## University of Maine Manufactures World's Largest 3D-Printed Boat for Military



The University of Maine's Advanced Structures and Composites Center in Orono has printed two of the largest 3D-printed vessels for the U.S. Marine Corps for testing. UNIVERSITY OF MAINE AT ORONO

ORONO, Maine – The world's largest polymer additive manufacturing machine printed the world's largest 3D printed vessel at the University of Maine's Advanced Structures and Composites Center in Orono, Maine. In fact, it printed two of them.

The prototype vessels were built with Marines in mind. One of the two logistics support vessels can carry a pair of 20-foot shipping containers, while the other can transport a Marine rifle squad with three days of food, water and supplies. This isn't the first time the UMaine Composites Center printed a vessel. In 2019, the Center printed 3Dirigo and earned two Guinness World Records — the world's largest 3D printed boat and the world's largest 3D printed object. The 25-foot, 5,000pound boat was printed in 72 hours. "Dirigo" is the motto of the State of Maine and means "I lead" in Latin.

The two new vessels are multi-material composites with engineering polymer and fiber reinforcement. The composites center fabricated and assembled one of the vessels in a month instead of up to year, which is typical using traditional methods and materials.

The university hosted a ceremony attended by the state's two senators, Republican Susan Collins and Independent Angus King, along with representatives from the Defense Department on Friday, Feb. 25, to mark the production of the vessel. In a statement issued by the senators and university, the achievement was called "a significant milestone towards demonstrating advanced manufacturing techniques to rapidly constitute critical DoD assets closer to the point of need."

Due to national security concerns, no photos or video of the boats was allowed.

#### 'The Future of Manufacturing'

"Marine Corps Systems Command's Advanced Manufacturing Operations Cell, in collaboration with the UMaine Composites Center, used advanced manufacturing techniques to successfully develop the expendable polymeric composite ship-to-shore vessels," the statement says. "The longer of the two vessels, the largest ever 3D-printed, simulates ship-to-shore movement of 20-foot containers representing equipment and supplies. The second vessel can transport a Marine rifle-squad with organic equipment and three days of supplies. The prototypes can be connected, maximizing the transport capability of a single-tow vehicle." "This is literally the future of manufacturing that's happening right here at the University," King said.

The Marine Corps established the Advanced Manufacturing Operations Cell in 2019 to support Marines with new advanced manufacturing and technologies and techniques, as well as to conduct testing, experimentation and analysis.

Multiple small logistics vessels will be needed by the Navy-Marine Corps team to support distributed maritime operations and expeditionary advanced base operations.

"This project demonstrates the art of the possible and the potential for AM [additive manufacturing] to fundamentally alter how we think about connectors and their role in mobility and distribution within a contested environment," said Lt. Gen. Edward Banta, Deputy Commandant – Installation & Logistics, U.S. Marine Corps.

"The University of Maine is at the forefront of cutting-edge research and high-impact technologies, including advanced manufacturing, AI and 3D printing important for industries in Maine and beyond," said University of Maine System Chancellor Dannel Malloy. "These prototype vessels are the latest innovations from the Composites Center that demonstrate the future of manufacturing."

"Two years ago, we demonstrated that it was possible to 3D print a 25-foot patrol vessel in three days. Since then, partnering with the DOD, we have been improving material properties, speeding up the printing process and connecting our printer with high-performance computers that can monitor the print. With these tools in place, we have now printed a prototype vessel that will be tested by the U.S. Marine Corps."

From the lab in Orono, the boats will travel next go to California for sea testing and evaluation.

## Cutter Diligence Returns to Homeport after 60-Day Eastern Pacific Ocean Patrol



The crew of the U.S. Coast Guard Cutter Diligence, shown conducting small boat training in the Eastern Pacific Ocean. *COAST GUARD / BM3 Cayne Wattigney* 

PENSACOLA, Fla. — The crew of Coast Guard Cutter Diligence returned to their homeport of Pensacola, Florida, Feb. 20 following a 60-day counter-drug patrol in Eastern Pacific Ocean, the Coast Guard 8th District said Feb. 25.

Partnering with three other Coast Guard cutters, Diligence interdicted three suspected drug-smuggling vessels resulting in the apprehension of 12 detainees and the interdiction of more than 4,321 pounds of cocaine with a street value of approximately \$82 million.

"Diligence's crew demonstrated professionalism, resilience and perseverance while conducting complex high-speed boat pursuits in the drug transit zone," said Cmdr. Jared Trusz, Diligence's commanding officer. "I am honored to serve with and proud of the crew's superlative efforts that directly support the United States national security interests."

Numerous U.S. agencies from the Departments of Defense, Justice and Homeland Security cooperated in the effort to combat transnational organized crime. The Coast Guard, Navy, Customs and Border Protection, FBI, Drug Enforcement Administration and Immigration and Customs Enforcement, along with allied and international partner agencies, play a role in counter-drug operations.

The fight against drug cartels in the Eastern Pacific Ocean requires unity of effort in all phases from detection, monitoring and interdictions, to criminal prosecutions by international partners and U.S. Attorneys' Offices in districts across the nation. The law enforcement phase of counter-smuggling operations in the Eastern Pacific Ocean is conducted under the authority of the Coast Guard 11th District, headquartered in Alameda, California. The interdictions, including the actual boardings, are led and conducted by members of the U.S. Coast Guard.

The Diligence is a 210-foot medium-endurance cutter homeported in Pensacola with 78 crewmembers. The cutter's primary missions are counter-drug operations, migrant interdiction, enforcing federal fishery laws and search and rescue in support of Coast Guard operations throughout the Western Hemisphere.

# U.S. Coast Guard Patrols EEZ in Partnership With Samoa



Crews from the U.S. Coast Guard Cutter Juniper (WLB 201) and USCGC Joseph Gerczak (WPC 1126) conducted security patrol operations in Samoa's exclusive economic zone throughout February 2022, to protect fisheries and other natural

#### resources. U.S. COAST GUARD

HONOLULU — Working with the government of Samoa, crews from the U.S. Coast Guard Cutter Juniper (WLB 201) and USCGC Joseph Gerczak (WPC 1126) conducted security patrol operations in Samoa's exclusive economic zone throughout February 2022, to protect fisheries and other natural resources, the Coast Guard 14th District said Feb. 28.

The Juniper and Joseph Gerczak crews helped fill the operational presence needed to deter illegal, unreported, and unregulated fishing while Samoa's Nafanua II patrol boat is down.

"We always look forward to assisting our partners in the region," said Cmdr. Jeff Bryant, the 14th District's chief of enforcement. "The United States offered to assist the government of Samoa by providing security and sovereignty operations in Samoan waters due to the absence of their patrol boat."

The cutters have been underway in Oceania supporting Operation Aiga, designed to integrate Coast Guard capabilities and operations with the United States' Pacific Island Country partners to effectively and efficiently protect shared national interests, combat IUU fishing and strengthen maritime governance on the high seas.

As a trusted partner in the Pacific, the Coast Guard employs 11 bilateral shiprider agreements with Pacific Island Forum nations, like Samoa, to support resource security and fisheries enforcement. These agreements enabled the Coast Guard to aid host-nation sovereignty while patrolling Samoa's EEZ.

The United States Coast Guard and the government of Samoa have a history of partnership. In 2019, the Coast Guard cutters Walnut and Joseph Gerczak visited Apia Harbor and conducted patrol operations with officials from Samoa's Ministry of Police and Ministry of Fisheries on board. In 2021, the crew of the Oliver Berry conducted similar patrols while Samoa's patrol boat underwent repairs.

"Operation Aiga is named that for a reason. Aiga means family in Samoan and that's how we view our Pacific neighbors," says U.S. Ambassador to Samoa Tom Udall. "This is real partnership. Together we can stop those who seek to steal valuable resources that simply don't belong to them."

With a population of approximately 40 million people covering an area of 3.3 million square miles, Oceania is regularly patrolled by the Coast Guard and its international partners to protect and support those who call it home.

## SECNAV Names Future T-AO USNS Thurgood Marshall, Sponsors for USS Doris Miller



Aircraft carrier USS Nimitz (CVN 68) performs a replenishmentat-sea with the fleet replenishment oiler USNS Pecos (T-A0 197). A future John Lewis-class replenishment oiler will be named USNS Thurgood Marshall, Secretary of the Navy Carlos Del Toro announced Feb. 25. U.S. NAVY / Mass Communication Specialist 3rd Class David Negron

WASHINGTON – During Black History Month, Secretary of the Navy Carlos Del Toro announced on Feb. 25 the sponsors for the USS Doris Miller and that a future John Lewis-class replenishment oiler (T-AO) ship will be named USNS Thurgood Marshall to honor the former Supreme Court justice and civil rights activist.

The future USNS Thurgood Marshall (T-AO 211) will be the first naval vessel to bear this name. However, it is not the first U.S. Navy ship to be named after a Supreme Court justice.

"It is my pleasure to recognize the tremendous lifelong contributions of the Honorable Thurgood Marshall by naming T-AO 211 after him. This naming selection enables a legacy of continued conversations and visibility, essentially a living memorial to be seen around the world, of a historic figure in the continued fight for civil and human rights, and I am pleased to share this decision during Black History Month," said Del Toro. "Continued diversity and inclusion efforts are critical to the mission success of the Navy and Marine Corps team. Selecting Thurgood Marshall as the namesake aligns with the diversity, equity and inclusion efforts that I have implemented in my strategic guidance since serving as secretary."

The name selection follows the naval tradition of honoring people who have fought for civil and human rights. Born in 1908, Thurgood Marshall was a civil rights leader turned Supreme Court justice. Marshall made history as the first Black justice to serve on the U.S. Supreme Court when he was confirmed by the U.S. Senate in 1967. Of his 25-year tenure on the Supreme Court, he is most noted for his work toward affirmative action, stopping Jim Crow segregation and the landmark case Brown v. Board of Education.

The future T-AO 211 is the seventh of the TAOs awarded to the Navy, with the first delivered in 2021. The class and lead ship is named in honor of Rep. John Lewis (D-Georgia).

T-AOs are fleet oilers designed to transfer fuel to the Navy's operating carrier strike groups. The oilers have the ability to carry a load of 162,000 barrels of oil, maintain significant dry cargo capacity, aviation capability and a speed of 20 knots. NASSCO designed the vessels with double hulls that protect against oil spills and strengthened cargo and ballast tanks. The John Lewis-class T-AO measures 742-feet in length with a full load displacement of 49,850 tons.

#### Ship Sponsors

Along with announcing the ship's name, Del Toro also announced the sponsors for the future USS Doris Miller (CVN 81) as Charlene Austin and Taya Miller, who in their role as the ship's sponsors will represent a lifelong relationship with the ship and crew.

Charlene Austin is not only the spouse of Secretary of Defense Lloyd Austin, but possesses an extensive history of professional and volunteer work supporting initiatives for military families. Taya Miller is the great-niece of Doris "Dorie" Miller, and was selected by the Doris Miller family to represent the family on behalf of the late Doris Miller and her late mother, Vickie Miller. Matrons of Honor for the USS Doris Miller are represented by members of the Dorie Miller family: Lakisha Bledsoe-Stansberry, Carra Miller Boykins, Tina Shedd and Selena James.

### Coast Guard Creates Cyber Mission Specialist Rating



Coast Guard Capt. Samson Stevens shows an aerial view of the

Port of Virginia during the Cyber Component Commanders' Conference aboard Coast Guard Base Portsmouth, Virginia, March 6, 2020. The service has now created a cyber mission specialist rating. U.S. COAST GUARD / Seaman Katlin Kilroy ARLINGTON, Va. – The Coast Guard commandant has announced the creation of a cyber mission specialist rating and corresponding chief warrant officer specialty to increase the focus and professionalism of the service's cyber capabilities.

Commandant Adm. Karl Schultz made the announcement during his Feb. 24 annual "State of the Coast Guard Address" before an audience at Coast Guard Air Station Clearwater, Florida.

In a Feb. 25 message to the Coast Guard, Shultz further amplified the announcement, saying, "Cyberspace is an operational domain continuously evolving while growing in importance and complexity. Operations in cyberspace require a professional and skilled workforce [military and civilian]. Competition to recruit, retain, and grow cyber talent is constant. A dedicated CMS enlisted rating with accessions beginning at the E-5 paygrade, as is done with the diver rating and an accompanying CYBR [cyber] specialty, will best provide a trained, proficient, and professional workforce to enable and conduct cyberspace operations.

"Members of the CMS rating and CYBR specialty will have the opportunity to serve in a broad range of missions," he said. "The Coast Guard's cyber program plays a critical role operating a secure cyberspace for the Service, protecting the Marine Transportation System against malicious actors seeking to identify new ways to exploit cyberspace, and countering adversaries' intent on disrupting Coast Guard operations or negatively impacting national interests. Members of the CMS rating and CYBR specialty will continue to serve in critical positions within [Coast Guard] Cyber Command, U.S. Cyber Command, DHS Cybersecurity and Infrastructure Security Agency areas, districts and sectors and elsewhere as required.

## Israel Adapts Iron Dome Missile Defense to Navy Corvettes



Israel has successfully tested the C-Dome, a naval configuration of the Iron Dome defense system. *RAFAEL* HAIFA, Israel – The Israel Missile Defense Organization, Israeli Defense Forces and Rafael Advanced Defense Systems have completed a successful series of live-fire tests of the C-Dome, an advanced naval configuration of the Iron Dome defense system, Rafael said Feb. 25.

The C-Dome was operated for the first time aboard the Israeli Naval Ship Magen, a Sa'ar 6 corvette, against multiple advanced threats. Crew members of the INS Magen led the C-Dome tests.

"I commend the DDR&D [Directorate for Defense R&D, parent of the missile defense organization], IDF and Rafael for the completion of an unprecedented test," said Defense Minister Benny Gantz. "The systems that we are developing as part of Israel's multi-tier missile defense array enable us to operate against Iranian proxies in the region and defend against their weapon systems, which are constantly being upgraded. We continue to be two steps ahead of them and we will continue developing and upgrading our capabilities in order to maintain security superiority in the region and to defend the citizens and assets of the state of Israel."

The test campaign consisted of a number of scenarios simulating advanced threats, including rockets, cruise missiles and unmanned aircraft. The C-Dome is capable of successfully intercepting such threats.

This successful live-fire test is an important milestone and demonstrates the operational capability of the Israeli navy to defend the strategic assets and vital interests of Israel against current and evolving threats.

The C-Dome onboard missile defense system is based on the Iron Dome defense system developed by Rafael, with the command-andcontrol system developed by mPrest. C-Dome interfaces with the Sa'ar 6's Adir radar, developed by Israel Aerospace Industries' Elta division. It joins other advanced systems that make up Israel's multi-tier missile defense array, including the Arrow and David's Sling systems. Development of C-Dome was led by the Israel Missile Defense Organization.

"The success of this test constitutes a significant technological breakthrough in the field of missile defense and is the result of the directorate's vision and cooperation with the IDF and Israeli defense industries," said Brig. Gen. (Res.) Danny Gold, head of the Directorate for Defense R&D in the ministry of defense.

"Today we mark another historic milestone for the Iron Dome defense system – the completion of a series of successful offshore tests of the missile defense system onboard a naval vessel," said Moshe Patel, director of the Israel Missile Defense Organization. "The advanced detection system accurately identified various threats including rocket fire, cruise missiles and UAVs. The system successfully intercepted the threats with surgical precision. The success of today's tests further strengthens our confidence in our missile defense systems as well as the ability of the Israeli navy to defend the maritime assets of the state of Israel."

#### Austal Lays Keel of Future LCS USS Kingsville



Ship sponsor Katherine Kline, center, welded her initials onto a USS Kingsville keel plate with the assistance of Austal Aclass welder Joseph Bennett Jr., to the right of Kline. *AUSTAL USA* 

MOBILE, Ala. — Austal USA celebrated the keel laying of the future littoral combat ship USS Kingsville (LCS 36) at its ship manufacturing facility on Feb. 23, the company said in a release.

Kingsville will be an Independence-variant LCS, one of 18 the Navy has contracted Austal to build. The ship is the first U.S. Navy ship named for the city of Kingsville in Texas.

A keel laying ceremony is the formal recognition of the start of a ship's construction. At Austal USA, the keel laying symbolically recognizes module erection in final assembly and the ceremonial beginning of a ship.

The ship's sponsor is Katherine Kline, a member of the sixth generation of the King Ranch family, decendents of Capt. Richard King who founded the King Ranch located in Kingsville, Texas, in 1853. Naval Air Station Kingsville, located three miles from Kingsville, was founded in 1942 and continues a special relationship with the King Ranch.

As the keel authenticator, Kline welded her initials onto an aluminum keel plate with the assistance of Austal USA A-class welder, Joseph Bennett Jr.

### Dahlgren Focuses Energy Weapons on Target



Arleigh Burke-class guided-missile destroyer USS Stockdale (DDG 106) Sailors prepare to conduct a replenishment-at-sea with Nimitz-class aircraft carrier USS Carl Vinson (CVN 70), July 12, 2021. Stockdale's Optical Dazzling Interdictor (ODIN) laser system is seen just below the bridge. U.S. NAVY / Mass

#### Communication Specialist Seaman Elisha Smith

DAHLGREN, Va. – The U.S. Navy has been researching and perfecting directed energy weapons to include railguns, highpowered microwaves and lasers, along with hypervelocity projectiles – to make futuristic weapons a reality on ships today.

The Naval Surface Warfare Center Dahlgren Division in Dahlgren, Virginia, has been leading the way in creating capabilities to give warfighters a high-tech advantage at sea, to include directed energy weapons.

"We take great pride in being a hands-on research, development, test and evaluation institution, where we possess and practice the organic technical knowledge for the Department of the Navy with respect to surface warfare," said Dale Sisson, NSWC Dahlgren Division's technical director. "That ends up being a fairly broad ranging mission, for sure. Having the opportunity to design, develop, test and integrate warfighting systems through the confluence of a physical range infrastructure, and a digital architecture such as our digital proving ground, is fundamentally who we are.

"We're also in the threat engineering business, which means we understand those threats well, and that knowledge translates back into understanding how to develop the weapons to counter that on a defensive standpoint, as well as create the offensive advantage that puts us ahead of the game," said Sisson.

While the Navy's railgun efforts are currently on hold, laser systems are installed or in the process of being integrated into ship combat systems today. In fact, much of Dahlgren's work on railguns is being leveraged today for new capabilities such as hypervelocity projectiles.

Today, lasers are a reality in the fleet. A prototype Optical Dazzling Interdictor, Navy, or ODIN system, designed and built

by Dahlgren, is being evaluated aboard the Arleigh Burke-class guided missile destroyers USS Dewey (DDG 105), and other Burke-class ships. The Lockheed Martin High-Energy Laser with Integrated Optical-dazzler and Surveillance system is being tested aboard another Burke-class ship, USS Preble (DDG 88). The Solid-State Laser Technology Maturation (SSL-TM) program is developing an integrated Laser Weapons System Demonstrator, built by Northrop Grumman, which is installed and being tested aboard landing ship dock USS Portland (LPD 21).

All of them can thank Dahlgren for vital concept development, design and testing. Dahlgren's Laser Lethality Laboratory and Laser Firing Range have provided knowledge, expertise and experience to mature the technologies and integrate the capabilities into the combat systems on the Navy's warships.

"Our laser firing range allows us to fire across Upper Machodoc Creek so we can examine how the maritime boundary layer between the water and the atmosphere affects laser performance. We have a two-story building within our explosive experimental area we use as a backstop for laser beams," Sisson said. "We can shoot up to about four kilometers, depending on where we position lasers on the range from the backstop."

Dr. Chris Lloyd, distinguished scientist for laser weapon system lethality, leads the Navy's laser lethality efforts.

"NSWCDD has extensive experience in integration of Navy laser weapon systems, from subcomponents up to full systems. The Navy laser lethality team supports development, assessment and deployment of laser weapons and conducts rigorous testing, modeling and simulation to drive requirements for advanced laser weapon system development for the Navy. Lethality is more than simply damaging materials, but understanding how threats are going to respond. We have to understand threat response, based on the damage we inflict, and apply that data, along with weapon system parameters and propagation information to tell the complete weapon effectiveness story," he said.

"Our industry partners team closely with the government directed energy workforce to integrate and test laser weapon systems at Dahlgren test ranges as well as other DoD test locations in the country," said Lloyd. "If they have a system that's ready to be tested in preparation for deployment, we can use actual system performance test data in our lethality and effectiveness analyses to validate models and assess overall lethality."



1001 Amphibious transport dock ship USS Portland (LPD 27) successfully disabled an unmanned aerial vehicle with a solidstate laser, Technology Maturation Laser Weapon System Demonstrator (LWSD) MK 2 MOD 0 in May 2020 in this still image from U.S. Navy video from Pacific Fleet Public Affairs. U.S. NAVY

#### Working Together

Lloyd said the Dahlgren team has been part of technical area working groups that have been together for the better part of 20 years, and, as a result of that, have become very proficient at working together and sharing data. "We collaborate closely with the Army, Air Force, Missile Defense Agency and the Joint Directed Energy Transition Office," he said. "We also work with the FFRDCs [Federally Funded Research and Development Centers] and academia to advance key S and T [science and technology] areas."

Dahlgren's lethality lab has several key features, including a repurposed World War II tunnel for longer range propagation studies. It's environmentally controlled, and can introduce moisture and aerosols to see how they affect not only propagation but lethality.

"We can look at battlefield contaminants, atmospheric conditions, and understand lethality through those conditions," said Lloyd.

"We're in the business of putting holes in targets and damaging components. That's the 'target vulnerability' piece of it," he said. "But we're interested in the overall weapon lethality. We have to understand the weapon system performance specifications, as well as the atmospheric conditions and the impact on overall effectiveness. We work very closely with the atmospheric community to grasp those principles and pull them into the modeling. We also collect vulnerability data on different materials all the way up to subsystem components and full systems."

Another aspect of Dahlgren's laser lethality efforts involves the modeling and simulation analysis team. "Fundamental properties for the materials we test against are fed into those models, along with all the basic parameters like conductivity," said Lloyd. "It all has to be well understood."

Sisson said the science and technology is important, but Dahlgren's staff knows how to put that knowledge into practical systems.

"We have the technical knowledge to build a system. But that's not enough. We have that true subject matter expertise that knows how to design, develop, deliver and field systems. When we're working on a tactical laser system, our engineers also understand systems integration and what it takes to go acquire things. We have to be able to install and operate that system on a ship reliably and effectively," Sisson said. "We need a system to target the beam and conduct battle damage assessment, and it has to integrate with the ship's combat management system. We have to be able to make it fit and work on a ship in a challenging maritime environment."

#### Not Just A Laser

"Dahlgren has been instrumental in the continued technology maturation for high energy lasers and the success of LWSD," said Donna Howland, acting general manager of Northrop Grumman's Directed Energy operating unit. "We learned from their expertise on how to operationalize high energy lasers."

"It's not just a laser. We want to integrate the laser – as both a sensor and weapon – as a full participant in the combat system," said Capt. Casey Plew, NSWC Dahlgren Division's commanding officer. "We're building a weapon that includes the mount, power, thermal management, command and control, tracking and doctrine, all done in coordination with government, industry and academia partners.

"Lasers are a great piece of the mission we perform, but they are only one part of the complex puzzle. And the awesome women and men of NSWC Dahlgren Division have been helping to solve our surface navy warfighting puzzles – for almost 104 years. It is in our DNA. It is what we do," said Plew.

### Commandant Names Future Polar Security Cutter 'Polar Sentinel'



The Coast Guard Cutter Polar Star (WAGB 10) transits in the Chukchi Sea, Dec. 19, 2020. The first future polar security cutter will be named Polar Sentinel. U.S. COAST GUARD / Lt. Jared Payne

ARLINGTON, Va. – The commandant of the Coast Guard used the occasion of his annual "State of the Coast Guard" address to announce the name of the first future polar security cutter.

"Today, I am excited to name the first polar security cutter; that name will be Polar Sentinel," said Commandant Adm. Karl Schultz, speaking Feb. 24 before an audience at Coast Guard Air Station Clearwater in Florida.

The name is in keeping with the Coast Guard's earlier class of polar icebreakers, one of which – the Polar Star – is the only operational heavy icebreaker in the U.S. military services and is badly in need of replacement. The first PSC is expected to

be delivered by Halter Marine in 2025. Halter Marine also is under contract for a second PSC.

"Detailed work remains underway in preparation for construction of our first polar security cutter," Schultz said. "That will be a state-of-the-art ship requiring exacting designs, complex steel work and systems integration. ... When our fleet of polar security cutters becomes operational, the work of these uniquely capable assets will be essential to protecting our economic, our environmental and our national security interests in what we call the high latitude regions."

The commandant said the Our Coast Guard "is amidst [its] largest shipbuilding effort since the Second World War as we build the fleet that will serve the nation for decades to come."

He said the the 10th national security cutter to be named for the first master chief petty officer of the Coast Guard, the Charles Calhoun, will be christened in June.

He also noted the first offshore patrol cutter, the Argus, is more than 60% complete and the second OPC, the Chase, is "well on its way."

Shultz said the Coast Guard anticipates "awarding the largest acquisition contract in the history of our service for the next 11 offshore patrol cutter hulls" this spring.

The newly competed OPC contract award follows the earlier OPC contract award to Eastern Shipbuilding Group for the first nine OPCs. The Coast Guard plans to procure a total of 25 OPCs, which will replace 28 medium-endurance cutters, some of which are more than 50 years old.

"That legacy fleet [of medium-endurance cutters] loses nearly 500 patrol days on an annual basis due to unplanned maintenance and repairs," the admiral said, noting that if all those days were lost from counter-narcotics patrols, it would result in 44,000 pounds of illegal drugs that could have been interdicted from reaching the United States.

Shultz also said the service is making progress on the acquisition of 30 waterways commerce cutters, noting that "these new tenders will have greater endurance, speed and deck-load capacity to efficiently maintain 28,000 aids to navigation, marking over 12,000 miles of navigable inland waterways. These aids to navigation are a critical component of our marine transportation system, upon which cargoes and commodities comprising 25% of our nation's gross domestic product move annually.

"For the first time in history, our inland fleet will be able to accommodate mixed-gender crews, providing all enlisted members of our service these unique afloat experiences," he said.

# NGC to Equip USMC with Next Generation Handheld Targeting Device



APOPKA, Fla. — Northrop Grumman Corp. has been selected to provide the U.S. Marine Corps with the Next Generation Handheld Targeting System (NGHTS). This compact targeting device provides unparalleled precision targeting and is capable of operation in GPS-denied environments, the company said in a Feb. 22 release.

"NGHTS will significantly enhance the ability of Marines to identify ground targets under a wide range of conditions," said Bob Gough, vice president, navigation, targeting and survivability, Northrop Grumman. "Connected to military networks, NGHTS can provide superior situational awareness and accurate coordinates for the delivery of effects from beyond the line of sight."

Northrop Grumman's NGHTS is capable of performing rapid target acquisition, laser terminal guidance operation and laser spot imaging functions. Its high-definition infrared sensors provide accuracy and grid capability over extended ranges. Additional features include a high-definition color display and day/night celestial compasses.