Royal Canadian Air Force also has P-8As on order. All of these except the Royal Air Force previously operated versions or derivatives of the P-3 Orion. India also operates a similar version of the Poseidon purchased by direct commercial sale, the P-8I Neptune.

One Size Doesn’t Fit All: Building U.S. Navy Hedges Against Rising threats

Sailors secure the rigid-hull inflatable boat on the midship of the Arleigh Burke-class guided-missile destroyer USS Curtis Wilbur (DDG 54) during small boat operations in the South China Sea, Sept. 4. 2025. *Photo credit: U.S. Navy | Mass Communication Specialist Seaman Mark Bergado*

The U.S. Navy faces challenges on multiple fronts. At sea, the fleet is stretched thin responding to China's continued gray-zone aggression and defending shipping in the Middle East from drone or missile attacks. At home, new ship deliveries fall further behind, fleet readiness is slipping, and recruiters are playing catch up after years of missing goals.

More money and industry innovation could help the Navy mitigate its challenges. But they don't tackle the root cause of a shrinking, less-ready fleet – the Navy's force design, which emphasizes large, multi-mission crewed warships and aircraft over robotic and autonomous systems (RAS) or less-complex vessels.

The Navy's preference for large, crewed platforms is logical. Smaller ships lack the endurance for transoceanic deployments,

RAS can’t perform peacetime missions like search and rescue or counter-piracy, and the cost of long-endurance crewed ships or aircraft suggests each one should be multi-mission.

But the Navy cannot afford a fleet of highly survivable warships large enough to address the its global responsibilities. Rising costs and delays in maintaining aging guided missile destroyers (DDGs), amphibious ships, and nuclear-powered attack submarines (SSNs) are already shrinking the operational fleet by forcing the Navy to retire ships early or sideline them for years.

Rather than continuing to field a shrinking force of exquisite ships and aircraft, the Navy should field a larger force of crewed and uncrewed platforms that gain an edge over opponents through their payloads and ability to combine in a diverse array of changing effects chains across domains. By shifting complexity from inside individual ships and aircraft to the kill chains between them, this fleet could gain decision-making advantages over adversaries and generate capacity or capability when and where it is needed.

Deterring without Dominance

After three decades of being the largest, most capable fleet on Earth, the U.S. Navy faces adversaries who are exploiting technology proliferation to field forces that can threaten U.S. military dominance. China is the most prominent example. With the world’s largest rocket force and navy, the People’s Liberation Army could keep Taiwan’s allies at bay long enough to blockade Taiwan or attempt an invasion.

There are a small number of intense scenarios that would require a substantial portion of the fleet, or of key elements of the fleet. The U.S. Navy has traditionally designed the fleet to meet the demands of these scenarios. In its post-Cold War period of dominance, the Navy could build a force able to counter a Taiwan invasion and retain enough residual

capability to handle any other situation, albeit much less efficiently than a purpose-built force.

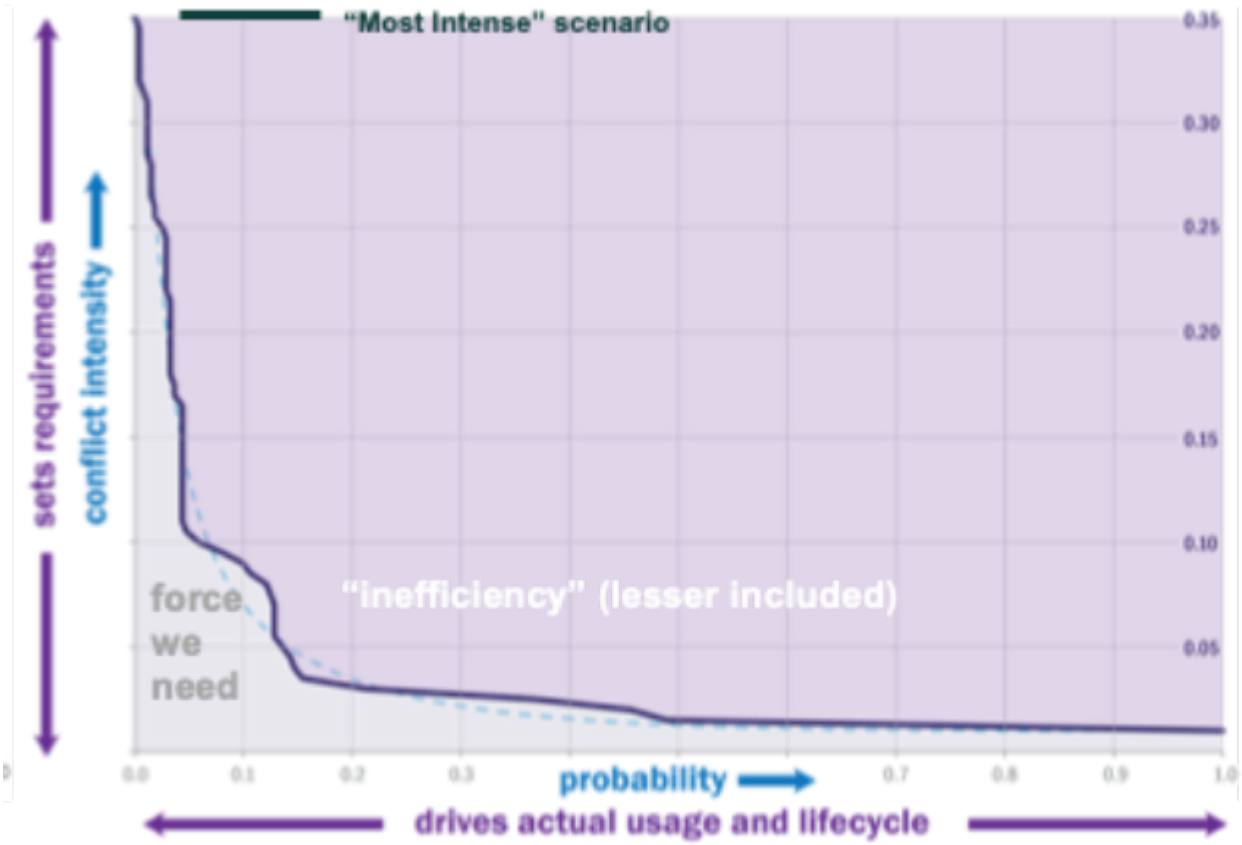


Figure 1

Figure 1 illustrates this approach. It shows U.S. combat deployments from 1943 to 2011 in terms of the probability a given portion of the force is deployed on any given day. (This chart is based primarily on U.S. Air Force data, which is the most comprehensive). The peak on the chart represents World War II, but the speed and scale of a Taiwan invasion would preclude significant mobilization. Navy leaders logically sized the active fleet for that scenario.

But the PRC's improving and growing military is driving up the capability and capacity needed to defend Taiwan. In the early 2020s, the Navy began to retire or slow production of ships and aircraft that were less relevant to a Taiwan invasion scenario. The one-size-fits all fleet started looking like a one-trick pony fit for one situation and ill-suited for many others.

Other stressing scenarios soon emerged as adversaries began exploiting military-relevant commercial technology and geography. Russia expanded its invasion of Ukraine beyond Crimea and is growing its submarine fleet, Iran's Houthi proxies attacked shipping across the Red Sea and Bab El Mandeb, and China intensified air and maritime incursions into Philippine and Japanese territory.

This expanding set of challenges leaves the Navy in a strategic cul-de-sac: It doesn't have enough forces with sufficient capability to be dominant in each region, but it cannot grow in its current form under any realistic budgets. In his opening speech during his assumption of office, new Chief of Naval Operations Admiral Daryl Caudle argued the Navy should use "hedge forces" to solve this force planning challenge.

Hedge forces are specialized groups of units designed to address high-consequence, low-probability situations like those on the left side of figure 1. These forces would provide the additional capability and capacity needed for a specific scenario but may not have broad utility in other regions or situations. Figure 2 depicts this force design paradigm using the data of Figure 1.

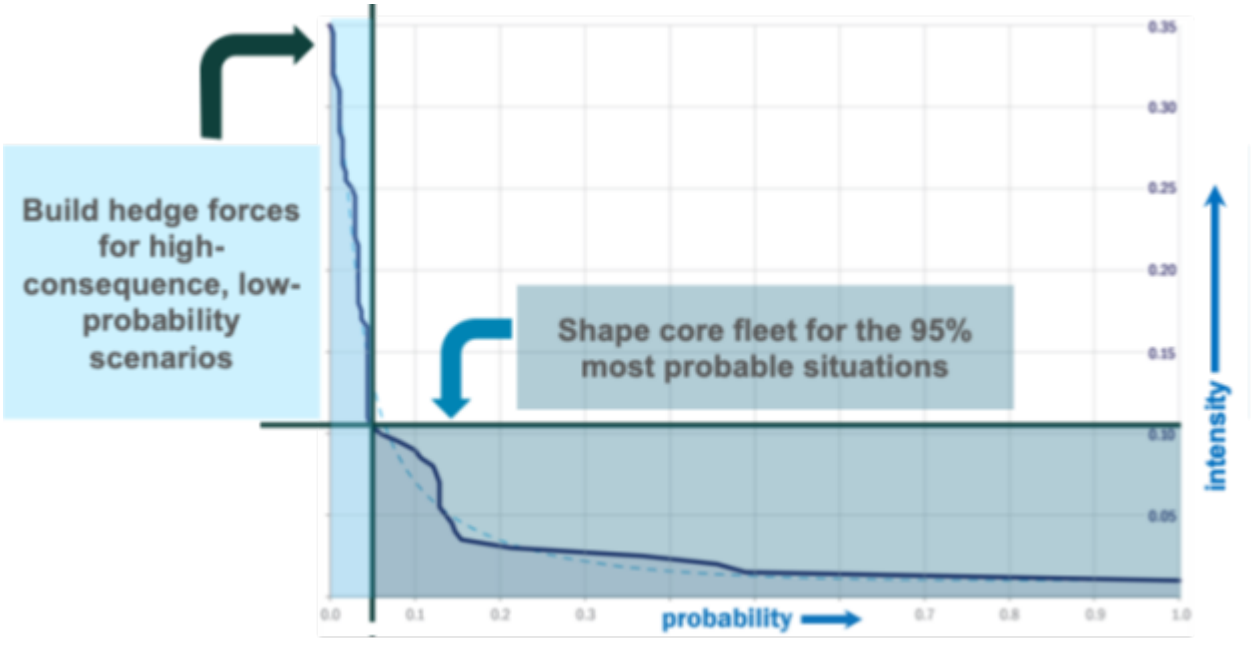


Figure 2

Under this paradigm, the Navy would size its core fleet – or the traditional Navy of today – for the bulk of scenarios that could emerge, including high-probability day-to-day conditions such as homeland defense or responding to gray-zone provocations. The core fleet should also be able to mount relatively large campaigns like Operations Desert Storm or Iraqi Freedom by surging additional deployments for the duration of operation. The Navy would build hedge forces to address the 5% of operational problems that would overstretch the core fleet.

The Navy should forward base hedge forces at allied facilities in their region of interest and organize them separately from the rotationally deployed core fleet. Because they are composed for a specific scenario, hedge forces will generally not be relevant to other theaters and scenarios, although some units may move in response to changing capability and capacity needs among hedge forces. Forward basing helps deter opponents by showing that hedge forces can quickly, potentially automatically, respond to aggression. And from a fiscal perspective, forward basing reduces the number of hedge force units needed compared to rotationally deploying them from U.S. territory.

The Navy's need for hedge forces to be specialized and forward based suggests they should be predominantly composed of RAS. Conflicts in Ukraine, Nagorno-Karabakh and the Middle East show that RAS can be relevant in high-end conflict. For example, after losing its navy to attack or capture, Ukraine's military restored access to vital shipping lanes by pushing the Russian Black Sea Fleet to the far side of Crimea using uncrewed attack boats and undersea vehicles.

RAS also offer dramatically lower costs of procurement and, most importantly, sustainment. By shifting some functions of traditional crewed platforms onto uncrewed systems, the Navy could gain scale at lower costs than it would take to achieve the same capacity through crewed ships or aircraft.

The Navy is pursuing RAS and associated operational concepts through an accelerating set of experiments. These initiatives – including Task Force 59 in the Middle East, 4th Fleet in Central and South America and the Integrated Battle Problems in the Indo-Pacific – are great examples of applying new technologies to thorny operational problems. But the Navy needs to go further and stop treating uncrewed systems as merely an additive to the crewed force.

The U.S. Department of Defense is experimenting with concepts like those used by Ukraine and Iran's proxies to create a "hellscape" for Chinese invaders in the Taiwan Strait. By attacking troop transports with drone boats, undersea vehicles and loitering munitions, a hedge force of RAS could slow or disrupt the invasion, giving U.S. and allied forces targeting information and time to destroy PLA ships with long-range missiles and torpedo fires.

But the hellscape cannot stop an invasion alone. It will need missile attacks from aircraft, submarines and surface combatants to defeat the invasion fleet and its escorts. However, surface forces will be hard-pressed to get close enough to deliver weapons and survive. The Navy could fill the gap by instead relying on a distributed fires hedge force of Modular Attack Surface Craft and submarines in the early phases of the fight.

The MASC program includes three RAS vessels, the largest of which would carry 16 missiles. Hudson Institute's wargaming and modeling suggests distributed uncrewed missile launchers with between 16 and 32 weapons offer an effective balance between undermining adversary planning and creating risks to adversary objectives. RAS vessels with larger magazines are easier to detect, have difficulty efficiently using their weapons before coming under attack and are large enough to be worth multiple enemy missile salvos. RAS vessels with fewer weapons are often unable to successfully attack a defended target alone, creating a need for coordinated attacks that can

be difficult if communications are degraded.

The Navy could benefit from building RAS-based hedge forces to address other stressing situations. For example, deployments by quiet Russian SSNs through the Greenland-Iceland-United Kingdom (G-I-UK) gap could quickly overwhelm U.S. antisubmarine warfare (ASW) forces, especially if other operations in Europe demand attention from U.S. SSNs, P-8A maritime patrol aircraft and DDGs. And a renewed campaign of drone attacks by the Houthis in the Red Sea could once again stretch a Navy surface combatant fleet that is also defending U.S. carriers, territory and other sea lanes.

A Dramatically Different Surface Fleet

This new force design paradigm implies changes in the makeup of the core force. For example, if a largely uncrewed hedge force can slow and disrupt a Chinese invasion, the Navy may need a lower rate of fires from surface combatants, strike-fighters, and SSNs. As a result, the Navy could reduce the number of crewed platforms it buys or delay their next generation.

But the changing threat environment also matters. The fleet's successful air defense actions in the Middle East during the last two years showed that countering drone and missile attacks is getting harder. These operations already stress the capacity of today's DDGs. Hudson Institute's wargaming with U.S., Australian and Japanese officers during the last year suggest China could overwhelm U.S. DDGs and successfully engage U.S. carriers well into a conflict in the Western Pacific.

DDGs will soon have to focus on air and missile defense and forgo other missions like ASW or strike due to combat system and magazine limits. Despite their reach, Tomahawk missiles still require DDGs to approach adversaries like Iran, Russia and China within anti-ship missile range and each adversary

would be willing to expend substantial numbers of $20 million ballistic missiles on a $3 billion DDG.

This suggests the surface force will need to both increase its magazine capacity and the range of its weapons to conduct offense and defense during tomorrow's conflicts. The Navy could realize those characteristics by renewing its pursuit of a CG(X) guided missile cruiser. A CG(X) could, like today's Ticonderoga CGs, carry 130-plus missiles in a vertical launch system magazine. Like the Navy's planned DDG(X), a CG(X) could also carry larger missiles like the Navy's planned hypersonic conventional prompt strike weapon that can reach targets more than 1,500 nautical miles away.

But with a cost of likely more than $5 billion per ship, the Navy will not be able to replace today's DDG-51s with new CG(X) or DDG(X) hulls on a one-for-one basis. While today's DDG-51s will be in the fleet for decades to come, the Navy will need to complement its new, larger surface combatants with smaller, less expensive vessels.

Unfortunately, the Constellation guided missile frigate cannot become that more affordable counterpart to the DDG-51. Originally planned to cost less than $800 million per hull, the FFG-62 class has been plagued by production delays and cost overruns driven in large part by Navy design revisions. The Congressional Budget Office now estimates each FFG will cost at least $1.4 billion.

With a cost nearly twice that of its parent FREMM FFG design or the Navy's original estimates, the FFG-62 no longer has a role in the Navy fleet. Its 32-cell vertical launch system magazine lacks the capacity to defend another ship against even the Houthi threat. The FFG-62's very low frequency sonar will generate long detection ranges against quiet submarines but still would place the ship well within submarine-launched anti-ship missile range. And the FFG-62's cost and complexity prevent the Navy from automating the ship or buying it in

sufficient numbers to be considered expendable or attritable.

Surface force leaders could use the Navy's budget constraints to reshape the fleet for deterrence in a post-dominance era. Instead of continuing the flawed and overpriced FFG-62 program, the Navy could pursue a smaller missile corvette like the Israeli Sa'ar-6 or Swedish Visby. A corvette would not be multimission capable like the FFG-62, but it could carry the same 32-cell VLS magazine for offensive weapons. With a reloadable Rolling Airframe Missile air defense system, it would be survivable against realistic missile salvos.

If the Navy used an existing design without significant modifications, it could purchase at least two corvettes for the cost of each planned FFG-62. This is not a novel approach. The Navy is beginning procurement this year of a new medium landing ship based on the Israeli logistics support vessel, which itself was derived from a U.S. Army landing ship.

Corvettes could conduct coastal defense around the United States and across the Western Hemisphere. But they could also lead and manage hedge forces overseas that are defending Taiwan, countering submarines at the G-I-UK gap, clearing mines in the Strait of Hormuz or defeating air attacks in the red Sea. Although hedge forces will be predominantly composed of RAS, human operators will still need to maintain, command and protect them when not in use. Corvettes could help provide those functions while also providing maritime security and addressing other threats.

With their lower complexity and smaller size, the Navy could also automate corvettes enough for them to be remote missile launchers during wartime, as it did with the fast troop transport USNS Apalachicola. They could then join the distributed fires hedge force in defeating amphibious assaults or blockades.

The Navy's fleet design needs dramatic change to deter in a

post-dominance era. Instead of relying on the broad overmatch of its one-size-fits-all fleet, the Navy should pivot to a smaller core fleet complemented by hedge forces to address its most challenging operational problems. Without a change like this, the Navy will lose relevance as opponents exploit proliferation and geography to threaten America's allies and interests. .

Bryan Clark is a Senior Fellow at the Hudson Institute. This story originally appeared in the December issue of Seapower *magazine.*