Analyst: Navy Needs to Re-Configure Carrier Air Wings for Future Fight

WASHINGTON – The Navy needs to change the structure of its future carrier air wings (CVWs) in the future to meet future threats, particularly in high-end combat against potential adversaries such as China and Russia, a team of defense analysts said in a published report.

"If the U.S. Navy is going to continue to invest in aircraft carriers, it need to re-consider how it's going to configure its [carrier] air wings," said Bryan Clark, a senior fellow at the Center for Strategic and Budgetary Assessments, a Washington think tank, speaking Feb. 7 at the center about the new report, Regaining the High Ground at Sea: Transforming the U.S. Navy's Carrier Air Wing for Great Power Competition.

The Navy's current CVW "is not designed for the way we're going to operate in the future," Clark said. "I would even go further to say, unless the Navy is going to re-configure its air wings, it should reconsider its continued investment in aircraft carriers."

Clark briefed the audience on worst-case scenario where an adversary such as China could launch a salvo of 600 1,000-pound-class weapons at a carrier strike group and recommended the type of defenses, including a CVW, that would be needed for a carrier to operate in the ocean in a high-end fight.

The report said that today's CVWs "lack the reach to operate at sufficient ranges from operational areas; the stealth to fight in contested environments; and the specialized capabilities in IRS&T [infrared search and track], EMW [electromagnetic warfare], and ASW [anti-submarine warfare] needed to defeat adversary platforms and systems."

Clark sees the need for a CVW to move toward including more unmanned aircraft. He recommended development of three new aircraft types: an unmanned air combat vehicle (UCAV); an unmanned refueling aircraft, initially the MQ-25; and FA-XX, a new fighter with a longer strike range.

The report's recommendations for re-configuring the carrier air wing by 2040 include:

* Sustaining planned procurement of the F/A-18E/F strike fighter through fiscal 2023.

* Sustaining procurement of the F-35C strike fighter through the first half of its planned production, ending in fiscal 2024.

* Develop an FA-XX fighter, a derivative of an existing fighter, by 2024.

* Develop a low-observable UCAV attack aircraft for production by 2025.

* Continue development of the MQ-25 aerial refueling UAV and increase overall number of tanker aircraft to 12 per air wing. Also,
develop the UCAV as a tanker for the mid-to-late 2030s.

* Retire the EA-18G electronic attack aircraft as they reach the
end of their service lives during the 2030s and replace them with
UCAVs equipped with the Next-Generation Jammer and also with

expendable UAVs and missiles.

* Field a rotary wing MALE [medium-altitude, long-endurance] UAV
(in concert with the Marine Corps) to augment the carrier-based
helicopter squadrons and assume some of the ASW missions.

Clark's team for the report included Adam Lemon, Peter Haynes, Kyle Libby and Gillian Evans.

CNO Richardson: 'Looking at 25-50 years of a maritime-centric world'

WASHINGTON – The role of the U.S. Navy as a diplomatic and economic actor in U.S. foreign policy and execution is as strong as ever and likely to remain so for the next several decades, the Navy's top officer said.

"In general, we're looking at 25 to 50 years – easy – of a maritime-centric world," said Adm. John M. Richardson, chief of naval operations, speaking Feb. 6 to an audience at the Atlantic Council, a Washington think tank. "[There will be] lots of responsibilities for maritime forces coming in the next 50 years.

"Those responsibilities are not the only military dimension of national power, but the Navy has a tremendous history of enhancing the diplomatic element of national power," Richardson said. "There have been major treaties and leader summits conducted on U.S. warships. Gunboat diplomacy–there is

something to that still. When we visit foreign ports, it's almost a given that the U.S. ambassadors to that country will host a reception on the ship because its sovereign U.S territory."

The CNO noted the Navy's rich role in U.S. diplomatic history, saying that there is "a role for that going forward."

Regarding influence on economic power, Richardson said the Navy's role "in preserving sea lines of communication – 90 percent of the world's trade goes over the seas."

Richardson said the maritime rules set developed over decades since World War II "provide that level playing field" that has benefited the nations, "perhaps most especially China, which has grown tremendously.

"We need to advocate for preserving that," he said.

Richardson has advocated consistency in complying with and enforcing international rules regarding freedom of navigation in current areas of tension – the South China Sea and the Taiwan Straits – as necessary to preserve the freedom of maritime commerce in international waters.

CNO Richardson: Rail Gun Is a 'Case Study' in 'How Innovation Maybe Shouldn't Happen'

WASHINGTON – The Navy's effort to field an electromagnetic rail gun has taken too long to develop but is yielding other

technological advances, the Navy's top officer said.

"I would say that rail gun is the case study that would say, 'this is how innovation maybe shouldn't happen,'" said Adm. John M. Richardson, chief of naval operations (CNO), speaking Feb. 6 to an audience at the Atlantic Council, a Washington think tank.

"[The rail gun project] has been around 15 years, maybe 20; 'rapid' doesn't come to mind in a time frame like that," the CNO said, having just addressed the need for rapid prototyping and acquisition agility in order to maintain a technological edge in great power competition.

"Now we've learned a lot [from the project], and the engineering of building something like that that can handle that much electromagnetic energy and not just explode is challenging," he said. "So, we're going to continue after this – we're going to install this thing, we're going to continue to develop it, test it. It's too great a weapon system so it's going somewhere, hopefully."

Richardson said that it was not uncommon in innovative approaches to yield unforeseen benefits.

The projectile conceived for the rail gun "is actually a pretty neat thing in and of itself," he said. "The high-velocity projectile is also usable in just about every gun we have. It can be out in the fleet very, very quickly independent of the rail gun. So, this effort is breeding all sorts of advances. We just need to get the clock sped up with respect to the rail gun."

CNO: ‘More Sporty Security Environment’ Will Affect Next Force-Structure Assessment

ARLINGTON, Va. – The Navy’s top officer said that a forthcoming force structure assessment will reflect the guidance of the National Defense Strategy, the changing security environment and emerging technology.

“The security environment has only gotten more sporty, so we’ll take that into account,” said Adm. John M. Richardson, chief of naval operations, speaking Feb. 1 to reporters in the Pentagon, referring to the emergence of increased and sometimes aggressive naval activity in recent years by the Russian and Chinese naval and air forces.

Richardson also said that “technology is starting to come into play, so what counts as a naval platform is going to be an interesting discussion in this new force structure assessment. We want to make sure we are moving forward in a very evidence-based way, so that we’re not counting on something that hasn’t been relatively proven when it comes to the security of the nation, but we also want to make sure we’re moving fast.”

Increased agility in operations and more rapid development of technology are themes that Richardson has emphasized in recent public addresses.

Although the CNO did not discuss further what counts as a naval platform, the issue is likely to come forth as the Navy develops large and medium unmanned surface vessels as part of its Future Surface Combatant fleet. Unmanned underwater vehicles such as the Orca and Snakehead may also blur the definition of a platform and hence what counts as a ship to be counted in the fleet.

“We’re on a path to grow the Navy,” he said. “The last force structure assessment was done about 18 months ago, put out this 355-ship number. There is structure within that 355, so sometimes people don’t recognize that. … That 355 number really came about by a number of studies that were conducted inside the Department [of the Navy] and outside the department. They consistently advocated for a stronger naval force, more naval power. The all converged into something in the mid-to-upper 300s in terms of numbers of platforms.”

The 355-ship Navy was codified by the Congress in the fiscal 2018 National Defense Authorization Act. The Navy determined its goal of 355 ships in a force structure assessment released in December 2016.

Richardson said the new force structure assessment report is due later this year.

“We’ll see where that goes,” he said. “We’ll get a new number. We may hold to it, we may not. The analysis is in process.”

Navy Begins Competition for New Training Helicopter

ARLINGTON, Va. – The Navy has issued a request for proposals (RFP) for new training helicopters to replace its fleet of TH-57 Sea Ranger helicopters in the Navy’s aviation training command.

The Naval Air Systems Command posted the RFP on Jan. 28 for the TH-XX program, designed to produce a new helicopter to succeed the TH-57B/C in rotary-wing training, including training in Instrument Flight Rules.

The Navy began using the TH-57A helicopter in 1981 to train rotary-wing pilots for the Navy, Marine Corps, Coast Guard and some foreign militaries. The helicopters were later upgraded to the TH-57B form primary training and TH-57C version for advanced and instrument training. Three helicopter training squadrons of Training Air Wing Five at Naval Air Station Whiting Field, Florida – HT-8, HT-18 and HT-28 – train student aviators in 41 TH-57Bs and 72 TH-57Cs.

The Navy expects to use the new helicopter and associated ground-based training systems to train at least 600 rotary-wing and tilt-rotor aviators per year, a number expected to increase through 2040. More than 50 percent of naval aviators are rotary-wing and tilt-rotor pilots.

The TH-XX helicopter will be one component of the Advanced Helicopter Training System, which also will include a Ground-Based Training System and contractor logistics and maintenance support.

The RFP announcement on the FedBizOps website states that the Navy expects the full and open competition to result in a single firm fixed-price contract for a total of 130 commercially derived aircraft through the base contract award and up to four options.

Three helicopter manufacturers are expected to submit proposals. Bell is expected to propose its Model 407GXi – a twin engine helicopter – and its single-engine Model 429. Airbus is expected to offer its model H135, a twin-engine helicopter, while Agusta-Westland is expected to propose its single-engine TH-119.

The proposals are due to Naval Air Systems Command by April 2. The Navy expects to award a contract in the first quarter of fiscal 2020.

Navy Orders 79 Net-Enabled Harpoons from Boeing

ARLINGTON, Va. – The Navy has exercised a contract option to order 79 Block II+ kits for Harpoon cruise missiles, the Defense Department said in a Jan. 30 release.

The $16 million order by the Naval Air Systems Command comprises the second production order of Block II+ kits for the air-launched AGM-84 Harpoon, which is deployed on the F/A-18 strike fighter and P-3 and P-8 maritime patrol aircraft. The order follows a batch of 15 kits delivered in 2018.

The Block II+ version of the Harpoon is a net-enabled weapon that can receive target updates via data link to more refine the missile's radar acquisition. Jim Bryan, director of Cruise Missile Systems for Boeing Missile and Weapon Systems, in a Jan. 16 conversation at the Surface Navy Association symposium, said a Block II+ kit runs in the range of a couple hundred thousand dollars, much cheaper than delivering a new missile.

The Block II+ kits are being delivered to Naval Air Systems Command for air-launched weapons. Bryan said Boeing stands ready to build kits for the surface-launched and submarine-launched versions of the Harpoon should the Navy determine a requirement.

The Harpoon is now fielded by more than 30 nations. The Block II, version which is not net-enabled, is marketed to international customers. Bryan said Boeing has the largest order backlog in the Harpoon program's history and will be meeting demand by expanding its manufacturing facilities.

CNO Defends Survivability, Utility of Aircraft Carriers

WASHINGTON – The Navy's top officer defended the notion of survivability for U.S. aircraft carriers and their battle groups in an era when great power competitors are developing advanced weaponry such as hypersonic missiles.

"There is a great virtue to being able to move an airfield 720 miles in a day," Adm. John M. Richardson, chief of naval operations, said Jan. 28 to an audience at the Brookings Institution, referring to the mobility of an aircraft carrier as opposed to a land-based airfield.

Stating that the topic of hypersonic missiles necessarily involved classified information that he could not discuss, Richardson said that the Navy was very much engaged in ensuring the survivability of its aircraft carriers.

"So rather than talk about the vulnerability of the carrier strike group, we should think about it as the most survivable airfield in the region," Richardson said. "If you look at the history of the vulnerability of aircraft carriers, we're less vulnerable now than we have been since and including World War II.

"In the Cold War, the Soviet submarine force was out there in great numbers, so there was vulnerability associated with that. So a combination of operational concepts and defensive systems – it is a give and take as we go – those carriers are able to have a big impact on the operational space."

CNO: ‘We’ve Got to Restore Agility’

WASHINGTON – The Navy must be able to rapidly adjust to changing geopolitical situations and technological advances to maintain maritime superiority, the Navy’s top officer said.

“We’ve got to, in the Navy, restore agility,” said Adm. John M. Richardson, chief of naval operations (CNO), said Jan. 28 to an audience at the Brookings Institution, a Washington think tank.

Richardson was not talking just of acquisition agility, a recent theme of other Navy officials to make the weapons procurement more responsive to emerging requirements, though he touched on that need as well.

The CNO said that agility has three dimensions, one of which is conceptual agility in the way the Navy operates.

“Frankly, we just need more imagination,” he said. “We have a conceptual or imagination challenge to be competitive at the low end of the spectrum [of naval warfare]. At the high end there is this capability challenge as technology moves faster and faster and more tools become available. We want to make sure that at the high end we get things done, get them done faster, get them out to the fleet faster so that we will compete.”

The second dimension is geographical agility.

“The Navy got very, very good at putting strike groups together,” he said. “Those strike groups would leave Norfolk or San Diego and book it to the [Persian] Gulf. They would do

their operations and stay there as long as they could and then they would come back. We got excellent at that. But that was very predictable. We had the Optimized Fleet Response Plan, optimized to get the most presence for the least amount of resources. It got pretty optimized that way.

“It wasn’t very flexible, it wasn’t very dynamic, and it wasn’t very agile,” Richardson said. “As we regain that muscle memory [and] go back and do those sorts of things, this geographic agility, going to places we haven’t been in a long time, we’re doing so a little bit less predictably [with] fewer indicators of where we’re going to go, is a big part of our business.

Richardson made the same point with the Navy’s role in ballistic missile defense (BMD).

“We’ve had some ships protecting some pretty static assets on land for a decade now,” he said. “That [BMD] ship is designed to be a maneuver force. If that asset is going to be a long-term protective asset, then let’s build something on land and liberate these ships from this mission.

“[BMD] is an important mission,” he said. “We will be there as long as we need to, but it seems that land-based system is better suited to protect a land-based asset than a ship. Then I can take

a ship out of those small boxes where they have to stay for ballistic missile defense and get them moving again.”

The CNO noted the recent voyage of the USS Harry S. Truman carrier strike group north of the Arctic Circle as an example of geographic agility, the first such carrier operations since 1991.

Speaking of the third type, technological agility, the CNO said, “We simply have to get better at this. It’s a strategic Achilles’ Heel. It’s the lack of tempo in terms of how we can

field technology to the fleet. We cannot get outpaced in this."

Richardson also said the current great power competition "is going to be a long competition. We have to think in terms of infinite-game-type strategy."

He pointed out that, at the high end of the warfare spectrum, "the U.S. Navy must always de-escalate on the high end on our own terms. Which is another way of saying we want to have the best capability on the water."

Navy is Pushing Advances in Offensive Mine Warfare

ARLINGTON, Va. – While mine countermeasures dominate the Navy's efforts in mine warfare, the service has accelerated improvements over the last two years in its weaponry in offensive mine warfare, the ability to lay anti-ship and anti-submarine mines.

The service now is developing the Clandestine Delivered Mine (CDM), Capt. Danielle George, the Navy's mine warfare program manager, said Jan. 17 at the Surface Navy Association convention in Arlington. The Navy is conducting testing of the new cylindrical-shaped mine and is scheduled to conduct end-to-end testing during the second quarter of fiscal 2019. Initial deliveries are scheduled for 2020. George said she was not at liberty to reveal the delivery platform(s) for the CDM.

Another new mine program, started in 2018, is the Hammerhead, an encapsulated torpedo designed to lie in wait for submarines. The capsule for the torpedo would be anchored to

the ocean floor, much like the Mk60 CAPTOR mine of Cold War vintage that housed a Mk46 anti-submarine torpedo. (The CAPTOR was withdrawn from the Navy's inventory in 2001.) The Hammerhead will be designed to have modular architecture to allow for technology insertion. The Navy expects to issue a classified request for information for the Hammerhead this year.

Until recently, the Navy's mine inventory was limited to the Mk62, 63 and 65 Quickstrike air-delivered mines and the Submarine-Launched Mobile Mine. The Mk62 and Mk63 Quickstrike mines are blast/fragmentation 500-pound Mk82 and 1,000-pound Mk83 bombs, respectively, equipped with influence target-detection devices for use in shallow water. The Mk65 is a thin-walled casing with a 2,000-pound warhead and equipped with a target-detection device for magnetic, seismic and pressure detonation.

For these air-delivered mines, the Navy has ordered new target-detection devices and adapters from Sechan Electronics Inc. during the last quarter of fiscal 2018. The Navy also has adapted the Joint Direct-Attack Munition (JDAM) guidance kit for the Quickstrike weapons, allowing for more precise seeding of the mines. This capability was demonstrated in Exercise Valiant Shield in 2018. In addition, an extended-range version of the JDAM Quickstrike – through installation of a wing kit – will be tested during the third quarter of fiscal 2019.

The Navy has not laid aerial mines in a conflict since Operation Desert Storm in 1991, when A-6E aircraft seeded mines in Iraqi waters. The capability remained intact, though low-key, in subsequent years.

LPD 17 Program Manager: These Ships 'Can Do Anything'

ARLINGTON, Va. – The San Antonio-class amphibious transport dock ships (LPD 17s) in production are incorporating improvements as the class progresses to the Flight II configuration, the Navy's program manager said.

"The mission remains the same," Capt. Brian Metcalf, the LPD 17 program manager, noted Jan. 16 at the Surface Navy Association symposium of the role of the 14 older Flight I LPDs and the forthcoming Flight II ships.

The Flight II LPD 17 ships, beginning with LPD 30, will incorporate improvements that include the Enterprise Air Search Radar (EASR), Consolidated Afloat Networks and Enterprise Services (CANES) architecture, a destroyer-style mast, boat deck, SLQ-32 Surface Electronic Warfare Improvement Program Block, and the Rolling Airframe Missile. The Flight II will retain the same hull form and propulsion plant as a Flight I ship but have improved fuel efficiency and electrical distribution. The Flight II will be capable of handling the CH-53K King Stallion heavy-lift helicopter.

The future USS Fort Lauderdale (LPD 28), a Flight I ship, will be the first LPD to have CANES installed and be fitted with a destroyer-style mast. The ship is scheduled for delivery in fall 2021. Metcalf said CANES will be back-fitted to older ships of the class.

The future USS Richard M. McCool Jr. (LPD 29), the last Flight I ship, will have the EASR installed. The ship is scheduled for delivery in 2023.

The Flight II ships will replace the Navy's eight Whidbey Island-class and four Harpers Ferry-class dock landing ships.

Metcalf said the Flight IIs will be interchangeable with and operate in the same manner as Flight I ships and improve an amphibious ready group's (ARG's) communications, enhancing the ARG's ability to operate in a disaggregated manner, which is more typical of operations in recent years.

"They can do anything," Metcalf said of the San Antonio class, including "recovering spacecraft or put 800 Marines in your back yard."

The 11 commissioned ships of the San Antonio class have completed 21 deployments, he said.

USS Portland (LPD 27) is the next to deploy, departing in 2020. It will have a solid-state laser weapons system installed.

Metcalf stresses that the LPDs were not just troop carriers, but are combatants built to military specifications.

"They will have to fight to get to the fight," he said, speaking of the need to operate in a high-threat environment.

The Navy plans to procure 13 Flight II ships. Metcalf said the Navy has the option of a block but not yet the authority for one from the Congress.