

Navy Nuclear Reactor Chief: Industrial Base Healthy, but Sustainment Requires High Energy

WASHINGTON – The Navy's nuclear propulsion industrial base is meeting the needs of the Navy, but it requires a lot of attention to sustain it to ensure its availability.

"The [nuclear industrial] base is small," Adm. James F. Caldwell, director, Navy Nuclear Propulsion Program, said Oct. 2 at the Center for Strategic and International Studies, a Washington think tank. "The base is healthy and capable of supporting our Navy nuclear propulsion needs. It's sustainable through the program of record but it takes a lot of energy to sustain that."

Caldwell noted that the nuclear vendors, particularly the principal vendors, share the culture of the Navy nuclear propulsion program.

"What matters the most to the Navy nuclear propulsion program is a stable 30-year shipbuilding plan and a stable budget," he said. "These are the things that stimulate our commercial vendors to support us. If they know that they're going to have the business, they will invest their facilities and stay the course with us."

Caldwell noted that "in the 1990s, when the force structure went down, it resulted in our major suppliers operating significantly below capacity. We were worried that the demise of the nuclear industrial base would result in the loss of the last critical skills that we needed. Since then we focused on right-sizing the industrial base to sustain the critical skills and facilities that we need, and the optimal words were

low-rate production, consolidation and down-sizing as appropriate to sustain the skills that we need.”

He also said that “since the 1970s, the Navy nuclear propulsion program has been the sole source that has been driving [the delivery of] new reactors. We’ve done so through first-tier suppliers who don’t specifically rely on commercial business for their business. We have commissioned some 99 vessels since 1979.

“Today, our industrial base is made up of hundreds of vendors of various sizes, but we’re focused mostly on about 28 principal vendors,” he said. “Many of these have been with us for 40 or 50 years and some going on even 60 years. The portion of Navy work for these vendors ranges from 15 percent to 95 percent, some even a little more; the average is around 60 percent. Many of them are seeking opportunities to grow their business in the commercial sector.”

Caldwell regards the nuclear industrial base in three levels: reactor plant heavy components; flow components such as valves and pumps; and reactor instrumentation.

He said the Navy is down to one vendor for reactor plant heavy components, for which the Navy’s requirements are very stringent.

“In the flow control [components], there’s some degree of competition, but the barriers for entry are high,” he said. “It does take many years to develop vendors to be able to develop the equipment. Probably the most competition is in reactor instrumentation and control. A lot of our vendors have other government business. In this area we have structured our approach to maintain a level of competition while also preserving some redundancy in the vendor base.”

EMCORE Awarded Inertial Navigation Systems Contract for Maritime Systems Application

ALHAMBRA, Calif. – EMCORE Corp., a provider of advanced mixed-signal optics products that provide the foundation for today's high-speed communication network infrastructures and leading-edge defense systems, has been awarded a contract valued at over \$4 million to design and manufacture navigational grade Inertial Navigation Systems (INS) for a maritime systems application, the company said in an Oct. 1 release.

This new INS will be based on the EMCORE-Orion series of navigators which incorporate EMCORE's latest generation fiber-optic gyroscope (FOG) technology. It is designed to be a form, fit and function replacement for legacy LN-100 units used in this application. As part of the contract, EMCORE expects to deliver initial production units that will be used for qualification.

"We are extremely pleased to be selected for this program to develop a navigator for this application," said David Faulkner, EMCORE's vice president and general manager of Aerospace & Defense. "EMCORE demonstrated the advantages of its low-risk production FOG technology and recently developed EMCORE-Orion series INS technology, which were key reasons for being selected for this program."

"This latest contract award results from the innovative fiber optic gyro and inertial sensing technology being developed by our Navigation Systems group," said Jeffrey Rittichier,

EMCORE's president and CEO. "The investments we are making in this business segment are enabling us to compete and win significant contracts. We look forward to delivering the highest quality product for this program."

F-35s Join Forces with British Aircraft Carrier to Make History

LONDON – The first F-35 Lightning fighter jets have landed on the deck of the United Kingdom's new aircraft carrier, making history and marking the beginning of more than half-a-century of "Carrier Strike" operations, the U.K. Ministry of Defence in a Sept. 28 release.

Royal Navy Commodore Nathan Gray and Royal Air Force Squadron Leader Andy Edgell were the first pilots to land their F-35s on board the carrier, demonstrating the formidable force HMS Queen Elizabeth and its fleet of jets will be.

The first landings and takeoffs from HMS Queen Elizabeth are the culmination of a national endeavor lasting more than a decade to bring an aircraft carrier back to the U.K.'s arsenal. Able to embark up to 24 of the supersonic jets, the carrier provides the Royal Navy with a capability possessed by few others.

"The largest warship in British history is joining forces with the most advanced fighter jets on the planet. This marks a rebirth of our power to strike decisively from the seas anywhere in the world," said Defence Secretary Gavin Williamson. "The historic first landing on the deck of HMS

Queen Elizabeth is a monumental moment in our country's proud military history. It is also a statement of Britain's determination to promote peace and prevent war."

The landings mark the start of more than 500 takeoffs and touch-downs set to take place from the mammoth warship during the next 11 weeks, with the jets being put through their paces in a range of weather conditions.

The return of "Carrier Strike" to the United Kingdom comes eight years after a fighter jet last landed on a British carrier.

"I am quite emotional to be here in HMS Queen Elizabeth seeing the return of fixed-wing aviation, having been the captain of the aircraft carrier which launched the last Harrier at sea nearly eight years ago," said the ship's commanding officer, Capt. Jerry Kyd, who was also the captain of HMS Ark Royal when the last Harrier took off from a carrier. "The regeneration of big-deck carriers able to operate globally, as we are proving here on this deployment, is a major step forward for the United Kingdom's defense and our ability to match the increasing pace of our adversaries. The first touch-downs of these impressive stealth jets shows how the United Kingdom will continue to be world leaders at sea for generations to come."

"The Queen Elizabeth-class carriers have been specifically designed and built to operate the F-35 Lightning, offering an immensely flexible and potent combination to deliver military effect around the world," said Cmdr. Andrew Betton, commander U.K. Carrier Strike Group. "Conducting these trials is a critical and exciting step on this journey and I applaud the many thousands of civilian and military personnel who have played a part in bringing the strategic ambition to reality."

While the HMS Queen Elizabeth Class carriers will be able to project British military power across the globe for the next

half-century, they can also provide humanitarian relief, deepen defense relationships with key allies and provide critical support to our forces as they are deployed across the world.

Royal Netherlands Navy Successfully Integrates SeeByte's Neptune into Remus 100

EDINBURGH, Scotland – The Royal Netherlands Navy (RNLN) has successfully integrated SeeByte's Neptune into its New Generation Remus 100 fleet, the company announced in a Sept. 28 release.

The vehicles are equipped with SeeByte's goal-based mission planning and autonomy engine software to expedite and optimize single and multivehicle operations.

"We are privileged to be in a position to continue working with The Royal Netherlands Navy and assist in their goal to achieve security at and from the sea," said Alastair Cormack, SeeByte's technical client manager. "With the U.S., U.K. and Canadian navies currently using Neptune software, it is fantastic that the RNLN will now have access to the advanced capabilities we offer."

Neptune can be used to coordinate fleets of unmanned assets for mine countermeasures missions enabling operators to easily coordinate various assets to search, classify and map, reacquire and identify operations as part of a single mission.

By combining all the mission plans and monitoring in a single work station and user interface, teams are able to manage larger fleets of unmanned assets without putting additional strain on the operators.

NAVSEA Assumes Maintenance Functions for SRF-JRMC

WASHINGTON – Commander, Naval Sea Systems Command (NAVSEA), formally assumed responsibility for ship maintenance availabilities at U.S. Naval Ship Repair Facility and Japan Regional Maintenance Center (SRF-JRMC) from commander, U.S. Pacific Fleet (USPACFLT), Oct. 1, NAVSEA said in a release.

NAVSEA's responsibilities include the oversight of all ship maintenance and repair operations, industrial processes and procedures, and repair-related programs. USPACFLT will retain administrative control and budget authority for SRF-JRMC.

"This is a tremendous opportunity for the Navy to implement best practices across all ship maintenance facilities," said NAVSEA Commander, Vice Adm. Tom Moore. "The added synergy will allow us to deliver ships out of maintenance on time and within cost. SRF-JRMC is an outstanding command with a proud and rich history of ensuring the readiness of our forward deployed ships.

"We are thrilled to have them join the One NAVSEA Team. This change will help ensure that the exceptional workforce of SRF-JRMC can benefit from the maintenance expertise NAVSEA brings, putting into practice lessons learned to ensure a streamlined approach to ship maintenance across the fleet."

Following the 2017 Comprehensive Review and Strategic Readiness Review, the Navy determined that NAVSEA's technical expertise and proven maintenance processes could be harnessed to ensure the delivery of materially-ready ships to USPACFLT.

"NAVSEA is looking forward to directly supporting USPACFLT and providing a smooth transition to ensure alignment of maintenance industrial operations for SRF-JRMC," Moore said. "As the Force Behind the Fleet, NAVSEA is dedicated to delivering deployable ships to the fleet on time and on budget."

In addition to SRF-JRMC, NAVSEA oversees ship maintenance at the Navy's four public shipyards and seven regional maintenance centers.

Navy Air Warfare Director: C-130 Fleet Will be Full Up in Fiscal 2019

WASHINGTON – The Navy expects to have all of its C-130 Hercules transport aircraft back flying this fiscal year after grounding many for problems with their propellers.

"We'll have all the aircraft up by FY '19 and all the aircraft to the NP2000 [propeller] by FY '20," said Rear Adm. Scott D. Conn, director of Air Warfare in the Office of the Chief of Naval Operations, testifying Sept. 28 before the House Armed Services Seapower and Projection Forces subcommittee.

The Navy Reserve operates 24 C-130T and KC-130T transports, as well as 15 C-40A Skytrain II airlift jets. They are used to

support deployed fleet operations by transporting personnel, cargo, spare parts and mail to ships and stations. The C-130 will become even more important in the future.

“The C-130T is the only Navy aircraft capable of moving all modules of the F-35’s engine,” Conn said.

Many Navy and Marine Corps C-130s were grounded as a precaution after a Marine Corps Reserve KC-130T crashed in Mississippi in July 2017, with the possibility that a propeller separated from an engine and cut through the fuselage. The crash killed 15 Marines and one Sailor.

Congress supported the Navy in procuring new propeller blades and new NP2000 propellers for the legacy C-130Ts and KC-130Ts with \$121 million.

The Air Force and Navy formed an Independent Review Team at Warner Robins air logistics complex in Georgia to revamp C-130 propeller overhaul requirements, with the Marine Corps, Coast Guard, and partner-nation C-130 operators also invested in the process.

The logistics complex began build-up of 54 propellers in March in support of naval C-130s. The propellers were assembled using new production blades procured from the original equipment manufacturer who currently is increasing delivery from 30 a month to 48 a month by October, Air Force Lt. Gen. Donald E. Kirkland, commander of the Air Force Sustainment Center, also testified at the hearing.

The Navy also is upgrading the mission systems of its C-130s.

“For fiscal 2019 the Navy requested \$28.5 million for avionics and communications obsolescence upgrades to keep the aircraft compliant with FAA and ICAO [International Civil Aviation Organization] standards to be able to enter air traffic management systems throughout the world,” Conn said. “These modernization efforts are critical to maintaining Navy

logistics support to our deployed forces.”

The Navy completed procurement of the C-130Ts in 1996.

“We’re now looking at recapitalizing our effort beginning with advance procurement and buying three [C-130J] aircraft in FY ’23,” Conn said.

HII Awarded Advance Procurement Contract for 11th NSC

PASCAGOULA, Miss. – Huntington Ingalls Industries’ (HII’s) Ingalls Shipbuilding division received a \$97 million fixed-price contract from the U.S. Coast Guard on Sept. 28 to purchase long-lead materials for an 11th national security cutter (NSC).

“Every National Security Cutter built at Ingalls Shipbuilding is an immediate and important defender of America’s shores when it joins the fleet,” said Ingalls Shipbuilding President Brian Cuccias. “This long-lead material award is critical to the efficient production of these platforms and to the health of our 422 suppliers in 40 states. We look forward to building and delivering another quality ship for the Coast Guard.”

The advance procurement funds will be used to purchase major components for NSC 11, such as steel, the main propulsion systems, generators, electrical switchboards and major castings.

Ingalls has delivered seven NSCs, the flagship of the Coast Guard’s cutter fleet, designed to replace the 12 Hamilton-

class high-endurance cutters that entered service in the 1960s.

President Signs Budget Boosting Navy Ship, Aircraft Procurement

ARLINGTON, Va. – The fiscal 2019 defense budget, part of a multiagency appropriations bill signed into law Sept. 28 by President Donald J. Trump, reflects the will of Congress to plus-up Navy Department ship and aircraft procurement.

The law appropriates \$606.5 billion for base defense spending and \$67.9 billion for Overseas Contingency Operations funds, totaling \$675 billion. This is \$20.4 billion over fiscal 2018 funding levels and matches the fiscal 2019 request.

The law, the first defense budget in 10 years that was passed before the fiscal year it funds began, added two littoral combat ships, two F-35B and four F-35C Lightning II strike fighters, two E-2D Advanced Hawkeye early warning aircraft and seven MV-22B/CMV-22B Osprey tiltrotor transport aircraft. The law deleted funding for two C-40A Skytrain II transport aircraft.

The law funds 13 ships in 2019 at \$24 billion, \$2.3 billion more than the Navy's request. These include:

- Two Virginia-class attack submarines (\$4.3 billion)
- Three Arleigh Burke-class Flight III guided-missile destroyers (\$5.3 billion)
- Three littoral combat ships (\$1.6 billion)
- One expeditionary sea base ship (\$647 million)

- One Spearhead-class expeditionary fast transport (\$225 million)
- Two John Lewis-class fleet replenishment oilers (\$1 billion)
- One towing, rescue and salvage ship (\$80.5 million)

The law also funded advance procurement for several ships:

- \$350 million for an LPD Flight II amphibious transport dock ship
- \$350 million for the LHA 9 amphibious assault ship
- \$250 million to purchase an additional Arleigh Burke guided-missile destroyer in fiscal 2020
- \$3 billion to support the construction of the Columbia-class ballistic-missile submarine
- Adds \$18 million for industry studies and requirements definition for the Common Hull Auxiliary Multi-Mission Platform (CHAMP) to replace sealift and auxiliary vessels and directs the Navy to present an updated acquisition strategy for CHAMP.

Aircraft funded for fiscal 2019 (\$20 billion, \$1 billion more than the Navy's request) include:

- 22 F-35B and 13 F-35C Lightning II strike fighters (\$3.5 billion)
- 24 F/A-18E/F Super Hornet strike fighters (\$1.9 billion)
- 10 P-8A Poseidon maritime patrol aircraft (\$1.8 billion)
- Nine E-2D Advanced Hawkeye early warning aircraft (\$1.1 billion)
- Three MQ-4C Triton maritime patrol UAVs (\$544 million)
- Two KC-130J Super Hercules refueler/transport (\$150 million)
- 13 MV-22B and CMV-22B Osprey tiltrotor transports (\$1.1 billion)
- Eight CH-53K King Stallion heavy-lift helicopters (\$1 billion)
- 25 AH-1Z Viper attack helicopters (\$798 million)
- Six VH-92A presidential transport helicopters (\$49 million)

Sara Fuentes, staff vice president, legislative relations,

contributed to this report.

Marine Corps Awards Contract for Lighter Body Armor System

MARINE CORPS BASE QUANTICO, Va.— Marine Corps Systems Command (MCSC) has awarded a contract to produce Plate Carrier Generation IIIs (PC Gen IIIs) – a move that will help Marines increase their mobility and keep them safe through training and deployments.

Vertical Protective Apparel, LLC, of Shrewsbury, New Jersey, was awarded a \$62.6 million firm-fixed-price, indefinite-delivery/indefinite-quantity contract to produce and deliver the PC Gen IIIs. A maximum quantity of 225,886 will be delivered, and the work will be completed by September 2023.

The PC Gen III is a body armor system that provides increased mobility, improved fit, lighter weight and additional modularity to support various types of missions. Compared to the legacy system, the PC Gen III offers increased ballistic protection and will be available in eight sizes to allow for a more customized fit across the Marine Corps.

“The legacy carrier fit the span of the Marine Corps, but this new system is more tailorable to fit Marines of various sizes with three new smaller-stature options,” said Flora “Mackie” Jordan, body armor engineer for the Infantry Combat Equipment Team at MCSC. “We wanted to give as much mobility back to Marines as possible by reducing the weight and bulk of the vest without decreasing ballistic protection. We were able to reduce the weight of the vest by 25 percent.”

The goal was to lighten the load Marines carry to reduce fatigue and improve their operational capability in the field. A few new features of the PC Gen III contributed to the weight reduction.

Excess material was removed from the shoulders and about an inch-and-a-half was taken from the bottom, which provides better integration with the USMC Pack. The team also chose a laminated laser cut material that only absorbs seven percent of water compared to 70 percent with the legacy system.

"We made sure to get the best system for our Marines, which included choosing the best lightweight soft armor and the best quality when it comes to the cut and sew of the carrier," said Mackie.

While conducting research, MCSC discovered Marines are eight percent faster when the PC Gen III systems were combined with prototype lightweight plates, compared to the Enhanced Small Arms Protective Inserts. They also found Marines could remove and reassemble the vest in less than three seconds.

"With the old system, it took about seven seconds to take it off, and 10 minutes to reassemble," said project officer Capt. Frank Coppola, who helped test the vests. "The new quick release works a hundred times better. It has a vastly improved quick detach system for Marines to act fast while on missions."

The PC Gen III is less bulky and easier for Marines to move in, especially when working in tight spaces. An inner vest was also added to increase modularity of the system. Marines can adjust it to meet the requirements and environment of their particular mission.

"Our vests have come a long way over the past 15 years, and the reduced weight and increased mobility is huge," Coppola said. "The fact that we can decrease the size of the vest and still be protected is the key."

Infantry, school house, and Reconnaissance Marines, along with vehicle crewmen and combat engineers will receive the vests when fielding begins in the third quarter of fiscal year 2019.

Navy Acquisition Chief: Navy Moving to Use Block Ship Maintenance Contracts

ARLINGTON, Va. – The Navy's top acquisition official said the service is moving toward block bidding of ship maintenance rather than issuing contracts for single ship availabilities. The Navy also is working to rapidly address unplanned repair needs for its ships.

"We've got a real challenge and opportunity ahead on how we operate [the Navy's] repair enterprise at speed," James F. "Hondo" Geurts, assistant secretary of the Navy for Research, Development and Acquisition, told reporters Sept. 26 at the Modern Day Marine expo in Quantico, Virginia. "We've already instituted a number of changes in contracting, how we deal with over-and-above and unplanned work.

"Traditionally, we've taken a very bureaucratic approach to resolve each one of those," he said. "[We're] coming up with a new contract mechanism that allows us to rapidly adapt to that unknown work as it pops up, so that we aren't keeping ships in the yards longer than they have to be."

Geurts said the Navy is "looking at how do we put multiple ships together so that there is a longer planning window and industry can provide better solutions because they have a longer-term look, whether that's workforce, or training, or

yard planning. Ideally, we would contract for all the ship repairs for the next six months in a block as opposed to our more traditional [method of] each ship's repair independently. That way industry would better plan and [facilitate] for the long haul."

He also said that with the number of ship repairs needed, "we don't have the capacity now without improving our efficiency and working with industry to figure how to become more efficient, as well as looking at their scale and how we bring more players into the marketplace to help us with that growing need."

Geurts cited a recent request for proposals in which three or four repairs were bundled together in a single bidding action.

"We've revised how we're doing this unplanned of over-and-above work, which is adding great efficiencies," he said. "We have approved [the] grouping together of contracts."

He also said the Navy conducted a survey of shipyards across the country, including those not currently doing business for the service, to determine repair capacity, location of dry docks, etc., "and proactively going out and, where there is opportunity, certifying those facilities and enabling them to compete and add into the marketplace."

The Navy received last month feedback from shipyards numbering in "double digits."

"Ultimately, we want a vibrant repair capability that can both do the work we know really well, efficiently and effectively, as well as give us capacity for work that we didn't know as it pops up," he said.

As to the block bidding, Geurts said that "if you have the right competitive market you will absolutely save money, because right now we're doing it single bid by bid. It's really hard for a company to do that efficiently."

He also spoke of a workforce challenge across the country, “whether it’s in the public yards or in the private repair yards. We right now don’t have the full workforce we need to meet the demand.”

Geurts sees the Navy’s efforts as “providing a better stability and a better planning horizon” for the ship maintenance enterprise.

According to the Marine Corps, fielding for the JLTV will begin in spring 2019. In all, the Army plans to purchase 49,000 JLTVs and the Marine Corps will purchase 9,091.