Marine Corps Awards OTAs to Assess Handheld Targeting Capabilities

MARINE CORPS BASE QUANTICO, Va. – Marine Corps Systems Command (MCSC) has awarded four Other Transaction Authorities (OTAs) to assess industry's capability to produce a Next Generation Handheld Targeting System (NGHTS) that is compact, rugged and lightweight.

The use of OTAs were approved by Congress in 2016 as a procurement method to pay for prototypes and to use nontraditional defense companies to spur innovation. The OTAs were awarded to BAE Systems, Elbit Systems of America, Fraser Optics and Northrop Grumman Systems Corp. The four companies will explore possibilities focused on the following criteria:

■ The system's overall ergonomics for supporting forward deployed, foot mobile users.

■ Target recognition, location and designation ranges during day and night operations.

■ The ability to integrate the system with the Target Handoff System Version 2 to view and manipulate target information.

■ Technological maturity, manufacturability and value engineering.

■ Sustainability at the operational user level.

NGHTS is a single, lightweight, man-portable system that enables Marines to quickly acquire targets; perform guidance of against targets; and generate target location data during combat operations.

"During the first phase, the four awarded companies will

explore potential system capabilities and provide Marine Corps Systems Command with an in-depth study of the best solution for our Marines at the best price," said Megan Full, contract specialist supporting Program Manager (PM) Fires at MCSC. "We will collect the findings by the second quarter of fiscal year 2019 and choose one or more vendors to move onto phase two where they will develop and demonstrate prototypes."

Currently, the Marine Corps uses four legacy systems: the Portable Lightweight Designator Rangefinder, Joint Terminal Attack Controller, Laser Target Designator and Thermal Laser Spot Imager. The intent is for NGHTS to replace all four systems.

"For the last four years, we have worked diligently to explore an option that condenses the legacy versions into one lightweight system with a reliable power supply that is rugged enough to throw onto a Marine's pack," said Jeff Nebel, Fire Support Coordination Team lead, PM Fires.

"The NGHTS will combine all of the legacy capabilities into one system that is compatible with both current and future fire support systems, and will support the Marine Corps for the next 15 to 20 years."

"The NGHTS will be an important advancement because it is planned to reduce the current weight of the laser designation and laser spot imaging capability by 60 percent, which will increase the mobility and lethality of our fire support-focused Marines," said Maj. Nathan Morales, Targeting Systems project officer, PM Fires. "This capability is focused on our ability to fight in the compartmentalized terrain outlined in the Marine Operating Concept."

San Pedro-Based Cutter Returns to Homeport Following First Drug Bust

SAN PEDRO, Calif. – The crew of a San Pedro-based Coast Guard cutter returned to their homeport Dec. 8 following a two-week patrol that included the ship's first drug bust, the 11th Coast Guard District said in a release.

The crew of the recently commissioned Cutter Forrest Rednour interdicted approximately 1,000 pounds of marijuana from a suspected smuggling vessel on Nov. 28 in international waters, approximately 30 miles south of the U.S.-Mexico maritime border.

A Customs and Border Protection (CBP) Air and Marine Operations Multi-Enforcement Aircraft spotted a northbound 25-foot cuddy cabin boat with three people aboard just before midnight, Nov. 27. The Forrest Rednour crew arrived on scene, deployed their interceptor boat and stopped the suspect boat. The ship's law enforcement team initiated a boarding of the U.S.-registered boat and discovered more than 40 bales of marijuana.

The Forrest Rednour crew transferred the marijuana and suspects to Customs and Border Protection agents at Ballast Point.

"These cutters are designed to seamlessly integrate with multiple agency partners to successfully execute an array of missions, so it was great to see it play out flawlessly so early in the ship's time in service," said Lt. Graham Sherman, commanding officer of Forrest Rednour. "All members of the Regional Coordinating Mechanism worked well together, and it led to a successful outcome."

The Regional Coordinating Mechanism (ReCoM) is an evolution of joint operations among interagency partners. Located in San Diego, Los Angeles and San Francisco, the ReCoM partnership includes the U.S. Coast Guard, CBP's Air and Marine Operations, Office of Field Operations, U.S. Border Patrol and Immigration and Customs Enforcement's Homeland Security Investigations in cooperation with state and local law enforcement partners operating along the California coast.

Forrest Rednour was commissioned in San Pedro Nov. 8, and it is one of two new fast response cutters (FRCs) to be homeported in San Pedro. Two additional FRCs are scheduled to be homeported in San Pedro by next summer.

FRC's are 154-foot multimission ships designed to conduct drug and migrant interdictions; ports, waterways and coastal security operations; fisheries and environmental protection patrols; national defense missions; and search and rescue.

Marine Corps Declares Remaining Marines Involved in Aviation Mishap Deceased

MARINE CORPS BASE CAMP BUTLER, Okinawa, Japan – The Marine Corps has pronounced the five remaining Marines involved in the F/A-18 and KC-130 aviation mishap deceased, the III Marine Expeditionary Force said in a Dec. 10 release. The change in status comes at the conclusion of search and rescue operations.

The next-of-kin for the five deceased Marines have been notified.

“Every possible effort was made to recover our crew and I hope the families of these selfless Americans will find comfort in the incredible efforts made by U.S., Japanese, and Australian forces during the search,” said U.S. Marine Corps Lt. Gen. Eric Smith, commanding general, III Marine Expeditionary Force.

“Our most valued asset is the individual Marine. We remain faithful to our Marines and their families as we support them through this difficult time. We ask for members of the public to please respect the family and allow them privacy.”

The KC-130 Hercules was assigned to Marine Aerial Refueler Transport Squadron 152 (VMGR-152, call sign “Sumo”), 1st Marine Aircraft Wing.

“All of us in the Sumo family are extremely saddened following the announcement of the conclusion of search and rescue operations,” said U.S. Marine Corps Lt. Col. Mitchell T. Maury, commanding officer of VMGR-152. “We know this difficult decision was made after all resources were exhausted in the vigorous search for our Marines. Our thoughts are heavy, and our prayers are with all family and friends of all five aircrew.”

The F/A-18 Hornet involved was assigned to Marine All-Weather Fighter Attack Squadron 242. The aircraft were conducting regularly scheduled training. It is not confirmed that aerial refueling was ongoing when the mishap occurred.

The Marine Corps rigorously investigates all aviation mishaps to identify the causes, learn from them, and mitigate future incidents. The circumstances of the mishap are currently under investigation. There is no additional information available at this time. The identities of the Marines will be provided 24 hours after next of kin have been notified.

Transportation Secretary Announces $1.5 Billion in BUILD Grants to Revitalize Infrastructure

WASHINGTON – U.S. Transportation Secretary Elaine L. Chao Dec. 11 announced $1.5 billion in discretionary grant funding to 91 projects in 49 states and the District of Columbia. The grants are made through the Better Utilizing Investments to Leverage Development (BUILD) Transportation Grants program and support road, rail, transit, and port infrastructure projects across the country.

“BUILD transportation grants are major investments in road, rail transit, and port projects that serve as a down payment on this administration’s commitment to America’s infrastructure,” Chao said.

Demand for BUILD grants far exceeded available funds, and the locally driven nature of the applications was clear in their volume and geographic diversity. 851 eligible applications from all 50 states, as well as U.S. territories and the District of Columbia, were sent in response to the BUILD Notice of Funding Opportunity (NOFO), nearly double the applications received in 2017. Overall, applicants in 2018 requested more than $10.9 billion in funding.

Project applications were evaluated by a team of 222 career staff in the department and selected based on established criteria, which included safety, economic competitiveness, quality of life, environmental protection and state of good repair. Further criteria included innovation, such as projects

supporting Connected or Autonomous Vehicles infrastructure, broadband service to underserved communities, as well as projects that demonstrate partnerships between the public and private sectors, and non-federal revenue for transportation infrastructure investments.

The department prioritized rural projects that aligned with the criteria and addressed rural infrastructure needs. The grant announcements made today will contribute to the construction or refurbishment of over 200 bridges nationwide, from North Carolina to the refurbishment of the Brooklyn Bridge.

The BUILD Transportation Grants rebalance a 10-year, historical underinvestment in rural communities. Rural applications more than doubled from the previous year's Transportation Investments Generating Economic Recovery applications. Underinvestment in rural infrastructure has led to a decline in the routes that connect communities in rural America. In this round, in which 59 percent of the applications were for rural projects, 62 projects were awarded to rural grant applications.

Several selected projects will contribute to America's energy independence. The Permian Basin projects and the Port Arthur Multimodal Rail Expansion and Berth Expansion Project will both contribute to the efficient transportation of domestic energy products. Border security infrastructure is also supported through BUILD Transportation grants, with projects such as the Calexico East Port of Entry Bridge Expansion in California making bridge improvements to accommodate freight traffic and improving other transportation facilities at the border crossing.

The Consolidated Appropriations Act of 2018 appropriated $1.5 billion for BUILD Transportation grants. For this round of BUILD Transportation grants, the maximum grant award is $25 million for a single project, and no more than $150 million

can be awarded to a single state. There is a $5 million minimum award for projects located in urban areas, and a $1 million minimum for rural projects.

Standard Missile-3 Block IIA Destroys Target in First Intercept from Land

PACIFIC MISSILE RANGE FACILITY, Hawaii – The Missile Defense Agency completed the third successful intercept of a ballistic missile target by a Raytheon Co. Standard Missile-3 (SM-3) Block IIA missile, the next-generation variant that defeats missile threats outside the earth's atmosphere, the company announced Dec. 11.

The test evaluated the system's overall performance and achieved three milestones for the IIA variant:

■ The first successful intercept from a land-based launch.

■ The first intercept of an intermediate-range ballistic missile target.

■ The first intercept using tracking data from remote sensors, known as "engage on remote."

Raytheon's missile defense solutions continue to expand the defended area by protecting against increasingly sophisticated threats with the use of remote sensors. In this test, Raytheon's AN/TPY-2 radar served as a remote sensor, tracking and providing the missile with data on the incoming threat, instead of using the phased-array connected to the Aegis Ashore system.

“This is a versatile and sophisticated missile,” said Dr. Taylor W. Lawrence, Raytheon Missile Systems president. “Our partnership with the Missile Defense Agency and Japanese industry made these results possible.”

The IIA variant has larger rocket motors and a bigger kinetic warhead, raising its effectiveness against evolving threats. The advanced missile obliterated a medium-range ballistic missile target at sea in October. SM-3 is the only ballistic missile interceptor that can be launched at sea and on land, and has achieved over 30 intercepts in space.

Navy Announces Findings on Sinking of World War I Cruiser USS San Diego

WASHINGTON – The Navy announced its findings Dec. 11 after a two-year study into what sank the World War I cruiser USS San Diego (ACR 6).

Alexis Catsambis, Ph.D., of the Naval History and Heritage Command’s Underwater Archeology Branch, based at the Washington Navy Yard, led the project and chaired a panel discussion for media at the American Geophysical Union’s (AGU) Fall Meeting. Although the original court of inquiry believed the explosion that sank the 500-foot armored cruiser was caused by a mine, later speculation raised the theory that it might have been a torpedo.

After examining new survey data, additional archival research, computer impact and flooding models, the area of the ocean floor in which the wreck rests, and other elements related to

the ship’s loss, Catsambis announced that research team believed the explosion’s cause was a mine. In fact, they believe it was one of two types of mines laid by German submarine U-156.

“The legacy of the incident is that six men lost their lives on July 18, 1918,” Catsambis said. “With this project we had an opportunity to set the story straight and by doing so, honor their memory and also validate the fact that the men onboard did everything right in the lead up to the attack as well as in the response. The fact that we lost six men out of upwards of 1,100 is a testament to how well they responded to the attack.”

In addition to Catsambis, the panel participants included Ken Nahshon, Ph.D., of the Naval Surface Warfare Center Carderock Division in Bethesda, Maryland, and Arthur Trembanis, Ph.D., from the University of Delaware in Newark, Delaware.

The 15,000-ton armored cruiser San Diego sank off Long Island, New York, losing six sailors from a crew of 1,100. German submarines had mined the coast, implicating a mine. But the ship’s captain was perplexed that the explosion occurred aft of the ship’s widest point, which gave rise to the notion the explosion might have been caused by a torpedo even though no submarine or torpedo trail had been spotted.

Later theories suggested a coal bunker explosion or sabotage, but the source of the explosion remained a mystery.

During the presentation, the scientists detailed how each of their teams used historical analysis, archaeological research, site investigation, and impact and flood modeling to eliminate other possibilities that might have caused San Diego’s sinking such as sabotage, accident or enemy torpedo.

Trembanis explained how the use of underwater robotics and remotely deployed instruments including an autonomous underwater vehicle allowed researchers to collect high-

resolution 3D images of the site to support their conclusion.

“The format of the 3D modeling data makes analysis readily comparable,” said Nahshon. “Before we started this, I wasn’t familiar with the ability to do this underwater; above the water we do it all the time, but below water collecting 3D data is a challenge. I’ve learned that the sheer amount of expertise that’s needed to interpret it is a credit to the advances of technology in sea floor mapping.”

Before taking questions, Catsambis shared why this research is important for the U.S. Navy and how learning from the past will help to prepare for the future.

“The collection of archeological and hydrographic data establishes a baseline informing site formation processes and management of USS San Diego,” said Catsambis. “Lessons learned here are applicable to other U.S. Navy sunken military craft. This endeavor also provided real-world training opportunities for U.S. Navy divers, archaeologists, historians, modelers, naval engineers and graduate students.”

To commemorate the 100th anniversary of the loss of San Diego, the only major U.S. warship sunk in World War I, a multipartner investigative campaign dubbed the USS San Diego Project was launched in 2017; mapping the wreck, assessing the wreck’s state of preservation, modeling its sinking, and uncovering the weapon that likely sank it.

Dive training at the site occurred in August 2016 and June 2017, with the site investigation commencing September 2017, followed by the commemoration and diver survey July 2018. A major goal of the project is to raise awareness of the importance of preserving the wreck site into the future.

Coast Guard Continues Search for Possible Survivors of Capsized Migrant Boat

SAN JUAN, Puerto Rico – Coast Guard rescue crews continue searching Dec. 7 for possible survivors of a capsized migrant boat in waters just off Isla Saona, Dominican Republic.

So far, 21 people have been rescued, while seven others are reportedly still missing.

Coast Guard watchstanders in Sector San Juan overheard a VHF Channel 16 radio transmission at approximately 2 p.m. Dec. 6 from the commercial tanker Sea Board Ranger requesting assistance to find for persons in the water, approximately six nautical miles east of Isla Saona, Dominican Republic. The Sea Board Ranger crew further relayed that they located a capsized vessel at and safely recovered 20 migrants from the water.

Survivors reported that there were 28 people aboard the makeshift vessel. Shortly thereafter, Coast Guard Sector San Juan received a request for assistance from Dominican Republic authorities.

Coast Guard watchstanders diverted the Coast Guard Cutter Joseph Tezanos and launched an MH-65 Dolphin helicopter and an HC-144 Ocean Sentry aircraft to search for possible survivors.

The cutter Tezanos arrived on scene located and rescued a woman from the water on the afternoon of Dec. 6, while the crew of the Coast Guard helicopter also located the capsized vessel.

Coast Guard rescue crews participating in the search are the Cutters Joseph Tezanos and Winslow Griesser, MH-65 Dolphin helicopters from Air Station Borinquen, HC-144 Ocean Sentry

from Air Station Miami and HH-C-130 Hercules from Air Station Clearwater, Florida.

ODU, LAVLE USA Announce New Marine Electric Propulsion Laboratory for Newport News

NORFOLK, Va. – Old Dominion University (ODU) is collaborating with LAVLE USA Inc. to establish a new Marine Electric Propulsion Simulation (MEPS) Laboratory, the university announced in a Dec. 8 release. The $12 million, 22,000-square-foot lab will be built on 1.33 acres in the heart of downtown Newport News, Virginia.

The lab will house state-of-the-art equipment to develop marine electric propulsion, advanced energy storage, autonomous systems and associated technologies to advance marine vessels for military and commercial applications. It will also focus on training the current and next-generation workforce supporting the shipbuilding and ship repair industry.

ODU President John R. Broderick sees the partnership in Newport News as an ideal opportunity for hands-on learning, particularly in one of the region's key industries.

"The university is excited about this project, which has grown from of our digital shipbuilding initiative and aligns with our partners' collective vision for America Builds and Repairs Great Ships," Broderick said. "It is exactly the sort of collaborative research with which ODU wants to be affiliated – it is cutting edge, makes a significant economic impact to the

region, supports the region's military, maritime and industrial bases, and provides hands-on training and education for students, industry and naval personnel."

The lab is expected to create at least 25 high-paying jobs including designers, engineers, programmers, and analysts.

LAVLE will design the lab's engineering and building plans for city approval in the first half of 2019. Construction is expected to begin in the summer with occupancy anticipated in summer 2020.

"The advantages of workforce development in Newport News cannot be overstated. In addition to the technical advantages of partnership with ODU and the MEPS Lab, LAVLE USA is extremely excited about the workforce development opportunity where our business will become even more heavily invested. Vessel electrification and hybridization within the region is a critical future market," said Jason Nye, LAVLE CEO.

"We are pleased LAVLE and ODU have selected Newport News as the site of the MEPS Lab," said Mayor McKinley L. Price. "The research and development that will be conducted at MEPS will bring new technology to the commercial and military markets and expand Newport News' role as a center of excellence for maritime innovation and construction."

"The city and EDA are excited to host MEPS," said Florence G. Kingston, the city's director of development and secretary/treasurer of the EDA. "We have been impressed by the entrepreneurial approach LAVLE and ODU have displayed during the site-selection process for the lab."

General Dynamics Awarded $346 Million by U.S. Navy for Virginia-Class Submarine Work

GROTON, Conn. – General Dynamics Electric Boat has been awarded a $346.5 million contract modification by the U.S. Navy to provide research and development and lead-yard services for Virginia-class nuclear-powered attack submarines. Electric Boat is a wholly owned subsidiary of General Dynamics.

Under the contract modification, Electric Boat will undertake development studies and other work related to Virginia-class submarine design improvements. Additionally, Electric Boat will perform research and development work required to evaluate new technologies to be inserted in newly built Virginia-class ships, including the Virginia Payload Module.

Initially awarded in 2016, the contract has a potential value of $1.3 billion through September 2019.

ONR-Sponsored Researcher Wins Nobel Prize

ARLINGTON, Va. – The Office of Naval Research (ONR) has a long record of placing winning bets on up-and-coming scientists. In fact, it was 30 years ago that the ONR Young Investigator Program sponsored Dr. Frances H. Arnold, a professor from the California Institute of Technology, who has been awarded the 2018 Nobel Prize in Chemistry.

Arnold – who still serves as a professor of chemical engineering at Caltech – was in Stockholm, Sweden, for the Nobel Prize Award Ceremonies, where she became only the fifth woman – and the first American woman – to take home science's most recognized award.

"Dr. Arnold is the latest in a long line of Nobel Prize winners to have been sponsored through ONR basic research programs," said Dr. E. Anne Sandel, ONR executive director. "Like the others, her research has led to discoveries and breakthroughs with important implications for both the Navy and society at large."

ONR sponsored Arnold with a series of grants between 1988 and 2002.

"I received an ONR Young Investigator Award in the late 1980s, which introduced me to problems of interest to the Navy, but also problems of good intellectual content that overlapped with some of my interests in metal recognition and protein engineering," said Arnold.

It was during this period that Arnold pioneered a process known as directed evolution of enzymes, which steers enzymes – proteins that accelerate chemical reactions – toward specific functions, such as manufacturing pharmaceuticals and biofuels.

"During those years, I developed methods for creating proteins that could be useful for naval applications, but that also pushed the boundaries of protein engineering," said Arnold. "We were doing things that no one knew how to do.

"The methods we devised to make new proteins became useful to many other laboratories. That's the reason I won the Nobel Prize," she continued, "not just for what I have done with directed evolution, but for the impact that others have made with the technology we developed in those early days."

Subsequent to Arnold's original research, Dr. Laura Kienker, a

program officer in ONR’s Warfighter Performance Department, saw the promise in Arnold’s work and provided a grant from 2011 to 2014, which led to the creation of a whole new class of enzymes that is important to sustainable production of chemicals and fuels from renewable sources.

Arnold’s research and teaching has also benefitted a new generation of scientists, several of whom ONR currently sponsors through basic research grants. According to Arnold, it’s important to take interest in and support this new generation of researchers, just like ONR did in her 30 years ago.

“It’s really important to fund people at an early stage, when they are just starting to formulate their ideas, because problems we learn about early in our careers stay with us,” said Arnold. “I

can’t thank ONR enough for that critical early support and also for introducing me to a community of brilliant scientists who were breaking new ground in biological engineering.”

Since 1952, more than 60 Nobel laureates have been sponsored by ONR for their work in everything from laser technology to graphene.