

# NAVY AND MARINE CORPS READINESS

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## HEARING

BEFORE THE

SUBCOMMITTEE ON READINESS AND  
MANAGEMENT SUPPORT

OF THE

COMMITTEE ON ARMED SERVICES  
UNITED STATES SENATE

ONE HUNDRED SIXTEENTH CONGRESS

SECOND SESSION

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WEDNESDAY, DECEMBER 2, 2020  
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## NAVY AND MARINE CORPS READINESS

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WEDNESDAY, DECEMBER 2, 2020

UNITED STATES SENATE,  
SUBCOMMITTEE ON READINESS  
AND MANAGEMENT SUPPORT,  
COMMITTEE ON ARMED SERVICES,  
*Washington, DC.*

The Subcommittee met, pursuant to notice, at 9:18 a.m. in Room SD-G50, Dirksen Senate Office Building, Senator Dan Sullivan (presiding) Chairman of the Subcommittee.

Subcommittee Members present: Senators Sullivan, Fischer, Ernst, Blackburn, Kaine, Shaheen, Hirono, Duckworth, and Jones.

### OPENING STATEMENT OF SENATOR DAN SULLIVAN

Senator SULLIVAN. Good morning. This hearing of the Subcommittee on Readiness and Management will come to order.

The Subcommittee meets today to receive testimony on the current readiness of the United States Navy and the United States Marine Corps. I want to welcome our three distinguished witnesses: the Honorable Kenneth Braithwaite, Secretary of the Navy; General David H. Berger, Commandant of the U.S. Marine Corps; and Admiral Michael Gilday, Chief of Naval Operations for the United States Navy.

I would also like to thank Diana Maurer, Director of Defense Capabilities and Management, and her team at the Government Accountability Office for submitting the requested statement for the record for this hearing. The Government Accountability Office (GAO) is an invaluable resource to our work on the Committee.

Some of the issues that I would like to address and cover today are COVID-19 and its impacts on the readiness of the U.S. Navy and Marine Corps; the Navy and Marine Corps' pivotal role in countering great power competition, as highlighted in the National Defense Strategy; the Commandant of the Marine Corps' bold, new Force Design and planning guidance; a recent provocation of Russian military exercises, massive Russian military exercises, in the Arctic, and related to that, the role of the Navy and Marine Corps as they play an increasingly important role in protecting our strategic interests in the Arctic. Let me touch on these briefly.

First, the impact of COVID-19 on Navy and Marine Corps readiness. Over the last few months, this Committee has received frequent and productive briefings on COVID-19 and on its impact on military readiness. As you are all aware, COVID-19 reduced operations at Navy and Marine Corps depots, canceled or postponed vital exercises such as RIMPAC 2020, and changed the way in

which we train our sailors and marines. I am looking forward to an update on these critical issues as it relates to the readiness of our Marine Corps and Navy team.

Second, I would like to address the 2018 National Defense Strategy and the Navy's and Marine Corps' role in responding to the return of great power competition. Released in 2018, the National Defense Strategy I believe is still very much a bipartisan document and strategy which prioritizes the return of great power competition particularly with Russia and China, with China as the pacing threat. Thus far, in responding to the NDS' directives, the U.S. Navy and this Committee have advocated for building a 355-ship Navy and has heavily and rightfully in my view focused these investments on improving and expanding our Nation's submarine fleet, a key area of American strategic advantage.

Third, as part of the Navy team's response to great power competition, the Marine Corps, under the Commandant's new planning guidance and his Force Design 2030 construct, has keenly focused on how to address the NDS' pacing threat: China. Specifically, General Berger has zeroed in on transforming our Marine Corps into a slightly leaner but more agile force. The Commandant's planning guidance calls for revolutionary change to the Marine Corps, at least in the Department of Defense (DOD) terms, and I commend him for his efforts on being one of the services' leading in terms of trying to implement the NDS. But the Commandant's strategy is not without its critics, and I would like to give the Secretary and General Berger the opportunity respond to some of those in this hearing.

I would like to also address a recent incident. I was with the Secretary in Alaska where we saw a peer exercise of great power competition, the recent very large military exercises which took place inside the U.S. exclusive economic zone off the coast of the great State of Alaska. As some of you may already know, in late August the Russians conducted a major war game near Alaska. Over 50 Russian warships, about 40 Russian aircraft took part in these exercises in the Bering Sea. It involved multiple practice missile launches, submarines. The New York Times reported last month in an article I would like to submit for the record, a headline and byline, "Are We Getting Invaded?" United States boats face Russian aggression near Alaska. Russia has accelerated its provocative encounters in the North Pacific harassing American fishing vessels in United States waters, sending bombers towards Alaska's shores. I would like to enter this into the record. Without objection.

[The information referred to follows:]

#### "ARE WE GETTING INVADED?"

##### U.S. BOATS FACED RUSSIAN AGGRESSION NEAR ALASKA

RUSSIA HAS ESCALATED ITS PROVOCATIVE ENCOUNTERS IN THE NORTH PACIFIC THIS YEAR, HARASSING BOATS IN U.S. FISHING WATERS AND SENDING BOMBERS TOWARD ALASKA'S SHORES.

*By Mike Baker*

ANCHORAGE—The crew of the Bristol Leader was laying out its long cod-catching line well within U.S. fishing territory in the Bering Sea when a voice crackled over the VHF radio and began issuing commands: The ship was in danger, it said, and needed to move.

The warnings, coming in a mixture of Russian and accented English from a plane buzzing overhead, grew more specific and more urgent. There was a submarine nearby, the voice said. Missiles were being fired. Leave the area.

Other U.S. fishing vessels that were scattered over 100 miles of open sea were getting similar messages. Capt. Steve Elliott stood dumbfounded on the trawler *Vesteraalen* as three Russian warships came barreling through, barking orders of their own. On the ship *Blue North*, commands from a Russian plane led Capt. David Anderson to contact the U.S. Coast Guard, wondering how to protect his crew of 27.

"It was frightening, to say the least," Captain Anderson said. "The Coast Guard's response was: Just do what they say."

The Russian military operations in August inside the U.S. economic zone off the coast of Alaska were the latest in a series of escalated encounters across the North Pacific and the Arctic, where the retreat of polar ice continues to draw new commercial and military traffic. This year, the Russian military has driven a new nuclear-powered icebreaker straight to the North Pole, dropped paratroopers into a high-Arctic archipelago to perform a mock battle and repeatedly flown bombers to the edge of U.S. airspace.

As seas warmed by climate change open new opportunities for oil exploration and trade routes, the U.S. Coast Guard now finds itself monitoring a range of new activity: cruise ships promising a voyage through waters few have ever seen, research vessels trying to understand the changing landscape, tankers carrying new gas riches, and shipping vessels testing new passageways that sailors of centuries past could only dream of.

Russia's operations in the Arctic have meant a growing military presence at America's northern door. Rear Adm. Matthew T. Bell Jr., the commander of the Coast Guard district that oversees Alaska, said it was not a surprise to see Russian forces operating in the Bering Sea over the summer, but "the surprise was how aggressive they got on our side of the maritime boundary line."

In the air, U.S. jets in Alaska typically scramble to intercept about a half-dozen approaching Russian aircraft a year, outliers on the long-range nuclear bomber patrols that Russia resumed in 2007. But this year that number has risen to 14—on pace to set a record since the Cold War era. In the most recent case, last month, the United States responded to the approach of two Russian bombers and two Russian fighters that came within 30 nautical miles of Alaskan shores.

Russians have refurbished and restored dozens of military posts in the Arctic region, including on Wrangel Island, some 300 miles from the coast of Alaska, and have laid plans for controlling emerging navigation routes that would bring traffic through the Bering Strait between Alaska and Russia.

This summer, Russia's military operated in the Bering Sea, home to America's largest fishery, where boats haul up pots crawling with red king crab, and trawlers dump nets filled with 200 tons of pollock onto their decks. The area is the U.S. pathway to the Arctic waters where extraction companies have worked for years to capture the billions of dollars of oil and gas resources trapped under the sea floor.

U.S. territorial waters extend 12 nautical miles from the Nation's shores, but commercial vessels operate even farther within the U.S. exclusive economic zone, a territory stretching some 200 miles offshore in which the country can harvest fish or natural resources without foreign competition but cannot prohibit the passage of international vessels.

Russian military leaders have touted the exercises in the Bering Sea as unlike any they had done before in the region. They said the goal of the effort was to prepare forces to secure economic development in the Arctic region, and U.S. officials have acknowledged that the Russians have a right to transit the waters.

Disputes over activities in exclusive economic zones around the world are not unusual, especially in the lucrative Arctic region, where several nations have contested the extent of their rights to dominate maritime economic activities.

Before a 1990 boundary agreement, the issue was especially contentious in the Bering Sea, which narrows to just 55 miles between the coasts of Alaska and Russia in the Bering Strait.

The August exercises occurred well south of the narrow strait, in an area where the sea is hundreds of miles wide.

Tim Thomas, a U.S. captain on the fishing vessel *Northern Jaeger*, encountered the Russian activities on August 26 when his ship was operating more than 20 nautical miles inside the U.S. economic zone. After a Russian plane directed Captain Thomas to take his boat out of the area, he said, he responded that he was within the U.S. zone, not on the Russian side, and that the Russians could not order them to leave.

At that point, he said, a Russian military ship joined in and issued similar orders.

“At this point, I’m going, ‘What’s going on here? Are we getting invaded?’” Captain Thomas said in an interview.

Captain Thomas said he contacted the Coast Guard, but the officers there, he said, seemed to be unaware of the Russian operations. They told him he was responsible for the safety of his crew. But he was reluctant to leave: They were finding some of the best fishing of the season, and the Russians had ordered him not to return to those productive grounds for nine days.

The Russians, who were running a military exercise known as Ocean Shield that involved some 50 warships and 40 aircraft operating throughout the Bering Sea, were adamant, and their warnings grew more intense. U.S. officials have since said that a Russian submarine launched a cruise missile from the Bering Sea that day.

As he considered the safety of the 130 people on his boat, Captain Thomas ultimately decided to leave. He estimates the forced departure cost his company more than \$1 million in revenue.

Senator Dan Sullivan of Alaska, a Republican, who has pressed for years for a stronger U.S. presence in the Arctic and has warned about increasing Russian activity there, said the fishing boats should not have been forced to leave U.S. fishing territory. He said he was surprised by the scale of Russia’s recent aggressive actions in the Bering Sea, noting that during the same exercise in August, fighter planes from the North American Aerospace Defense Command, or NORAD, scrambled to respond to three groups of Russian aircraft that approached Alaska.

“I think they were testing us—flexing their military muscle,” the senator said.

Coast Guard officials said Russia had notified the U.S. Government that part of its exercise would include a portion of the fishing zone. But federal officials did not alert commercial fishing operators to the planned exercise.

Coast Guard officials said they have been working to make sure future notifications reached the right people. They have also said that U.S. fishing vessels were not required to follow any orders from a foreign entity to depart American fishing grounds. But in a memo last month to those involved in the North Pacific fishing industry that outlined what had transpired in the Bering Sea, the Coast Guard also cautioned that “safety of life at sea should always be paramount in managing the safe navigation of any vessel on the high seas, and is the responsibility of the mariner with firsthand situational awareness.”

As Russia has ramped up its presence in the region, U.S. officials have accelerated their own efforts. The Coast Guard has long complained that its lone pair of aging icebreakers are struggling to stay in service but may now have the opportunity to build six new ones. (Russia has dozens.) The United States is also discussing a northern deepwater port, perhaps around Nome. Currently, the nearest strategic port is 1,300 nautical miles away in Anchorage.

Alaska already draws a relatively large portion of U.S. military spending, with bases serving the Air Force and the Army in or around both Anchorage and Fairbanks.

Jets in Alaska scrambled repeatedly this year to intercept Russian aircraft moving toward U.S. airspace. But jets taking off from inland bases can take more than 90 minutes to reach the coast of Alaska, said Maj. Gen. Scott Clancy, a Canadian officer who is the director of operations at NORAD.

General Clancy said the encounters were professional. In the encounter last month, the four Russian aircraft loitered in the area for about 90 minutes and never crossed into U.S. airspace. But General Clancy said it was clear the Russians were both testing the capabilities of NORAD and demonstrating their own, increasing the frequency and also the complexity of their approaches.

“This adversary—this competitor, Russia—has advanced on all fronts,” he said. “We find ourselves in another era of great-power competition. Russia obviously wants to be a competitor in that.”

Lt. Gen. David Krumm, commander of the multi-force Alaskan Command and also the 11th Air Force, said that while the Arctic used to provide a natural buffer between the nations of the Far North, the new possibility of ice-free passage has changed that.

“We’re at a pivotal point in the timeline of the Arctic,” he said at a recent convention of the Alaska Federation of Natives, many of whose members reside in remote villages scattered throughout the northern region.

General Krumm said the United States would need to invest in operations, equipment and training to prepare for the changing environment. Alaska, he said, has historically been viewed as a base from which to project American power elsewhere in the world, but the mission is changing.

“What we have to do now is be prepared to fight here and defend here,” he said.

Senator SULLIVAN. But I would like, Mr. Secretary, Admiral, an update on that, particularly the coordination that we need to improve between the Coast Guard, the Navy, and the Alaskan fishing fleets that were impacted by this.

Finally, I would like to have a broader discussion today on the Arctic, as it has become an emerging area of great power competition, and to better understand the Navy and Marine Corps' role in protecting the Arctic homeland, safeguarding the Arctic region's global commons, and as the Navy and Marine Corps do across every part of the world. In this regard, I am hopeful to hear some positive news about a new Navy Arctic strategy, which this Committee has been encouraging all the services to produce Arctic strategies.

I am hopeful that we could also have a discussion on not only the support for building six *Polar*-class icebreakers that our Nation needs but the discussion that the President started a couple months ago with his memo to senior national defense officials on where and how we should be basing *Polar*-class security cutters in America's Arctic. Mr. Secretary, you and I have had a lot of discussion on that.

Finally and perhaps most importantly in this Committee, I would like a prediction of who is going to win the Army-Navy football game that takes place in a couple weeks. That is going to be very important, gentlemen.

Thank you very much. I am looking forward to this hearing.

I would now like to hear from my friend and colleague, Senator Kaine.

#### STATEMENT OF SENATOR TIM KAINE

Senator KAINE. Well, thank you, Chairman Sullivan. We find ourselves in very, very challenging times, and it is good that this Committee's work has continued and will.

I want to welcome the distinguished witnesses. Thank you for your service. We are looking forward to the testimony and opportunities to exchange questions today.

I echo the comments from Chairman Sullivan and offer thanks to Diana Maurer for her work at the GAO.

I also want to do one other set of thank yous. This is probably the last opportunity that we will meet either as a subcommittee or even as a full committee prior to some changes, and we are losing two colleagues, Senator McSally and Senator Jones, who have served on the Committee in a wonderful way and on the Subcommittee as well. They were great public servants before they got here. They were great public servants while they were here, and I am sure they have great public service ahead of them. But I just wanted to acknowledge each of them.

The chairman has done a really good job of putting the issues kind of up on the board that we need to discuss today: impacts on readiness from the ongoing pandemic, and lessons learned along the way that will help us going forward. What role will the DOD play in vaccine distribution and what plans are being made within the Navy family—Navy and Marine Corps—over vaccines and how they will be deployed. Shipyard modernization plan and the looming threats that our bases face from the effects of climate change.

I will not delve further into those now, and I will save those topics for my questions. We want to help the Department address what we need to do to be ready to operate in this challenging environment and respond and execute the full range of DOD responsibilities and missions.

I look forward to your testimony today and thank you.

Senator SULLIVAN. I would like to begin the testimony. Each of you will have 5 minutes to give an oral testimony. Your longer statements can be submitted for the record, if you so choose. Mr. Secretary, I would like to begin with you, sir.

**STATEMENT OF HON. KENNETH J. BRAITHWAITE, SECRETARY OF THE NAVY**

Secretary BRAITHWAITE. Thank you, Mr. Chairman.

Before I begin, I would like to offer the Department of the Navy's condolences to you, sir, for the loss of your father, a great veteran of the United States Navy, and our thoughts and our prayers are with you, sir.

Senator SULLIVAN. Thank you.

Secretary BRAITHWAITE. In May of 1943, American troops, aircraft, and ships were sent to the Aleutian Island of Attu to dislodge the imperial Japanese troops occupying our American soil. These young Americans were dedicated and brave, but unprepared and under-equipped. The only thing that prevented the operation from ending in total catastrophe was the fact that that landing was unopposed. In short, we, the United States military, got lucky.

But that should never be accepted as good enough for our fleets, our force, or for our nation. As Secretary of the Navy, I am determined to ensure that our sailors and marines are never again sent into a situation without the right training, the right equipment, and the right leadership.

Chairman Sullivan, Ranking Member Kaine, distinguished Members of the Committee, we appreciate your efforts to ensure funding stability over the past several years. This stability has enabled a greater focus on readiness across both services from the Navy's investments in shipyards and aviation maintenance to the Marine Corps' modernization initiatives within the Commandant's Force Design 2030. These efforts are increasing our expeditionary deployment capabilities and fleet readiness even in the face of this COVID-19 and other global challenges. More importantly, we are investing in the training, education, and resilience of our personnel. They and their families will always be our greatest resource.

As I discussed during my confirmation hearing, I was concerned about the morale of the force and its underlying effects on culture across the entire Department. Thankfully, I found many efforts underway to address these concerns, and in consistent engagements with our sailors and marines around the globe, I have discovered our morale is better than I thought it might be. But it can get better as we direct the resources to make it better.

We must prepare today for tomorrow, and we must continually adjust to the threat. Our existing fleet structure operates on the premise that we still live in a post-9/11 state where the North Atlantic Treaty Organization's (NATO's) flanks are secure, the Rus-

sian fleet is tied to the pier, and terrorism is our biggest problem. That is not the world of today. As the world changes, we must be bold, evolve, and change with it.

Instead of perpetuating a structured design to support yesterday's joint forces command, we are aligning to today's threat to meet the unique maritime challenges of the Atlantic theater, we will rename Fleet Forces Command as the U.S. Atlantic Fleet and we will refocus our naval forces in this important region on their original mission, controlling the maritime approaches to the United States and to those of our allies. The Atlantic Fleet will confront the re-assertive Russian navy, which has been deploying closer and closer to our east coast, with a tailored maritime presence capability and lethality.

Also, in order to improve our posture in the Indo-Pacific, we will reconstitute the first fleet assigning it primary responsibility for the Indo and South Asian region as an expeditionary fleet back to the capabilities and unpredictability of an agile, mobile, at-sea command. This will reassure our allies and partners of our presence and commitment to this region while ensuring any potential adversary knows we are committed to global presence to ensure rule of law and freedom of the seas.

We are determined today to make the bold changes required to ensure that our forces are prepared to dominate any potential battlespace and return home safely tomorrow. As the great navalist, the 26th President of the United States, Teddy Roosevelt, once said, a strong Navy is not a provocation to war but the surest guarantor of peace.

We look to you, our Congress, for the strong oversight partnership that has enabled our maritime strength ever since Congress authorized the construction of our first six ships, the mighty American frigates of 1794. So I would like to take this moment to announce that the next *Constellation*-class frigate will be named for one of those original six, a name selected by our first President, George Washington. The ship will be USS *Congress* to honor and recognize the work that you and your staff do every day to support our sailors, our marines, and the people of the United States of America.

On behalf of the Department of the Navy, our marines, our sailors, our civilian workforce, and their families that serve at their side, thank you for what you do to enhance our readiness.

I look forward to your questions.

[The prepared statement of Secretary Braithwaite follows:]

#### PREPARED STATEMENT BY THE HONORABLE KENNETH J. BRAITHWAITE

In May of 1943, American troops, aircraft and ships were sent to the Aleutian island of Attu to dislodge the Imperial Japanese troops occupying our soil. These young Americans were dedicated and brave, but unprepared and under-equipped. Our force was not ready for this type of fight in Arctic conditions.

The amphibious landing on Attu was marred by embarrassing setbacks, stemming from a failure to appreciate the impact of cold weather and rough seas on our operating procedures, equipment, and people. Air sorties were scattered and unreliable due to poor visibility and high winds.

Engines on landing craft froze, stranding their crews and the troops on board. Batteries failed because operators hadn't gained the experience that would teach them to keep them on trickle charge through cold water operations. Ice and rough

seas threatened to destroy the PT boats and other small craft as they approached the landing site. Heavy fog resulted in multiple collisions.

The only thing that prevented the operation from ending in catastrophe was the fact that the landing was unopposed. Our forces did not make contact with the enemy immediately, and so they were able to recover their battle readiness and execute the mission.

In short: we got lucky. But that should never be accepted as good enough, for our fleet, our force, or our nation. As Secretary of the Navy I am determined to ensure that our sailors and marines are never sent into a situation without the right training, the right equipment, and the right leadership, to dominate the fight and return safely home.

Chairman Sullivan, Ranking Member Kaine, distinguished Members of the Committee, we cannot be caught unprepared in any clime or place. The Department of the Navy must always stand ready with the personnel, platforms, and operational skills necessary to secure vital sea lanes, stand together with our allies, and protect the American people wherever and whenever necessary.

The sailors, marines, and civilians of our forward-deployed, globally maneuverable team, are prepared and equipped to respond, from the Arctic to the Indo-Pacific to the Gulf. We intend to keep it that way. In partnership with Admiral Gilday and General Berger, I am determined to strengthen our people, build on the pride of service, and develop a ready force for the future.

The reemergence of long-term great power competition, the evolving character of that competition, and the accelerating advancements in technology are spurring a period of transformation in the strategic environment, requiring us to adapt our integrated naval force design and operating concepts to new realities. As the National Defense Strategy (NDS) states, “there can be no complacency—we must make difficult choices and prioritize what is most important.”

Thus far this century, terrorist groups and rogue states have dominated our perception of the threat environment. These threats were lethal, but did not pose an existential threat to our national security. China and Russia present a different challenge, as each continues to develop sophisticated military capabilities backed by sizable economies. Their investments in surface, air, and undersea platforms have significantly increased the potential for kinetic conflict, while the

leadership of both nations demonstrate increasing contempt for international law and the rules-based order that ensures the prosperity and security of all nations.

A dominant naval force is central to the effective execution of the NDS in a changing world. We must be ready at all times to execute as one integrated naval force—Navy and Marine Corps seamlessly linked at every level—with common logistics, infrastructure, practices and support networks—executing a fleet-wide emphasis on resilient and combat ready forces.

To make that happen, the Department of the Navy fiscal year 2021 budget request prioritized recovering the readiness of the platforms that deliver victory in a major conflict, from amphibious ships and ground element equipment, to our agile destroyers and cruisers, and the heavy-hitting aircraft carriers, air wings and attack submarines that ensure continued freedom of action throughout the global commons.

To meet the forward maneuverable force requirements of the NDS, the Marine Corps has put into motion an aggressive modernization of the Service. Force Design 2030 is not simply an improvement on its existing form and function; it is transformational. With a studied concentration on the future operating environment, the Marine Corps is reinvigorating the Fleet Marine Forces within existing resource constraints as an indispensable element to global maritime operations. We appreciate the Committee’s advocacy for new training venues and opportunities that simulate the operational complexities of a contested maritime domain.

We greatly appreciate the Committee’s efforts to ensure funding stability and predictability over the past several years. This has given our force the agility and flexibility needed to address emerging threats, to invest in critical future capabilities for our integrated naval force, while shifting away from less beneficial and relevant spending. This stability has saved money for the American taxpayer and enabled a greater focus on readiness across the Navy and Marine Corps, enabling greater long term shipbuilding and maintenance planning, and fueling the Marine Corps transformation as the Nation’s stand-in, fight-tonight force. These investments mark a commitment to creating asymmetric advantages across the entire Joint Force.

The Department of the Navy is building on this foundation by aggressively pursuing better readiness, lethality, and capabilities in those areas of warfighting technology showing the greatest promise of delivering non-linear warfighting advantages. Across both services, we are executing force designs centered on Naval Expe-

ditionary force deployment, giving us a sustainable edge and a resilient capability to deliver the integrated all-domain naval power required by the Joint Force.

Hard experience has shown that this capability cannot be sustainably achieved through “can do” and “make do” improvisation. Our front line personnel may be determined, adaptive, and skillful enough to get the job done in the face of equipment shortfalls and intense battle rhythms, but relying on their adaptability is no substitute for genuine fleet readiness. We owe it to the sailors and marines out in the fleet to make sure they always have the tools they need to do the dangerous jobs we ask of them.

The changes generated from the Readiness Reform and Oversight Council (RROC) and other relentless self-examination efforts have enabled us to improve readiness, training, and maintenance processes at every level. For example, we’ve implemented a uniform readiness assessment and certification process that must be followed before a ship can be certified to return to the fleet. We have also increased opportunities for shipboard certification and skills enhancement, while adjusting manning schedules to maximize safety and improve quality of life and professional effectiveness for our personnel while underway. These and many other changes will result in a better prepared, rested, and equipped force.

We continue to pursue greater readiness in the development and maintenance of our fleet, particularly in our critical public shipyards. Through the Navy’s Shipyard Infrastructure Optimization Plan (SIOP), the Navy has outlined a 20-year investment plan for the facilities and tools needed to improve shipyard performance, starting with shipyard-specific Area Development Plans (ADPs) already underway. We must stay committed to this objective.

We appreciate the leadership of this Committee to provide direct hiring authority, which has been instrumental in helping naval shipyards achieve their accelerated hiring goal of 36,100 personnel—one full year ahead of schedule. An extension of this authority granting an exception to the 180-day “cooldown” requirement before hiring retired members of the armed forces would further assist our shipyards in maintaining acceptable staffing and experience levels. Finally, the Navy has worked with the shipyards to develop their workforce by establishing new learning centers that reduced worker training time by 50 percent or more.

We have also achieved greater aviation readiness for both the Navy and Marine Corps, including the Naval Aviation Enterprise (NAE) efforts to meet the Strike Fighter aircraft availability goals for both services. The NAE is incorporating commercial best practices to improve performance on targeted production lines. For example, process reforms have improved organic depot capacity and repair speed, reducing the turnaround time for F/A-18E/F maintenance from over 100 days to 60 days.

The Department of the Navy appreciates the leadership of this Committee in helping ensure both aviation and systems readiness across our force. Towards that end, the Department requests assistance from the Committee to secure the necessary space to conduct critical combat training.

Most prominently, expansion of the Navy’s training range in Fallon, Nevada is imperative to maintaining our readiness in the skies and across every domain. We are concerned that Congress will not act on the Administration’s legislative proposal to expand the Fallon Range Training Complex (FRTC) to provide the area needed to fully accommodate modern military training requirements this year. The FRTC is currently too small to accommodate realistic and safe training with precision-guided munitions. This modernization is driven by real-world threats and the need for longer range stand-off release for training with precision guided munitions. Aircrews and special operations forces cannot fully exercise tactics and are unable to train in sufficiently-realistic conditions, which compromises their safety and success in combat. In many cases, the first time a pilot is able to fully use the F-35’s sensor and weapons systems suite is during combat. Expanding this range will allow us to send our sailors and marines into combat fully prepared by providing them with the training they need to win. Over the past 5 years, the

Navy has worked exhaustively with key stakeholders, including Members of Congress, federal agencies, tribes, state and local government, and environmental groups. We need the authority from Congress not only for modernization, but to follow through on our promises to these groups.

Unfortunately, Fallon is only one of the challenges we face with our training spaces. We continue to assess how proposed active offshore windfarm operations off the coast of California impact our aircraft navigation, communication, and weapons systems, with an expectation that other stakeholders are assessing prospective windfarm locations and impacts beyond the Navy’s operating areas. Easements granted by the Department of the Navy to San Onofre Nuclear Generating Station and San Diego International Airport are soon expiring; we need to use these parcels

of land for military training. Special use airspace supporting the Marine Corps ranges at Twenty-nine Palms is surrounded by congested commercial air routes, causing interruptions to military aircraft and artillery fire training. This is against a backdrop of historical Navy range closures and realignments occurring over the past three decades. If the Navy and Marine Corps are to remain the world's premier Naval force, this trend cannot continue.

The threats to our Nation are real and as our adversaries close the technological divide, our greatest strength is our training. We ask that this and all other relevant Committees seriously consider the national security impact of any decisions made regarding any development or land use initiatives that may impact our training areas.

We also recognize that we cannot meet the global challenges our Nation faces alone. Readiness requires presence and rapid capabilities in every part of the world, as well as specialized and localized knowledge to handle evolving and challenging situations. Just as Canadian troops joined in the operation to retake Kiska in 1943, the strategic maritime defense partnerships we maintain today with our partners and allies around the world extend the reach and power of our force. They underscore the importance of cooperation and coordination in maintaining the rules-based international order that enables so much of our global prosperity and security.

Our personnel regularly train and operate alongside their foreign counterparts, test the interoperability of our systems, and build our collective readiness on the front lines of great power competition. In the critical Arctic region, the destroyer USS *Thomas Hudner* just completed Operation Nanook alongside our Canadian, French and Danish allies, as well as our vital partners, the United States Coast Guard. During my time as our Ambassador to Norway, I was proud to look to our United States Marines guarding NATO's northern flank alongside Norwegian soldiers.

Operational exercises, international port calls, joint Marine force training, and other interactions generate the personal contact that builds understanding, respect, and trust across national and functional lines. Our sailors, marines and civilian personnel know that through their service they are front-line diplomats for our nation. Their professionalism and dedication promotes the connections that strengthen our collective security and cultivate shared ideals that send the message that the United States is a friend worth having.

The Department of the Navy appreciates the dedicated oversight provided by this Committee following recent events that have potential impacts on the readiness of our fleet forces. As this Committee is aware, 2020 has brought its share of challenges and adversity. But failure in our mission is never an option, and we look forward to working with each Member of the Committee to ensure the continued readiness and lethality our nation needs to preserve the forward maneuverability, lethality, and resilience needed to ensure our nation's readiness.

The COVID-19 pandemic has highlighted the strength and agility of our people, as active duty and reserve servicemembers have responded to the call for medical, logistics, and security support wherever and whenever the American people have needed it. At the same time, our sailors, marines, and civilian teammates have continued to execute the NDS while maintaining the procedures and safeguards necessary to prevent the debilitating spread of the pandemic across our platforms and facilities.

Like all Americans, the Navy and Marine Corps have had to adjust to this global pandemic, from preventing, mitigating, and recovering from positive cases detection of positive cases aboard ships, to changing the recruitment and training of our personnel, to helping our military families cope with longer separation and other challenges like virtual learning and social distancing. This pandemic has forced us to rethink and refine our recruitment, training, and personnel movements throughout the force, and it has taken a toll on our shipyard operations and deployment and maintenance schedules.

Both the Navy and Marine Corps are actively implementing Force Health Protection measures in an effort to protect marines, sailors, civilians, contractors, and our military families. Across the department, we've implemented prevention, mitigation, and recovery guidance from the Navy Bureau of Medicine and Surgery (BUMED) and the Centers for Disease Control and Prevention (CDC). We have implemented—and will continue to evaluate—active testing protocols to detect asymptomatic COVID-19 positive personnel, contain outbreaks aboard vessels or elsewhere in the fleet, and conduct surveillance to detect and treat the disease as early as possible.

Within our shipyards, the Navy took aggressive steps at the start of the pandemic and continues to implement safety measures to minimize the spread of this disease and to protect the personnel, civilians, contractors, and families that power our naval enterprise and protect our nation. These steps include maximum telework op-

opportunities for shipyard employees, administrative leave for high-risk individuals unable to telework, altered shifts to maximize social distancing, sanitization and hand-washing stations throughout the shipyard, cloth face coverings and face shields for the workforce, and screening checks at all workplace entry points.

We're also working closely with our partners and suppliers in the defense industrial base to ensure the continued viability of the crucial businesses and infrastructure needed to ensure our ships, aircraft, and ground equipment are available when needed for the defense of our nation, both during this current challenge and long into the future. We must be transparent and honest about the potential impact this pandemic may have on certain aspects of our readiness. But we will never fail to maintain the global vigilance and readiness required to execute our global mission. That mission never abates, because the demand signal never fades.

Finally, we must never forget that the greatest source of readiness and strength for our force will always be the men and women who wear the uniform, who comprise our civilian workforce, and the families that serve alongside them. We are committed to ensuring our sailors, marines, and civilians are trained and equipped to execute the mission and return home safely, and that their families are provided with the housing, medical attention, and education they need.

Through a combination of non-monetary, quality of life, and customer service programs, we are increasing our responsiveness to the needs of the individual warfighter and their family, making continued service a viable and attractive option. We are increasing avenues for civilians with prior service through the Targeted Reentry Program, and expanding opportunities to serve in meaningful roles. We are also increasing opportunities for our personnel to learn, operate, and innovate with partners from the private sector, across the joint force, and alongside our allies.

Our people must be confident that their leadership will look out for their interests and advocate tirelessly for their safety and well-being. We remain committed to making sure we assess, monitor, and remediate issues of concern in all forms of military housing, including those managed by Public Private Venture (PPV) providers, with quick, effective, and engaged leadership and reinforced Department-level oversight.

We are also determined to eliminate the scourges of sexual assault and sexual harassment from every part of our force. These behaviors are a betrayal of those who have stepped forward to serve in uniform and have a direct impact on our readiness. We will continue to work with this Committee to share best practices and ideas, relentlessly pursuing a future where no sailor, marine, or civilian teammate ever has to fear for their own safety while protecting us all.

As leaders we must also do all in our power to ensure that our people feel respected and valued. In this moment of national reckoning with longstanding issues of racial injustice, we cannot and will not tolerate discrimination or racism of any kind. Our readiness, and the bedrock strength of our core values, depends on the elimination of any policies or practices seeming to tolerate or promote racial inequity in any aspect of the Navy and Marine Corps, from recruiting and assignment practices, to advancement and promotions, to our military justice system.

As I wrote to the entire fleet in my first month as Secretary of the Navy, "We must never forget that equal treatment, equal justice, and equal opportunity require continual determined effort. 'United' is the most important word in 'United States Navy and Marine Corps'."

Our sailors, marines and civilian teammates will always be our greatest source of readiness and strength in a challenging and changing world. On behalf of each of these brave patriots and the families that serve at their side, I would like to once again thank the leadership and membership of this Committee for your attention, interest, and ongoing support.

Senator SULLIVAN. Thank you very much, Mr. Secretary.

Admiral, would you care to make an opening statement, sir?

#### **STATEMENT OF ADMIRAL MICHAEL M. GILDAY, USN, CHIEF OF NAVAL OPERATIONS**

Admiral GILDAY. Yes, sir, I would.

Chairman Sullivan, again my condolences on your family's loss. Your dad was not only a sailor but a great friend of the Navy.

Senator SULLIVAN. Thank you.

Admiral GILDAY. Ranking Member Kaine, distinguished Members of the Committee, thank you for the opportunity appear before

you this morning with the Secretary of the Navy, as well as Commandant Berger. My wife Linda behind me joins me this morning.

To be effective, the United States Navy has to be able to carry out two critical functions. The first is sea control and the second is power projection. Both of those missions are timeless. The Navy does not need to reinvent itself. The manner by which we carry out those functions and the equipment that we use to do it do change over time, but as Admiral Nimitz said in front of a joint session of Congress in October of 1945 at the dawn of the nuclear age, he called those missions timeless. President John F. Kennedy, in the wake of the Cuban Missile Crisis, said the same thing, so for me, sea control and the capability to control the seas and to dominate the oceans is my primary focus.

With respect to readiness, that covers two areas: readiness today, which I believe is the focus of this hearing, as well as our readiness tomorrow. The budget decisions that the Navy presents to the Secretary of Defense really balance across three big areas that are aimed at those two functions. That would be readiness, readiness today and readiness to the future. That would be lethal capabilities in order to control the seas and to project power, and the last is capacity, the size of the United States Navy.

Today in the midst of a global pandemic, we have about 100 ships deployed, and we have about 40,000 sailors at sea. That ranges from the Arctic Circle to the Cape of Good Hope, from the Black Sea in the Baltics to the Arabian Sea, the Atlantic and the Indo-Pacific. Our cyber warriors are standing vigilant watch right now as we speak. They are joined by our silent service under the seas that continue their constant patrols.

I would be remiss if I did not talk about the civilian sailors who support us every single day so that we can control the seas. Those are our shipyard workers. Those are folks that work in production lines that keep our spare parts rolling to the waterfront, to our aviation squadrons, to our submarines, and to our ships. They are people that provide the Naval Academy, our academic institutions like the Naval Academy, the Naval War College, and the Naval Post-Graduate School that continue to churn out the best and the brightest that this nation has, and our boot camp which is operating at double its capacity.

That said, the investments that keep that machine going every single day are also balanced against investments of the future. Think about hypersonics and laser energy. We just shot down an unmanned vehicle (UAV) with laser energy at sea just last months. We shot down an intercontinental ballistic missile (ICBM) from a destroyer with a standard missile just 2 weeks ago, so we are focused on the future and what we need to do to get there.

Members of the Committee, we are grateful for the support you provide the United States Navy, our sailors, and our families.

Again, I thank you for this opportunity this morning, and I look forward to your questions.

[The prepared statement of Admiral Gilday follows:]

## PREPARED STATEMENT BY ADMIRAL MICHAEL M. GILDAY

Chairman Sullivan, Ranking Member Kaine, and distinguished Members of the Subcommittee, thank you for the opportunity to testify today on the Navy's current readiness.

This hearing occurs during a critical time for our country. Multiple nations are attempting to undermine the existing international order that has benefited so many for so long. Our rivals are rapidly modernizing their militaries and eroding our advantages. Emerging technologies have provided them more ways to attack our shores. A global pandemic and economic crisis threaten global stability and security. The maritime environment—a vital source of our prosperity and protection—has become increasingly contested.

America is a Maritime Nation—Our people depend on freedom of the seas. Since the end of the Cold War, traffic on the seas has increased over four fold. Ninety percent of global trade now travels by sea, facilitating \$5.4 trillion in U.S. commerce annually and supporting 31 million American jobs. Ninety-five percent of global internet traffic travels along undersea cables, fueling our digital economy and accounting for \$10 trillion in financial transactions per day. Competition for offshore resources such as aquaculture, energy, and rare-earth minerals is increasing across the globe. There can be no doubt that our economic vitality relies on free and open conditions at sea, and now those conditions—and our way of life—are under threat.

Despite benefiting from decades of peace and stability, China and Russia are now using all elements of their national power to undermine the international order at sea. Both attempt to unfairly control access to rich sea-based resources outside their home waters. Both intimidate their neighbors and enforce unlawful claims with the threat of force. Both have constructed sophisticated networks of sensors and long-range missiles to hold important waterways at risk. China, in particular, is building a Navy to rival our own.

Over the last decade, China has rapidly grown its Navy from 262 to 350 ships that include modern surface combatants, submarines, aircraft carriers, amphibious assault ships, and polar icebreakers. Expanding their robust naval force with a multilayered fleet of Coast Guard and maritime militia vessels, they routinely harass neighbors to exert pressure at a level below traditional armed conflict. They have blanketed their regional waters with the world's largest missile forces in an attempt to intimidate their rivals. They have strengthened all dimensions of military power to contest us from the seafloor to space and in the information domain. They are extending their maritime infrastructure across the globe through aggressive investments, particularly in ports, to control access to critical waterways. We must move with urgency to sustain and grow our advantage at sea.

U.S. Navy—Deployed Forward to Defend America and Protect our Way of Life

The U.S. Navy is responding to this challenge by: demonstrating our global reach, enforcing common principles, sustaining the conditions that enable shared prosperity, strengthening our alliances and partnerships, and modernizing our fleet to control the seas in contested environments. Today, 39,903 sailors are currently deployed on nearly 111 ships and submarines to preserve freedom of the seas, deter conflict, and keep America safe. Together with the United States Marine Corps, our Navy is delivering Integrated All-Domain Naval Power across the globe, and we are doing this in the midst of a global pandemic.

With parts of the world shut down in response to COVID-19, our operational tempo did not decline. Since the last time I appeared before you in March, the Navy has continued to steam and fly from the Arctic Circle to the Cape of Good Hope. Our hospital ships provided relief to American communities; we executed underway training events for deployment certification; and we conducted exercises alongside the Joint Force and our allies and partners.

Since the COVID-19 outbreak, we have aggressively worked to keep our sailors and families safe, while sustaining fleet operations and supporting the whole-of-government response to the virus. Lessons learned from the outbreak aboard USS *Theodore Roosevelt* honed our COVID-19 Standardized Operational Guidance. Our sailors and their families adjusted and sacrificed to accomplish the mission. When the virus threatened the deployed USS *Kidd*, USS *Ronald Reagan*, and USS *Makin Island*, we quickly stemmed the spread of COVID-19 and the ships continued their missions, reflective of our strong learning organization.

We are applying this same kind of adaptive mindset across our entire Navy. After identifying a potentially dramatic increase in gapped sea billets for fiscal year 2021 due to COVID-reduced accessions, we gradually and safely increased recruit training to meet our goals. All while adhering to strict Centers for Disease Control and Prevention Guidance to keep our force safe. We also leveraged retention incentives,

such as Advancement-to-Position, to keep sailors in critical jobs. These measures are improving our ability to fill operational requirements.

When health protection measures reduced public shipyard productivity, we took swift action to protect our workers and mitigate impacts to maintenance. Meanwhile, our dedicated, patriotic shipyard workforce adapted to our COVID-19 protocols, came to work every day, and got our ships back to sea. We cannot thank them enough. To stay connected during the pandemic, our Information Technology workforce quickly increased network bandwidth, added virtual private network licenses, and supported the DOD Commercial Virtual Remote (CVR) environment roll-out. This enabled a large portion of the Navy workforce to get the mission done from home.

We are aggressively working to mitigate the readiness impacts of COVID-19 and deliver a more ready fleet.

#### Building a More Ready Navy

Delivering the decisive naval power needed to maintain America's advantage at sea requires balanced investments across multiple elements of naval power. Naval power is not a function of ship numbers alone, nor is it simply a result of the lethal systems employed from those ships. It is also about the networks that connect them, the sailors that bring them to life, the concepts that shape how we fight, and the means to maintain, train, and equip our forces to win in combat.

Readiness—the investments across the force that bring naval power to life—is the backbone of our Navy. For the past two decades, the Navy sustained the same operational tempo seen during the Cold War, but with a fleet almost half the size. Meeting the security demands of our nation with a smaller Navy and budget instability had a corrosive effect on our readiness.

Over the last 3 years the Navy has implemented critical reforms and improved our readiness in new ways. With sustained funding and our learning culture, our readiness recovery was on an upward trend before COVID-19 struck. Measurable improvements were seen across the Navy, including:

- Operational billets filled to highest point in 6 years.
- Eighty percent mission capable rates sustained for F/A-18E/F and EA-18G.
- On-time private shipyard surface ship maintenance availability completion rates improved from 37 percent in fiscal year 2019 to 67 percent in fiscal year 2020.
- Public shipyard reduced maintenance delay days by over 80 percent from fiscal year 2019 to fiscal year 2020.
- All 111 Strategic Readiness Review and Comprehensive Review (SRR/CR) Surface force readiness initiatives are implemented.

COVID-19 will undoubtedly impact our continued recovery in fiscal year 2021—as the need to protect the force will likely cause some delays in on-time maintenance completion. However, we will continue to meet any challenge with the same adaptive mindset and learning culture that has kept our ships sailing throughout this pandemic.

Congress can help support our readiness recovery by swiftly enacting our requests in the Fiscal Year 2021 President's Budget. Fiscal Year 2021 President's Budget sustains our trajectory by increasing funding in our readiness accounts. This means more time steaming and flying, more ammunition and spare parts, more effective maintenance, and better infrastructure and training for our sailors.

A larger, more ready, more lethal fleet will need greater investments to operate and sustain. It also requires an unrelenting focus on reforms that deliver the force needed to deter and—if needed—fight and win. With your support and our sailors' determination, we will continue our momentum—even in the midst of this pandemic—to build a more ready Navy in the following ways.

To build a more ready Navy, we're more robustly manning and strengthening the fleet. A lethal fleet depends on our sailors—the true source of our naval power. As we grow our fleet, we must bring in more personnel, which is why we are requesting an additional 7,300 sailors in fiscal year 2021. We are grateful to Congress for the generous pay raises and personnel reforms. The Navy is leveraging both—alongside our Sailor 2025 initiatives—to better retain our incredibly talented force. Meanwhile, we continue to transform our MyNavyHR infrastructure to rapidly deliver services to our sailors at a reduced cost. This includes the DOD-leading mobile applications that help with the challenge of military moves and finding childcare or housing. Our personnel reforms are keeping sailors excited about the Navy and we are exceeding retention benchmarks.

The strength of our fleet depends on the strength of our sailors. We are cultivating a Culture of Excellence (COE) across the Fleet, which strengthens the Navy's enduring standards of

professional competence and personal character. It teaches our sailors to actively pursue what is right, rather than simply avoiding what is wrong. We saw COE at work during the tragic fire aboard USS *Bonhomme Richard*. Battling 1,200 degree heat, smoke and poor visibility, and a series of explosions, our sailors exemplified the initiative, integrity, accountability and resiliency central to our COE.

We also launched Task Force One Navy in July under the COE framework to analyze and evaluate issues in our society and military that detract from Navy cohesiveness and readiness. The Task Force is hard at work and will release their report to me this month. Respect and the promise of opportunity are core to our Navy, and we will not stop until we rid discrimination and other biases from our ranks. This is a moral and warfighting imperative.

To build a more ready Navy, we're better training the fleet. Our sailors must be better trained than their Chinese and Russian counterparts. Maintaining this competitive edge requires sustained investments in steaming days and flying hours as well as in virtual and constructive training. The Fiscal Year 2021 President's Budget increases funding for steaming days and flying hours and invests in advanced virtual environments. This delivers high quality training to the waterfront, modernizing our existing training through key programs like Ready, Relevant Learning which provides sailors the experience to hone their skills between underway operations.

Maintaining the edge also requires providing the ranges our sailors need to train for the high-end fight. Currently, our premier Carrier Air Wing and SEAL training center—the Fallon Range Training Complex (FRTC)—is too small. Without expansion, our sailors cannot sufficiently train with longer-range weapons, or practice the tactics and techniques they will employ against a near-peer threat. We will continue to work with Congress, the local communities, and key stakeholders to ensure our aircrew and special operators can train effectively to win in combat.

We are also fully funding all Surface Force readiness initiatives. The Navy has now fully implemented all 111 Strategic Readiness Review/Comprehensive Review recommendations. One thousand four hundred thirty-two junior officers have now graduated from our new Junior Officer of the Deck course with training aligned to International Maritime Organization's standards. We are broadening the use of instructor-led virtual reality training through the construction of two Mariner Skills Training Centers and the modernization of our Integrated Navigation Seamanship and Ship handling Trainers. All of these efforts are building a COE that prepares our teams to confidently perform under the most demanding conditions.

The Navy is training and operating in the places that matter most for great power competition. Together with the Joint Force, we are providing credible deterrence and sharpening our warfighting advantage from the South China Sea to the Mediterranean. Additionally, we are keeping pace with the changing strategic environment by proactively steaming and flying in the Arctic region. Ice Exercise in the Arctic Ocean, Exercise Dynamic Mongoose off the coast of Iceland, and multiple exercises in the Barents Sea demonstrate our commitment to provide capability and presence in higher latitudes alongside our allies and partners.

To build a more ready Navy, we're better maintaining the fleet. Delivering ships and aircraft from maintenance on time is vital to generating ready forces. Using data driven methods, we are reducing delays, improving operational availability, and saving taxpayer dollars. We have seen this type of success in our tactical aviation community. Eighty percent of our Super Hornets and Growlers remained mission capable throughout fiscal year 2020, a dramatic improvement from the 55 percent long-term average. With higher numbers of aircraft available, our aircrew are more ready to fly and fight than at any point over the last decade.

Prior to the COVID-19 pandemic, we were seeing dramatic improvements in ship maintenance, and the on-time delivery of ships in private yards continues to improve this year. To sustain improvement of ship maintenance in private shipyards, we modified contracting strategies, increased dry dock capacity, and worked to optimize facility and pier layouts. We also made adjustments to ship maintenance durations to account for available shipyard capacity and improved planning and directed maintenance to reduce growth and new work. Getting the durations right has reduced days of maintenance delay and increased on-time delivery. We are also leveraging authorities provided by Congress, such as the 3 year Other Procurement, Navy pilot program, to increase flexibility and stabilize demand for our shipyard workforces.

In February of 2020, we were successfully reducing the maintenance backlog and better predicting the delivery of availabilities when the impacts of COVID-19 began to manifest. The COVID-19 pandemic and subsequent decline in our production workforce impacted the trajectory of further gains and current availabilities in execution. To mitigate additional impacts to ship maintenance in our private shipyards,

we accelerated awards of contract options and improved the cash positions of the industrial base. For our public shipyards, we mobilized 1,352 skilled Navy Reserve sailors, increased overtime usage, and rebalanced future workload and capacity. Still, we have much work to do.

Submarine maintenance, in particular, remains one of our most pressing challenges. While we have driven submarine idle time down by 50 percent this year, public and private shipyard capacity is still not adequate to meet requirements. We are aggressively working to modernize our public yards, reforms which will take many years. In the near term, we have better aligned work requirements with capacity, hired additional workers and accelerated their training, and partnered with private industry to increase capacity. In the longer term, we are continuing to explore innovative technologies such as hull crawling robots and cold spray repairs to more efficiently conduct maintenance.

To build a more ready Navy, we're better sustaining the fleet. Our logistics enterprise and strategic sealift capacity are vital to a dynamic Joint Force operating forward in support of national interests. We are accelerating our sealift recapitalization strategy and improving the readiness of our Surge and Ready Reserve Force (RRF). Fiscal Year 2021 President's Budget increases resources for sealift operations and maintains service life extensions, while executing the efficient replacement of the oldest and least ready vessels first.

Sustaining the fleet for long-term competition also means making targeted investments in critical infrastructure like our public shipyards and aviation depots. Our Shipyard Infrastructure and Optimization Program (SIOP) takes a deliberate approach to refurbishing these vital national assets. Beginning with building virtual models of each shipyard, we are leveraging 21st century technology to improve productivity, safety, and quality-of-life for our talented workforce. Over the next year, we will use these models to drive investment decisions for major dry dock, facility, and equipment upgrades. We have already broke ground on a perimeter floodwall at Norfolk Naval Shipyard and are building a new lock system at Portsmouth Naval Shipyard. These and many other investments will be important in keeping our Navy competitive for years to come.

We are also optimizing and recapitalizing our aviation depot infrastructure, the Fleet Readiness Centers (FRCs). Through a Naval Aviation Infrastructure Optimization Plan (IOP), we are developing a 10-year Master Plan that provides our organic depots the capacity to sustain and modernize our aircraft, engines, components, and support equipment. Funding \$3.5 billion over the next 10 years will ensure the Navy's ability to conduct maintenance on next generation aircraft while sustaining current aviation readiness gains. Additionally, Fiscal Year 2021 President's Budget requests the largest funding for shore readiness in the past 4 years. These funds cover a range of critical needs, such as increased oversight of public-private venture housing to better serve Navy families and cyber infrastructure protection for our ashore and deployed units.

To build a more ready Navy, we're better connecting the fleet. Maintaining readiness ashore and at sea requires strengthening our digital fleet. We are modernizing and transforming our Navy enterprise shore network infrastructure into a secure, resilient digital platform which includes a \$1 billion investment across our Future Years Defense Budget. We are also laser-focused on delivering a resilient operational architecture for Distributed Maritime Operations (DMO). The Naval Operational Architecture (NOA) serves as the digital backbone of our future fleet by connecting our sensors, platforms, and command and control nodes with the Joint Force. As we incorporate more unmanned systems into the fleet, the NOA will become even more vital to delivering the naval power we need to deter, fight, and win.

Protecting our networked fleet also requires building cyber security and resilience into our platforms. To meet this end, Fiscal Year 2021 President's Budget requests over \$1 billion to protect our forces from intrusions and will ensure that we can fight through and recover from cyber-attacks. Critical to the resiliency of our networked fleet is the ability to assure our capabilities in positioning, navigation, and timing (PNT). We are investing in alternate sources of PNT, like the Automated Celestial Navigation System, to ensure our Navy can fight and win in Global Positioning System (GPS) denied or degraded environments.

To build a more ready Navy, we're better arming the Fleet. To fight and win at sea against a near-peer threat, we must arm the fleet with distributed payloads of increasing range and speed such as: the Maritime Strike Tomahawk, Joint Standoff Weapon Extended Range, the Long Range Anti-Ship Missile, and the Standard Missile-6. When coupled with enhanced Air-to-Air and Air-to-Surface missiles along with MK-48 torpedoes, our platforms will have the advantage they need against near-peer threats under, on, and above the seas.

Concurrently, we are rigorously developing hypersonic and directed energy weapons to increase the lethality and defensive capability of the fleet. Hypersonic missiles change the risk calculus for our competitors by providing conventional sea-based prompt, global strike capability. Our Navy Laser Family of Weapons are also continuing to mature. The recent demonstration onboard USS *Portland* showed how we can disable an unmanned aerial vehicle using directed energy. We will continue to invest in laser technology and non-kinetic defensive systems to increase fleet survivability and free magazine space for our offensive missiles.

#### CONCLUSION

Let there be no doubt—America is a maritime nation—our security and prosperity are inextricably linked to the seas. For 245 years—in both calm and rough waters, your Navy has stood the watch to protect our homeland, preserve the freedom of the seas, and defend our way of life.

Our competitors are increasing their naval power every day, and their malign behavior and growing presence on the waters places an enormous demand on our forces. Our global forward posture—necessary to deter conflict and meet our national objectives—requires a relentless focus on readiness to keep our ships and sailors strong. Sustaining our readiness recovery has never been more vital to our nation's future.

Yet, it is important to remember readiness only partly delivers the maritime power our nation needs. Maintaining our advantage at sea also demands growing the fleet with manned and unmanned systems; developing weapons of greater lethality; connecting our fleet with resilient battle networks; mastering all-domain, fleet-level warfare; and empowering our sailors with intellectual overmatch to out-fight our rivals.

Without sustained funding that comprehensively grows U.S. naval power, we will lose the military advantage at sea on which our nation's prosperity and security depend.

Our Navy remains the finest maritime fighting force in the world and our sailors—active and reserve, uniformed and civilian—are committed to keeping it that way. But we need your help.

I am grateful to this Subcommittee for your support in this crucial work. I look forward to working with you as we ensure our nation's advantage at sea.

Senator SULLIVAN. Thank you, Admiral.  
General Berger?

#### STATEMENT OF GENERAL DAVID H. BERGER, USMC, COMMANDANT OF THE MARINE CORPS

General BERGER. Chairman, thanks for the opportunity for us to appear this morning.

From one marine to another, as we talked last night, just know that if one marine hurts, all of us hurt. So we are all thinking about you and your family.

For the Ranking Member Kaine and the rest of the Members, this is a good opportunity and timely for us to be here this morning to talk about readiness.

I am in the same spot as the CNO. I think readiness is job one for a service secretary. But it is also a balance, as he highlighted, of today's readiness, what we have to provide combatant commanders now, this afternoon, balanced against the force that we have to prepare for the future. The cold, hard truth of it is if you are a service chief that every dollar you spend on a legacy piece of equipment or on trying to prepare something for this afternoon is a dollar that you have to consider for the future. This is the tension that every service chief has always been challenged with.

That said, I think you should be very confident—this Subcommittee should be very confident that all your Navy and Marine units that are deployed around the world are ready this afternoon. They are ready for any crisis, any contingency, and we are working

very hard to make sure that we are going to stay in front. There is no adversary that is going to overtake us.

The readiness. I will just offer you I probably will break precedent in my view of readiness, how I view it. I do not view readiness as availability only. It is more than just having a platform, a ship, an aircraft, a piece of equipment available. I think you expect us to be ready in terms of are you manned, are you trained, are you equipped, are you ready for the threat. When we think of readiness, we are talking about readiness in terms of ready for what, ready when.

I am also grateful for all the support this Committee has given us because 5, 6 years ago, we were in a tough spot readiness-wise. We had rode the force hard and we needed the resources to build our readiness back. We are back where we need to be thanks to the support of the Members on this Subcommittee and the Congress writ large. I am very grateful for that.

Lastly, I would just touch on the same thing I think that Admiral Gilday mentioned, which is our readiness in a sort of unconventional way, and that is cyber readiness. Of course, that is offensive and defensive. I would just highlight that because those threats clearly are not going down. In fact, they are increasing. But you would be very proud of the cyber mission force that every day is tackling the challenges that you wanted to tackle. On the defensive side, I think we have all the means, the resources in terms of the training and the people and the equipment to prepare all our networks for the challenges that another adversary is going to pose. In both cases, I think we are very focused on it, and that is going to be an enduring task for all of us.

Chairman, I would yield the rest of my time to the topics that you want to focus on, sir.

[The prepared statement of General Berger follows:]

#### PREPARED STATEMENT BY GENERAL DAVID H. BERGER

##### INTRODUCTION

Chairman Sullivan, Ranking Member Kaine, and distinguished Members of this Subcommittee, thank you for the invitation and opportunity to address what many defense professionals conclude is job one for a service chief—operational readiness. In an era of great-power competition, this requires establishing the appropriate service culture necessary to generate and sustain readiness not only for the demands of the present, but also for the uncertainty of the future. Therefore, generating a ready force, and not simply an available force, remains my priority.

Your invitation clearly articulated five specific items of interest for the Subcommittee, and I intend to address each with as much detail and precision as possible. However, before turning to those individual topics, I should acknowledge that my understanding of the term “readiness” may break somewhat with precedent. For the record, I do not think availability is synonymous with readiness. Today’s readiness does not assure future readiness or ensure operational advantage. Every dollar consumed by the current force to make existing and in some cases legacy capabilities ready via their availability comes at the expense of future readiness and investments in to the creation of a modern force. Legacy forces with antiquated capabilities can be maintained at high rates of availability, yet that does not mean they are ready. This readiness schema was most famously articulated in Dr. Richard Betts’ seminal work—Military Readiness in 1995. As the Members of this Subcommittee know, Dr. Betts’ articulated a model to determine readiness based on three simple questions: a) For what, b) For when, and c) Of what. I will address the topics you identified in your invitation letter using this paradigm.

I have commented publicly on numerous occasions over the past year that the Marine Corps is not optimized today to meet the demands of the 2018 National Defense Strategy. The exploitation of maritime gray zone operations by the People's Liberation Army Navy and the Peoples Armed Force Maritime Militia, coupled with their increasingly aggressive pursuit of conventional and hybrid capabilities, have fundamentally transformed the environment in which the U.S. military will operate for the foreseeable future. Add to this the continuing threat posed by Russia, by rogue regimes such as Iran and DPRK, as well as by non-state actors and we have a complex problem set that answers the first of Dr. Betts' questions—ready for what?

The Marine Corps is prepared to respond rapidly to any crisis or planned contingency related to China or Russia with naval expeditionary forces from Marine Expeditionary Units to Marine Expeditionary Forces, with capabilities such as 4th or 5th GEN aviation squadrons or with any other combined arms formation desired by fleet commanders and Geographic Combatant Commanders, and in accordance with established timelines. This answers Dr. Betts' second question—for when.

Our forward deployed units in the Pacific, whether shore-based or afloat, are prepared to immediately respond to any crisis, and have a demonstrable record of success. However, successful response is not the acme of skill or triumph. We must modernize our force in accordance with our Force Design 2030 report and in the process make our adversaries respond to our competitive capability advantages as well as the advantages achieved through innovative concepts such as the existing Expeditionary Advanced Base Operations Concept and soon to be released Competition Concept. While this may sound ambitious, it is well within our ability and resources. As with our record of success responding to crises, the Marine Corps and the Naval Service as a whole have a record of success driving change as evidenced by Chinese and Russian modernization efforts focused on overcoming the advantages created by our traditional power projection and forcible entry capabilities. Our adversaries responded to our obvious military advantages, and adapted their operational and strategic approaches as well as their anti-access and area denial capabilities to counter us, and now it is time for us to respond and counter those advantages in order to restore our competitive advantages per the NDS. Making legacy platforms better will not force our near peer adversaries to change course.

As noted in my Force Design 2030 Report, we will transition our ground fires capabilities from a short-range cannon-based force to one oriented on long-range precision rocket fires—to include an anti-ship missile capability. These long-range fires will provide our traditional ground formations and naval expeditionary units with the modern capabilities required for any contingency against Russian Battle Task Groups or Peoples Liberation Army Navy—Marine Corps units, whether in Europe, Asia, or elsewhere globally. Those modernization efforts will further enable the forward deployment of a new capability—the Marine Littoral Regiment. These units, once augmented with anti-ship missiles, a light amphibious warship for mobility and sustainment, air defense capabilities, Group 5 UAS, and fully trained for expeditionary advance based operations will provide our joint force and fleet commanders with forces prepared to deter adversary aggression by denial and by detection, as well as a counter-gray zone competition maritime force. While EABO discussions have increasingly focused on application in the Indo-Pacific, we should not forget their efficacy in the high north in support of larger Navy Anti-Submarine Warfare efforts, or in contested littoral environments elsewhere around the world.

To be clear, our naval expeditionary forces and FMF in general will be uniquely capable of EABO—but not solely defined as an EABO force. Our Marine Expeditionary Units will remain capable of the full range of crisis response functions. In fact, once enhanced with unmanned surface and undersea vehicles, anti-ship missiles, amphibious combat vehicles, long-range unmanned ISR capability, and 5th GEN STOVL aircraft, we will provide our fleet and theater commanders with a distinct all-domain capability for use in traditional conflict as well as day-to-day competition. Since the technologies enabling the anti-access strategies pursued by Russia and China are also steadily proliferating in the arsenals of lesser powers—notably including Iran and some of her non-state proxies—these capabilities will increasingly be needed for the effective execution of naval expeditionary operations in a widening range of crises and contingencies.

Based on lessons learned from Iraq, Afghanistan, and Syria, as well as from the experiences of the Israeli Defense Forces in Gaza and Lebanon, coalition forces in eastern Ukraine, and the experiences of allies and partners in Mali, Libya, and across the East and South China Seas, we are modernizing our infantry battalions and traditional reconnaissance units to create more distributable formations with much greater organic lethality in accordance with units traditionally associated with

special forces and commando units. To support such a transition, we will need to fill our ranks with the highest-caliber individuals capable of out-thinking sophisticated enemies. Our current manpower system was designed in the industrial era to produce mass. War still has a physical component, and all marines need to be screened and ready to fight. However, we have not adapted to the needs of the current battlefield.

With this in mind, I am glad to bring to the Committee's attention two initiatives designed to address this evolving manpower landscape. The first is the planning direction I gave to our new Deputy Commandant for Manpower & Reserve Affairs. The essential element of that guidance is to transition the Marine Corps' approach to human resources from an industrial age manpower approach to a modern talent management system. This effort is just beginning. As we learn more, I look forward to updating you and your colleagues across Congress.

The second initiative involves how we approach training and education. Here we face a requirement to reform and re-invigorate our approaches to learning. The Marine Corps has always prided itself on producing innovative and adaptable thinkers, planners, and warfighters. This does not occur automatically or by chance, however. Rather, it results from regular re-evaluation and reform of training and education institutions, personnel, and curricula to ensure they remain at the cutting edge of military thought and learning technique. We have recently published our first top-level doctrinal publication since 1995, and not coincidentally, it is about Learning. Based on the thinking contained in this document we are taking a hard look at the selection and standards governing entry into our professional military education schools, the quality and qualifications of the faculty who teach there, the curriculum they teach, and the learning approaches they use. A major emphasis of this review focuses on the expansion of active adult learning techniques and the provision of as many opportunities as possible for students to make tactical and operational decisions in environments that realistically approximate those they may face in today's rapidly changing world. Among other elements, this approach implies a greatly increased focus on the use of wargames and other decision-forcing tools in the classroom. In our service-level training events, a similar focus on requiring marines at all levels to make decisions in the face of thinking enemies in conditions as close to those of combat as we can safely manage. We have been running these large force-on-force exercises for over a year now with great success, and are considering options for broadening them further, to include integration with existing Joint exercise and training programs.

These major initiatives merely scratch the surface of the changes we will need to make in our training programs—all of these changes will generally point in the direction of producing more highly qualified individual marines with a range of more diverse skillsets. From the skills our infantrymen will need to ensure their lethality and survivability on a more distributed battlefield, through the expanded capabilities for information operations our force design demands at a number of levels, to the entirely new (for us) skillsets associated with the employment of anti-ship missiles and other forces in seamless integration with the ships and aircraft of the Navy, our training institutions will need to branch out and step up in a number of very critical and consequential areas. My recent decision to elevate our Training and Education Command to three-star level, making its commanding general a full peer to my Deputy Commandants overseeing other critical functions within the Service headquarters, is by no means a full solution to the challenges of change in training and education, but it does symbolize my determination to effect that change and place the immediate authority and responsibility for it in the hands of an officer I know will rise to the challenge.

Finally, let me address Dr. Betts' third question—of what. While I have already commented on the current and future readiness of our naval expeditionary forces, we must not forget the total force—specifically the readiness of our reserve component forces. Discussions on the readiness of the Marine Corps are incomplete without a conversation about our reserves—a force we utilize as both an operational and strategic reserve. As with the rest of our force, we are in the process of reconceiving and redesigning the reserve portion of our total force. This process is ongoing, and has not yet matured to a point where I could provide significant detail to the Subcommittee; however, I remain committed to doing so once the latest force design planning is complete.

#### LOGISTICS, INFRASTRUCTURE, AND TRAINING RANGE READINESS

As has been documented via a series of war games over the last few years, the operational logistics system, both ground and aviation is insufficient to meet the

challenges posed by peer/near-peer conflict especially in the Indo-Pacific where significant distances complicate sustainment of a deployed force.

While we are making some gains in maintaining legacy equipment and aircraft readiness, it is clear to me that this will lead us on a road to irrelevancy against peer/near peer threats. Readiness is not about availability of equipment; rather, it is about our ability to persist and prevail against peer/near peer threats. The readiness assessments of today are more about our ability to source forces against Combatant Commander requirements. This is an argument about what we can do vice what we should do. Vice the linear path of today, we must develop new readiness metrics that incorporate numerous additional factors to facilitate assessing the service's readiness glide slope into the future. To those who say we must focus on our ability to fight tonight vice an uncertain future, I say you are presenting a false dichotomy. We must focus on and assess our ability to fight tonight, every night, in perpetuity.

Many across the joint force are working to overcome these challenges; however, there is much to be done and time is not on our side. While that is ongoing, my focus is on how to most effectively connect the Fleet Marine Force with my partners in the Navy to the evolving Joint Logistics Enterprise. The distributed battlefields of today strain our systems to the limits. This will only get worse considering the dynamic, evolving threats that could be arrayed against us unless we take action. I can assure you this has my highest priority.

At present our installations are more of an indication of where we have been as a service than where we are headed. Just as the Fleet Marine Force (FMF) is evolving, we must challenge our assumptions concerning how we deliver installation management and support. We execute these critical tasks as part of a complex network of local, state and national governments not to mention our partners in the Navy and the remainder of the Joint Force. The more we understand our place in that system and how we can influence the important players, the better our regions, bases and stations will be positioned to facilitate the readiness of the FMF both now and into the future. As there is no one size fits all option, we will have to be comfortable adapting enterprise solutions to local conditions. As a result of the rising peer and near peer threats that have several of our bases and stations inside the Weapons Engagement Zone, the service's efforts to protect the force will be far more significant than they have been in the past, requiring greater partnerships with the Navy and the Joint Force.

Based on anticipated funding levels and the additional budget uncertainty introduced by the COVID-19 response, there will be no risk free options. Our force design efforts for the future provide the necessary context to make the difficult choices about the present for our installations as well as help us to prioritize installation related funding for the future. We can no longer accept the inefficiencies inherent in antiquated legacy bureaucratic processes nor accept incremental improvements in our regions, bases and stations. In order for our installations to change effectively, we must more fully understand the implications that Force Design 2030 will have on the FMF across multiple time horizons so our future installations can be resourced to meet those objectives. In coordination with partners both inside and outside the service, we will evolve our regions, bases and stations to meet the readiness requirements in the air, on land and at sea of the future force while continuing to provide world-class support to the force today.

#### POSTURE

While some use the word posture simply to describe geographic location, it is more helpful if understood in the broader context of forces, footprints, and agreements. At present, we are in operationally suitable locations across the Indo-Pacific. Okinawa, Guam, Hawaii and Australia provide our forward deployed forces with a competitive advantage, and our forces afloat are capable of global response. However, the success of our future force will be measured in part by its ability to remain mobile in the face of contested operating spaces. While this capability is certainly relevant across multiple scenarios, it assumes a particular sense of urgency in the littoral regions of the Indo-Pacific and in an era of precision-strike missiles, sensing technology, counter reconnaissance capabilities, and the proliferation of unmanned systems. This makes it imperative that we redouble our engagement with capable allies such as the Japan Self-Defense Force and the Australian Defence Force, to refine how and where we work together to confront the shared security threats posed by China, Russia, DPRK, and others. Similarly, we remain committed to a rotational presence in places like Alaska even as we continue to explore opportunities to establish a more permanent forward presence such as with a potential active

or reserve component Group 5 UAS DET. Meanwhile, extensive training and exercises will continue in Norway and with other European partners.

#### RESOURCES AND RESOURCE SHORTFALLS

As I have previously discussed with each of you and stated publicly in my Force Design 2030 Report, I think I have sufficient resources available to generate the ready forces required by the NDS, the Fleet Commanders, the Combatant Commanders, and as expected by our partners and allies. This will require continued Congressional support and ultimately Congressional authorization to re-scope existing programs-of-record in accordance with our new force structure. I choose the word “think” vice “know” simply because our infrastructure, training, and education requirements may require additional funding, but I am not prepared to speak with precision regarding those resource needs at this time. Additional funding for experimentation would accelerate the development of our future force, and allow for accelerated wargaming, experimentation, and learning. The future Marine Corps requires heavy-lift helicopters, protected mobility, and 5th generation aircraft—but we need the flexibility to adjust programs of record to match the design of our future force. As two of these programs fall within the category of “blue dollars,” savings reaped from those could potentially be applied to existing and anticipated shortfalls within the SCN account to fund the procurement of new light amphibious warships and unmanned systems or to fund MQ-9B maritime Group 5 capabilities—all of which have the Secretary’s and CNO’s support.

#### TECHNOLOGY AND INNOVATION

We face tremendous challenges in fielding new capabilities quickly and at scale; I would like to partner with Congress to identify the resources necessary to make serious investments to rapidly close the military-technological gap. To be clear, it is not just a matter of a straight budget plus up. It is about creating the multi-dimensional structures, the cross-functional partnerships, and the innovative culture that can leverage the new technologies to transform how the marines operate. We just need to be smarter about how we invest the money we have. We need to be able to procure an adequate number of new systems to enable robust field experimentation, which supports further concept development, and allows for further refinement of requirements before moving to full-scale production/employment. Our existing institutions dedicated to these functions, to include the wargaming and analysis capacity that precedes and guides any effective experimentation, may not be adequate to the demands of rapid and thoroughgoing change that we now face. They are an essential contributor to readiness as I have defined it here, and increasing their capability and capacity will not be without cost.

We risk readiness when we follow antiquated processes that do not keep pace with the compressed timeframe of the operating space created by today’s technology. To be most effective, the MLR must be built around human-machine teaming, leveraging AI and unmanned systems to the maximum extent possible. We have prioritized the related concept development and wargaming to stay on track to deploy three MLR by 2027. That being said, far more analysis and experimentation at scale will be required so that this new, novel operational concept can be analyzed and tested in realistic scenarios. We will need the support of Congress to make adjustments to the MLR in stride as we incorporate lessons learned, to include from the perspective of how the MLR supports the Joint Force as well as its integration with allies and partners, such as Japan’s Amphibious Rapid Deployment Brigade.

How do we balance innovation and readiness? Precisely by developing a clear sight picture, by collapsing the operating space between them and by creating continuous on-ramp opportunities. To be competitive we must be opportunistic, and to be opportunistic we must be agile enough to course correct with speed and agility.

#### CONCLUSION

While Force Design 2030 will continue to inform our divestment and investment decisions going forward, we should view it as the first step in a longer journey to address the evolving threats posed by near-peer competitors, rogue regimes, and non-state actors. Risk is inherent when you employ strategic shaping to implement priorities as described by the NDS. Yet, through continued collaboration with your Committee and with Congress as a whole, as well as with the other services and with stakeholders from industry to academia, the marines are well positioned to carry out a generational transformation. Over the next 2 years, I intend to focus on Phase III of Force Design 2030—Experimentation. Specifically, I will prioritize efforts to analyze, test, and stress the systems, structures, and platforms required for Force Design 2030 implementation; to reform training and education to support

the 21st Century warfighter; and to overhaul our outdated personnel and retention model to ensure we attract—and keep—the best marines our nation has to offer.

In conclusion, the Members of this Subcommittee should remain confident that their Marine Corps and Fleet Marine Forces remain ready to respond to crisis globally or deploy in accordance with pre-planned contingency timelines—today, and in response to any threat whether from China, Russia, North Korea, Iran, or any other state or non-state actor. In order to counter adversary maritime gray zone activities and deter aggression by denial and detection, the Marine Corps must modernize. This will require no additional top-line increase, but will require authorization to modify current requirements and established programs-of-record. I understand that this is not a small ask, and that any such change could be perceived as “a loss” or signal a potential decrease in funds or jobs in some of the states you represent. I understand that I am asking you to potentially support a position contrary to self-interest, and am prepared to do everything possible to minimize the impacts of those required changes. While I have testified specifically to Marine Corps readiness, we should not forget that your Fleet Marine Forces remain part of a larger joint force; thus, any discussion of readiness must be understood as a subset of that larger readiness discussion. The Marine Corps and Navy are a team—and one cannot be completely ready without the other.

Senator SULLIVAN. Well, thank you, General.

I will just begin. I appreciate the comments about my dad. You know, I come from a family with a long tradition of naval service. My dad accomplished a lot in his life, but his proudest accomplishment, no doubt, was his service in the U.S. Navy. His cousin, Bruce Wilhelm—he was a naval aviator, an academy grad who won the distinguished Flying Cross during the Cuban Missile Crisis. You can read about that. He was actually highlighted in a movie. He was later killed in a training accident. Finally, my dad’s uncle, Tom Sullivan, was a lieutenant in the Navy. He did three Murmansk runs during World War II, some of the most dangerous service in the U.S. Navy during the war.

I mention the Murmansk runs, and, General, as you know, it is the 70th anniversary of the Chosin Reservoir battle right now. A lot of Americans do not know a lot about that battle. But I mention that because those are very important cold weather operations that our Navy and Marine Corps did quite well at a critical moment in history.

Mr. Secretary, perhaps you can begin by talking about the Navy’s upcoming Arctic strategy to get back to the roots whether Murmansk operations or Chosin Reservoir type operations were—we have a Navy and Marine Corps that can operate well and protect America’s strategic interests in some of the coldest places in the world that are now increasingly becoming the places where great power competition are going to be taking place in the future.

Secretary BRAITHWAITE. Mr. Chairman, I would be happy to.

As you know, I am a student of the Arctic, an advocate for the Arctic. I first went to your great State as a U.S. Navy pilot stationed in Adak, Alaska at the Naval Air Station and flew anti-submarine warfare (ASW) missions throughout the Arctic Circle.

Most recently, I was the United States Ambassador at the Kingdom of Norway, and I spent most of my time above the Arctic Circle right near Murmansk.

I have seen with my own eyes how the Arctic has changed in those 35 years. Today it is navigable 365, and there are other nations in the world that have recognized its importance to us. It should be an alarm to all of Americans as an Arctic nation that we

should have a more formidable presence to ensure rule of law and freedom of the seas in that part of the world.

Most recently the USS *John McCain* was doing just that, a freedom of navigation exercise, near the Bay of Peter the Great and was engaged by a more assertive Russian navy.

The United States Navy, the United States Marine Corps has had a recommitment to the Arctic. We operate in the Arctic today much more than we have historically although, as you know, the Navy has operated consistently in the Arctic since the inception of our submarine force. It is just that you cannot see our vessels. Today we need that visible presence. As the Chief of Naval Operations talked about just a few moments ago, power projection, sea control, and the ability to ensure to our partners and allies and to our own people that we, the United States Navy, have that first and foremost in our minds.

We are about to release an Arctic strategy that you and I talked about during our recent trip to Alaska and the importance of how that blueprint will recommit ourselves in a much more visible way to activities in the Arctic.

But we must recognize that if we do not step forward quickly, those who have challenged us on the stage of great power competition are there. I have seen it. Russia has re-militarized the Arctic. China has recommitted itself to build icebreakers to be able to move its product from its homeland to Western markets in half the amount of time that it has historically had to.

The United States Navy, the United States Marine Corps, Senator, is committed to being present in the Arctic in a much more visible way than we have historically been.

Senator SULLIVAN. Can I ask just two quick follow-ups maybe for you and Admiral Gilday? The Russian exercise that I mentioned—it did catch our fishing fleet by surprise. I know that there has been an after-action. But you know, our fishing fleet was ordered out of the exclusive economic zone (EEZ), which of course is our EEZ where they fish. They should not be ordered out of that by Russians. They were buzzed. They were harassed.

What are we doing in terms of an after-action to make sure that that does not happen again? Our fishing fleet—you know, my State is what I call the super power of seafood. Actually over 60 percent of all seafood harvested in America comes from Alaska's waters. What are we doing to make sure that that does not happen again?

Mr. Secretary, do you have any follow-up on the President's memorandum on icebreakers and home-porting those in different parts of the Arctic?

Secretary BRAITHWAITE. Well, again, as I mentioned, the USS *John McCain* was just recently in the Arctic to ensure freedom of navigation, and I would invite the Chief of Naval Operations to go into a little more detail.

Some of it, of course, is classified as you and I have discussed, and the CNO and I would be happy to talk with you privately at any time that would be convenient to you, Mr. Chairman.

You may know that I recently went to Finland to see the icebreakers in question that the President has directed us to purchase. We are looking within the Department of the Navy of how we can facilitate that. Part of commissioning those ships means

that they become United States naval vessels, and there are requirements that we have to have U.S. naval personnel in command of those vessels. So I have asked the CNO to look into the process by which we can facilitate that.

You and I agree we need to build icebreakers. We cannot build them as quickly as we need them. Today the Coast Guard maintains two icebreakers, and that is all that we have.

Senator SULLIVAN. One is broken.

Secretary BRAITHWAITE. Yes, sir. One is broken. We do need icebreakers, and the Navy recognizes—it is not a mission that is central to the United States Navy, but it is one that we rely on the Coast Guard to provide. In this instance, per the executive order, we are looking at ways to procure those.

CNO, do you have any thoughts you would like to offer?

Admiral GILDAY. Thanks, Mr. Secretary.

Sir, in terms of the Navy's presence in the Arctic—the Navy and the Marine Corps—I would say that over the past year, we have done some 20 exercises in the high north. That ranges from unilateral, joint exercises that the U.S. conducts alone, some of it in the training range in Alaska, to bilateral exercises with some of our closest allies and partners to multilateral exercises. Now our operations above—in the high north are not extraordinary, but they are beginning to become part of our day-to-day business. I think that is directly tied to the National Defense Strategy, the Chairman's role as the global integrator to posture the globe against those primary competitors, namely in this case, China and Russia that would include the Arctic.

With respect to the incident that happened in late August, I share your concern, Senator. I actually meet with the U.S. Northern Command (NORTHCOM) Commander later on this week. I know they are looking at what potentially happened with communication breakdowns potentially to our fishermen, perhaps miscommunication between agencies in the U.S. Government. But U.S. fishermen should not feel threatened by another nation in our own EEZ in terms of fishing. I think our continued presence up there will have some blunting effect to that, but I think perhaps more needs to be done, including through the Arctic Council, to have honest discussions about it.

Senator SULLIVAN. Thank you, Admiral.

Senator KAINE?

Senator KAINE. Thank you, Mr. Chair.

Secretary Braithwaite, I want to talk to you about the announcements you have made today about the 1st Fleet and the Atlantic Fleet. I will spend 1 minute on the 1st Fleet and then minutes on the Atlantic Fleet.

The 1st Fleet, as I understand your announcement—it will take the sizable real estate that is now covered by the Seventh Fleet out of Japan and divide it into two fleets because of increased activity at the seam between the Pacific and the Indian Oceans. Do I understand that correctly?

Secretary BRAITHWAITE. Yes, sir. That is exactly right.

Senator KAINE. This is something that you have worked out with U.S. Pacific Command (PACOM), with the 7th Fleet, and you are still making decisions about manpower, but it will likely be an ex-

peditionary fleet without, at least at the start, a land-based headquarters (HQ). Is that correct?

Secretary BRAITHWAITE. That is correct. Yes, Senator.

Senator Kaine. Thank you, and that is to emphasize the growing importance of this region and the strategic alliances that the United States has with nations like India and others in the Quad in that part of the world.

Secretary BRAITHWAITE. That is exactly right, Senator.

As you know—and you have traveled in that region—it is vast, and for the 7th Fleet, which is home-ported in Japan, although it is also a sea base, it has formidable challenges to move all the way through the Western Pacific down through the approaches of the Indian Ocean all the way over to the Northern Arabian Gulf.

Senator Kaine. Let me move to the Atlantic Fleet question, which affects Virginia significantly.

The Atlantic Fleet was the fleet headquartered in Norfolk until I believe Secretary Rumsfeld during the war on terror reconstituted the Atlantic Fleet as the Fleet Forces Command, and it was not just a name change. There were some different areas of focus.

Right before I came to the Senate in 2011, the 2nd Fleet, which was based in Norfolk and provided coverage in the Atlantic, was decommissioned because the United States perceived that Russia would no longer be a naval threat.

Well, not so fast. In 2018, during my service on the Committee, the Navy recommissioned the 2nd Fleet in Norfolk because of the increased Russian threat in the Atlantic.

Your proposal today to reconstitute the Fleet Forces Command, which was focused on the war on terror to the Atlantic Fleet, as I understand it, is to recognize the reality of this increased Russian presence and the fact that the great power competition is now sort of the dominant concern of the National Defense Strategy. Is that correct?

Secretary BRAITHWAITE. That is correct, Senator.

Senator Kaine. Let me ask this. My folks in Hampton Roads will wonder whether reconstituting Fleet Forces Command as the Atlantic Fleet will cause them either to lose jobs or personnel or investment levels in that region. Should they be worried about that?

Secretary BRAITHWAITE. No, Senator. There are no loss of jobs. There is no loss of revenue to the Tidewater region.

Senator Kaine. I understand that you will be going to the region to have discussions with folks in the area about this proposal that you have announced today.

Secretary BRAITHWAITE. I will. That is correct, Senator.

Senator Kaine. That is very helpful.

If I understand now with the structure that you are putting on the table, the Pacific Fleet would have the 1st, 3rd, and 7th Fleets reporting through it. Correct?

Secretary BRAITHWAITE. That is correct. Yes, sir.

Senator Kaine. You are contemplating that the 5th Fleet would still report through CENTCOM?

Secretary BRAITHWAITE. That is correct.

Senator Kaine. The Atlantic Fleet would have the 2nd and 4th Fleets reporting through it. Is that correct?

Secretary BRAITHWAITE. That is correct, although we still have—

Senator KAINE. You would suggest the 6th Fleet would be reporting through United States Forces Europe?

Secretary BRAITHWAITE. That is correct. Yes, Senator.

Senator KAINE. Because that fleet does so much in tandem with NATO allies in that theater.

Secretary BRAITHWAITE. That is correct.

Senator KAINE. Okay.

Let me ask now—I will move to one other topic and I will save the others for a second round. Vaccine deployment.

Secretary BRAITHWAITE. Yes.

Senator KAINE. We are grappling with a lot of vaccine deployment issues nationally, but also it is very, very critical that vaccine—thank goodness it is being developed rapidly—that the vaccine be deployed rapidly in a way that will keep our military forces active and healthy.

Talk a little bit about the DOD discussions about vaccine deployment issues and how you are approaching it. Did you learn things with respect to how you did testing, wide testing, through the DOD family that have given you lessons about how to do vaccine deployment and how to phase the deployment of vaccines throughout the Navy and Marines?

Secretary BRAITHWAITE. Yes, sir, Senator. I am extremely proud of the Department of the Navy. Both the Marine Corps and our Navy have done a phenomenal job in the aftermath of the lessons we learned from USS *Teddy Roosevelt*. We are applying some of those lessons in the testing, as you mentioned, to what our rollout strategy will be around the vaccine. Of course, some of those discussions are still going on with the Office of the Secretary of Defense (OSD) team as we determine how quickly we will get those vaccines, how quickly we will roll those out. I know the CNO is in discussions with our Surgeon General to how we will do that for the Navy, as well as the Commandant for the Marine Corps.

I would invite the CNO if he had any thoughts on this specifically to comment.

Admiral GILDAY. Thank you, Mr. Secretary.

Sir, there are two related but separate plans that are in development right now very closely with the the Centers for Disease Control and Prevention (CDC). The first one deals with the distribution of vaccines, and so there are two that DOD is looking at. One is Moderna and the other is Pfizer. As you probably know, the Pfizer requires—Pfizer's are going to be shipped in GPS-tracked coolers—

Senator KAINE. Separate refrigeration, yes.

Admiral GILDAY. Right, and once it is thawed, it is good for about 5 days.

The Pfizer medicine will be distributed here in CONUS at 10 different locations across the DOD. Every medical treatment facility in the military will receive that vaccine. Then we will also have three or four out-CONUS overseas locations that will receive the Moderna vaccine, which is allowed to be refrigerated for up to 30 days, and so you have a little bit more flexibility.

The second piece of this is the vaccination plan itself. And it is kind of tied to lessons learned from testing. We actually developed a prioritization for testing. We were building the airplane as we were flying it, as we were trying to get testing capability out.

This time we have a better sense of what that prioritization structure ought to look like. At the top are health care workers and then emergency and safety personnel at our installations, those people who are likely to come in contact with people that are infected, and then our strategic forces. I think maybe your cyber mission forces, the crews on strategic missile submarines, and then the forces that will deploy within the next 3 months.

We have a good count of what those numbers are, and if there is anything we are really good at, it is mass immunization in the U.S. military. We feel pretty confident, sir, that once we get the vaccine distributed, that the vaccination piece, now that we have the prioritization well thought out, will happen pretty quickly.

Senator KAINE. Thank you.

Thank you, Mr. Chair.

Senator SULLIVAN. Senator Shaheen?

Senator SHAHEEN. Thank you, Mr. Chairman.

And thank you to each of you for being here this morning and for your service.

Secretary Braithwaite, I want to follow up on the conversation you and Senator Sullivan were having about the importance of being able to operate in cold climates and the importance of the Arctic going forward because in New Hampshire, we have the U.S. Army's Cold Regions Research and Engineering Lab. They do amazing research, and I wondered to what extent you share that kind of research across branches. Do you get information from the Army about research that is being done at CRREL that would be helpful to the Navy?

Secretary BRAITHWAITE. We do. Of course, under a new joint approach, the service secretaries and I—we talk. The service chiefs talk all the time. Our respective research arms have exchange and interplay as well.

Senator SHAHEEN. Admiral Gilday, I appreciated your comments on the importance of our civilian workers especially at our shipyards. We have had the opportunity to visit the Portsmouth Naval Shipyard, and everyone appreciated that.

I am very interested in ensuring that the shipyard optimization plan goes forward as envisioned. Are you comfortable that the resources are going to be there to keep that plan on time? What has been the impact, if any, of COVID-19?

Admiral GILDAY. With respect to the plan, ma'am, it has been a priority of the Department and certainly the Secretary since he has been in the seat.

I will tell you, in terms of putting our money where our mouth is, right now across the four public yards, we have nine MILCON projects that are underway, so four of those are up at Portsmouth. There is a couple in Puget Sound and a couple more in Hawaii and so forth. But those are progressing on track and funded.

Across the FYDP, we have outlaid \$3.5 billion, which is not a trivial amount given the fact that—this is for Shipyard Infrastructure and Optimization Program (SIOP)—given the fact that our

typical MILCON budget a year is about a billion. So \$3.5 billion over the Future Year Defense Program (FYDP), and that is progressing pretty well with respect to the work and the planning associated with it. There is a big project in Hawaii that we just made congressional notification on a week ago. I am confident that we are heading in the right direction, that is, the right degree of prioritization and resources against the plan, ma'am.

With respect to workforce itself, so the workforce, as you know, is an older workforce. We were very conservative, particularly in the spring, and we wanted to make sure that safety was our number one priority. And so we did see probably with respect to production—we saw a dip in our production capability at the public yards with respect to the work that was being done. It went down to the 70s with respect to 70 percent of the workforce on the job every day. That is now back at 90 percent.

When we look at lost man-days with respect to that time period, it is about 2 percent of the man-days across the four yards that we would expect to complete a year.

We have mitigation efforts in place. That includes overtime, which buys us back 2 or 3 percent. Contracting, so going to local contractors outside of those public yards that can do some of that work for us. Also, we have mobilized about 1,300 reservists that have unique skill sets that we could bring into the yard.

The mitigation plan, again safety first, and right now we are watching it very closely. But I think that we are stable right now. I would describe our repair efforts in the public yards as stable. I am very comfortable with where we are.

Senator SHAHEEN. Do you expect to be delayed in terms of where we had hoped to be with the optimization plan as the result of COVID?

Admiral GILDAY. I have not seen any delays to military construction (MILCON) projects as a result of COVID. I am sure there have been some slight delays but nothing that has popped a red flag at my level to raise significant concern.

Senator SHAHEEN. Good. Thank you.

Also, this is I think both for you, Admiral, and for the Secretary. One of the challenges that we have is our shrinking industrial base as we look at the needs going forward. I assume that COVID is going to have an impact on that. I know we have small businesses in New Hampshire that are part of our defense industrial base in the State that are facing real challenges as the result of this pandemic.

Are you concerned about the impact of the pandemic on more of those businesses that we are going to rely on for our industrial base? Do you have any thoughts about how we can do more to ensure that we have the support that we need through the industrial base?

Secretary BRAITHWAITE. Senator, as I mentioned to you, you know, I am a product of Philadelphia and the shipyard closure there and what a negative impact that it has had not just on the greater Philadelphia region but on our industrial base writ large across our country. We need to protect every shipyard we have. The Chinese, ma'am, have 25 shipyards to our one, and I am a student of history. When you go back and you see the element that kept

the United States capable during World War II, it was our industrial might. It was our ability to build back the ships that we were losing. We need to maintain the sacred industrial base that we have today.

I would give kudos to our Assistant Secretary of Defense, Jim Geurts, who has done an incredible job of crafting a plan to look to those second and third tier suppliers to ensure that there is consistency in getting the product into the yards. As the CNO has indicated, our shipyard workers, both in our public yards and in our private yards, have done an amazing job of continuing to be there engaged through the fact that they are dealing with antiquated systems, they are dealing with older ships that require more work, and especially in the midst of a global pandemic. They have done a phenomenal job. As the CNO has indicated, we really have not missed a beat. We will have some slowdowns I am sure, and the CNO can go into some more detail on that. But overall I believe that the Department of the Navy has a great record under the leadership of Jim Geurts of doing the work to ensure that we have consistency to those yards.

Admiral GILDAY. Thank you, sir.

Just a couple of comments to amplify some things that the Secretary said.

I think that the apprenticeship programs that we have that are associated with each of our shipyards and local community colleges, whether it is Hawaii or Washington or New Hampshire or Virginia, have been phenomenal. Those 4-year programs that produce some of the best and brightest in the yards that hopefully we can keep around for 30 years, because it is a family business in many cases—it is eye-watering to meet those young people. Actually they are not just young people. They are people from all walks of life, and some of them are middle-aged that just have decided that they want to give more back to the country.

But that program collectively produces about 1,000 workers a year, and over the past 3 years, we have increased the number of shipyard workers from about 33,000 to almost 37,000. We have been on the increase, and we are changing that demographic. As you know, there are either young people in the shipyard or there is older people in the shipyard, but we missed a generation, and so we are trying to rebuild.

I am very optimistic about where we are headed with the workforce. When you visit those shipyards—and I know that you do—it is an uplifting experience when you meet those people, salt of the earth, and they love what they are doing.

With respect to the supply chain, that remains a concern for us. Senator Kaine mentioned this during his opening remarks. With respect to opportunities that we have seen during COVID, the relationship that we have, the opaqueness that has dissolved with vendors during COVID, has been something that I have not seen in my career. Again, as the Secretary said, Assistant Secretary Geurts can speak to this in more detail. But we have our eye on more than a quarter of a million parts, and you know, it only takes one to take down a ship or an aircraft or a submarine. But we have our eye on those vendors that are struggling and other vendors that have stepped up to fill the gap in places. We have seen a bit of

both. We have seen some failures that have been troubling. We have also seen some great innovation.

Senator SHAHEEN. Well, thank you. Certainly ensuring that those businesses get paid as expeditiously as possible is really important right now. I know that that has been a focus of DOD, so thank you.

Thank you, Mr. Chairman.

Senator SULLIVAN. Gentlemen, I am going to have to step out for a brief minute. Senator Kaine will be taking over, but I am sure we are going to have a number of additional questions. We have a number of Senators on the line as well. I am going to next call on Senator Hirono.

Senator HIRONO. Thank you, Mr. Chairman, and before you leave, I would like to also extend my condolences to you for the loss of your dad.

Senator SULLIVAN. Thank you.

Senator HIRONO. Mr. Secretary, you were talking a bit about the Arctic. This will be a yes or no question. Is it time for the United States to ratify or the Senate to ratify United Nations Convention on the Law of the Sea (UNCLOS), Mr. Secretary?

Secretary BRAITHWAITE. Senator, I think we need to do some more work to make sure that it is the right time, to be very honest with you.

Senator HIRONO. UNCLOS has been hanging around for decades, and I would say it is the right time, especially as I think our country is disadvantaged by not being part of UNCLOS especially as the Arctic is seeing a lot more activity, shall we say. I think one of the reasons that the Arctic has become navigable is because of global warming.

For General Berger, I would like to offer my condolences, General, for the eight marines and one sailor who tragically perished in an amphibious assault vehicle (AAV) accident at the end of July. I realize that the investigation is occurring. Can you tell me when the investigation into this accident will be completed?

General BERGER. The initial portion of the investigation is done, ma'am. I think probably within 30 days the endorsement chain will be complete.

Senator HIRONO. Since the initial phase has been done, can you tell us what led to this accident very briefly?

General BERGER. I cannot, ma'am, because I have not seen the investigation. As long as it remains in the endorsement chain, in respect of the due process, I do not poke into that.

As you are well aware, ma'am, we took initial measures within the first 30 days, but as far as the final recommendations, the final opinions and recommendations, I have not seen them yet.

Senator HIRONO. I know the vehicle that was involved in the accident is to be replaced by the amphibious combat vehicle (ACV). We probably would need to get some kind of an update on how all of that is going.

Mr. Secretary, I do not want to get into a long discussion with you, but it came as news to me that I thought I heard you say that you are taking some ships from the 7th Fleet based in Japan to be located in the Indian Ocean. Is that what you said? This is a proposal or is it already being implemented?

Secretary BRAITHWAITE. No, Senator. That is not what I said.

We are going to re-commission the 1st Fleet, which like the 7th Fleet would operate in the greater Pacific region under the command and control of the United States Pacific Fleet headquartered in Hawaii. It would not necessarily take ships from the 7th Fleet or from the 3rd Fleet. It would be a sharing. That is how our numbered fleets operate predicated on the demand and the threat that emanates in the part of the ocean in which those respective fleets operate.

The 1st Fleet would be expeditionary. We are still determining from where that fleet would operate from. But its major focus would be on the Western Pacific and the Eastern Indian Ocean.

Senator HIRONO. Mr. Secretary, is this the proposal or has the decision already been made to do this?

Secretary BRAITHWAITE. The decision has been made, yes, under my Title—

Senator HIRONO. Did I hear you say that this was in consultation with INDOPACOM people?

Secretary BRAITHWAITE. It is in consultation with INDOPACOM through the Chairman's office and the Office of the Secretary of Defense.

Senator HIRONO. Thank you.

Now, you were asked some questions about the importance of the continuation of the modernization program at the shipyards, and so I just want to reiterate my support of the importance of going ahead with those plans even though I know with COVID we have had delays, et cetera because of manpower issues relating to COVID.

Let me turn to you once again. You visited Palau which was I think—I think that was very important. You were the first, I believe, Secretary of the Navy to visit Palau in October. You emphasized the importance of United States military presence in the Indo-Pacific as, of course, China continues its destabilizing activities in the area. So the recent activation of the Marine Corps? Camp Blaz in Guam is also an important part of the military's force laydown in this region.

I wanted to ask you, can you provide some insight into how the U.S. and Palau can build on our partnership with Palau through joint use facilities in the Pacific? Because I believe the new President of Palau has written to us saying that he would welcome that kind of effort.

Secretary BRAITHWAITE. Yes, Senator. Thank you for the question.

I had never been to Palau before.

Senator HIRONO. Oh, I am sorry.

Secretary BRAITHWAITE. No, no. I went as Secretary of the Navy. It is a beautiful country. I had never been there before. I was a Navy pilot and I flew extensively throughout the Western Pacific, but I had never been to the beautiful islands of Palau, and what a gorgeous country it is.

The thing that struck me—I went in the wake of Secretary Esper. He and I had discussed the opportunity to not only reassure those who are partners and allies like Palau, who is on the cutting

edge, the tip of the spear of Chinese aggression in that part of the world—

Senator HIRONO. Yes.

Mr. BRAITHWAITE.—that we are with them.

I personally went with members of my team to look at the infrastructure there to see how we could support U.S. naval vessels operating periodically from there.

During my trip, I also visited Guam, Senator, and the same reasons to see how we could ensure a more forward presence of naval forces and enhance our presence there.

That process is ongoing. Palau continues, as you have said, to be receptive to receiving more U.S. naval vessels. While I was there, we had some operating in the region. I was able to interact with them, and the support that they received was again indicative of Pacific island nations.

Also, as I think through the uniqueness of Palau, they are COVID-free, Senator, and one of the things that we are dealing with now is our sailors, our marines have been deployed on ships without any port visits. You know, it was kind of one of those additional bonuses of my trip by Palau where we have forces operating at sea who are COVID-free. It would be almost bubble to bubble to be able to see our ships go into Palau.

All of those things indicate that Palau is a nation that we need to continue to support and recognize their partnerships, their friendships with us and how we can enhance that.

Senator HIRONO. Yes. I hope that we can do more with all of our compact nations. That would include Palau, the Marshall Islands, and the Commonwealth of Micronesia.

So yes? Is my time being called?

Senator KAINE [presiding]. I need to move to Senator Duckworth, Senator.

Senator HIRONO. Okay. Thank you so much.

Senator KAINE. Thank you, Senator Hirono.

Senator HIRONO. I will submit other questions for the record.

Senator KAINE. Senator Duckworth I believe is with us via Webex.

Senator DUCKWORTH. Yes. Thank you so much, Senator Kaine.

I want to open by acknowledging the Department of the Navy's leadership in removing the Confederate flag from Navy and Marine Corps installations. Commandant Berger, you specifically led the way for other military services in a move that I felt displayed great concern for all of your marines and sailors and great personal moral courage. Your expectation that the marines and sailors assist you in rooting out symbols that cause division in the ranks sets a clear standard of leadership, and this is a readiness issue and I think you have made that very clear.

Additionally, your recognition that the Confederate arm's battle flag can cause feelings of—and I quote—pain and rejection clearly states a truth that other senior leaders have failed to acknowledge for so long. The Confederate flag was carried by those who took up arms against the United States to keep black Americans in chains. It is imperative that all of our servicemembers feel welcomed and valued. Banning displays of the Confederate flag shows respect for

black servicemembers who already face well documented barriers to service in the military and inclusion in the ranks.

Commandant, your actions represent one of the many important steps that our armed services can take to improve the inclusion of all servicemembers, as well as discipline and unit cohesion. I applaud your leadership.

I also applaud you, Admiral Gilday, for your subsequent call for a Navy order banning the display of the Confederate flag from public spaces aboard Navy installations.

Now that we get into my question, I actually want to focus on a region that is personally important to me, Southeast Asia in particular. The National Defense Strategy, the NDS, focuses significant attention on countering the rise of China and our own readiness to operate in this large, geographically diverse, distributed and maritime region is absolutely key to executing the vision that is laid out in the NDS.

General Berger, I was pleased to see your acknowledgement in your written statement that our operational logistics system, both ground and aviation, is insufficient to meet the challenges posed by peer and near-peer conflict especially in the Indo-Pacific. I am very concerned about our ability to sustain our troops while they execute the vision of warfighting that is laid out in the NDS, but the logistics function of warfighting receives far less attention than fires and maneuver. Your admission that the Marine Corps has work to do when it comes to logistics gives me greater confidence that you are thinking realistically about this problem set.

I think that your recognition of readiness, particularly in the Indo-Pacific, implies more than simply maintaining legacy equipment is a really important one. Our services plan to operate in smaller and more distributed formation across a large and geopolitically complex region, perhaps with limited COMs, it is clear that the military services will have to rethink the way they sustain warfighters in theater.

General Berger, from your perspective what are the biggest challenges to reforming the Marine Corps' current operational logistics [inaudible] to meet the needs of distributed [inaudible]? Sorry for the long [inaudible].

General BERGER. I think I understand the question, Senator.

We have a big challenge because of two factors I think. One is the distances, which you highlighted. The second is that we have enjoyed a protected back side in terms of our logistics chains for 70 years. We have not been challenged. We are now. We have to assume that any adversary is going to contest our logistics supply chains.

In terms of what do we have to do about it, I will offer just two or three thoughts.

First of all, we got to be able to distribute laterally at the tactical to operational level, sustainment, supplies, equipment, people in a way we have not been challenged to do in the past, and we got to do it, again, in a contested environment. By contested, I mean in a region where an adversary can see us and can interdict you. We have to have everything from the surface craft to the aircraft and probably in the future I would suspect a fair portion of that would

be in unmanned. We have to have better distribution mechanisms than we have right now.

From the operational to strategic, we have enjoyed a secure line all the way back to the continental United States (CONUS), as you pointed out for years. It has not been challenged. That is now becoming a problem. From the strategic to the operational, we got to push the supplies forward, and then operationally at the tactical laterally, we are going to need different means to move supplies and equipment and people laterally within the second or first island chain or within Europe or within U.S. Central Command (CENTCOM).

Senator DUCKWORTH. Well, thank you.

Are there policies or programs that my colleagues and I should be considering at our level to address these challenges and better adapt to an environment and style of warfighting that is very different from what we have seen in Afghanistan and Iraq? So what can we do here at our level here in the Senate in terms of particular programs that will help you basically bring your readiness level in those logistical networks, especially when you are talking about doing it horizontally in a contested environment? What can we do to support you? Are there particular programs that you would emphasize?

General BERGER. There are, ma'am. I think the combination of oversight and resourcing for our unmanned surface and aerial systems is probably the biggest area. I am sure there are others. But you asked me here, I would say that one comes to mind. We have to move very quickly to develop and field the unmanned surface vessels and unmanned aerial systems that will move those supplies because we will never get there if we rely only on manned systems.

We have a lot of learning to do there. We have a lot of experimentation to do there. But if there is one area I would ask for support there, that would be it.

Senator DUCKWORTH. Thank you.

Admiral GILDAY. As the CNO, can I add—

Senator KAINE. Admiral Gilday, do you want to weigh in? Admiral Gilday, you can weigh in and then I will move to Senator Jones, if that is okay, Senator Duckworth.

Senator DUCKWORTH. Yes. My next question was actually going to be to ask Admiral Gilday for his input. Thank you.

Admiral GILDAY. Thank you, ma'am. I appreciate the opportunity to amplify on what General Berger so eloquently spoke to.

We have a legislative proposal right now in consideration by—in conference with the National Defense Authorization Act (NDAA) that would allow the Navy to buy used sealift vessels instead of investing in new sealift vessels to increase the number of used vessels that we can buy. As you know, that is a growing capability gap for us, as you highlighted, and we need to close it quickly. We can do so at a tenth of the cost by—we have already done the market analysis. We know which ships we would go after at a tenth of the cost of buying new. For \$30 million instead of \$300 million with a minor upgrade in a U.S. shipyard, we will have the sealift that we need to move ground forces where they need to be in order to bring effects to bear.

The other thing I would mention is the Future Naval Force Study Assessment that was completed recently and will be briefed to staff up here on the Hill tomorrow. One of the big takeaways I think are logistics vessels, and the numbers increase significantly with respect to the requirement. I think it is noteworthy and something that we at the Department need to put a higher priority on with respect to procurement.

Thank you, ma'am.

Senator DUCKWORTH. Thank you. [Inaudible] we do not have enough hulls in the water nor heavy lift capabilities, and that is it. Thank you, Mr. Chairman.

Senator Kaine. Senator Jones?

Senator JONES. Thank you, Mr. Chairman.

Let me first—I want to echo Senator Duckworth's comments about the removal of the Confederate battle flag and those symbols. In my career, I have seen, especially coming from a State like Alabama, words matter. Symbols matter. They can have deadly consequences on occasion, so I appreciate your efforts without an act of Congress to remove those symbols.

I want to talk just a moment about readiness in a different way, not from adversaries attacking or whatever, but from security on our own installations here in the United States on our soil. One year ago this coming Sunday, there was a shooter, a terrorist attack at the Naval Air Station in Pensacola, Florida. I met a few months ago with Ben Watson and his son Adam to talk about their terrorist attack.

Ben's son, Ensign Kaleb Watson, was the officer on deck that morning and was one of the first people the shooter encountered. Though he had been a captain of the rifle team at the Naval Academy, per installation rules Kaleb did not have a weapon that day. He and two other young men, Airman Mo Haitham from Florida and Airman Apprentice Cameron Walters of Georgia, died that day. Ben and his wife Sheila wanted to be here today but were unable to because of COVID restrictions, but they are watching in Alabama. I believe and Kaleb's family believes that things could have been different that day in December of 2019. Things should have been different.

Secretary Braithwaite, you and I have talked about this some. For one thing, the law enforcement officer who drove Kaleb to the hospital with his injuries got lost on the base. That just should not happen.

Now, my office has been asking the Navy since April 6th about its investigation report. We finally got that last week, a week and a half ago, a redacted version. And one of the things that was clear, even before the report came out, is this has happened too many times on our military installations. Too many American troops have lost their lives to shooters on U.S. military bases on U.S. soil. As someone in the Senate like Senator Kaine and others who send folks to the academies and they are going to be on these bases, as someone who encourages our young men and women to join the armed forces to serve their country, that is disturbing that we are putting them in harm's way at a place where they should be most secure.

There have been investigation reports about all of those instances and shootings, and there have been recommendations. What we see from the Pensacola report is that many of those are just not being followed, especially with regard to planning, training, and assessment of response plans for situations just like this. I for one believe that is inexcusable.

Ben and Sheila Watson are watching today from Alabama, and they have made it their mission to do everything they can to prevent losing more of our sons and daughters. I tried to help in my time here on the Armed Services Committee.

I asked for the Committee to include in the Senate version of the NDAA language that would require the Secretary of Defense to implement within 90 days of all applicable security—emergency response recommendations to protect military installations and language requiring the Secretary of Defense to ensure that each installation conducts or develops a plan to conduct live emergency response training with first responders. I very much hope that those requirements make it into the final bill that we are going to see shortly.

I am going to ask each of you today—and this is just brief answers because I have got a couple more I would like to ask—can you tell me that it is currently a priority—currently a priority—to make absolutely certain that on every Navy and Marine Corps installation, that all applicable security recommendations and regulations have or will be implemented and followed? If that is not a priority, would you commit to making one? Secretary Braithwaite?

Secretary BRAITHWAITE. Senator, first and foremost, Kaleb is a hero. I was in Pensacola 2 weeks ago with the leadership there, and I was in the very place where Kaleb was shot. I cannot imagine the anguish that his family, being a father myself, must feel.

In 31 years in uniform of our country as a naval officer, every time I went aboard a base, I always felt safer because I presented my identification card. Although there is no easy answer to this, we are committed to ensuring that we get to the root problem of all of these. In some instances, it is because people do have guns on our installations. In other instances, it is because people do not have weapons on our installations.

We are working diligently to figure out the right approach to this so a hero like Kaleb Watson never loses his life.

Senator JONES. I will come back to the other two real quick, but I want to follow up on the comment about the weapons.

One of the recommendations is that there be a uniform policy with regard to weapons on there. Is that something that you intend to try to follow to develop a uniform policy of weapons on base?

Secretary BRAITHWAITE. Well, the uniform policy—I mean, we are one Department of the Navy, and it should be uniform. But remember, the shooting in Pearl Harbor was just the opposite. It is because the individual who was on duty had a weapon and used that weapon to attack others with it. Again, there is not an easy answer to say one or the other.

What we are committed to is ensuring that those people who are armed are appropriately trained, that there is the cross-integration both on base and off base so what happened in Escambia County

does not happen again on any other base. That is what we are committed to do.

Senator JONES. Mr. Chairman, if you could bear with me, I would like to just get a quick answer from Admiral Gilday and General Berger on the question about a commitment to the security of those installations and following those recommendations. Admiral?

Senator SULLIVAN [presiding]. Sure.

Admiral GILDAY. First of all, Senator, I completely agree with you that the incident was inexcusable.

Secondly, taking a deeper look at this, besides as you mentioned the memorandums of understanding (MOUs) that we are looking at and the training that we are doing with first responders at all our installations now that we had not been doing to the degree we should have been doing is underway regardless of whether any legislation comes out.

The third thing is I commit to you, sir, that this is a priority for the Navy.

Senator JONES. Thank you.

General Berger?

General BERGER. Senator, I can affirm the same. It is a priority right now. It will remain a priority.

Senator JONES. Thank you all.

Mr. Chairman, let me say, first of all, it has been an honor serving on this Committee for the last 2 years with both of you and all the other Members of this Subcommittee, as well as the general committee. I will miss it, but I know the work is in good hands.

Mr. Chairman, let me say to you specifically, let me also offer my condolences. I lost my dad about 11 months ago. He was also a Navy guy, so I feel the pain and I feel the loss, and it can never be replaced.

Thank you, Mr. Chairman.

Senator SULLIVAN. Thank you, Senator Jones. Thanks for your kind words.

Thanks for your great service on this Committee. You know, I think the witnesses know there are certain Senators who dig into these issues, really care. The issues of civilian oversight for our military are critical, and you certainly have been one of those and we appreciate your service. We know that you have a lot left in terms of giving to your country and your State. Thanks very much for your great service on this Committee.

Gentlemen, I would like to continue with a second round of questioning. General Berger, I would like to dive in a little bit more with regard to the Force Design 2030 plans that you have put forward that I highlighted in my opening remarks. To be respectful and also to give you an opportunity, as you know—and I think this happens anytime someone is trying to break glass in terms of a broad-based strategy that recognizes challenges that are new and very significant. I happen to agree wholeheartedly with the National Defense Strategy and the National Security Strategy of this administration. I think one of the unwritten stories in the media is how bipartisan the support is for that strategy. But then the services now have to start implementing it, and I think that is always a difficult challenge.

I think the Marine Corps, under your leadership, has really taken that to heart, and I happen to appreciate it. But it is not, as I mentioned in my opening remarks, without its critics. I am going to read just a couple lines from a detailed piece in "the National Interest" from former Secretary of the Navy Jim Webb, who has a lot of respect in the Marine Corps, of course, as a combat veteran from Vietnam. But he says a couple things in his piece. Quote: After the centuries it took to establish the Marine Corps as a fully separate military service, this new strategy could reduce its present role by making it again subordinate to the funding and operational requirements of the U.S. Navy. That is one criticism.

Another, he talks about the plan to dramatically alter the entire force structure of the Corps to focus on China, ignores the unpredictability of war. He also says there is no greater danger in military strategy than shaping a nation's force structure to respond to one specific set of contingencies, giving an adversary the ability to adjust and adapt beforehand.

Do you want to comment on those comments? I know there are some other former commandants who have also been critical, and I want to offer this as an opportunity for you to make the case of what you are trying to do with the 2030 Force Design.

Secretary BRAITHWAITE. Mr. Chairman, if I may—

Senator SULLIVAN. Sure, Mr. Secretary. As the Secretary of the Navy, you certainly—both of you—I would welcome really all three of you. Former Secretary Webb obviously incorporates the Navy in general. So I would welcome—actually it is a good point, Mr. Secretary—all three of you to respond.

Secretary BRAITHWAITE. Mr. Chairman, I would just like to say first and foremost, Secretary Webb is an incredible patriot and a great American.

Senator SULLIVAN. He is, no doubt.

Mr. BRAITHWAITE.—and an individual I hold in extremely high regard.

Senator SULLIVAN. He is a former Member of this Committee.

Secretary BRAITHWAITE. Yes, sir, and an incredible accomplished marine, a graduate from the U.S. Naval Academy where I was fortunate to follow in his wake, and a gentleman who I consider a friend and somebody that I have had discussions with.

But I would say that General Berger is a visionary, and I could not say this during my confirmation hearing because I was told to throttle back a little bit. But I generally do not throttle back, Senator. I lean in pretty heavy when I know and believe in my heart and in my head something is right. Dave Berger is the visionary that the Department of the Navy needs today. It is his vision and his humble leadership of going up against all of the challenges that he has now encountered to see something come to fruition that is long overdue.

The world has changed in the last 20, 40, 60 years, but what has been proven is the concept that a combined Navy/Marine Corps team, not one subordinate to the other. The Marine Corps and the Navy in the Commandant's vision are one equal paired together. His vision gives a combatant commander another tool in the toolbox in order to fight the fight if you have to do that, that takes the Marine Corps from being land-centric to being a capable amphib-

ious force again. His vision is predicated on those of Commandant Russell and Commandant Fuller who, through the fleet marine force concepts of the 1930s, created the success of the amphibious marine oriented combat capabilities, coupled with the United States Navy, and being able to take the fight to the Japanese and win World War II.

So I wanted to be on record to say as the Secretary of the Navy, I am proud to be with our Commandant whose vision is the one that we need for the challenges that we see emerging in great power competition.

Senator SULLIVAN. Thank you, Mr. Secretary.

Senator Kaine, if you are okay with it, I am going to go a little long for General Berger and Admiral Gilday to be able to respond and add to what the Secretary said.

You know the criticisms, General. If you can take this opportunity to address what former Secretary Webb and others have been saying and how you, Admiral, view this new force design for the Marine Corps.

General BERGER. Chairman, I think the feedback—my view—the feedback from Secretary Webb and others is helpful. This is elevating the discussion. This is an ongoing debate that will continue for years. So it is not hurtful. It is actually helpful.

I met with Secretary Webb, as I have with the others who want to provide feedback. I met with him in Arlington, and we talked for probably 2 hours. I did not know him that well, but it was a great discussion. I know him now, did not know him that well before.

We talked in three broad areas. First of all, does the Marine Corps need to change? Second, if it does, does it need to change now? The third part was the changes that we are considering right now, the direction we are headed—are those the right changes? So in basic order kind of marine-like, we broke it down into three categories.

I did not see any daylight between us on do we need to change. To the point you made earlier, we have to change.

Now, do we need to change now or can we wait to change in a year or 2 when things are a bit clearer? This is as much a judgment call as anything, but my assessment is we cannot wait. We have adversaries that are moving quickly. If we wait a year or 2 for a clear, 90 percent picture, we will not catch up. In my opinion, we cannot wait.

So then it came down to the changes themselves, which you highlighted. Here there are going to be differences of opinion. But what I emphasized to him is this is just—where we are right now is on the front end not the back end. We have a lot of experimentation, a lot of learning to do. We cannot wait to move out.

We had a great, healthy discussion, and I take all the input from everybody else not in a negative sense but in a positive sense. It elevates the discussion. But in my assessment, my professional opinion, we have to change. We have to move out now, and we have to preserve enough to learn in the future over the coming years to make sure we get it right.

Senator SULLIVAN. Thank you, General.

Admiral, would you care to comment?

Admiral GILDAY. Thank you, Senator.

I go back to what I said in my opening statement, sea control and power projection, and so Nimitz said it was timeless. President Kennedy said it is timeless. If you look at the missions of the NDS today, they require those functions from the Navy and Marine Corps team.

What General Berger is doing is giving us another, as the Secretary said, tool in the toolkit so what changes today is not only what we fight with but how we are going to fight. We have to look at that fight in every domain from the seabed to space. The Marine Corps brings a terrestrial capability to the problem of sea control, a function that we still value.

If the nation believes that we need a United States Navy and a United States Marine Corps forward so that the fight stays forward and not in this country, then that is an investment that you want to double down on because what General Berger is bringing is an asymmetric advantage to that particular function, something that the enemy is going to be—it is going to be difficult to find, difficult to pin down, and difficult to take on. It gives us many more options. It presents more options, as the Secretary said, to a combatant commander to confuse an enemy and to come at him with multiple vectors, with multiple tools in the toolkit.

So it goes without saying, Senator, I am a huge supporter. I think we are headed in the right direction. That is not to say that there still will not be friction within the Department of the Navy in terms of where we put our next dollar with respect to capabilities, and you will be asking the same question on whether a capability for the Marine Corps with respect to sea control is worth it or whether you get more flexibility, more maneuverability, better effects through another investment. I think we have to be open-minded about that, and I think we have to look at, at the end of day, the capability gaps you have to close in order to give you sea control.

Senator SULLIVAN. Great, and your point, General, I think is a really good one, that all of this, whether it is from former Secretary Webb, former Senator Webb as well, and former commandants, it does elevate the discussion. I think the discussion also needs to be here which is why I have highlighted it in terms of the Armed Services Committee's civilian oversight responsibilities, and I think it is going to continue. I appreciate—this really is kind of the beginning of an important discussion at the highest levels of our government because it is a really important undertaking that the Navy and Marine Corps are advancing right now as part of our National Defense Strategy, and I commend all three of you for the seriousness with which you have undertaken this at this moment.

Senator Kaine?

Senator KAINE. Thank you, Mr. Chair. I am glad you took extra time on this question because I think it is a very, very important one.

General Berger, I want to echo comments made by Senators Duckworth and Jones about your courage in taking the stance you took last spring with respect to display of the Confederate battle flag on Marine installations. Because you have such family ties to Virginia, this was not a decision taken by an outsider or imposed by somebody who does not deeply understand the dimensions of

this issue. Frankly, your ties to Virginia I think are such that the decision that you made and the way you articulated it maximized the acceptability of it within your ranks, and so I want to echo those comments.

Your willingness to take courageous stands when you need to bears upon this last question as well. Change is needed. Should change happen now or can we wait on it? I think the answers to those first two questions—I think you have answered them correctly. Exactly the dimensions of all the change that is needed, that is a profitable area for a lot of discussion now and in the future. But your willingness to take big steps forward is one of the reasons that you are in the position that you are in and that we have confidence in your leadership.

A few questions. The Navy has developed a shipyard infrastructure optimization plan, and that was to deal with this lack of capacity at shipyards. The original plan was estimated as a \$21 billion investment over 20 years. The GAO suggests that is likely an underestimate because a number of costs were probably not included in the original estimate.

I guess, Admiral Gilday, what I would like to ask you, is the SIOP still on track with respect to both time and funding? If so, why are we not seeing it in budgetary requests to Congress?

Admiral GILDAY. Sir, I would argue that we are. I mean, as I talked about the investments in nine MILCON projects underway right now, \$3.5 billion in MILCON at the four shipyards themselves invested over the FYDP, typically we are spending a billion a year on MILCON. I think relatively speaking we are, sir, making it a high priority.

We understand the importance of it. These dry docks on average, as you know, are over 100 years old, and we have neglected them for too long. This is a strategic decision by the Department to make this a priority and put the money where we need to or we cannot sustain the fleet of the future. As you know, we are challenged to sustain the fleet that we have now.

Senator KAINE. Thank you, Admiral.

Mr. Secretary, the fiscal year 2020 NDAA required the Department to submit military installation resilience plans to help our bases prepare for extreme weather events, whether it is sea level rise in Hampton Roads or whether it is drought or wildfire conditions in other parts of the country. In the wake of destruction observed over the last several years at Camp Lejeune, China Lake, and elsewhere, has the Department completed any military installation resilience plans, and when can we on the Committee expect to see them?

Secretary BRAITHWAITE. Senator, thank you for that question. You and I spoke about this in detail both during my confirmation hearing and in meetings between now and then.

Our Department has looked into this. I mean, the devastating destruction of Hurricane Florence on Camp Lejeune or the earthquake at Naval Air Station China Lake—you all have been wonderful to help offset our losses there so that we can rebuild some of those structures. As you know, Senator, a lot of those structures on our military bases are old. They are antiquated. They were built

before there were codes in place to ensure that our buildings could withstand a hurricane of a certain severity or an earthquake.

We are in the process of developing the plans. Our installations are working on those. I do not know if the CNO has any specific thoughts on this or the Commandant, but it is important to us as we look forward because we cannot be a ready force unless we ensure that we are operating from bases that are resilient and those homes on those bases where our dependents live, which of course have a personal impact on our readiness, have the ability to sustain damage as well.

Senator KAINE. Can I ask either Admiral Gilday or General Berger? Do you know when any of these plans are likely to be done so that we can review them on the Committee?

Admiral GILDAY. Sir, I do not. I am not satisfied right now, where we are, the pace that we are acting on these plans. There are discrete projects that we have ongoing, one down in Norfolk Naval Shipyard right now in terms of dealing with the rising water tables in the vicinity of the dry docks as an example, others at the Naval Academy where we are seeing rising water levels. So we are reactive and not proactive.

I owe you a better answer for the Navy, and I owe the Secretary a better answer as well in terms of when we can present those plans to both him and you.

Senator KAINE. General Berger?

General BERGER. Sir, some of them are complete, not all, and we prioritized the ones that we had to do first, which is Camp Lejeune, North Carolina, where we had to rebuild. So every contract in the last 18 months that you all have resourced to rebuild Camp Lejeune is to the new regulations for resiliency. They are prioritized. We will provide you the detailed breakdown, sir.

Senator KAINE. That would be helpful. I think this is a serious matter for the Committee because the resilience plans will enable us not just to exercise oversight on are you trying to be resilient, but it will help us prioritize investments. We would hate to rebuild something in a way that is substandard and does not really meet the conditions that are likely to be there in 10 or 20 years. Rebuilding one off or being reactive one off to dangers or emergencies is not the same as having a forward-looking plan that is likely to involve a more efficient use of the dollars that are so competitively sought. I would like follow-up on that from both the Navy and the Marines.

[Please see Appendix A on page 70]

Here is the last question I would like to ask. I am over, Mr. Chair, but with an indulgence, and I would like each of you to address it. It is sort of like a lessons learned during COVID question.

COVID and the pandemic has been horrible. The death toll, the economic effect—it has been horrible. Nevertheless, even in a horrible time you learn some lessons. Americans are doing much more telehealth than they did before, and that has actually had some significant benefits for people who might have a hard time accessing health care institutions because they live so far away. We have been able to do some Committee work virtually. So there have been some lessons learned that we would not want to just snap back to the status quo ante when this public health emergency is over.

In each of your spaces, I would love you to talk about maybe some lessons learned since the beginning of March as we have dealt with COVID that you think could be—that could lead to sort of continuous improvement or changes you have had to make that you will not want to undo when we are over this public health emergency. If you could each address that question, that is the last question that I have.

Secretary BRAITHWAITE. Senator, thank you. I will answer the question first because I will tell you that I believe the Department of the Navy, both the Marine Corps and the United States Navy, have done an incredible job.

You know, this caught the Department off guard, as it did the entire world, The Navy, in particular, struggled through some of the early weeks of this because the close proximity in which our sailors live aboard ship made this a real threat to our ability to operate at sea. That was even more important aboard—or more challenging aboard our submarines.

Admiral Gilday has done an incredible job to lead the effort to not only identify ways to mitigate the risk but to keep our ships operating. We have over 100 ships today that are at sea deployed, and there are cases of COVID aboard some of those ships. But he and the leadership of the Navy have done an incredible job. It is an amazing story of resiliency to be able to address the issue, to isolate the issue through contact tracing, through all of the protocols that the CDC and the National Institutes of Health (NIH) have put out through social distancing, masks. When I go aboard a ship, everybody is masked up. I will let the CNO talk to more of the details. But we are today a better force prepared for nuclear, biological, chemical warfare in the future because of the lessons we have learned from this pandemic.

As you and I talked about, you know, carbon footprints and the ability to have our workforce telework, that is another great—we have finally busted through the fact, as a former military guy, you got to form up in front of the flagpole every morning to get credit for actually being on the job. I think we have thought beyond that now to a point where we are more realistic in the fact that we can do work from afar, we can be productive.

But I would invite the CNO who, believe me, is an incredible leader who has done an incredible job on this. I am very proud to be his wingman.

Admiral GILDAY. Thanks, sir.

Sir, a couple things. One of the things that strikes me the most aboard ship right now is just the change in behaviors. It is almost like cultural change onboard ships because, as the Secretary said, you are operating in such close quarters, and your success or failure comes down to individual responsibility. That means that every sailor now understands that as a leader at whatever level they are at on a ship, that they have a responsibility to their shipmates that is tangible. They also have a responsibility to hold other people accountable if they are not following the protocols and the standards that they should be. So with respect to the culture of excellence that we want to have in the Navy and the kind of leadership that we want people to exhibit, I think that has been a positive.

There have been a lot of second order effects to telecommuting. So excess capacity with respect to leased spaces where we can recoup over \$100 million a year in spaces that we just do not need. So another byproduct has been a realization of—I think a better realization of what is core and what is non-core in terms of what we really need to be focused on and working on and how we use that teleworking force.

Another is an acceleration of information technology (IT) capabilities. I do not want to say the specific company, but capabilities that would have taken us—you can imagine—years to field that have been accelerated by the Secretary of Defense to weeks and months that have put us in a much better place.

I will also mention real briefly training at sea. Because now we operate in COVID bubbles, we have said, well, gee, why are we just in kind of a single production line with ships to get ships trained and qualified. Why can I not do that with six ships at once, get a lot more out of the trainers, become a lot more efficient, and actually increase the numbers of ships that I am generating for the Secretary to present to the Secretary of Defense to use out there at sea? I think overall it has caused everybody to think a little bit more innovatively and to be a little bit more efficient in terms of how they think about using their time.

Senator Kaine. General Berger?

General BERGER. Sir, I will be pretty short.

This is a virus, not the first virus that your military has operated in. The pandemic is once every 100 years, but this is not an operating environment that is new. You would expect us, in other words, not to take a knee but to operate through it, and that is what has happened.

A couple of things to highlight. You asked for lessons learned. There is not an exercise or training event that we do in the military we do not take away nine days to Sunday afterwards. We do after-action reports like nobody else, and we have a long list. I will just mention one or two.

Recruit training. We had to continue recruit training, but we cannot be taken to our knees. What we learned that we were going to continue, to your question, Senator, is spread out the racks in the squad base, put washstands outside the chow hall, take specific measures that we are going to keep in place afterwards because normally, typically every officer candidate class, every recruit training class gets some kind of crud in the first 2 weeks and it shuts them down. We have not had that problem. Why? Because we are basically quarantining them for 2 weeks before the first day of training. Why would we not consider continuing that later on so that when training starts, everybody can train instead of half the squad being sick? To your point, some of these measures we need to keep in place afterwards.

I will just finish with I would echo the same as Admiral Gilday. This Committee, this Subcommittee would be very proud of the small unit leaders. This is where discipline matters. We have not had large outbreaks because we are a disciplined force. We follow orders. We very much trust our leaders, and they have not let us down.

Senator Kaine. Mr. Chair, I am so glad I asked that question.

Senator SULLIVAN. Yes, a great question.

Senator KAINE. That is really important.

One of the first visits that I did when we were in our kind of initial months of COVID and when we were home during April and the Senate was closed was I went to the Department of Veterans Affairs (VA) hospital in Richmond, the McGuire VA, which is dealing with a lot of these issues. It did not really strike me until I walked into that massive facility that there was not a single thing that they did that they did not have to rethink. I mean, touching an elevator button, the arrangement of tables in the cafeteria, how do you check in if you are a patient coming in. Every last thing that is done in that facility, which is tens of thousands of square feet—it is massive—they have had to rethink, and onboard a ship or a sub, close quarters, people working in such close proximity to each other, that is even magnified.

But I just think it is really important for us in this Committee and across the board that we do the lessons learned. It would be foolish if we went back to the status quo ante. One of the things we did, for example, is we used to, as a Federal Government, reimburse telehealth visits at a lower reimbursement rate than office visits. We made an emergency change to allow an equalization of reimbursement rates for such visits, and that has dramatically advanced telehealth. It would be foolish to go back to the status quo ante when this is done because then we would sacrifice all that learning and slide back to a second best.

There is going to be a lot of need for us to look at the changes that have been forced upon us and say, hey, this needs to be the going-forward norm. There are some things we will be glad to let go, but there is also, as you point out, General Berger, why would you not have a 14-day quarantine period now forever to avoid just the common kinds of infectious viruses or whatever that can take down a recruiting class early in their time in. So we are going to really need to do this, and you guys have offered some great examples that can, I think, inspire that work. So I really appreciate it. Thank you.

Senator SULLIVAN. Yes, a great question and great answers.

General Berger, I mentioned I did see I think it was a New York Times article or something that talked about the changes to Marine Corps recruit training, how it is still working, and in my view some of the best recruit training anywhere in the world. So kudos to the Marine Corps and the rest of the Department of the Navy for doing such great work.

I am going to end here with just a couple additional questions. I appreciate the patience of the three of you gentlemen.

General, I wanted just one additional question on the Force Design. You speak in your testimony of modernizing Marine Corps infantry and reconnaissance units. As an infantry and reconnaissance officer myself and I am a United States Marine Corps Forces Special Operations Command (MARSOC) marine officer currently, I am interested in what you stated in your testimony that we are modernizing our infantry battalions and traditional reconnaissance units to create a more distributable formation with much greater organic lethality in accordance with units traditionally associated with special forces and commando units.

Can you unpack that a little bit more in terms of, again, your Force Design and what Marine infantry and reconnaissance units can anticipate in MARSOC as well?

General BERGER. Senator, like you, I have the same background.

Senator SULLIVAN. Yours is a little bit more distinguished actually—a hell of a lot more distinguished.

General BERGER. We have common ground.

I believe if we are going to compete and we are going to deter, first of all, then much of who has an advantage is decided in the reconnaissance/counter-reconnaissance sort of effort that both sides in any competition are going to do. I think we were relying more and more and more on your forward expeditionary forces to paint a picture of what is happening in front of them because deterrence is really the foundational element of the strategy. To do that effectively, you have got to have good reconnaissance forward to understand what is happening in front of you to give decision-makers the space, the situational awareness to make good calls.

As we reshape the Marine Corps, we will reshape our reconnaissance effort and our reconnaissance units and infantry units as well. Infantry training will be longer. The product of infantry training on the enlisted side will be at a higher level than we are producing right now. Right now, in other words, you complete basic training and you go through infantry training. You join your first unit. The rest of the way is on the backs of the platoon sergeant in that first platoon. We need to take that marine to a higher level so that the whole platoon, the whole battalion can get to a higher level. We need to get to that higher level because they are going to be more distributed. We are going to rely on them to make higher level decisions.

As you know, sir, from your service, we ask captains to make decisions now that lieutenant colonels, battalion commanders made a decade ago. Why? Because they have the capabilities now. We have to get them to a higher training level now.

Infantry training both on the officer and enlisted side, more extensive, longer. Reconnaissance forces, better capabilities, a deeper reach, and the ability to commit to communicate, to sense, and to distribute what they are sensing back and laterally to the rest of the force. I think you are going to see a lot of our investments in ground, aerial, and surface reconnaissance so that we can give the combatant commander, the fleet commander a better picture of what is in front of us.

Senator SULLIVAN. Great. Thank you for that.

Mr. Secretary, we talked briefly on the Arctic and icebreakers. I wanted to dive in a little bit more.

You know, I authored language in the NDAA a couple of years ago that Congress put forward the authorization to build 6 *Polar*-class icebreakers between the Coast Guard and the Navy. As I mentioned, the President put forward a memo a couple months ago on how we operationalize that, what ways we look at that, and then importantly from my perspective, where you would want to home-port some of these *Polar*-class icebreakers that in my view should have much more than just icebreaking capability, should have intelligence capability, should have weapons capability, the way the Russians are certainly viewing their massive icebreaking

fleet. I think the latest number is 56, and as you mentioned, we have two. One is broken, so we have a long way to catch up.

But on this issue, to me it is a no-brainer that you would at least home-port some of these icebreakers that we are building in the Arctic of America.

You and I had a great visit when you came up to Alaska. I really, really appreciated that. I know my fellow Alaskans certainly enjoyed meeting you in Ketchikan and Adak and Kodiak and Anchorage.

But do you have a view on this? The President has actually asked his national security team. I have talked to you, the Secretary of Defense (SECDEF), National Security Advisor, the Commandant of the Marine Corps—or I am sorry—Commandant of the Coast Guard. I am a little bit biased, but I think it makes strategic sense for America. If you are going to have icebreakers, you need to base them in the place where the action is and that is the Arctic not in Florida or other places where there is no ice. Do you have a view on where we should be basing these? I know the President has asked that in the memo.

Secretary BRAITHWAITE. Mr. Chairman, I always have an opinion. You know that.

Senator SULLIVAN. Good. Love to hear it especially if it is the right answer.

[Laughter.]

Secretary BRAITHWAITE. However, as you and I also discussed, the United States Coast Guard does not fall under the command and control of the Department of the Navy.

Senator SULLIVAN. I am asking you in your personal opinion.

Secretary BRAITHWAITE. Of course, we could change that. You could change that and I would be happy to incorporate the Coast Guard as part of the Department of the Navy—

Senator SULLIVAN. I am not committing to that right now.

Mr. BRAITHWAITE.—as a sister maritime service. I think that would be wonderful. It does not take anything away from Homeland Security, but I love the Coast Guard. They are incredible partners, and we would like to see them get all the resources they need.

I have seen some of the efforts in the shipbuilding when I have been down to Huntington-Ingalls and building a new national security cutter.

You know, as far as home-porting those ships, if they fell under the control of the United States Navy, of course, we would home-port them closer to where they would be required to fulfill their mission. But I am not in a position, Mr. Chairman, to make a determination for the Coast Guard on where they should put those icebreakers.

If we are the ones who end up operating those icebreakers, I think as the executive order has indicated, that is something that we, the Department of the Navy, would come back and work with you, Mr. Chairman, on figuring out the best placement where we would have the kind of support—I know going into Kodiak, I was extremely impressed with the Coast Guard facility there, meeting with the station commander, again a phenomenal base with the infrastructure to support additional ships being home-ported there.

Again, there are a lot of options here, but there is a lot of work to be done. Unfortunately, it is not an A to Z quick answer.

Senator SULLIVAN. I am going to press you a little bit. Do you have a personal opinion on this issue of where you would home-port icebreakers—

Secretary BRAITHWAITE. So, Mr. Chairman—

Senator SULLIVAN.—to defend America's interest in the Arctic?

Secretary BRAITHWAITE. You and I both served. You still serve in the uniform of our nation. For 31 years, I wore the cloth of the U.S. naval officer very proudly, and in my role as now the Secretary of the Navy, I still fall under the command and control of the President of the United States and I have to follow the lawful orders of those appointed over me. Again, as the Secretary of the Navy, I have personal opinions and I have professional requirements of how I conduct myself each and every day.

In this case, the Coast Guard has the authority to operate those vessels, and I think they are the ones who would have to determine where they wanted to home-port them.

Senator SULLIVAN. Let me turn to—Senator Kaine, I just have a couple more questions.

Mr. Secretary, on the USS *Bonhomme Richard*, I guess the Navy made the decision just a few days ago that this is going to be a ship that is decommissioned. Can you just give us a little quick understanding of what actually happened—it is obviously an issue that this Committee has a lot of interest in—and then why you made that decision recently on the decommissioning and what that does to our capability both from a Navy and Marine Corps perspective? That is quite an important ship.

Secretary BRAITHWAITE. Absolutely, Senator. First of all, the investigation is ongoing, and our Naval Criminal Investigative Service (NCIS) have done a remarkable job in working through all the details of something that is not straightforward. There was such extensive damage on that ship. Both the Chief of Naval Operations and I went out to visit the ship shortly after the incident. The amazing performance of the crew to save that ship—what they did is just remarkable and a testament to the training that they receive in damage control and firefighting.

I am a businessman, Mr. Chairman, and at the end of the day, there is a return on investment, and the return on investment of what it would have taken to rebuild that ship, working very closely with the Secretary of Defense, Dr. Esper wanted to see that ship come back and for all the right reasons to send the right message to say, you know, we do not give up our ships very easily. We have a battle flag that hangs in Memorial Hall at the Naval Academy that says don't give up the ship. But using logic and looking at what it would have required to put that ship back together, it would have been a foolish investment of our American taxpayer dollars to invest in a ship that was over 20 years old instead of looking at the options of building another ship in the future that would have more relative capabilities embracing the technologies that are emerging.

I would invite the CNO to go into some of the particulars of what we have determined. The ship was not to deploy until 2022. Talking with the Commandant about how we can ensure that we have

the right assets to come in in the deployment plan and to offset the loss of the ship, we are working all those now. But, CNO, do you have any thoughts about the Bonhomme Richard?

Admiral GILDAY. Thanks, sir. Just a couple.

Sir, the ship is 22 years old. About 60 percent of it was so heavily damaged it would have to be replaced. If we try to rebuild the ship into a Landing Helicopter Dock (LHD), return it to its original state, it would take 5 to 7 years. It would be straining the industrial base. We think there is one shipyard on the Gulf coast who could do that kind of work, and it would cost almost as much as a brand new ship.

If we took a look at other options like repurposing it, could it be a command and control ship, could it be a hospital ship, could it be a sealift vessel, it costs us less money to buy one new than it would be to restore or to repurpose Bonhomme Richard to another function.

For those reasons, sir, the \$30 million to decommission was the best decision I think. The Secretary has all the consequential decisions come to his desk, and I supported that recommendation that we decommission her.

In terms of near-term impacts operationally, we have mitigated those. I think longer term—let us say out to 3 to 5 years—we are taking a look at what those other options could be. Do we accelerate the production of a big deck vessel? What would that mean with respect to the amphibious force that we are building for the future? You know, what are the priorities that we want to take a look at within the Department? What is the demand signal from the Secretary of Defense and the combatant commanders for those vessels. So that is work to be done that is ongoing right now, but in the near term, there will not be any operational impact. We have mitigated that with moving some other deployment schedules around.

Senator SULLIVAN. Great. Thank you for that answer, and we are going to look forward to the report when it is done, both if it is classified or unclassified, on what happened and some of the actions. I know there were a lot of sailors that undertook very heroic actions to save that—tried to save that ship.

Let me ask another for all three of you gentlemen. As you know, here in the Senate we have got a number of important bills that we are trying to finish up prior to the end of this Congress, both the COVID relief bill and the NDAA and a final appropriations bill. Importantly, that is going to have military appropriations, but it is not for sure we are going to be able to get there. There is a lot of work that is being done to try to get a compromised bipartisan bill. If we do not get there and we have to settle for a continuing resolution, which is certainly not ideal—it is better than a government shutdown, but it is not ideal—I would like the three of you to weigh in on what you think the impacts of a CR would be on Navy and Marine Corps operations. I think sometimes it is not well understood that even though it is continued funding, it is very, very disruptive for our military operations and readiness, which is the whole point of the oversight of this Subcommittee.

Mr. Secretary, we will start with you.

Secretary BRAITHWAITE. Absolutely, Mr. Chairman, and really, thank you for this question.

When I worked on the Hill, we rarely ever had a CR. I worked for Senator Arlen Specter. Passing our appropriations bills, our authorizing bills is extremely important especially to an organization like the Department of the Navy. So this does impact us.

We are looking at ways now that if in fact we do have a CR, how we minimize the impact. But it will affect readiness. We asked for an anomaly, and it appears that we have received that to continue to build the *Columbia*-class, our follow-on ballistic missile submarines (SSBN), to replace the *Ohio*-class. Without that anomaly, we would not be able to replace the *Ohios*, which are 35–40 years old. On behalf of the Department, we would like to thank Congress very much for that relief.

But the particulars of this—I mean, the way that we operate our fleet, steaming hours, flying hours, all that will be impacted. Pay to our sailors, to our marines—there will be significant impact, you know, in the hazardous and special pay spaces.

I would invite the Commandant or the CNO to talk to some of the more specifics of what they see is the operational leads for their respective services.

Senator SULLIVAN. Admiral?

Admiral GILDAY. Yes, sir, so as the Secretary mentioned, across a number of accounts, you begin to see the effects accumulate over time. So with a 72-day CR, it is about \$1 billion. It primarily affects our operations and maintenance accounts. So think steaming hours, flying hours. You want to keep these people, in the era of great power competition, on the cutting edge and the best that they can be, and you cannot when you are dealing with fiscal year 2020 levels of spending.

You see that begin to manifest itself more acutely at the 6-month point where we have decisions to make with respect to moving money around with the next steps with the USS *Gerald R. Ford*, an aircraft carrier that we want to get operational in fiscal year 2022, as fast as we can, or with the ongoing overhaul on George Washington, a refueling overhaul, or a new start overhaul on the John C. Stennis, a carrier that is waiting to go into maintenance. Military personnel (MILPERS). You begin to see the effects more acutely in those accounts as well where you cannot hire the people you want to hire in numbers to get to where you want to be at the end of the fiscal year.

A 12-month CR—the impact of that is in the order of about \$18 billion for the United States Navy across a number of accounts. Over time you begin to see significant impact with respect to both near-term readiness and investments that we are trying to make in the future.

Senator SULLIVAN. General, do you have anything to add to that? That is a really staggering number you mentioned, \$18 billion.

General BERGER. Chairman, I think if you asked any leader who has anything to do with executing the budget if you could have one thing, what would you ask for, they would say stable, predictable funding. They would not ask for a dollar amount. They would just say some predictability, some stable, predictable funding.

I would boil it down in the same two buckets as the CNO: readiness and modernization. We will get by. We have gotten by so far on this CR on readiness without any negative impacts. It will begin to impact going into the next few months. The CNO just really accurately highlighted those areas. They are similar to ours.

My bigger concern, frankly, or my major concern is modernization. We are turning our ship to make a Marine Corps that we will need 10 years from now. That involves new starts. If we do not have the appropriations bill on time, you are going to delay the modernization in the Marine Corps and to the detriment of our readiness. It is going to be for us sort of a double whammy. Not a good picture.

Senator SULLIVAN. Thank you. I appreciate it.

I have one final question, gentlemen. Again, I appreciate the comments about my father. One of the favorite things I got to do with him every year was go to the Army-Navy game. As a member of the Board of Visitors of the Naval Academy, I was honored to be appointed by that by the former chairman of this Committee, Senator McCain. So it looks like the game is going to continue, which is great, and I would appreciate a prediction. If you cannot make it in your professional capacity, Mr. Secretary, maybe your personal view on who is going to win that game. It is a very important question for the Nation. If the other two uniformed leaders, the Admiral and General, also have a view, I would welcome that.

Secretary BRAITHWAITE. Mr. Chairman, as a proud member of the United States Naval Academy class of 1984, my personal and professional opinion on this one converge. We will beat Army at West Point. We have a record of playing there three times. The first Army game in 1890, the Navy won, and we played it at West Point. We went back to Army during World War II when we were under some of the same pressures as we are today with COVID.

When Secretary Ryan McCarthy and I talked about where we should play the game, we were committed to ensuring that every cadet and every midshipman would get to attend that game. Being a Philadelphian, I live about an hour outside the city, it is always great to go back to Philadelphia, but Philadelphia would not allow us to go beyond 7,500, which does not cover all of the corps cadets or the brigade of midshipmen. Secretary McCarthy and I, working with the CNO and the Army Chief of Staff and the respective superintendents of both the United States Military Academy and the United States Naval Academy, determined that we will play the game even if we have to play it in a parking lot outside the Meadowlands. This is an uninterrupted tradition that has gone on since 1890 in the midst of the Spanish influenza, World War I, World War II, and we are not stopping now.

Navy will beat Army on December 12th once again for the fourth time that we play at West Point, Army's home team. That is why we went to West Point. Go Navy. Beat Army.

Senator SULLIVAN. Are there any dissenting opinions from the Admiral and General on that view?

Admiral GILDAY. No, sir.

Senator SULLIVAN. I did not think so.

Well, listen, gentlemen, I appreciate very much your time and your professionalism and your service to our nation. This has been

a very, very informative hearing. I know that there will be additional questions for the record. We will keep the record of this hearing open for 2 more weeks for additional questions, and the Committee asks respectfully if you get questions for the record, if you could try to get them back to the Committee in short order, again we appreciate it, and thank you for your service.

This hearing is now adjourned.

[Whereupon, at 11:17 a.m., the Committee adjourned.]

[Questions for the record with answers supplied follow:]

#### QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

##### NDS AND THE NAVY AND MARINE CORPS ROLE IN GREAT POWER COMPETITION—INITIAL USMC FORCE DESIGN

1. Senator SULLIVAN. Admiral Gilday, in your personal opinion, what specific capabilities do you believe would be most effective in a potential 1st Fleet to help counter China and to reassure our allies in region?

Admiral GILDAY. In order to improve our posture in the Indo-Pacific, we will reconstitute the first fleet, assigning it primary responsibility for the Indo and South Asian region as an expeditionary fleet back to the capabilities and unpredictability of an agile, mobile, at sea command. This will reassure our allies and partners of our presence and commitment to this region, while ensuring any potential adversary knows we are committed to global presence to ensure rule of law and freedom of the seas. The first fleet will share resources and capabilities with Seventh Fleet and Third Fleet to posture against primary competitors (Russia and China) by delivering sea control and projecting power from the sea across all domains. The Navy continues to review our organizational structure and force posture, in coordination with combatant commanders and our allies and partners, to ensure we can most effectively meet the maritime challenges we face around the world.

##### USMC FORCE DESIGN 2030

2. Senator SULLIVAN. General Berger, in your testimony you talk about two new operating concepts, the “Expeditionary Advanced Base Operations Concept and soon to be released Competition Concept.” Can you describe both of these concepts in a bit more detail, specifically the “Competition Concept?”

General BERGER. “Expeditionary Advanced Base Operations” (EABO), which was co signed by the Chief of Naval Operations and Commandant of the Marine Corps in March 2019, originated as a classified naval concept to directly support the Navy’s Distributed Maritime Operations. EABO involves the employment of mobile, low-signature, and persistent naval expeditionary forces from austere, temporary locations within contested or potentially contested areas. EABO is a method by which marines temporarily utilize an area, always with the intent to return to the sea. The purpose of EABO is to support allied and partner nations in competition to counter malign behavior and, if necessary, deny enemy actions. Since the publication of the concept, the Navy and Marine Corps have aggressively evaluated and developed the concept through wargaming, while incorporating what we have learned into a predominantly unclassified tentative manual to drive further experimentation.

With respect to drafting a concept for competition, the Marine Corps issued Marine Corps Doctrinal Publication 1–4, “Competing” in December 2020. It explains that Western nations and other political actors often use binary “war” or “peace” labels to describe interactions. Instead, most actors use means other than violence in their competitive interactions to achieve their goals.

The publication, “Competing,” explains to marines where they fit in this competition continuum. Marines are an integral part of the Nation’s strategic competition with other actors. Indeed, marines are always competing, even when they are not fighting in combat. Additionally, understanding unleashes creativity, and as marines understand the nature of competition, their innovative spirit will lead to the development of new thinking and techniques to gain competitive advantages. Competing means that marines impose costs on adversaries, while simultaneously reassuring allies on a daily basis as a means to make conflict less likely.

3. Senator SULLIVAN. General Berger, in your testimony you talk about creating a new “Marine Littoral Regimen,” which will be “augmented with anti-ship missiles, a light amphibious warship for mobility and sustainment, air defense capabilities, Group 5 UAS, and fully trained for expeditionary advance based operations” and designed to “deter adversary aggression by denial and by detection, as well as a counter-gray zone competition maritime force.” Can you give a potential real world situation where you believe this new capability would be especially useful? How do you envision its use?

General BERGER. I envision Marine Littoral Regiments (MLRs) being task-organized and dispersed across key maritime terrain in the Indo-Pacific region. The MLR capabilities will augment and reinforce a host nation’s ability to monitor, expose, and challenge malign behavior, but the MLRs will be fully capable of operating without host-nation support if required. Many potential scenarios exist throughout the competition continuum in which MLRs might be employed and task-organized with additional naval, joint and coalition capabilities.

As an example, the People’s Republic of China (PRC) uses its Maritime Militia and Coast Guard vessels to intimidate and harass United States allies and partners in their Exclusive Economic Zones (EEZ). The MLR is designed to conduct activities during gray zone competition to disrupt, channel, and restrict enemy activity by identifying and exposing malign behavior, reinforcing partnered nations, holding key maritime terrain, and holding adversary assets at risk, ultimately encouraging de-escalation. These capabilities contribute to safeguarding territorial waters and supporting economic sovereignty of our allies and partners, while maintaining a free and open Indo-Pacific region.

Additionally, the MLR provides persistent capabilities to deter further malign activity, aggression or escalation beyond gray-zone competition. The MLRs will be highly mobile, constantly changing their positioning and posture to increase ambiguity and increase the adversary’s challenge of monitoring and targeting MLR units, thus reducing an adversary’s confidence and encouraging off-ramps from conflict.

#### READINESS AND COVID-19—TRAINING

4. Senator SULLIVAN. Secretary Braithwaite, Admiral Gilday, and General Berger, what joint training exercises involving Naval and Marine forces have been postponed or canceled as a result of COVID-19 and what plans are in place to mitigate the lost opportunities from these canceled or delayed training events?

Secretary BRAITHWAITE\* and Admiral GILDAY. Although COVID-19 did force some cancellations/postponements of our joint and multi-national exercises this last year, many were able to be de-scoped (e.g. cancelling port visits) or modified thru the use of virtual means and other physical barriers to still enable the critical interaction/collaboration required in strengthening our alliances and partnerships.

General BERGER. Although the force initially experienced impacts early in the pandemic, training has resumed and the Service continues to deploy Global Force Management units without delay through the implementation of risk mitigation and force health protection measures. Despite initial cancellations, adjustments to the planned exercises allowed the Marine Corps to close the gap and maintain a trained and ready force to support current tasking.

Provided below are exercises impacted by COVID-19 along with their adapted accomplishments:

- Service Level Training exercises Weapons and Tactics Instructor Course 20-2, Integrated Training Exercise (ITX) 3-20, Mountain Warfare Exercise (MWX) 3-20, and Adversary Force Exercise (AFX) 3-20 were canceled due to COVID-19 from March to May 2020.
  - o ITX 5-20, MWX 5-20, and AFX 5-20 were re-scoped to capture the lost training from June to July 2020.
- Task Force Ellis, a I Marine Expeditionary Force (MEF) task-organized force, under Operational Control of the Pacific Fleet and embarked aboard the USS Comstock deployed from July to November 2020.
  - o The deployment started 90 days after the scheduled departure in April and many objectives were significantly re-scoped due to the host countries of Fiji and the Federated States of Micronesia cancelling the medical and humanitarian support.
  - o The Task Force supported Exercise Valiant Shield in Guam and was able to gain valuable training and familiarization with Mark VI patrol boats.

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- Korean Marine Exercise Program 20.3 (KMEP), a continuing and annual series of exercises to advance interoperability between the Republic of Korea Marine Corps and USMC were temporarily suspended from July to August 2020.
  - KMEP 21.1 resumed in Sep 2020 and has continued without COVID impacts.
- Rim of the Pacific, a Pacific Fleet national exercise scheduled to take place from July to August 2020 was modified to an at-sea exercise only, which cancelled the amphibious portion for the service.
  - Marine Forces Indo-Pacific Command found alternate means to support the exercise with an F/A-18 airpower demonstration and assault support lift with MV-22s.
- Exercise UNITAS (latin for unity), a fully integrated, multi-national amphibious exercise in South America focused on humanitarian assistance and sea basing was delayed 30 days from Sep to Oct 2020 and modified to an at-sea exercise only.
  - Marine Forces Southern Command adjusted to the changes and hosted partnered nation representatives from Honduras, El Salvador, and Dominican Republic in Camp Lejeune, NC for amphibious tabletop exercises.

Overall readiness and service-level training exercises are key areas where the Service continues to fight through the COVID environment, adapt to rapidly changing conditions and deploy ready forces worldwide.

#### BALANCING READINESS AND COVID—SUCSESSES STORIES

5. Senator SULLIVAN. Secretary Braithwaite, Admiral Gilday, and General Berger, it's important to keep our forces the best trained in the world and the pandemic made extremely difficult. Can you highlight how you are balancing the need to keep the force ready with the desire to also keep the force healthy?

Secretary BRAITHWAITE\* and Admiral GILDAY. Since the COVID-19 outbreak, we have aggressively worked to keep our sailors and families safe, while sustaining fleet operations and supporting the whole-of-government response to the virus. Lessons learned from the outbreak aboard USS *Theodore Roosevelt* honed our COVID-19 Standardized Operational Guidance. Our sailors and their families adjusted and sacrificed to accomplish the mission. When the virus threatened the deployed USS *Kidd*, USS *Ronald Reagan*, and USS *Makin Island*, we quickly stemmed the spread of COVID-19 and the ships continued their missions, reflective of our strong learning organization. We are applying this same kind of adaptive mindset across our entire Navy. We continue to aggressively work to mitigate the readiness impacts of COVID-19 and deliver a more ready fleet.

General BERGER. The Marine Corps continues to balance risk to force versus risk to mission. Initially, policy was heavily weighted toward protecting the force due to the unknown risks/threats. As our understanding of the pandemic has matured, policy is being refined to delicately strike a balance within the risk calculus. Through rigorous protocol testing, contact tracing and persistent mitigation measures, the Marine Corps has been able to maintain a low infection rate while accomplishing readiness objectives.

The COVID impact to readiness in the Defense Readiness Reporting System (DRRS) remains low and Force Health Protection (FHP) measures continue to be effective. Units are adapting their pre-deployment, deployment, post-deployment and training procedures to the additional FHP measures. The Marine Corps' efforts are shifting to meet FHP conditions while responsibly expanding our ability to train and deploy.

The service has taken a proactive stance toward risk to force through discovery learning, effectively balancing disease risk-mitigation protocols while creating maneuver space through policy, autonomy, and risk-based assessments and decisions.

Using effective, aggressive contact tracing and testing protocols, the Marine Corps rapidly contains and mitigates against further spreads along with the dissemination of lessons learned from localized upticks in cases. In light of the number of cases spanning the last 10 months worldwide, active mil cases remain steady around .5 percent, hospitalizations represent less than 1 percent of active cases and recovery rate exceeds 99.99 percent. Due to the extremely limited impacts of COVID-19 to training, overall readiness and deployment cycles, the Marine Corps continues to be the nation's force in readiness.

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6. Senator SULLIVAN. Secretary Braithwaite, Admiral Gilday, and General Berger, are there any specific challenges or success stories that you would like share with the Committee?

Secretary BRAITHWAITE\* and Admiral GILDAY. Yes, I can share two recent challenges and how the Navy has dealt with them. First, after identifying a potentially dramatic increase in gapped sea billets for fiscal year 2021 due to COVID-reduced accessions, we gradually and safely increased recruit training to meet our goals. All while adhering to strict Centers for Disease Control and Prevention Guidance to keep our force safe. We also leveraged retention incentives, such as Advancement-to-Position, to keep sailors in critical jobs. These measures are improving our ability to fill operational requirements. Second, when health protection measures reduced public shipyard productivity, we took swift action to protect our workers and mitigate impacts to maintenance. Meanwhile, our dedicated, patriotic shipyard workforce adapted to our COVID-19 protocols, came to work every day, and got our ships back to sea. We cannot thank them enough. To stay connected during the pandemic, our Information Technology workforce quickly increased network bandwidth, added virtual private network licenses, and supported the DOD Commercial Virtual Remote (CVR) environment roll-out. This enabled a large portion of the Navy workforce to get the mission done from home.

General BERGER. The Marine Corps was able to quickly adapt to the COVID-19 environment and ensure the entry level training continued to deliver fully trained new Marines to the Fleet Marine Force despite the challenges presented by the pandemic. At the onset of the COVID-19 pandemic, both Marine Corps Recruit Depots (MCRDs) postponed shipping new recruits in order to implement mitigation measures. The postponement only lasted two weeks, and both MCRDs began receiving and training new recruits under new COVID-19 protocols. The combination of implementing off-site Restriction of Movement (ROM) facilities and practices, adjusting the shipping schedule to allow for smaller platoons to enable social distancing, and introducing COVID-19 mitigation measures within the recruit training environment resulted in the both MCRDs training a combined total of over 30,000 new marines in Fiscal Year 2020.

In addition to the mitigation measures taken at recruit training, the postponement of leave following recruit training (known as “Boot Leave”) and the introduction of the Minimum Exposure Movement Plan reduced the chance of exposure to COVID-19 for newly graduated marines by allowing them to travel from recruit training to Marine Combat Training and their Military Occupational Specialty schools in a controlled environment. This precaution enabled the training pipeline to continue without disruption.

The Marine Corps’ Training and Education Command also utilized the Council on Recruit Basic Training to instantiate a weekly COVID-19 synchronization meeting with key leadership from each Service’s entry-level training Commands to discuss issues brought on by the pandemic. The weekly meeting has driven readiness across the services due to the sharing of information and lessons learned.

#### CONTINUING RESOLUTION

7. Senator SULLIVAN. Secretary Braithwaite, Admiral Gilday, and General Berger, what are the potential adverse impacts on the U.S. Navy and Marine Corps if a continuing resolution is passes instead of a defense budget this year? What are the impacts on Navy and Marine Corps readiness? What are the other impacts, to include modernization efforts?

Secretary BRAITHWAITE\* and Admiral GILDAY. I am very grateful to Congress for passing the fiscal year 2021 Appropriations Omnibus in December 2020, which prevented more serious impacts from an extended continuing resolution (CR). During CRs, new starts and rates of operations are constrained, which delays critical investments required to deliver a more ready, more lethal, resilient, and rapidly innovative force. CRs are disruptive and result in lost time as well as increased administrative workload with non-value added work that detracts from the business of the Department, including oversight and management, and slows investing in the Navy force. The longer a CR lasts, the greater the impact on Navy programs and people. CRs erode, and in some cases reverse, the Navy’s readiness recovery effort that began in fiscal year 2017. I appreciate Congress providing the much-needed funding stability by passing the fiscal year 2021 Appropriations Omnibus.

General BERGER. The fiscal year 2021 budget request reflects significant changes in priorities of Marine Corps investments toward future capabilities and increased

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readiness. As CRs persist through the fiscal year, they constrain our ability to balance operational readiness with building a more ready, lethal force to compete with a peer threat.

Continuing resolutions generally allow for funding at approximately the prior year's level. That is going to significantly hamper the Marine Corps this year and over the next few years because we are significantly ramping up our research and development as well as our procurement.

8. Senator SULLIVAN. General Berger, what the impact of a continuing resolution on your Force Design 2030 implementation plans?

General BERGER. Under a CR, where we must spend at the prior year's level, we cannot increase our investment spending and pursue our newest, most high priority programs at the level we budgeted for.

Under a CR, we cannot begin "new starts." One example of a new start in this year's budget is the Light Amphibious Warship. This new class of warship will provide the needed maritime maneuver and logistics in the INDOPACOM region. We need it for our marines to get to the fight and maneuver once there. However, under a CR, we cannot begin that "new start" program, and the program is delayed until we receive our budget. That equates to real consequences for countering the peer threat.

Moreover, we cannot begin our MILCON projects under a CR. In fiscal year 2021, the Marine Corps is investing approximately \$500 million in projects on Guam as we rebalance our forces in the Pacific.

#### DEFENSE POSTURE REVIEW INITIATIVE (DPRI)

9. Senator SULLIVAN. General Berger, to the extent possible, can you inform the Committee of any recent status updates Fiscal Year 2020 NDAA requiring a review of the current DPRI plan on this effort?

General BERGER. OSD Policy has the lead on responding to the reporting requirement, which has been delayed due to COVID manning restrictions. OSD Policy expects to provide the report to the Committees early next year.

#### DON ARCTIC SURFACE CAPABILITIES—ICE-HARDENED NAVY SHIPS

10. Senator SULLIVAN. Secretary Braithwaite, former Secretary of the Navy Richard Spencer said in visiting Alaska last year, "We need to have an on-sea presence now that we have a blue water Arctic more times than not." Do you believe that the U.S. Navy can have the sustainable and credible Arctic presence we currently and will need without ice-hardened vessels?

Secretary BRAITHWAITE\*. U.S. naval forces currently participate in a wide variety of surface exercises in the Arctic region and we will continue to expand our participation, as needed. The Navy Department is restoring skills and knowledge of cold-weather surface ship operations through research, by participating in training events, and by planning and executing exercises in the high latitudes of the Alaskan Arctic and the North Atlantic Arctic with other services and with our allies and partners. The Department will evaluate and modernize existing and future forces to provide manned and unmanned operational presence and patrol options in cold weather and ice-diminished Arctic waters. We will improve hydrographic surveys and sensors to support the fleet. In a Blue Arctic, the Department must have a more credible presence in Arctic waters. This means ensuring that Arctic operations are considered in our design and modernization plans, and that our defense industrial base can build and sustain forces for the Arctic. We will build upon these efforts to maintain enhanced presence, strengthen cooperative partnerships, and build more capable naval forces for the Arctic Region.

#### ARCTIC—NEED FOR ICEBREAKERS AND HOMEPORTING IN ALASKA

11. Senator SULLIVAN. Secretary Braithwaite, given that Alaska is America's Arctic, in your personal opinion, does it not make the most sense to homeport at least some of the nation's icebreakers in Alaska?

Secretary BRAITHWAITE\*. The Department of Homeland Security submitted their report on "Safeguarding U.S. National Interests in the Arctic and Antarctic Regions"—which includes an analysis on homeporting options for Coast Guard icebreakers. The USCG has the lead in assessing homeporting requirements for ice-

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breakers. Where applicable, the DOD will continue supporting the DHS in its studies.

12. Senator SULLIVAN. Secretary Braithwaite, I understand that the Department of Homeland Security submitted a report on leasing icebreakers and that report specifically discusses leasing opportunities. Recognizing that this is a priority of the President, how can the Navy best streamline the process of leasing one or more icebreakers within the next 12 months? In this regard, do you commit to making the Navy move faster on federal acquisition and sole source procurement through the public interest exception in the federal acquisition regulations (FAR)?

Secretary BRAITHWAITE\*. The Navy and Coast Guard have chartered an icebreaker study team that is examining the authorities available related to vessel leasing and any required modifications and associated acquisition means. The study team is maturing courses of action associated with the acquisition strategy in the most expeditious means possible in accordance with all applicable laws and regulations.

#### STRATEGIC ARCTIC PORT

13. Senator SULLIVAN. Secretary Braithwaite, as you know well, the Arctic has the need for some type of port infrastructure. The nearest DOD Strategic Seaport is the Port of Anchorage, 1500nm away from the Arctic Circle. That's like asking Boston to cover Miami. Given this disparity, why is it important—from a capability, capacity, and strategic messaging standpoint—for our nation to have a Strategic Arctic Port?

Secretary BRAITHWAITE\*. As you are aware, DOD is currently finalizing the study on this very issue, per Section 1752 of the Fiscal Year 2020 NDAA, "Department of Defense Designation of Strategic Arctic Ports." The Section 1752 study will inform the Department's overall evaluation of Arctic infrastructure and capability needs, in the context of global mission demands and defense priorities. I can relay that we are considering all options in terms of how to best ensure our security interests in the region, and the SECDEF-level decision is forthcoming. Along with the greater DOD, the Department of the Navy remains committed to working closely with you on this issue.

14. Senator SULLIVAN. Secretary Braithwaite, what is DOD's status on designating a strategic Arctic port pursuant to the National Defense Authorization Act for Fiscal Year 2020?

Secretary BRAITHWAITE\*. As mentioned, DOD is finalizing the study, per Section 1752 of the Fiscal Year 2020 NDAA, "Department of Defense Designation of Strategic Arctic Ports." Despite the continued COVID-19 limitations on the workforce, the Department of Defense has made significant progress on completing its requirements under Section 1752 and will deliver its report as soon as it is approved by DOD leadership. The Section 1752 study will inform the Department's overall evaluation of Arctic infrastructure and capability needs, in the context of global mission demands and defense priorities. I can relay that we are considering all options in terms of how to best ensure our security interests in the region, and the SECDEF-level decision is forthcoming. Along with the greater DOD, the Department of the Navy remains committed to working closely with you on this issue.

15. Senator SULLIVAN. Secretary Braithwaite, Admiral Gilday, and General Berger, a provision in the Senate-passed Fiscal Year 2020 NDAA allows the Secretary of Defense to designate sites for a Strategic Arctic Port. Have the Navy and Marine Corps given input into this report? If so, what was that input?

Secretary BRAITHWAITE\*. Yes, while considering the provisions within Section 1752 of the Fiscal Year 2020 NDAA, the Department of the Navy provided analysis to inform the overarching DOD report.

Admiral GILDAY. The Navy provided input. Navy's inputs will be reflected within the impending DOD report.

General BERGER. The Marine Corps' input to the report is as follows:

The Marine Corps, as an expeditionary force, is prepared to operate "in every clime or place." This includes providing Marine Air Ground Task Forces (MAGTF's)†

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†MAGTF—The Marine Corps' principal organization for conducting missions across the range of military operations. MAGTFs provide combatant commanders with scalable, versatile expeditionary forces able to respond to a broad range of crisis and conflict situations. They are bal-

to serve with the Navy for the full range of operations in the Arctic region. The marines routinely conduct cold weather training in the continental United States (Marine Corps Mountain Warfare Training Center, Bridgeport, CA) and overseas in cooperation with partner nations (e.g., exercise COLD RESPONSE with Norway) utilizing a prepositioned equipment set in Norway. Additionally, the marines deploy to Alaska when training opportunities arise that will enhance USMC capabilities and readiness.

STRATEGIC COMPETITION IN THE ARCTIC, ARCTIC FONOPS, AND COST IMPOSITION ON OUR ADVERSARIES

16. Senator SULLIVAN. Secretary Braithwaite, in your nomination APQs you included three separate iterations of your experiences in Norway with you witnessing first hand “great power competition” in the Arctic. Can you talk about these experiences and why—as you have said—the U.S. needs to do FONOPs in the Arctic?

Secretary BRAITHWAITE\*. The United States is an Arctic nation, and developments in the complex Arctic security environment have direct implications for U.S. national security interests. The Arctic is strategic terrain and is a potential corridor between the Indo-Pacific region, Europe, and the United States Homeland. The United States, working with allies and partners, must deter strategic competitors from seeking to change the existing rules-based order unilaterally.

Freedom of Navigation Operations (FONOPs) demonstrate that the United States does not acquiesce in excessive maritime claims across the globe. These challenges help preserve the balance of rights and freedoms reflected in the UN Convention on the Law of the Sea and thus the global mobility of U.S. Forces. As a matter of principle, the United States should fly, sail, and operate wherever international law allows, including in the Arctic domain, which encompasses international straits, territorial waters, and high seas, and the rights and freedoms associated with each under international law.

17. Senator SULLIVAN. Secretary Braithwaite, the NDS references “expanding the competitive space” with regard to increased work with interagency. Shouldn’t this also be taken literally in terms of Russia and the Arctic, especially with the importance they place on the region?

Secretary BRAITHWAITE\*. The Department of the Navy recognizes effectively expanding the competitive space requires the combined actions of the interagency to employ all dimensions of national power. The integration of naval power with the joint forces, interagency teammates, allies, and partners is key to the preservation of peace and protection of the northern maritime crossroads and gateway to our shores. We will work in concert with interagency efforts to identify opportunities and build partnerships that promote transparency and integration. While we focus on cooperation, we must also ensure we are prepared to compete effectively and efficiently to maintain favorable regional balances of power. Naval forces will operate across the Arctic Region to prevail in day-to-day competition and deter coercive behavior and conventional aggression.

18. Senator SULLIVAN. Secretary Braithwaite, given the great importance of the Arctic to both Russia and China—and the high cost of construction, couldn’t the United States use investments in the Arctic to force our adversaries to react and impose great costs on them? While peaceful and legal under international law, what effect might U.S. FONOPs have in this regard?

Secretary BRAITHWAITE\*. Consistent with the National Defense Strategy and our Strategic Blueprint for the Arctic, we will work closely with our joint and interagency partners along with regional allies and partners to reduce transit times, preserve mobility, and meet logistical demands. The Department of the Navy will ensure any investments correlate with future operational needs. The underlying principles of Freedom of Navigation Operations to challenge excessive maritime claims are unchanged by this approach.

U.S. NAVY USE OF COMMERCIAL SHIPYARDS FOR REPAIRS (SEWARD AND KETCHIKAN)

19. Senator SULLIVAN. Secretary Braithwaite, given the growing maintenance backlog, doesn’t it make sense for the Navy to try and look at additional shipyards for more minimal maintenance issues—especially small commercial ones like JAG

anced combined-arms force packages containing organic command, ground, aviation, and sustainment elements.

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Alaska in Seward or the Ketchikan Shipyard that we saw—to help reduce the Navy’s large backlog?

Secretary BRAITHWAITE\*. In fiscal year 2020, the Navy’s non-nuclear surface ship maintenance backlog, as measured by Days of Maintenance Delay (DMD), was reduced by 84 percent. The Navy is dedicated to drive improvement by executing a variety of initiatives aimed at improving maintenance outcomes from planning to execution, including sustaining and increasing the ship maintenance and repair industrial base.

While improving shipyard capacity is only one factor that influences on-time delivery from maintenance availabilities, Navy has been focused on identifying and working with potential industry partners outside of homeports. Non-homeport shipyards have recently been utilized to augment the capacity of a ship’s homeport private sector capacity. These non-homeport shipyards are helpful in providing surge capacity to meet maintenance demands when schedules and capacities otherwise limit flexibility in meeting Navy requirements.

The Navy has comprehensive processes in place to assess, certify and then contract for the execution of non-nuclear surface ship maintenance and modernization. These processes begin with the assessment of capacity, capability, and facilities through the Master Ship Repair Agreement (MSRA) and Agreement for Boat Repair (ABR) certifications. The Navy regularly engages with companies, including those outside of homeports, to aid in these certification processes. Ultimately, while the execution of maintenance availabilities outside of Navy homeports can be beneficial it must always be weighed against the impact to crew, family, and oversight costs.

20. Senator SULLIVAN. Secretary Braithwaite, does the Navy and Marine Corps have any current plans to utilize small, largely commercial shipyards for needed repair work in order to help reduce the backlog? If so, would you be able to provide a Subcommittee a plan to do this?”

Secretary BRAITHWAITE\*. Sustaining and increasing the U.S. ship maintenance and repair industrial base is among the Navy’s top priorities. The utilization of non-homeport firms to provide increased capacity and meet surge requirements above homeport capacity is the optimal use of non-homeport shipyards.

Due to the costs and impacts on the crew associated with the execution of availabilities outside of a ship’s homeport, the preferred option is to grow the homeport industrial base through steady and predictable workload. However, due to the nature of maintenance work, operational schedules and emergent requirements will at times require mitigation. The utilization of non-homeport “surge” capacity for the execution of this scope, which cannot be satisfactorily absorbed within a ship’s homeport, is a desirable option for the Navy.

#### AIR COMBAT LIVE VIRTUAL CONSTRUCTIVE CAPABILITY

21. Senator SULLIVAN. Secretary Braithwaite and Admiral Gilday, given the emphasis on readiness for the near-peer fight (China-Russia), does the Navy have a requirement for Live, Virtual Constructive (LVC) Synthetic Inject to Live (SITL) to replicate the Near Peer threat capability and density in the air combat domain? If no, why not?

Secretary BRAITHWAITE\* and Admiral GILDAY. The Navy has Live Virtual Constructive (LVC) requirements for the air combat domain as well as a vision for the larger LVC construct which includes all applicable warfare domains in which the Navy shares a role. The Navy established the Fleet Training Wholeness Committee following a USFF training analysis in 2016 and began making investments towards LVC and training wholeness in PB18 and subsequent budgets. The Committee’s strategy, roadmap, and investment decisions are guided by Fleet and TYCOM requirements in order to not only replicate the threat capability and density in the air combat domain, but also mitigate OPSEC vulnerabilities, geographic/airspace constraints, and opposing force gaps.

22. Senator SULLIVAN. Secretary Braithwaite and Admiral Gilday, a LVC–SITL capability was demonstrated by “SLATE” (Secure LVC Air Training Environment) to the Navy just over 2 years. What acquisition process is being used to consider the range of alternatives and when will the Navy or OSD CAPE conduct an Analysis of Alternatives (AoA) specifically to address adding SITL–LVC capability to the Fleet?

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Secretary BRAITHWAITE\* and Admiral GILDAY. The Navy conducted an Analysis of Alternatives to include applying encryption technology to the TCTS I/P5 system and new systems development. The findings were used in the development Scope of Work for TCTS II that provides a design solution addressing both Navy and Air Force Air Combat Maneuvering Instrumentation (ACMI) requirements and provide a pathway to LVC. The TCTS II contract was awarded following a full and open competition, and the TCTS II open architecture, government data rights, and technical data packages enable future competition of production systems and capability upgrades. TCTS II delivers initial Synthetic Inject to Live (SITL) capabilities allowing mission operators to inject constructive threats into the secure, advanced training environment. TCTS II's architecture enables affordable incorporation of additional LVC capabilities, as they become available, and as DoN requirements, infrastructures and investments support.

## ACV

23. Senator SULLIVAN. General Berger, now the Marine Corps is testing and, finally, close to fielding the "Amphibious Combat Vehicle" or ACV. Can you tell me about how important this capability is to the Marine Corps, the status of the program, and how it fits into your force design?

General BERGER. The capability provided by the Amphibious Combat Vehicle (ACV) is aligned with the National Defense Strategy (NDS), Defense Planning Guidance (DPG), and Commandant's Planning Guidance (CPG) as a power projection enabler and key source of protected mobility for ground combat formations of the Fleet Marine Force. The ACV can self-deploy from amphibious ships in situations where connectors are not optimal to deliver intact combat units to a point of decision without the requirement for arrival and assembly and provide the offshore flexibility for rapid penetration, raids, and redeployment. In December 2020, the Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN RDA) approved the ACV for Full-Rate Production.

24. Senator SULLIVAN. General Berger, how will the ACV acquisition enhance the operational capabilities and effectiveness of the Corps' Fleet Marines, especially when compared to the Amphibious Assault Vehicle (AAV)?

General BERGER. The ACV is a modern, fully amphibious armored personnel carrier that will provide otherwise dismounted ground combat formations with a greater range of maneuver options in the littoral operating environment, along with significantly improved lethality, protection, and command and control when compared to the AAV.

## USMC ROTARY WING AND TRITONS (UAVS)

25. Senator SULLIVAN. General Berger, you have previously identified the need for more analysis before reducing the F-35 fleet, has a similar pause been extended to the proposed divestment of rotary wing systems at this time? If not, can you commit to pausing any rotary wing divestment actions until this Committee has the chance to review the complete aforementioned study or similar information you can provide at an earlier date?

General BERGER. As stated in my "Force Design 2030" report, issued in March 2020, I am confident in the divestment of three heavy helicopter squadrons, three medium-lift tiltrotor squadrons and at least two light attack helicopter squadrons. The redesign of the Marine Corps, across all elements of the force remains our imperative if the Nation expects the Marine Corps to respond globally to crisis in an advanced adversary threat environment. To accomplish that end, within available resources, requires choices, carefully considered and balanced across all elements of the Marine Air-Ground Task Force (MAGTF). Studies will continue to inform our progress, but to delay will offer competitors an advantage in gaining and maintaining a qualitative edge over our expeditionary forces. I will ensure that you receive a briefing on the study outcomes, which will offer me one perspective on appropriate force size.

26. Senator SULLIVAN. Secretary Braithwaite, the current RQ-4C Triton Program of Record calls for 68 aircraft. Following the planned Air Force divestment from the RQ-4 Global Hawk, has this outlook changed? Can you describe how decisions related to the Global Hawk, which we know is substantially similar to the Triton, could impact supply chain readiness and costs? Even if your acquisition plans re-

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main unchanged, how might divestment of the Global Hawk impact Triton readiness over the short- and the long-term?

Secretary BRAITHWAITE\*. Divestiture of U.S. Air Force RQ-4 air-vehicles/support will likely lead to rate impacts at all levels of the common supply chain. In turn, this will likely increase Department of the Navy (DoN) Triton costs for production, spares/repair parts, and sustainment/depot support. The Triton program has already realized increased costs for shared/common services at the Northrup-Grumman (N-G) Operations Support Center, Mission Systems Lab Services, and SIPR infrastructure at N-G Rancho Bernardo, CA facilities. Loss of additional core air-vehicles/support systems is anticipated to drive higher (TBD) costs to the DoN. Additionally, Triton would likely incur a higher share of common engine sustainment recurring costs through the Oklahoma City and Rolls Royce facilities.

Regarding supply-chain readiness, the planned shared investment by both programs in establishing organic repair capability for common subsystems such as landing gear, brakes, flight controls, and electrical distribution has already been delayed due to budget reductions to both programs. With Global Hawk divestment, and the existing Service resource challenges for the planned investment in organic repair capability, the Triton will likely need to rely on commercial suppliers for repair/sustainment. While the risk to Triton short-term readiness is low, it is not yet fully clear how USAF Global Hawk divestment and the reliance on commercial suppliers will impact the mid/long-term event horizon.

The DoN will continue to assess these impacts in context to the current MQ-4C program. This assessment will look at the overall force structure and long-term readiness/sustainment to balance overall DoN ISR requirements/priorities, appropriated resources, and any updates to the National Defense Strategy.

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#### QUESTIONS SUBMITTED BY SENATOR DAVID PERDUE

##### MARINE CORPS HIGH MOBILITY ENGINEER EXCAVATOR

27. Senator PERDUE. General Berger, in 2019, the Marine Corps validated a formal requirement to procure and maintain 120 High Mobility Engineer Excavators (HMEE) to replace its aging, trailer transported Backhoe Loader (BHL). As you know, the HMEE is a self-deployable multi-mission system that can travel at over 55 mph, be up-armored and ford over 30 inches of water. It is ideally suited to support the full spectrum of Marine Corps missions with survivability, mobility, counter-mobility and humanitarian/disaster relief capabilities. Given its importance, Congress included and additional \$10.2 million in the Fiscal Year 2019 Defense Appropriations Bill to help accelerate fielding of the HMEE.

Can you please describe the ways that the HMEE fully supports the Marine Corps' new operating concepts of Expeditionary Advance Base Operations (EABO) and Littoral Operations in a Contested Environment (LOCE)?

General BERGER. Combat Engineer formations will employ the HMEE to support assured mobility while operating ashore within a contested maritime environment. Tasks include route reconnaissance, obstacle and debris removal, and limited material handling utilizing the front bucket, rear ditching bucket, forklift attachment, and associated hand tools. The HMEE's self-mobility will provide a valuable material handling and construction tool at a smaller total footprint. While specific future engineer formations and mission sets are still being developed through the Force Design process, we expect HMEE will help us balance the requirements of assured mobility against maintaining a light footprint in contested littoral spaces.

28. Senator PERDUE. General Berger, in what ways does the HMME support security cooperation and humanitarian/disaster relief missions the Marine Corps is often called upon to support?

General BERGER. The HMEE is one of several Engineer Equipment resources the Marine Corps can use to support security cooperation and humanitarian assistance and disaster response (HA/DR) missions. Traditionally, the Marine Corps utilizes Engineer Equipment to clear debris, deliver supplies, perform emergency earthmoving operations such as constructing berms and dikes, and even rescue stranded civilians. Our response forces employ tailor made equipment sets for each mission, dependent upon the situation.

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29. Senator PERDUE. General Berger, given this formal requirement was validated after the release of the 2018 National Defense Strategy, please further describe why the HMEE is important to Marine Corps units for future mission success.

General BERGER. The HMEE will be an important tool for future Engineer formations that are divesting of large equipment in favor of lighter, more agile equipment sets. The HMEE bridges the gap between our current small and large excavators, while also adding self-deployment, limited forklift capabilities, and pneumatic hand tools to emplace and clear obstacles. As the Marine Corps develops its future Engineer capabilities, the HMEE will continue to play an important role in the Combat Engineer, Littoral Combat, and Engineer Support Battalions

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#### QUESTIONS SUBMITTED BY SENATOR MAZIE K. HIRONO

##### AMPHIBIOUS ASSAULT VEHICLE PROGRAM

30. Senator HIRONO. General Berger, do you foresee any issues with maintaining the safety of the current AAV program until it is replaced with the next generation Amphibious Combat Vehicle?

General BERGER. While we wait for the Amphibious Combat Vehicle to be fully fielded, we will continue to support AAV readiness through an enduring AAV Sustainment Working Group. The Marine Corps is prudently addressing maintenance for the AAV and its sub-systems, tracking supply chain issues, and carefully monitoring the supportability of the AAV repair parts supply chain with the Defense Logistics Agency. Additionally, we have conducted a thorough review of our operator and maintainer manuals.

31. Senator HIRONO. General Berger, to what extent have AAV operations resumed?

General BERGER. AAV waterborne operations have only resumed for mission essential MOS qualifications at the Assault Amphibian School (AAS) and testing by the Amphibious Vehicle Test Branch. All other AAV waterborne operations have remained suspended pending the results of on-going investigations. All other AAV non-waterborne operations remains in effect.

Specifically, AAS has resumed AAV water operations on five separate occasions since the mishap, each time to train entry-level marine students and only after a deliberate review of required safety measures. Fleet Marine Force units, Training and Education Command, and Headquarters Marine Corps stakeholders have clarified and improved safety requirements for swim qualification, egress training, life preserver use, and vehicle safety checklists. AAS has reinforced these requirements through expanded implementation of emergency breathing devices, safety boats, and certification of instructor personnel.

32. Senator HIRONO. General Berger, how has July's accident affected maintenance and training for AAVs?

General BERGER. A thorough and detailed review of all training, operator, and maintenance manuals and references has been directed which has resulted in a more comprehensive, detailed inspection process and maintenance actions that address the aging of our fleet of AAV's. A more inclusive, thorough analysis of training and doctrine has led to improved training standards and requirements for the AAV and training systems such as the Submerged Vehicle Egress Trainer. These actions have been implemented across the Fleet Marine Force and Supporting Establishment and all reference materials are being updated.

AAV waterborne training remains focused on the essential occupational and licensing actions necessary to complete initial training at the AAS and all other AAV non-waterborne training remains in effect. Service-wide efforts addressing AAV maintenance remains on-going to action our AAV materiel maintenance way ahead.

##### CLIMATE CHANGE

33. Senator HIRONO. Secretary Braithwaite, Admiral Gilday, and General Berger, can you provide a comprehensive list of the domestic and overseas installations that are likely to be affected by rising sea levels and extreme weather events over the coming decades and if not, can you provide a timeline for when such a list can be made available?

Secretary BRAITHWAITE\* and Admiral GILDAY. We are seeing extreme weather events, droughts and sea level rise. Super storm Sandy caused \$50 million in damage at Naval Weapons Station Earle. More recently, Hurricane Irma severely impacted Naval Air Station Key West in 2017, Hurricane Florence caused \$3.6 billion in damage at Camp Lejeune in 2018, and Hurricane Sally caused \$521 million in damage at NAS Pensacola.

Wildfires in 2018 forced the evacuation of Naval Air Station Point Mugu, and burned approximately 1,200 acres at Camp Pendleton.

Droughts can have broad implications for base infrastructure, impair testing activities, increase the number of black flag day prohibitions for testing and training, and contribute to heat-related illnesses.

Naval Station Norfolk is experiencing sea level rise averaging 4.6mm per year, with a 5.1mm increase in 2017. Sea level rise, land subsidence, and changing ocean currents have resulted in more frequent nuisance flooding and increased vulnerability to coastal storms.

The ten most vulnerable Marine Corps installations (in no particular order) are:

- Marine Corps Base Camp Pendleton, CA
- Marine Corps Base Camp Lejeune, NC
- Marine Corps Base Camp Butler, Okinawa, Japan
- Marine Corps Base Hawaii, HI
- Marine Corps Recruit Depot Parris Island, SC
- Marine Corps Support Facility Blount Island, FL
- Marine Corps Air Station Beaufort, SC
- Marine Corps Base Quantico, VA
- Marine Corps Reserve Forces, New Orleans, LA
- Marine Corps Recruit Depot San Diego, CA

The sixteen most vulnerable Navy installations (in no particular order) are:

- Naval Air Station Key West, FL
- Naval Submarine Base Kings Bay, GA
- Naval Base Guam, Guam
- Joint Base Pearl Harbor Hickam, HI
- Wahiawa Annex, HI
- Naval Magazine Indian Island, WA
- Naval Base Coronado, CA
- Naval Base San Diego, CA
- Joint Base Anacostia Bolling, DC (Transferred to the Air Force in fiscal year 2020)
- Washington Navy Yard, DC
- Andersen Air Force Base, Guam
- Naval Support Facility Indian Head, MD

General BERGER. In the Report to Congress entitled “Climate Impacts on Installation Resiliency” from December 2020, installations were identified as susceptible to either flooding or hurricanes as detailed in the tables below. These tables include the Plant Replacement Value (PRV) for each installation, which is the cost to construct a replacement facility aboard that installation using current building codes, design criteria, and materials. PRV is calculated based on the size of the current facility, published DOD unit costs for that type of facility, the local area cost factor, design, contingency, and Supervision, Inspection, and Overhead (SIOH).

Exposure	Marine Corps Installation	State	PRV
Flooding	MCAS YUMA AZ	ARIZONA	\$1,751,321
Flooding	MARCORPRCUIIDEP SAN DIEGO CA	CALIFORNIA	\$11,993
Flooding	MCB CAMP PENDLETON CA	CALIFORNIA	\$4,196,785
Flooding	MCSF BLOUNT ISLAND	FLORIDA	\$806,429
Flooding	MCB HAWAII KANEOHE	HAWAII	\$ 217,016,749
Flooding	HDQTRS 4TH MARDIV NEW ORLEANS	LOUISIANA	\$1,399,334
Flooding	MCAS CHERRY POINT NC	NORTH CAROLINA	\$501,785,354

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Exposure	Marine Corps Installation	State	PRV
Flooding	MCB CAMP LEJEUNE NC	NORTH CAROLINA	\$208,326,613
Flooding	MCRD/BEAUFORT PI SC	SOUTH CAROLINA	\$1,403,525,324
Flooding	MARINE CORPS BASE QUANTICO VA	VIRGINIA	\$10,115,032
		TOTAL	\$2,348,934,934

Exposure	Marine Corps Installation	State	PRV
Hurricane	MCSF BLOUNT ISLAND	FLORIDA	\$26,825,049
Hurricane	MCLB ALBANY GA	GEORGIA	\$6,669,957
Hurricane	MCB HAWAII KANEOHE	HAWAII	\$49,953,534
Hurricane	HDQTRS 4TH MARDIV NEW ORLEANS	LOUISIANA	\$10,936
Hurricane	HDQTRS 4TH MAW NEW ORLEANS LA	LOUISIANA	\$412,821
Hurricane	MARCORRESFOR NEW ORLEANS LA	LOUISIANA	\$7,839,283
Hurricane	MCAS CHERRY POINT NC	NORTH CAROLINA	\$3,671,715
Hurricane	MCB CAMP LEJEUNE NC	NORTH CAROLINA	\$339,774,306
Hurricane	MCAS BEAUFORT SC	SOUTH CAROLINA	\$997,334
Hurricane	MCRD/BEAUFORT PI SC	SOUTH CAROLINA	\$23,952,391
Hurricane	MARINE CORPS BASE QUANTICO VA	VIRGINIA	\$3,568,912
		TOTAL	\$463,676,238

The difference in PRV values between each table is due to the fact that facilities aboard each installation would be affected differently, depending on exposure type (either flooding or hurricane). To identify installations susceptible to flooding exposure, fiscal year 2019 end of year data from the internet Navy Facility Assets Data Store (iNFADS) was correlated with a geospatial data query for buildings in the United States and Territories where buildings are located within 100 year USA Flood Hazard Areas set by FEMA. Of note, this FEMA data only considers locations in the United States, so overseas locations are not represented. Hurricane exposure was assessed for all buildings within the hurricane-prone region, as identified by UFC 3-301-01, Structural Engineering, with a Facility Condition Index below sixty. An assessment could be made of the flooding risk for overseas Marine Corps installations with the appropriate authorization and funding.

34. Senator HIRONO. Secretary Braithwaite, Admiral Gilday, and General Berger, given how long it can take to properly execute military construction projects, what actions are being taken now to mitigate future effects of climate change on domestic installations and installations overseas?

Secretary BRAITHWAITE\* and Admiral GILDAY. The DON mitigates the risk of environmental impacts through a combination of historical information, design criteria and statutory requirements to design facilities and plan installations. 10 USC 2864 requires all major military installations to have a Master Plan. Unified Facilities Criteria (UFC) 2-100-01, Installation Master Planning, is issued under the authority of DODI 4165.70, Real Property Management, implementing the requirement for Installation Master Plans. In accordance with the Fiscal Year 2020 NDAA, the UFC was changed to specifically incorporate planning for the effects of climate change. Design and construction utilize the latest code requirements and ultimately result in delivery of more resilient facilities better capable of withstanding future events; therefore, every installation has prescribed mitigations to combat climate change.

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Depending on the size of the mitigation and the severity of the consequence if the project is not completed, the installations can use either their local controls or compete for centralized or line item appropriated funds.

General BERGER. Installations apply a variety of mitigation measures to maintain continuity of operations, ranging from exercising emergency action plans to evacuating personnel and weapons platforms during floods, to long-term design adaptations and facility development which reinforces and raises building above the historic mean-high water of the 100-year flood plain.

When new facilities are planned, facilities are sited outside of the 100-years floodplains whenever possible. Where it is not possible to avoid a floodplain due to mission requirements, the Department of the Navy designs new facilities in accordance with the requirements in UFC 3-21-01, Civil Engineering, and the Navy and Marine Corps include floodplain mitigation measures in the facility design.

35. Senator HIRONO. Secretary Braithwaite, Admiral Gilday, and General Berger, how will domestic and overseas ports, airfields, and other logistics nodes be impacted by climate change in the coming decades?

Secretary BRAITHWAITE\* and Admiral GILDAY. If our current sea level rise models hold true then some ports will be subject to increased flooding, requiring prioritized investment (to overcome impacts to operations). Similarly, logistics functions will need risk evaluations for decisions about additional protection or relocation to other installations. The Navy will attempt to minimize impact, maintain logistics capabilities, and ensure individual missions are not compromised (based on threat) to deliver maximum lethality.

Consequence Management at Naval installations around the world is predicated upon risk posed by all hazards, not just climate change. Each installation (port, airfield, logistics node or base) has evaluated risk based on impact to their mission. If a risk presents a negative impact to the mission, mitigation measures are evaluated and an optimized solution is pursued, either through construction funding or other means to provide a deterrent to the threat. Therefore, on an annual basis every installation performs this consequence management evaluation to ensure appropriate mitigation measures are applied judiciously. Climate Change is just one threat that the Navy addresses and is evaluated based on impact to the mission.

General BERGER. The Department of the Navy views the effects of climate change as a significant installation resilience issue which impacts readiness, and incorporates climate resilience as a cross-cutting consideration for planning and decision-making processes, not necessarily as a separate program or specific set of actions. The Marine Corps uses programs within the DOD Office of Local Defense Community Cooperation (OLDCC), formerly the Office of Economic Adjustment, to ensure installation resiliency through collaboration with surrounding states and communities. Specially, the recently authorized Installation Resiliency Authority will enable the Marine Corps to provide technical and financial assistance through OLDCC to defense communities to analyze and implement action that enhance the resiliency of essential transportation, logistical, or other necessary resources outside of the military installation that are required in order to maintain, improve, or rapidly re-establish installation mission assurance and mission-essential functions.

#### STRATEGIC FUEL

36. Senator HIRONO. Secretary Braithwaite, the ability to effectively resupply disparate small units is critical to operations in the Indo-Pacific. A recently release INDOPACOM study, conducted by IDA, highlights our adversaries' increasing ability to threaten the supply chains that provide fuel. Do you agree with the conclusion that posturing fuel in theater closer to the point of need is required?

Secretary BRAITHWAITE\*. The assessment of the IDA study as it applies to the entire Indo-Pacific Theater is best answered by USINDOPACOM. However, from the Navy perspective, it reinforces studies and war games that my own staff, the CNO, and the Commandant have also conducted. It is true that posturing fuel in theater is a part of the needed solution. However, it is only part of the solution because forward staged fuel is static and vulnerable to interdiction. Distributed Logistics envisions intra-theater networks to deliver to point-of-need. Potential solutions that the Naval team are working on include a more effective, and smaller tactical distribution capability that accounts for the contested environment that we need to be capa-

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ble of operating in. Examples of this include but are not limited to the “Stingray” (MQ-25) aerial refueling drone and the Next Generation Logistics Ship.

37. Senator HIRONO. Secretary Braithwaite, what steps are being taken to protect the integrity of our fuel supply chains?

Secretary BRAITHWAITE\*. From an end-to-end supply chain perspective this question is best answered by the Joint Staff with input from the Services and various DOD Agencies, to include DLA–Energy. The Navy is working closely with the Defense Logistics Agency, the Joint Staff, and the Office of the Secretary of Defense to address challenges of supporting the Navy and Marine Corps in peacetime as well as in contested environments. The Navy Petroleum Office focuses on these issues on a daily basis. The Navy is also developing new capabilities that enable Naval operations as mentioned above, as well as developing advanced capabilities supporting ship –to-shore fuel movement and more.

#### QUESTIONS SUBMITTED BY SENATOR DOUG JONES

##### INSTALLATION SECURITY

38. Senator JONES. Admiral Gilday, is it your understanding that once the short started firing in Pensacola, everything went according to plan from the Navy’s perspective?

Admiral GILDAY. From a security response perspective, installation security forces at Naval Air Station Pensacola followed standard operating procedures and pre-planned responses for an active shooter situation in accordance with Navy Tactics, Techniques and Procedures. The Naval Air Station Pensacola security response was immediate and first responders were in the building within five to seven minutes after the shooting began. Responding Navy Security Force units established a perimeter and engaged the threat using their government-issued weapons. Escambia County Sheriff Deputies quickly arrived on scene and supported Navy Security Forces. The Navy and county first responders followed their training and did everything they could to mitigate injuries and loss of life.

39. Senator JONES. Admiral Gilday, can you answer as to whether anything about installation security and emergency response procedure at NAS Pensacola has changed since December 6, 2019?

Admiral GILDAY. Standard installation security and emergency response procedures at Naval Air Station Pensacola have not changed as a result of the shooting. However, the Department of the Navy’s investigation into the shooting is complete, and we are in the process of implementing the report’s recommendations for physical security and force protection at Naval Air Station Pensacola and all Navy installations worldwide.

40. Senator JONES. Secretary Braithwaite, Admiral Gilday, and General Berger, the NASP shooting investigation report recommends requiring that installation Naval Security Forces qualify as Category III/IV weapons qualified personnel. What does that mean and how will that help prevent or mitigate attacks?

Secretary BRAITHWAITE\* and Admiral GILDAY. Navy personnel who are authorized to be issued a military weapon are assigned within one of four categories. The category defines the weapon qualification criteria based on the type of armed mission an individual is assigned. The categories with examples are as follows:

*Category I.* Personnel who are issued a military weapon primarily for personal protection. This category includes most officers, chief petty officers, officer accession personnel, enlisted accession personnel, aircrews, shipboard armed watch standers, and Military Sealift Command (MSC) personnel who are armed in the course of their duties. Personnel/units in this category are those non-security personnel/units whose mission exposes them to potential hostile fire, thus requiring them to be armed for self-defense.

*Category II.* Personnel who are issued weapons primarily to maintain security of Department of Defense (DOD) assets. This category includes law enforcement, non-expeditionary security forces, contract security forces, armed watch standers, rovers and security reaction force personnel.

*Category III.* Personnel who are issued weapons for combat support and expeditionary operations. These units are attached to, or in direct support of, ground com-

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bat elements. This category includes, but is not limited to, Navy Expeditionary Combat Command.

*Category IV.* Personnel who are issued weapons for special missions. This category includes, but is not limited to: explosive ordnance disposal teams in support of special operations forces; convoy support personnel; F-18 aircraft squadrons attached to a Marine wing; designated marksmen; visit, board, search and seizure personnel; and nuclear weapons security for shore facilities.

At this time, there is no intent to change the weapons qualification criteria for our Navy Security Forces. Our Navy Security Forces, who are category II personnel, are armed, qualified and highly trained to respond quickly to a variety of emergency situations. As stated, categories III and IV are designated for specialized weapons training for combat support in expeditionary operations.

General BERGER. In accordance with DOD and Service policy, Category III weapons include missiles, rockets, grenade launchers, and mortars. Category IV weapons include semi-automatic or non-automatic shoulder-fired weapons, handguns, and recoilless rifles. The aforementioned weapon categories are appropriate for base defense operations for Marine forces performing security functions in a deployed/hostile environment, with primarily Category IV weapons maintained at our installations supporting installation defense. For law enforcement (LE) and security functions aboard Marine Corps installations, Category III weapons include grenade launchers capable of deploying non-lethal munitions, and Category IV weapons including the service pistol and shotgun. The shotgun is also capable of employing non-lethal munitions. Category II weapons include crew-served weapons systems, and automatic and semi-automatic small arms used by Marine Corps LE personnel, such as the M4/M16 service rifle. Marine Corps LE personnel, which includes Marine Military Police, 0083 civilian Police Officers, and 1811 Investigators, assigned to Marine Corps Provost Marshal Offices (PMO)/Marine Corps Police Departments (MCPD) as gate sentries, patrol units, and Special Reaction Team personnel, are qualified on the weapons appropriate for LE and security functions specific to each PMO/MCPD mission aboard the installation on which they are assigned. The primary being the service pistol, service rifle, and shotgun. Marine Corps LE personnel are further required to train and qualify with the assigned weapons carried on their person and maintained while on duty. Marine LE personnel also receive training on these categories of weapons during entry-level training, sustainment training, and pre-deployment training. The weapons issued to our Marine Corps LE personnel providing LE and security aboard Marine Corps installations provides an immediate and sustained response to an active threat aboard Marine Corps installations, acting a deterrent against those planning an attack. Installation commanders and tenant unit commanders exercise discretion through authorities granted by DOD and Service policies for selectively arming personnel with the appropriate weapons system to serve other security functions outside of what is provided by Marine Corps LE personnel aboard Marine Corps installations.

41. Senator JONES. Secretary Braithwaite, we use an app called HERO 911 in Alabama with our schools, and I'd like to see the Defense Department consider something similar. The intent is to get the closest first responders to the scene of an attack ASAP, in order to neutralize the shooter and minimize casualties. The NASP report recommends requiring regional and installation commanders to coordinate with civilian authorities to integrate geographically bounded Wireless Emergency Alert notifications into a Standard Operating Procedure for crisis response. Would you be willing to investigate and, if practicable, implement an app that automatically summons all verified, registered law enforcement with a certain radius of a base during an active shooter event?

Secretary BRAITHWAITE\*. The Navy has been in coordination with DOD and other Services on the Next Generation 911 (NG911) requirements and standards defined by the National Emergency Number Association (NENA). Significant infrastructure upgrades are required to align the telecommunications framework to complement existing information technology modernization initiatives.

My staff is continuously looking for new technologies to reduce response times to an active shooter incident. The Navy currently has great working relationships with the local law enforcement agencies surrounding our Navy installations.

42. Senator JONES. Secretary Braithwaite\*, do you have the authorities and resources to look into such an application, or will you need to work with the Armed Services Committees to achieve this?

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Secretary BRAITHWAITE\*. The Navy has the authorities to review existing technologies. At this time, there is no need for additional support from the Armed Services Committees.

43. Senator JONES. Secretary Braithwaite, Admiral Gilday, and General Berger, the NASP investigation report recommends that the Chief of Naval Operations (CNO) develop a uniform policy “to arm qualified NSF personnel and other individuals for personal protection not related to performance of an official duty or status.” Can you state what you believe this policy should be?

Secretary BRAITHWAITE\* and Admiral GILDAY. The safety and security of our military and civilian personnel, family members and base visitors is our top priority. Current Navy policy provides guidance regarding personal firearms safety, control and accountability. The policy further provides a process for the registration, accountability, storage, and transportation of personal firearms, when approved by the Navy Installation Commanding Officer. The current policy does not allow the transportation of loaded or concealed handguns, shotguns, or rifles on Navy installations except by duly authorized law enforcement personnel or by military personnel in the performance of their official duties. Individual state licenses or permits that authorize individuals to carry concealed handguns are not recognized or valid on Navy installations. Navy Installation Commanders have the authority to approve privately owned firearms on their respective installations for use at MWR recreational locations (i.e. hunting, target practice, etc.).

Our Navy Security Forces, comprised of military active duty and reservist, and civilian personnel are trained and equipped to protect our personnel within our Navy installations, ships, and facilities. Navy Security Forces are armed, qualified and highly trained to respond quickly to a variety of emergency situations.

Consistent with the recommendations from the NASP investigation, the Navy’s policy is under revision and will be consistent with guidance provided in DOD policies. At this time, I do not intend to authorize the carrying of personal firearms for personal protection.

General BERGER. The Marine Corps published Marine Corps Administrative Message 719/19 on 31 December 2019 that authorizes qualified Marine Corps law enforcement (LE) personnel (58XX Military Police, 0083 Police Officers, and 1811 Investigators) possessing 18 U.S.C. §926 billion credentials under the LE Officer Safety Act, to carry a privately owned firearm (POF) for personal protection not related to the performance of official duties while aboard Marine Corps property. A draft Marine Corps Bulletin (MCBUL) is also being staffed that supports existing Service efforts to provide this capability to Marine Corps personnel that are not designated as LE personnel. The MCBUL would authorize the broader Marine Corps population (non-LE personnel) among the total force meeting DOD, DON, Service, and statutory requirements for the concealed carry of a POF for personal protection not related to the performance of official duties while aboard Marine Corps property.

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\*These responses were received on June 9, 2021, Secretary Thomas W. Harker assumed the position of Acting Secretary of the Navy on January 21, 2021.

**APPENDIX A**



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United States Government Accountability Office

Statement for the Record to the  
Subcommittee on Readiness and  
Management Support, Committee on  
Armed Services, U.S. Senate

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For Release on Delivery  
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## NAVY AND MARINE CORPS

Services Continue Efforts  
to Rebuild Readiness, but  
Recovery Will Take Years  
and Sustained  
Management Attention

Statement for the Record by Diana Maurer, Director,  
Defense Capabilities and Management

# GAO Highlights

Highlights of [GAO-21-225T](#), a statement for the record to the Subcommittee on Readiness and Management Support, Committee on Armed Services, U.S. Senate

## Why GAO Did This Study

The 2018 National Defense Strategy emphasizes that restoring and retaining readiness is critical to success in the emerging security environment. The Navy and Marine Corps are working to rebuild the readiness of their forces while also growing and modernizing their aging fleets of ships and aircraft. Readiness recovery will take years as the Navy and Marine Corps address their multiple challenges and continue to meet operational demands.

This statement provides information on readiness challenges facing (1) the Navy ship and submarine fleet and (2) Navy and Marine Corps aviation. GAO also discusses its prior recommendations on Navy and Marine Corps readiness and the progress that has been made in addressing them.

This statement is based on previous work published from 2016 to November 2020—on Navy and Marine Corps readiness challenges, including ship maintenance, sailor training, and aircraft sustainment. GAO also analyzed data updated as of November 2020, as appropriate, and drew from its ongoing work focused on Navy and Marine Corps readiness.

## What GAO Recommends

GAO made more than 90 recommendations in prior work cited in this statement. The Department of Defense generally concurred with most of GAO's recommendations. Continued attention to these recommendations can assist the Navy and the Marine Corps as they seek to rebuild the readiness of their forces.

View [GAO-21-225T](#). For more information, contact Diana Maurer at (202) 512-9627 or [maurerd@gao.gov](mailto:maurerd@gao.gov).

December 2, 2020

## NAVY AND MARINE CORPS

### Services Continue Efforts to Rebuild Readiness, but Recovery Will Take Years and Sustained Management Attention

#### What GAO Found

The Navy and Marine Corps continue to face significant readiness challenges that have developed over more than a decade of conflict, budget uncertainty, and reductions in force structure. These challenges prevent the services from reaping the full benefit of their existing forces and attaining the level of readiness called for by the 2018 National Defense Strategy. Both services have made encouraging progress identifying the causes of their readiness decline and have begun efforts to arrest and reverse it (see figure). However, GAO's work shows that addressing these challenges will require years of sustained management attention and resources. Recent events, such as the ongoing pandemic and the fire aboard the USS *Bonhomme Richard* affect both current and future readiness and are likely to compound and delay the services' readiness rebuilding efforts.

#### Selected Navy and Marine Corps Readiness Challenges



##### Maintenance

The Navy is frequently unable to complete scheduled ship maintenance on time and incurred over 38,900 days of maintenance delay from fiscal year 2014 through fiscal year 2020. This equates to the loss of 15 ships on average each year. The factors contributing to maintenance delays include insufficient shipyard capacity, shortage of skilled personnel, and deferred maintenance during operational deployments.

Similarly, delays in depot maintenance contribute to limited Navy and Marine Corps aircraft availability, as do shortages of maintainer personnel and diminishing manufacturing sources for parts.



##### Personnel

The Navy is reassessing and increasing the personnel requirements for its ships, but does not expect to crew its ships to these updated baselines for several more years.



##### Training

The Navy has installed protections to ensure that ship crews are trained and certified prior to deploying, and is in the process of reforming enlisted sailor training.

However, GAO found that changes made to surface warfare officer training could be further enhanced to ensure its effectiveness.

Source: GAO. | GAO-21-225T

Continued progress implementing GAO's prior recommendations will bolster ongoing Navy and Marine Corps efforts to address these readiness challenges.

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Chairman Sullivan, Ranking Member Kaine, and Members of the Subcommittee:

I am pleased to submit this statement on issues related to Navy and Marine Corps readiness.

We have long noted the challenges of addressing the needs of the emerging national security environment in the midst of an unsustainable fiscal situation in which the Department of Defense (DOD) accounts for approximately half of the federal government's discretionary spending.<sup>1</sup> Within this environment, DOD is working to rebuild the readiness of its current forces while also modernizing to counter highly capable adversaries as called for in the department's 2018 National Defense Strategy. As DOD contends with these challenges, it is also responding to the COVID-19 pandemic.<sup>2</sup> The Secretary of Defense has stated that his top three priorities during the COVID-19 pandemic are protecting DOD's people, maintaining military readiness, and supporting the whole-of-government interagency response.

This statement provides information on readiness challenges facing (1) the Navy ship and submarine fleet and (2) Navy and Marine Corps aviation.

This statement is based on reports that we issued from 2016 to November 2020 examining the challenges that the Navy and Marine Corps face regarding readiness, shipyard workforce and capital investment, weapon system sustainment, and Navy and Marine Corps aviation, among others.<sup>3</sup> To perform our prior work, we analyzed Navy and Marine Corps readiness, maintenance, personnel, and training data and interviewed cognizant Navy and Marine Corps officials. The reports cited throughout this statement contain more details on the scope of the

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<sup>1</sup>GAO, *The Nation's Fiscal Health: Action Is Needed to Address the Federal Government's Fiscal Future*, GAO-20-403SP (Washington, D.C.: March 12, 2020) and GAO, *Department of Defense: Actions Needed to Address Five Key Mission Challenges*, GAO-17-369 (Washington, D.C.: June 13, 2017).

<sup>2</sup>We have issued several reports on the effects of COVID-19 on government operations, including GAO, *COVID-19: Federal Efforts Could Be Strengthened by Timely and Coordinated Actions*, GAO-20-701 (Washington, D.C.: September 21, 2020). We have additional reviews underway and expect to report the results of this work in a series of reports over the coming months.

<sup>3</sup>A list of related classified and unclassified GAO products is provided in the Related GAO Products pages at the end of this statement.

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work and the methodology we used to carry it out. This statement also includes observations based on our ongoing work focused on Navy and Marine Corps readiness and updates to information and selected data from our prior reports as of November 2020, as appropriate. For ongoing work and updates, we reviewed Navy documentation and interviewed Navy officials. We have also issued several classified reports since 2016 examining these issues; however, this statement does not include that work.

We conducted the work on which this statement is based in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Background

DOD has reported that the extended conflict in the post-9/11 era combined with budget uncertainty and reductions in force structure has degraded its readiness. In response, the department has made rebuilding readiness a priority. The 2018 National Defense Strategy emphasizes that restoring and retaining readiness across the entire spectrum of conflict is critical to success in the emerging security environment. Nevertheless, DOD has reported that the readiness of the total military force is low and has remained so since 2013.

DOD has developed a plan to rebuild the readiness of the military force, and the military services provide regular input on the status of their readiness recovery efforts. In August 2018, we reported that the Office of the Secretary of Defense had developed a Readiness Recovery Framework that the department is using to guide the services' efforts and plans to regularly assess, validate, and monitor readiness recovery.<sup>4</sup> Through this framework, the military services have identified key readiness issues that their forces face and actions to address these issues, as well as metrics to assess progress in addressing them. The services have been revising their readiness recovery goals in accordance

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<sup>4</sup>GAO, *Military Readiness: Update on DOD's Progress in Developing a Readiness Rebuilding Plan*, GAO-18-441RC (Washington, D.C.: Aug. 10, 2018). The Readiness Recovery Framework identifies primary readiness issues that each military service faces, actions the service has taken to address identified issues, and milestones and metrics to assess progress in addressing those issues.

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with the National Defense Strategy and corresponding force employment initiatives, and we have ongoing work assessing DOD's progress in improving readiness.<sup>5</sup>

Over the last several years, the Navy and the Marine Corps have experienced a number of ship and aviation mishaps resulting in the loss of life and hundreds of millions of dollars in damage, underscoring the importance of overcoming these challenges. Several recent events, including the ongoing COVID-19 pandemic and the fire aboard the USS *Bonhomme Richard*, further complicate the services' efforts to rebuild readiness. We testified before the Senate Committee on Armed Services in December 2018<sup>6</sup> and again in December 2019,<sup>7</sup> highlighting current and future readiness challenges and emphasizing that rebuilding readiness will require time and sustained management attention.

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### The Navy Faces Multiple Challenges to Rebuilding Ship and Submarine Readiness

The Navy faces multiple interrelated challenges in the areas of maintenance, personnel, and training that continue to hinder its efforts to rebuild ship and submarine readiness.

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<sup>5</sup>Section 333 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232 (2018), requires us to report annually until 2021 on the readiness of the armed forces to conduct full spectrum operations in the ground, sea, air, space, and cyber domains. We issued the first of these classified reports in August 2019: GAO, *Military Readiness: Readiness Improved in the Ground and Cyber Domains, But Declined in the Sea, Air, and Space Domains from Fiscal Year 2017 to Fiscal Year 2018*, GAO-19-499C (Washington, D.C.: August 30, 2019). (SECRET).

<sup>6</sup>GAO, *Navy and Marine Corps: Rebuilding Ship, Submarine, and Aviation Readiness Will Require Time and Sustained Management Attention*, GAO-19-225T (Washington, D.C.: December 12, 2018).

<sup>7</sup>GAO, *Navy Maintenance: Persistent and Substantial Ship and Submarine Maintenance Delays Hinder Efforts to Rebuild Readiness*, GAO-20-257T (Washington, D.C.: December 4, 2019).

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**The Navy Has Made Progress in Reducing Ship and Submarine Maintenance Delays, but Submarine Idle Time Continued to Grow**

We found that the Navy has made progress reducing ship and submarine maintenance delays in fiscal year 2020, but submarine idle time—periods in which a submarine is awaiting maintenance and unable to conduct normal operations—continued to grow. Idle time and maintenance delays reduce time available for training and operations and incur costs in a resource-constrained environment without providing operational capability. The Navy's readiness recovery is premised on the adherence to set deployment, training, and maintenance schedules. We reported in May 2016 on the difficulty that both the public and private shipyards were having in completing maintenance on time, and we have found that the Navy continues to struggle with this problem.<sup>8</sup>

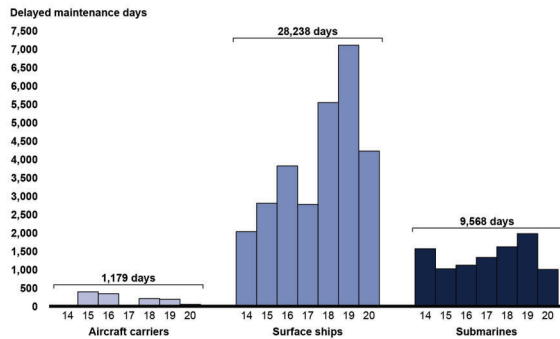
In December 2019, the Navy established a goal to reduce days of maintenance delay by 80 percent in fiscal year 2020 compared with fiscal year 2019, and eliminate days of maintenance delay by the end of fiscal year 2021. From fiscal year 2014 to the end of fiscal year 2020, the Navy incurred over 38,900 days of maintenance delays (see fig. 1). Our analysis of fiscal year 2020 data indicates that the Navy reduced the number of days of maintenance delay from fiscal year 2019 by 43 percent, short of its 80 percent reduction goal. Additionally, Navy projections show that delays will continue through at least fiscal year 2022.<sup>9</sup> According to Navy officials, it is already apparent that there will be delays in fiscal year 2021 because delays in fiscal year 2020 pushed back the start dates for some fiscal year 2021 maintenance periods. These officials said that the effects of COVID-19 on shipyard workforce capacity have been a major cause for the delays, in addition to other factors.

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<sup>8</sup>GAO, *Military Readiness: Progress and Challenges in Implementing the Navy's Optimized Fleet Response Plan*, [GAO-16-466R](#) (Washington, D.C.: May 2, 2016).

<sup>9</sup>The Navy projects that it will incur at least 3,955 days of maintenance delay in fiscal years 2021 and 2022, but the total number of days remains to be seen. Days of maintenance delay are allocated to the year in which they occur.

**Figure 1: Number of Days Maintenance was Delayed for Aircraft Carriers, Surface Ships, and Submarines, Fiscal Years 2014–2020**



Source: GAO analysis of Navy data. | GAO-21-225T

Note: Delayed maintenance days are allocated to the fiscal year in which they occurred. Data on delayed maintenance days for aircraft carriers for this analysis are limited to the Navy's public shipyards and do not include data from private shipyards. Data for submarines include days of maintenance delay for maintenance conducted at both public and private shipyards. Surface ship maintenance is conducted at private shipyards. We analyzed days of delayed maintenance data as of October 2020.

We also have found that Navy ships based overseas, which are maintained by a mix of Navy-operated facilities and private foreign contractors, experience significant and substantial delays. We reported in February 2020 that maintenance on surface ships based overseas took longer than planned for 50 of the 71 maintenance periods—or about 70 percent—that started during fiscal years 2014 through 2018.<sup>10</sup> More than half of these maintenance delays lasted a month or longer, which reduced the ships' availability for training and operations.

In May 2020, we reported that the Navy has experienced some benefits since shifting to the Multiple Award Contract-Multi Order (MAC-MO) contracting approach for ship maintenance work in 2015—namely, increased competition opportunities, more flexibility to ensure quality of

<sup>10</sup>GAO, *Navy Ship Maintenance: Actions Needed to Address Maintenance Delays for Surface Ships Based Overseas*, GAO-20-86 (Washington, D.C.: February 26, 2020).

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Interrelated Factors  
Contributing to Delays

work, and limited cost growth.<sup>11</sup> During the period between April 2015 and April 2019, 21 of 41 ship maintenance periods for major repair work cost less than initially estimated, and average cost growth across the 41 periods was 5 percent. However, we also found that schedule delays persisted, with only 12 of 41 MAC-MO periods completed on time and an average of 30 percent schedule growth across the 41 maintenance periods. To mitigate these delays, the Navy has identified and taken actions to implement lessons learned, including negotiating and funding undefined but expected increases in work at the time of contract award. However, these actions have not resolved the delays that result from the approval process the Navy often must use to obtain funds to complete this maintenance work.

Our prior work has found that the Navy's ability to successfully maintain its ships—meaning the completion of all required maintenance on time and within estimated cost—is affected by numerous factors occurring throughout a ship's life cycle.<sup>12</sup> Some of these factors involve decisions made during the acquisition phase, which occurs years before a ship arrives at a shipyard for maintenance. Other factors manifest during operational use of the ship or during the maintenance phase. Decisions based on these factors can be interrelated. For example, decisions to increase deployment lengths to meet the Navy's operational demands can result in declining ship conditions and material readiness. Also, the declining condition of the ships can increase the time that ships spend undergoing maintenance at the shipyards. The increased maintenance time at shipyards can have a ripple effect—officials may have to extend deployment lengths for other ships to compensate for the ships experiencing maintenance delays.

In July 2020, the Navy completed a report identifying the underlying causes of maintenance delays for aircraft carriers, surface ships, and

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<sup>11</sup>GAO, *Navy Ship Maintenance: Evaluating Pilot Program Outcomes Could Inform Decisions to Address Persistent Schedule Challenges*, GAO-20-370 (Washington, D.C.: May 11, 2020).

<sup>12</sup>GAO, *Navy Maintenance: Navy Report Did Not Fully Address Causes of Delays or Results-Oriented Elements*, GAO-21-66 (Washington, D.C.: October 29, 2020).

submarines.<sup>13</sup> In October 2020, we found that the Navy's report identified two key causes and several contributing factors regarding maintenance delays, but did not identify other causes.<sup>14</sup> For public shipyards, the Navy's report identified the key cause of maintenance delays as insufficient capacity relative to growing maintenance requirements. For private shipyards, the Navy's report identified the key cause as the addition of work requirements after a contract is awarded. These causes and other identified factors generally align with factors that we have previously identified as originating during the maintenance process. However, the Navy's report did not consider causes and factors originating in the acquisition process or as a result of operational decisions, as shown in figure 2.

**Figure 2: Factors Contributing to Delays in Navy Maintenance during Three Phases**

Acquisition	Operations	Maintenance
<ul style="list-style-type: none"> <li>✖ Ineffective requirements for ship reliability and maintainability</li> <li>✖ Ineffective acquisition oversight of issues impacting sustainment</li> <li>✖ Optimistic sustainment assumptions not evaluated</li> <li>✖ Providing ships to fleet with defects due to gaps in the Navy's delivery policy</li> <li>✖ Insufficient technical data</li> </ul>	<ul style="list-style-type: none"> <li>✖ Ships' low crew levels and performance</li> <li>✖ Deferred maintenance</li> <li>✖ Extended deployments</li> </ul>	<ul style="list-style-type: none"> <li>✓ Workforce capacity, capability, and prioritization</li> <li>✓ Unplanned work</li> <li>✓ Adherence to planning process</li> <li>✓ Condition of facilities and equipment</li> <li>✓ Insufficient shipyard capacity</li> <li>✓ Availability of parts and materials</li> <li>✓ Information technology infrastructure</li> <li>✖ Modernizations and alterations</li> </ul>

✓ = Identified in the Navy's July 2020 report as contributing to maintenance delays  
✖ = Not identified in the Navy's July 2020 report as contributing to maintenance delays

Source: GAO and GAO analysis of Navy documents. | GAO-21-225T

Below we provide details on a number of the factors—acquisition decisions affecting sustainment, workforce challenges at the Navy shipyards, and poor condition of Navy shipyard facilities and equipment—affecting the timeliness of ship and submarine maintenance. When maintenance is not completed on time, fewer ships are available to

<sup>13</sup>Assistant Secretary of the Navy (Research, Development, and Acquisition), *Report to Congress on Aircraft Carrier, Surface Ship, and Submarine Maintenance Delays* (July 22, 2020). The conference committee report accompanying a bill for the Fiscal Year 2020 Consolidated Appropriations Act directed the Navy to conduct an analysis to identify the underlying causes of aircraft carrier, surface ship, and submarine maintenance delays and to submit a report on its findings to congressional defense committees and GAO. H. Rep. Comm. Print No. 38-678, *Consolidated Appropriations Act, 2020*, 138 (January 2020).

<sup>14</sup>GAO-21-66. H. Rep. Comm. Print No. 38-678, *Consolidated Appropriations Act, 2020*, 138 (January 2020) also included a provision for GAO to submit a review of the Navy's report to the congressional defense committees.

Readiness Challenges  
Stemming from Lack of  
Sustainment Analysis during  
the Acquisition Process

conduct training or operations and the Navy can incur significant costs without obtaining operational benefits. We have made recommendations to address them and the Navy has several efforts under way to improve its maintenance operations. However, our work has shown that these will take years to implement, and will require sustained management attention and funding above current levels.

Our prior work has found that the Navy routinely delivers ships to the fleet that need significant maintenance from the first day of service, which leads to backlogs that erode Navy readiness.<sup>15</sup> In March 2020, we found 150 examples of systemic maintenance problems across every class of ship the Navy built during the last 10 years.<sup>16</sup> Sailors showed us problems like failed engines, faulty electronics, and clogged toilets that broke shortly after construction and cost the Navy over \$4 billion to fix.<sup>17</sup> The following provide a few examples of sustainment problems that could have been prevented had the Navy identified, evaluated, or mitigated their risks during the acquisition process when ships are designed and constructed:

- The Navy previously determined that over 4,000 parts and systems on Virginia class submarines would not need any maintenance for the duration of the submarine's life. However, many of these parts and systems are consistently failing. This has added unplanned cost and effort to ship maintenance periods. During the acquisition process, the Navy did not fully test and assess the likelihood that most of these parts and systems would be reliable enough to bypass maintenance. As a result, Navy maintenance officials stated that the fleet is planning to pay \$360 million over the next 12 years to maintain a part of the propulsion system that it assumed would not need any maintenance for the life of the submarine.
- During the USS *Makin Island's* (LHD 8) first deployment, problems arose with the automated machinery control system that controls

<sup>15</sup>GAO, *Navy Shipbuilding: Policy Changes Needed to Improve the Post-Delivery Process and Ship Quality*, GAO-17-418 (Washington, D.C.: July 13, 2017).

<sup>16</sup>GAO, *Navy Shipbuilding: Increasing Focus on Sustainment Early in the Acquisition Process Could Save Billions*, GAO-20-2 (Washington, D.C.: March 24, 2020).

<sup>17</sup>These problems stemmed from shipbuilding programs not identifying, evaluating, or mitigating sustainment risks during the acquisition process. GAO found that it would cost the Navy at least \$4.2 billion to correct the 30 percent of these problems for which the Navy had data on estimated repair costs.

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nearly all shipboard systems on LHD 8 and LHA 6 class ships.<sup>18</sup> The system overheated, leading to a failure of the electrical distribution system and a loss of power to the entire ship on multiple occasions. The Navy selected the machinery control system early in the acquisition process to enable reduced crew sizes and sustainment costs. At the end of the shipbuilding process, the Navy discovered that the system required more maintenance and sustainment effort than planned. Further, the technical data provided by the manufacturer, according to Navy engineers, were insufficient for the sailors to operate, troubleshoot, and repair the system. As a result, the Navy has spent over \$90 million to repair the software and replace key components of the system on USS *Makin Island* (LHD 8), USS *America* (LHA 6), and USS *Tripoli* (LHA 7).

In all, we found significant deficiencies in how the Navy considers and plans for ship sustainment during the acquisition process. Specifically, we identified deficiencies in the following areas:

- **Developing requirements:** Shipbuilding programs' requirements for sustainment reflect weaknesses with how DOD policy defines these requirements for ships. Sustainment requirements should inform acquisition decisions, such as when developing a ship's design, because they are critical to the sustainability of a ship class. However, the Navy's sustainment requirements do not provide key information on how reliable and maintainable mission-critical systems should be and, therefore, cannot adequately inform acquisition decisions, such as adding redundancy to a key component to ensure availability. For example, the Navy's new FFG(X) frigate class ship can meet its reliability requirement even if it experiences catastrophic failures for over 25 percent of the time it is available for operations.
- **Planning for maintaining ships:** Shipbuilding programs did not consistently address sustainment risks in acquisition planning documents, such as independent logistics assessments and cost estimates. The Navy's operating and support costs included in cost estimates did not capture all sustainment risks that could affect costs or evaluate sensitivity to changing sustainment assumptions, contrary to DOD and Navy cost estimating guidance. As a result, for six

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<sup>18</sup>LHD 8 and LHA 6 class ships are amphibious assault ships.

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shipbuilding programs whose costs we could assess, the Navy had underestimated sustainment costs by \$130 billion.<sup>19</sup>

- **Evaluating ship sustainment during acquisition reviews:** We found that the Navy rarely focused on sustainment during acquisition program reviews with critical Navy leadership despite guidance directing ship programs to do so. The Navy has begun making some changes to its acquisition oversight process, such as developing sustainment program baselines and adding a sustainment oversight review. While positive, these changes focus on considering sustainment after key decisions are made rather than earlier in the acquisition process prior to these decisions. We also found that DOD is not required to provide detailed information about shipbuilding programs' sustainment cost growth to Congress. As such, Congress does not have full insight into the extent of shipbuilding programs' cost growth and why such growth occurred.

To address these deficiencies, we made 11 recommendations to the Navy to improve the costs, logistics, and performance of ships throughout their lifecycles by giving more consideration to ship sustainment early in the acquisition process. We recommended such actions as: improving DOD guidance regarding sustainment requirements, conducting sensitivity analyses in operating and support cost estimates, considering risk during sustainment planning, making changes to ensure the efficacy of independent logistics assessments, and implementing a sustainment program baseline, among others. We also raised a matter for Congress to consider developing an oversight mechanism for evaluating shipbuilding programs' sustainment cost estimate growth during the acquisition process, with requirements for the Navy to: (1) report sustainment cost estimate growth information to Congress and (2) reassess shipbuilding programs that are experiencing a high level of sustainment cost estimate growth. DOD concurred or partially concurred with all 11 recommendations, but did not describe the specific actions it is planning to take to address some of our recommendations. Absent specific actions by DOD and Navy leadership, the Navy is at risk of continuing to provide ships to the fleet that are incomplete, unreliable, and cost more than expected to maintain.

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<sup>19</sup>The six shipbuilding programs consist of LPD 17 class amphibious transport dock ships, DDG 1000 class destroyers, LHA 6 class amphibious assault ships, CVN 78 class aircraft carriers, Littoral Combat Ship seaframes, and SSN 774 class submarines. For more information, see [GAO-20-2](#).

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Workforce Challenges at Naval Shipyards

We reported in December 2018 that the Navy faced a variety of workforce challenges at the four naval shipyards, such as hiring personnel in a timely manner and providing personnel with the training they needed to gain proficiency in critical skills.<sup>20</sup> The Navy has noted that some occupations require years of training before workers become proficient. According to Navy officials, a large portion of its workforce is inexperienced. For example, 45 percent of the Puget Sound's and 30 percent of the Portsmouth Naval Shipyard's skilled workforces had fewer than 5 years of experience as of December 2018. Further, workforce shortages and inexperience had contributed to lengthy maintenance delays such as occurred with two submarines at Pearl Harbor Naval Shipyard in 2014 and 2015. Maintenance periods for these submarines were delayed by approximately 20 months each, in part because of shortages in skilled personnel.

Most of DOD's depots, which include the naval shipyards, have taken actions to maintain critical skills through retention incentives, bonuses, and awards. However, we found that neither the depots, their higher-level service component commands, nor the services have conducted an assessment to determine the effectiveness of these actions. We recommended that the services, including the Navy, assess the effectiveness of their actions to maintain critical skills in the depot workforce, and DOD agreed. As of June 2020, the Navy was still in the process of collecting information to assess the effectiveness of these actions.

Further, we reported in August 2020 that the Navy has consistently relied on high levels of overtime to carry out planned work at its shipyards.<sup>21</sup> We found that overtime among certain production shops, such as painting or welding, were high, averaging from 25 to 32 percent for fiscal years 2015 through 2019, with peak overtime as high as 45 percent.<sup>22</sup> Shipyard officials told us that production shops at all four shipyards were working beyond their capacity and that such high rates of overtime can lead to

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<sup>20</sup>GAO, *DOD Depot Workforce: Services Need to Assess the Effectiveness of Their Initiatives to Maintain Critical Skills*, [GAO-19-51](#) (Washington, D.C.: Dec. 14, 2018).

<sup>21</sup>GAO, *Navy Shipyards: Actions Needed to Address the Main Factors Causing Maintenance Delays for Aircraft Carriers and Submarines*, [GAO-20-588](#), (Washington, D.C.: August 20, 2020).

<sup>22</sup>A shop working 45 percent overtime in a 40-hour work week would mean an average of 58 hours worked that week per person in the shop.

Cost Estimates for Improving  
the Poor Conditions and Lack  
of Capacity at Naval Shipyards

diminished productivity. We recommended that the Navy update its workforce planning to avoid the consistent use of overtime, and the Navy agreed.

We reported in September 2017 that the poor condition of facilities and equipment at the naval shipyards contributed to maintenance delays for aircraft carriers and submarines, hindering the shipyards' ability to support the Navy.<sup>23</sup> Specifically, we found that the average condition of shipyard facilities was poor, that the shipyards faced threats from issues such as chronic flooding and seismic hazards, and that shipyard equipment was generally past its expected service life. Equipment that is past its expected service life can pose an increased risk for maintenance delays or higher maintenance costs, affecting the depots' ability to conduct work. As we have previously reported, aging equipment can present a number of challenges, such as more frequent breakdowns, less effective or efficient operation, and safety hazards.<sup>24</sup>

We also reported in 2019 that the naval shipyards cannot support 68 of the 218 maintenance periods—almost a third—that aircraft carriers and submarines will require through 2040, because they lack sufficient dry dock capacity.<sup>25</sup> Specifically, several of the Navy's 17 dry docks will become obsolete after the Los Angeles class submarines are retired, because they will be too small or lack the appropriate shore-side support to accommodate newer classes of submarines.<sup>26</sup> In addition, no dry dock at any of the naval shipyards can currently support repairs to the Ford class aircraft carrier, even though the Navy accepted delivery of the first ship of that class in 2017.

The Navy has begun to implement a major effort—the Shipyard Infrastructure Optimization Program—that is intended to significantly improve the condition of shipyard facilities and equipment, but it will require significant time, resources, and sustained management attention to implement. This plan is designed to address the bulk of the Navy's dry-

<sup>23</sup>GAO, *Naval Shipyards: Actions Needed to Improve Poor Conditions that Affect Operations*, GAO-17-548. (Washington, D.C.: September 12, 2017).

<sup>24</sup>GAO, *Military Depots: Actions Needed to Improve Poor Conditions of Facilities and Equipment that Affect Maintenance Timeliness and Efficiency*, GAO-19-242 (Washington, D.C.: April 29, 2019).

<sup>25</sup>GAO, *Naval Shipyards: Key Actions Remain to Improve Infrastructure to Better Support Navy Operations*, GAO-20-64. (Washington, D.C.: Nov. 25, 2019).

<sup>26</sup>GAO-20-64.

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dock capacity issues and identify the optimal placement of facilities and major equipment at each naval shipyard. The Navy estimates that these changes can ultimately increase its maintenance efficiency by reducing the distance that workers and material will have to travel within the shipyards during the maintenance period. According to the Navy, more efficient layouts at the shipyards have the potential to save about 328,000 labor days per year—an amount roughly equal to the labor needed for an additional submarine maintenance period annually. However, the Navy estimated that these facility improvements will take 20 years to complete. Further, the Navy estimates that it will take 30 years to bring the average age of its equipment to within industry standards.

The Navy estimated in 2018 that its efforts to improve the naval shipyards would require \$21 billion over 20 years to implement. However, we found in November 2019 that this \$21 billion estimate does not include inflation and other significant costs, such as those for utilities, roads, or environmental remediation, which could add billions to the final cost. Moreover, even at a cost of \$21 billion, this effort would require funding levels beyond what the Navy has requested for shipyard infrastructure in recent years. In November 2019, we recommended that the Navy prepare more accurate cost estimates, using best practices, so that it can request accurate funding from Congress and avoid common pitfalls associated with inaccurate estimates, such as cost overruns, missed deadlines, and performance shortfalls.<sup>27</sup> We also recommended that the Navy take steps to improve its cost estimate prior to the start of its primary facility improvement effort. The Navy concurred with these recommendations, and plans to update its estimates in 2022 when it completes its planning efforts to optimize the layout of the shipyards.

#### Effects of Maintenance Delays on Ship Availability for Training and Operations

When maintenance is not completed on time, fewer ships are available to conduct training or operations and the Navy can incur significant costs without obtaining operational benefits. We reported in December 2019 that maintenance delays had resulted in the equivalent of the Navy losing 19 surface ships in fiscal year 2019.<sup>28</sup> Days of maintenance delay incurred in fiscal year 2020 equate to the loss of 11 surface ships.

Further, maintenance delays are costly. In November 2018, we examined maintenance delays for attack submarines and reported that the Navy

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<sup>27</sup>GAO-20-64.

<sup>28</sup>GAO-20-257T.

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had incurred significant operating and support costs to crew and maintain attack submarines that were delayed during maintenance periods.<sup>29</sup> We estimated that from 2008 to 2018, the Navy spent \$1.5 billion to support attack submarines that provided no operational capability—attack submarines that were sitting idle and no longer certified to conduct normal operations while waiting to enter the shipyards and those whose maintenance was delayed while they were at the shipyards.<sup>30</sup> We recommended that the Navy conduct a business case analysis to inform its allocation of maintenance workload across public and private shipyards. The Navy concurred with this recommendation and, in December 2018, issued a five-year submarine maintenance plan outlining actions to reduce submarine idle time and maintenance delays.

Our analysis shows that submarine idle time continues to grow. In August 2020, we reported that submarine idle time increased year over year from 100 days in fiscal year 2015 to 1,019 days in fiscal year 2019—a 919 percent increase (see fig. 3).<sup>31</sup> Further analysis of the Navy's idle time data shows that idle time grew to 1,188 days during fiscal year 2020, and the Navy projects idle time to increase to 1,424 days during fiscal year 2021. Specifically, the Navy projects that all 11 submarine maintenance periods planned to start in fiscal year 2021, or that incurred idle time in both fiscal years 2020 and 2021, will incur an average of approximately 129 days of idle time during fiscal year 2021.<sup>32</sup>

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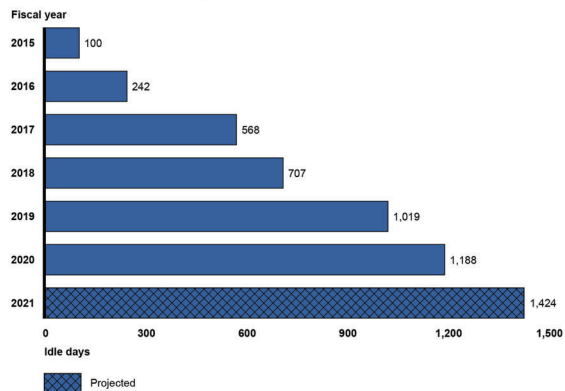
<sup>29</sup>GAO, *Navy Readiness: Actions Needed to Address Costly Maintenance Delays Facing the Attack Submarine Fleet*, [GAO-19-229](#) (Washington, D.C.: Nov. 19, 2018).

<sup>30</sup>We calculated the costs in fiscal year 2018 constant dollars. While acknowledging the magnitude of these costs, Navy officials stated that there may be some benefits that could be realized from supporting these idle attack submarines since crews on idle attack submarines can conduct some limited training. [GAO-19-229](#).

<sup>31</sup>[GAO-20-588](#).

<sup>32</sup>As of October 2020, the Navy projected that five submarines will incur 729 days of idle time in fiscal year 2022, or about half of the idle time the Navy expects to incur during fiscal year 2021. However, any delays in submarine maintenance in fiscal year 2021 may negatively affect idle time. Delays in starting and completing maintenance can lead to a "bow wave effect" where delays in completing one maintenance period can affect the start time of the next scheduled maintenance period.

Figure 3: Idle Time Incurred or Projected prior to Submarine Maintenance Periods from Fiscal Years 2015 through 2021



Source: GAO analysis of Navy data. | GAO-21-225T

Note: Idle time occurs on submarines whose safety certifications have expired or will soon expire and prevent the submarines from performing submerged operations while awaiting available facilities to begin a maintenance period.

The July 2020 fire aboard the USS *Bonhomme Richard* (LHD 6) as it was nearing the end of a scheduled maintenance period will likely have downstream effects on the Navy's operations as well its capacity to maintain other ships. USS *Bonhomme Richard* is one of only 10 amphibious assault ships that forms the centerpiece of an amphibious ready group or expeditionary strike group. While damage assessments are ongoing, the loss of this capability while repairs are under way—or the more severe prospect of permanently removing the ship from the fleet—will likely require that other ships take up the USS *Bonhomme Richard*'s expected share of operations until it is repaired or replaced. This may have cascading readiness effects on the substitute ships assuming the damaged ship's operational load, such as higher operational tempos, compressed or deferred maintenance and unit-level training periods, and reduced downtime for ship crews.

Further, emergent repairs, such as those following the fatal 2017 collisions of both the USS *Fitzgerald* (DDG 62) and the USS *John S.*

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*McCain* (DDG 56), show that extensive repairs tend to take longer and cost more than initially estimated. For example, Navy officials told us that the USS *John S. McCain*'s repairs took over twice as long as estimated, and both ships experienced complications during their repairs that contributed to schedule and cost increases, such as additional damage discovered over the course of their overhauls. The unexpected schedule and cost growth to return both of these ships to the fleet put further strain on the Navy's budgets and operational schedules, and may offer lessons for the Navy should it decide to repair the fire damage on the USS *Bonhomme Richard*.

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**Long-Term Personnel  
Challenges Hinder the  
Navy's Efforts to Rebuild  
Readiness**

In May 2017, we reported that the Navy's effort to reduce crew sizes in 2003 through 2012 may have been leading to overburdened crews working long hours.<sup>33</sup> These changes also corresponded with increases in maintenance costs that outweighed the savings achieved through reduced personnel costs. In addition, changes made during this time to the Navy's process for determining crew requirements—the number and skill mix of sailors needed on the Navy's ships—did not fully account for all ship workload. Navy officials told us that shifts in maintenance workload from the organizational and intermediate levels to depot-level maintenance increased overall maintenance costs. This change occurred in part because reduced crew sizes resulted in minor maintenance being deferred; which led to more costly issues that had to be addressed later at the depot level. We recommended steps to help ensure that the Navy's crew requirements meet the needs of the existing and future surface fleet.

The Navy has addressed our recommendations by revising the factors used to calculate ship crew sizes, studying in-port workload, and using these changes to begin updating the crew requirements for its ship classes. To date, the Navy has recalculated crew size requirements for five ship classes, and it expects to complete studies for the remaining surface ship classes through 2024. For example, these efforts have resulted in average increases to crew sizes of 32 personnel for DDG 51 class destroyers and 28 personnel for CG 47 class cruisers. However, as the Navy continues to increase the required size of its crews over the next several years, it will need to demonstrate that it can assign crew members to these ships to meet the higher crew levels required.

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<sup>33</sup>GAO, *Navy Force Structure: Actions Needed to Ensure Proper Size and Composition of Ship Crews*, [GAO-17-413](#) (Washington, D.C.: May 18, 2017).

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In addition to updating ships' crew requirements, the Navy has also set targets that establish minimum thresholds for filling ship billets with qualified sailors. The Navy has established a minimum threshold of filling at least 95 percent of authorized billets in its ship crews with sailors (referred to as fill), with a minimum goal of 92 percent of those sailors having the right qualifications for the billet (known as fit). The Navy has prioritized crewing its surface ships that are homeported overseas and other deploying ships. According to Navy officials and quarterly manning reports, the Navy is generally meeting its fit and fill targets, based on the number of billets that were authorized before it increased the requirements.

However, meeting the increased requirements will pose challenges. Navy officials have noted that there is a lag between crew requirements being increased and the funding, or authorization, of additional billets. Funding additional billets within the Navy's limited end strength is the first challenge, since there is a constraint on the number of sailors available for distribution across the fleet. The second and perhaps longer-term challenge is recruiting and retaining enough qualified sailors to meet the Navy's rising crew targets and ensuring that ships are safely operated. We have ongoing work examining the Navy's crewing issues and the management of fatigue in ship crews; we plan to report on the results of that work in early 2021.

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#### The Navy's Training Challenges Hinder Readiness Rebuilding

##### Improving Crew Certifications and Collective Training

In our prior work, we reported on challenges related to (1) expired crew certifications for surface ships (2) the training of Surface Warfare Officers (SWO) and (3) Navy and Marine Corps training ranges. The Navy has taken steps to address these challenges as well as others, such as the training of enlisted sailors. However, many of these actions are in the early stages and we have ongoing work examining the Navy's efforts.

Following two Navy ship collisions in 2017, the Navy focused on training surface ship crews to its existing standards. Rather than allow crews to operate with expired training certifications, the Navy has worked to ensure that surface ships are certified prior to deploying. For example, the Navy established controls to limit waivers that allowed training lapses to worsen, and it now requires multiple high-level approvals for ships to operate uncertified. Our work has shown that the percentage of lapsed certifications on cruisers and destroyers in Japan decreased significantly,

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from 41 percent of certifications expired in September 2017, to 9 percent of certifications expired in November 2018, showing a marked improvement.<sup>34</sup> Navy officials have attested that these efforts to certify crews are continuing.

Additionally, the Navy has plans to phase high-level collective training over the next several years into the operational schedules of its ships that are homeported in Japan. Previously, advanced and integrated training involving multiple ships was conducted ad hoc, if at all, for ships homeported in Japan. Such collective training is important, because the 2018 National Defense Strategy states that the department's principal priority is to prepare for threats from strategic competitors due to the magnitude of the threat they pose. However, in November 2018, officials from Fleet Forces Command told us that the command's training approach to prepare for advanced adversaries would not be fully implemented across the fleet for several years. These efforts depend on the investment of billions of dollars over the next decade in live, virtual, and constructive training needed to replicate the high-end threats posed by adversaries. We have ongoing work examining the Navy's collective training efforts and plan to report on the results of that work in early 2021.

Changes to Training for both  
Officers and Enlisted  
Personnel

Since 2017, the Navy has made numerous changes to enhance SWO ship-driving training and has plans for further changes. The Navy expects its efforts to triple the number of initial ship-driving training hours for SWOs, by 2021, over the number of training hours that were provided prior to the 2017 collisions. The Navy has added classroom and simulator time to existing training courses to improve skills and is developing two additional simulator-based ship-driving courses for 2021. These improvements hinge on the completion of two new simulator-based training facilities, which are scheduled for completion in June 2021 and January 2023.

The Navy also has added skill checks, to be conducted throughout a SWO's career to ensure that each SWO has basic ship-driving skills. However, as we reported in November 2019, the Navy had at that time not put key processes and assessments in place to comprehensively evaluate the effectiveness of its changes to ship-driving training.<sup>35</sup> Senior Navy officials stated that it could take 16 years or more to know whether

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<sup>34</sup>GAO-19-225T.

<sup>35</sup>GAO, *Navy Readiness: Actions Needed to Evaluate the Effectiveness of Changes to Surface Warfare Officer Training*, GAO-20-154 (Washington, D.C.: Nov. 14, 2019).

Capability and Capacity of  
Navy and Marine Corps  
Training Ranges

the planned changes were effective in increasing the ship-driving proficiency of commanding officers across the fleet and that they intended to closely monitor the implementation of changes to the training. We made several recommendations with which the Navy agreed; however, the Navy does not plan to fully implement the recommendations until March 2023.<sup>36</sup>

In an effort to provide more timely and targeted individual training to enlisted sailors, the Navy has created the Ready Relevant Learning initiative, which is in the early stages of implementation and includes plans to divide some training into phased blocks, significantly overhaul most training curriculums, and eventually modernize the means by which training is delivered. We have ongoing work reviewing the implementation of this initiative and expect to issue a report on its progress in early 2021.

DOD has identified several challenges to the capability and capacity of Navy and Marine Corps training ranges, particularly to meet the direction in the latest National Defense Strategy for the military services to train to counter advanced adversaries and competitors. For example, DOD has reported that the current size of the Navy's premier range for advanced aviation warfare training at the Fallon Range Training Complex in Nevada severely restricts the extent to which the Navy can realistically train using its various weapons systems as they would be employed in combat. In addition, the boundaries of the Fallon range have not changed to accommodate the capabilities of modern weapons. Similarly, DOD has reported that Marine Corps ranges lack the capability to fully exercise a large-scale, realistic training scenario. For example, the Marine Corps premier combat training range at Twentynine Palms, California, is unable to support a full-scale, live-fire Marine Expeditionary Brigade exercise. The Marine Corps is in the process of expanding the boundaries of these training ranges in an effort to increase its ability to conduct more realistic training, but it is still negotiating the use of the airspace above the expanded land space, so its current use of these training ranges is limited.

<sup>36</sup>Consistent with our recommendations, in H.R. Rep. No. 116-442, at 101 (2020), accompanying a bill for the National Defense Authorization Act for Fiscal Year 2021, the House Armed Services Committee directed the Navy to conduct a top-down assessment of Navy surface warfare training to include an objective assessment of the status of seamanship skills, with a report due to the congressional defense committees not later than February 2, 2022.

### Sustainment and Personnel Challenges Limit the Recovery of Navy and Marine Corps Aircraft

Our work has shown that Navy and Marine Corps aircraft mission capable rates—the percentage of total time when the aircraft can fly and perform at least one mission—have been negatively impacted by aging aircraft, delayed maintenance, and insufficient supply support. The growing F-35 program, which is meant to replace many aging aircraft, has presented additional operational and sustainment challenges, which will likely persist into the future. Shortfalls in maintenance personnel further limit readiness recovery across legacy air platforms.

### Maintenance and Supply Challenges Limit Availability of Aging Aircraft

Navy and Marine Corps aircraft mission capable rates—used to assess the health and readiness of an aircraft fleet—have been negatively affected by challenges associated with aging aircraft fleets, depot maintenance, and supply support that reduce the services' ability to keep aviation units ready.<sup>37</sup> The Navy and Marine Corps spend billions of dollars each year on sustainment, such as for spare parts and depot maintenance, to meet mission capable goals that are based on operational and training needs.

We reported in August 2020 that of the 19 individual fixed- and rotary-wing types of Navy and Marine Corps aircraft we examined, only one met the service-established mission capable goal for fiscal year 2019.<sup>38</sup> Furthermore, for fiscal year 2019

- three were from 6 to 15 percentage points below the goal; and
- 16 were more than 15 percentage points below the goal, including 11 that were 25 or more percentage points below the goal.

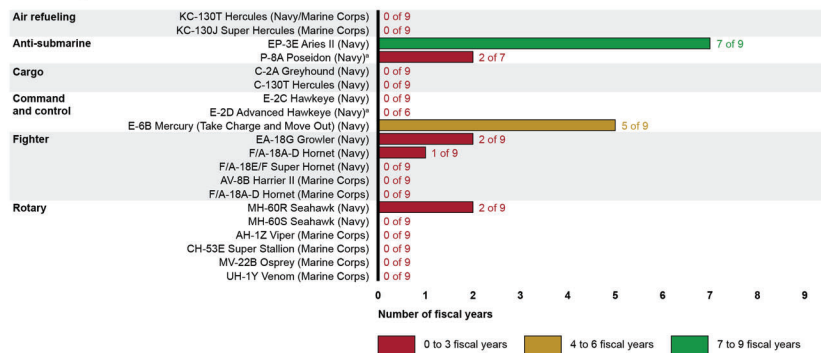
The Navy and Marine Corps ability to meet annual mission capable goals has been a long-standing issue, as shown in figure 4. From fiscal year 2011 through fiscal year 2019, both services were generally unable to meet annual mission capable goals for the 19 aircraft we reviewed. Specifically, only two types of aircraft—EP-3E Aries II and E-6B

<sup>37</sup>GAO, *Weapon System Sustainment: Aircraft Mission Capable Rates Generally Did Not Meet Goals and Cost of Sustaining Selected Weapon Systems Varied Widely*, GAO-21-101SP (Washington, D.C.: November 19, 2020). This was a public version of a more detailed August 2020 sensitive report: GAO, *Weapon System Sustainment: Aircraft Mission Capable Rates Generally Did Not Meet Goals and Cost of Sustaining Selected Weapon Systems Varied Widely*, GAO-20-67SPSU (Washington, D.C.: Aug. 27, 2020). We also reported on aircraft sustainment in *Weapon System Sustainment: Selected Air Force and Navy Aircraft Generally Have Not Met Availability Goals, and DOD and Navy Guidance Need to Be Clarified*, GAO-18-678 (Washington, D.C.: Sept. 10, 2018).

<sup>38</sup>The Navy and Marine Corps F/A-18A-D Hornet fleets have different goals, although we are counting them as one type of aircraft.

Mercury—met the goals in a majority of the years from fiscal year 2011 through fiscal year 2019. Furthermore, 14 types of aircraft did not meet the goal in any fiscal year.

Figure 4: Number of Times Selected Navy and Marine Corps Aircraft Met Their Annual Mission Capable Goal, Fiscal years 2011 through 2019



Source: GAO analysis of Navy data. | GAO-21-225T

Note: Navy F/A-18A-D Hornet aircraft and Marine Corps F/A-18A-D Hornet aircraft are listed separately above because they had different mission capable goals.

Additionally, the average mission capable rate for the Navy's and Marine Corps' 19 selected types of aircraft decreased from fiscal year 2011-2019.<sup>39</sup> Specific mission capable rate data are considered sensitive by the Navy and the Marine Corps, and cannot be discussed in detail.

In addition to the mission capability goals established by the Navy and Marine Corps, in September 2018, the Secretary of Defense issued a memorandum emphasizing that a key component of implementing the 2018 National Defense Strategy is ensuring the mission capability of critical aviation platforms.<sup>40</sup> The memorandum established a goal of

<sup>39</sup>GAO-21-101SP.

<sup>40</sup>Secretary of Defense Memorandum, *NDS Implementation-Mission Capability of Critical Aviation Platforms* (Sept. 17, 2018).

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achieving a minimum of 80-percent mission capable rates for various DOD aircraft, including the Navy's F/A-18A-D Hornet, F/A-18E/F Super Hornet and the EA-18G Growler, by the end of fiscal year 2019. We reported in December 2018 that program officials within DOD and the Navy had told us that this goal would be challenging to achieve by the end of fiscal year 2019.<sup>41</sup>

Our analysis showed that mission capable rates generally did improve for these systems over the course of fiscal year 2019, including meeting the 80 percent mission capable rate at particular points of time in fiscal year 2019. However, we found that none of these aircraft achieved the mission capability goal when mission capable rate data were averaged for each day in fiscal year 2019. Navy officials noted that the Navy continues to work at sustaining the progress made during fiscal year 2019. The details of our analysis were deemed sensitive by the Navy and therefore are omitted here.

During the process of conducting our analysis to assess whether the Navy had met the 80 percent goal identified by the Secretary of Defense, we determined that the Navy has two information technology systems that track mission capable rates. These systems use different approaches, and produce different results. According to Navy officials, the Navy uses mission capable rate data from its Aviation Maintenance Supply Readiness Reporting (AMSRR) information technology system to evaluate its progress against the Secretary's 80 percent mission capable goal. These officials further stated that the AMSRR data they are using to track progress against the Secretary's 80 percent mission capable goal allows for a better assessment of the Navy's ability to "fight tonight" because it measures mission capability at a point in time on each day.

The Navy also maintains mission capable rate data, as well as other sustainment data, in its Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE) information technology system. Navy officials acknowledge that DECKPLATE data provide a more comprehensive measure of the health of aircraft, systems, and components because they measure mission capability based on a percentage of the total time the aircraft is available.

The Navy's AMSRR mission capable rates for fiscal year 2019 are higher for the 19 Navy and Marine Corps aircraft than the DECKPLATE mission

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<sup>41</sup>GAO-19-225T.

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capable rates for those aircraft for the same fiscal year. While three aircraft—the EP-3E Aries II, the E-6B Mercury, and the F/A-18A-D Hornet—met the service's goals using AMSRR mission capable rate data, one aircraft met the service's mission capable goal for fiscal year 2019 using the DECKPLATE mission capable rates. As there are trade-offs to the different approaches, we did not evaluate the efficacy of the Navy's tracking and reporting of mission capable rates and did not make any related recommendations.

According to the Navy, the pace of operations has increased wear and tear on its aircraft and decreased the time available for maintenance and modernization, which are especially necessary for an aging fleet. For example, the average age of an F/A-18A-D Hornet is nearly 28 years, of an AV-8B Harrier over 24 years, and of a C-2A Greyhound over 32 years. Both services expect to use these aircraft for the foreseeable future and in some cases until 2030.

The Navy and the Marine Corps have also faced delays in the delivery of the F-35 to replace their legacy F/A-18A-D Hornets and AV-8B Harriers.<sup>42</sup> To compensate for the delays, the Navy and the Marine Corps are procuring additional aircraft, such as the F/A-18E-F Super Hornet, and plan to extend the service lives and upgrade the capabilities of their legacy aircraft. However, the sustainment of the Navy and Marine Corps legacy aircraft fleet faces several key challenges (see fig. 5).

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<sup>42</sup>GAO-21-101SP and GAO-18-678.

Figure 5: Sustainment Challenges Affecting Selected Navy and Marine Corps Aircraft

	Aging aircraft			Maintenance			Supply support			
	Delays in acquiring replacement aircraft	Service life extension <sup>a</sup>	Unexpected replacement of parts and repairs	Access to technical data	Delays in depot maintenance	Shortage of trained maintenance personnel	Unscheduled maintenance	Diminishing manufacturing source <sup>b</sup>	Parts obsolescence <sup>c</sup>	Parts shortage and delay
Air refueling										
KC-130T Hercules (Navy/Marine Corps)		•	•		•				•	•
KC-130J Super Hercules (Marine Corps)		•	•	•	•					•
Airborne tankers										
EP-3E Aries II (Navy)								•		
P-8A Poseidon (Navy)				•						•
Cargo										
C-2A Greyhound (Navy)		•	•		•		•	•	•	
C-130T Hercules (Navy)		•	•		•		•	•	•	
Command and control										
E-2C Hawkeye (Navy)			•		•		•	•	•	•
E-2D Advanced Hawkeye (Navy)					•		•	•	•	
E-4B Mercury (Take Charge and Move Out) (Navy)		•	•						•	
Fighter										
EA-18G Growler (Navy)					•	•		•	•	•
F/A-18A-D Hornet (Navy/Marine Corps)	•	•	•		•	•	•	•	•	
F/A-18E/F Super Hornet (Navy)		•	•		•	•		•	•	•
AV-8B Harrier II (Marine Corps)	•		•		•	•		•	•	
Utility										
MH-60R Seahawk (Navy)				•		•	•			•
MH-60S Seahawk (Navy)				•		•	•			•
AH-1Z Viper (Marine Corps)							•			•
CH-53E Super Stallion (Marine Corps)		•	•	•	•	•		•	•	•
MV-22B Osprey (Marine Corps)			•	•		•	•			•
UH-1Y Venom (Marine Corps)						•	•			•

Source: GAO analysis of Navy information. | GAO-21-225T

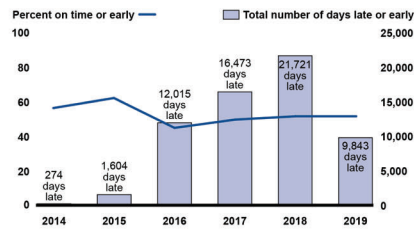
<sup>a</sup>A service life extension refers to a modification to extend the service life of an aircraft beyond what was planned.<sup>b</sup>Diminishing manufacturing sources refers to a loss or impending loss of manufacturers or suppliers of items.<sup>c</sup>Obsolescence refers to a lack of availability of a part due to its lack of usefulness or its no longer being current or available for production.

Furthermore, our prior work examining depot maintenance has shown that the Navy and the Marine Corps face four interrelated challenges. Specifically,

- **Considerable declines in on-time performance at Navy aviation depots.** We reported in June 2020 that the Navy's aviation depots—referred to as Fleet Readiness Centers—were late in completing aviation depot maintenance of selected fixed-wing aircraft from fiscal

years 2014 through 2019.<sup>43</sup> As shown in figure 6, the annual average percentages for on-time or early-completion maintenance ranged from 45 to 63 percent. In total, the maintenance for selected Navy fixed-wing aircraft has taken over 62,000 more days than expected since fiscal year 2014. Maintenance delays can cause the services to incur operating and support costs without receiving an operational benefit from the weapon system. Lack of operational weapon systems also hinders training leading to a reduction in readiness.

**Figure 6: Navy Percentages of Depot Maintenance Completed On Time or Early and Total Days Late or Early for Selected Fixed-Wing Aircraft, Fiscal Years 2014 through 2019**

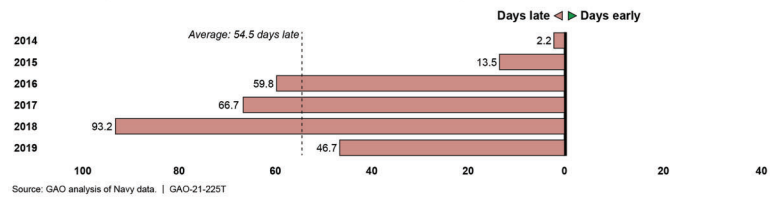


Source: GAO analysis of Navy data. | GAO-21-225T

In addition, our analysis of the maintenance timeliness data on a per aircraft basis shows similar trends (fig. 7). The Navy completed depot maintenance on average nearly 55 days late per aircraft. We recommended that the Navy use historical data to analyze turnaround time and establish accurate turnaround time targets for depot maintenance; the Navy concurred.

<sup>43</sup>GAO, *Military Depots: The Navy Needs Improved Planning to Address Persistent Aircraft Maintenance Delays While Air Force Maintenance Has Generally Been Timely*, GAO-20-390 (Washington, D.C.: June 23, 2020).

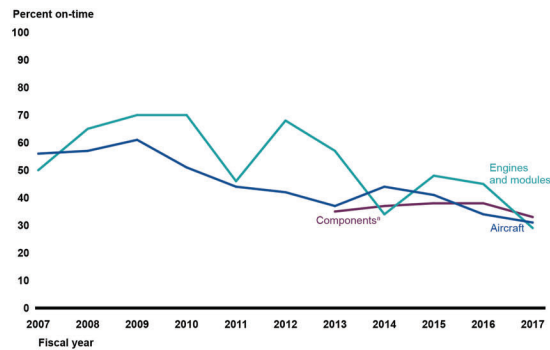
Figure 7: Average Number of Days Navy Aviation Depots Completed Selected Fixed-Wing Aircraft Maintenance Earlier or Later than Projected on a Per Aircraft Basis (Fiscal Years 2014 through 2019)



We also reported in April 2019 that maintenance timeliness had declined not only for aircraft at the Fleet Readiness Centers between fiscal years 2007 and 2017, but also for engines and modules and components (see fig. 8).<sup>44</sup>

<sup>44</sup>GAO, *Military Depots: Actions Needed to Improve Poor Conditions of Facilities and Equipment that Affect Maintenance Timeliness and Efficiency*, [GAO-19-242](#) (Washington, D.C.: April 29, 2019). Fleet Readiness Centers provide depot maintenance for Navy and Marine Corps rotary- and fixed-wing aircraft.

Figure 8: On-Time Performance at the Navy's Three Aviation Depots, Fiscal Years 2007 – 2017



Source: GAO analysis of performance data from the three Navy aviation depots. | GAO-21-225T

Note: A Navy official described components as any aircraft assembly or subassembly, such as valves, gearboxes, and rotor heads. Similarly, modules were described as major subassemblies of an engine that other locations can use to complete engine repairs. Navy aviation officials stated that they began tracking on-time performance of components in fiscal year 2013.

- Poor condition of facilities and equipment at maintenance depots.** We have also found that facility and equipment condition can affect depot performance. Specifically, we reported in April 2019 that the condition of two of the three Fleet Readiness Centers—Fleet Readiness Center Southwest and Fleet Readiness Center Southeast—were rated as poor while the other—Fleet Readiness Center East—was rated as fair.<sup>45</sup> Additionally, each of the Fleet Readiness Centers relied on equipment that is, on average, past its expected useful life. As previously discussed, we recommended that the Navy track the extent to which facility or equipment conditions contribute to maintenance delays and the Navy agreed.
- Maintenance and supply support challenges for aging aircraft.** Depot maintenance on aging weapon systems, including Navy and Marine Corps aircraft, becomes less predictable as structural fatigue occurs and parts that were not expected to be replaced begin to wear

<sup>45</sup>GAO-19-242.

out. While the Navy and the Marine Corps reported that sustainment funding accounts, such as those for depot maintenance and spare parts, have been funded at increased levels in fiscal years 2017-2020, efforts to improve spare parts availability take time to produce results, as a result of long lead times for acquiring some items. In addition, Navy and Marine Corps aircraft face challenges associated with diminishing manufacturing sources and parts obsolescence.<sup>46</sup> DOD has a program intended to manage these risks, but we reported in September 2017 that its implementation varied across DOD weapon system program offices.<sup>47</sup> We made recommendations to improve the program's management; DOD concurred and has initiated improvement efforts.

- Inexperience and retention issues with depot maintenance personnel.** In December 2018, we reported that while the Fleet Readiness Centers were generally able to fill skilled occupations for fiscal years 2013-2017, they faced challenges in ensuring that their workforces had sufficient training and experience to perform current and planned depot maintenance activities.<sup>48</sup> For example, Fleet Readiness Center Southwest officials reported that challenges to maintaining critical skills in the depot workforce have contributed to maintenance delays. Specifically, these workforce challenges contributed to the Navy depots repairing only 18 out of a planned 31 F/A-18 A-D aircraft in fiscal year 2017. In addition, workforce inexperience and attrition were some of the reasons cited by a Navy report for defects detected in the landing gear for F/A-18, E-2, and C-2A aircraft.<sup>49</sup> As previously discussed, the Navy has undertaken actions to hire, train, and retain a skilled workforce at its depots, but we found that the Navy has not assessed the effectiveness of these actions. We recommended that the Navy assess the effectiveness of its efforts, and the Navy agreed and has identified planned actions.

<sup>46</sup>GAO-21-101SP and GAO-18-678.

<sup>47</sup>The Diminishing Manufacturing Sources and Material Shortages program is meant to address parts supply challenges. GAO, *Defense Supply Chain: DOD Needs Complete Information on Single Sources of Supply to Proactively Manage the Risks*, GAO-17-768 (Washington, D.C.: Sept. 28, 2017).

<sup>48</sup>GAO, *DOD Depot Workforce: Services Need to Assess the Effectiveness of Their Initiatives to Maintain Critical Skills*, GAO-19-51 (Washington, D.C.: Dec. 14, 2018).

<sup>49</sup>Commander Fleet Readiness Centers, *Fleet Readiness Center Southwest Landing and Arresting Gear Quality Escape Investigation Report* (May 11, 2017).

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### New F-35 Aircraft Face Sustainment and Operational Challenges

Sustainment challenges are not just an issue for older aircraft; they represent a significant challenge for the F-35 Lightning II aircraft—a key component in the future of tactical aviation for the Navy and Marine Corps. The Navy and Marine Corps are both flying F-35s now as the program ramps up production, and the two services plan to procure nearly 700 aircraft over the coming decades.

In August 2020, we reported that while the average mission capable rate for the F-35 Lightning II Joint Strike Fighter showed an increase from fiscal year 2012 to fiscal year 2019, it trended downward during fiscal years 2015 through 2018 before improving slightly in fiscal year 2019.<sup>50</sup> We testified in November 2019 and July 2020 on the sustainment challenges hindering the readiness of the F-35 fleet.<sup>51</sup> In particular, spare parts shortages throughout the F-35 supply chain are contributing to F-35 aircraft being unable to perform as many missions or to fly as often as the warfighter requires. In April 2019, we reported that:

- F-35C aircraft (including Navy aircraft) were *available* (i.e., the aircraft were safe to fly, available for use, and able to perform at least one tasked mission) 36 percent of the time from May 2018 through November 2018, which fell short of the 65-percent goal established by the Navy for non-deployed units. These aircraft were *fully mission capable* (i.e., the aircraft were capable of accomplishing all tasked missions) only about 2 percent of the time during the same period, falling well short of the Navy's 60-percent goal.
- F-35B aircraft (including Marine Corps aircraft) were *available* about 46 percent of the time from May 2018 through November 2018, which fell short of the Marine Corps 65-percent goal and were *fully mission*

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<sup>50</sup>GAO-21-101SP.

<sup>51</sup>GAO, *Aircraft Sustainment: DOD Faces Challenges in Sustaining a Growing Fleet*, GAO-20-234T (Washington, D.C.: November 13, 2019) and GAO, *F-35 Sustainment: DOD Needs to Address Key Uncertainties as It Re-Designs the Aircraft's Logistics System*, GAO-20-665T (Washington, D.C.: July 22, 2020).

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*capable* about 16 percent of the time, also falling well short of the 60-percent goal.<sup>52</sup>

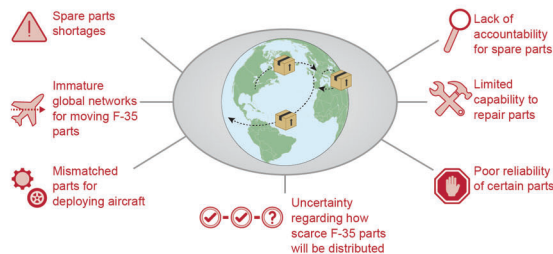
We found that several factors contribute to the parts shortages, including that F-35 parts are breaking more often than expected and DOD has limited capability to repair parts when they break (see fig. 9).<sup>53</sup> DOD does not expect to have repair capabilities at its military depots ready until 2024, which is 8 years behind schedule. As a result, the average time taken to repair an F-35 part was more than twice as long as planned between September and November 2018, and a backlog of about 4,300 spare parts was awaiting repair at depots or manufacturers at that time. Furthermore, our work found that spare parts for deploying aircraft do not always match military service needs. DOD purchases certain sets of F-35 parts years ahead of time to support aircraft on deployments, but the parts do not fully match the military service's needs, because the F-35 aircraft have been modified over time. For example, 44 percent of purchased parts were incompatible with aircraft the Marine Corps took on a deployment in 2018.

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<sup>52</sup>GAO, *Aircraft Sustainment: DOD Needs to Address Substantial Supply Chain Challenges*, [GAO-19-321](#) (Washington, D.C.: April 25, 2019). The F-35C data include fewer than 30 fielded F-35C aircraft, and the Navy did not declare initial operational capability for this fleet until February 2019. DOD officials said that the Navy was prioritizing modifications to upgrade the capabilities of its F-35C aircraft as the service progressed toward a declaration of initial operational capability instead of pursuing efforts to maximize current aircraft availability and capability rates.

<sup>53</sup>We reported in April 2019 that the F-35 program was failing to meet four of its eight reliability and maintainability targets—which determine the likelihood that the aircraft will be in maintenance rather than available for operations—including metrics related to part removals and part failures. For additional information, see GAO, *F-35 Joint Strike Fighter: Action Needed to Improve Reliability and Prepare for Modernization Efforts*, [GAO-19-341](#) (Washington, D.C.: April 29, 2019).

**Figure 9: Selected F-35 Supply Chain Challenges**



Source: GAO. | GAO-21-225T

Our work has shown that, as DOD has gained experience with the F-35, it has encountered additional challenges. In 2017, the Marine Corps became the first military service to station F-35 aircraft overseas, transferring aircraft to Iwakuni, Japan. While in the Pacific, DOD expects to disperse its F-35s into smaller detachments to outmaneuver the enemy and counter regional threats. However, as we reported in April 2018, this approach posed logistics and supply challenges.<sup>54</sup>

Additionally, DOD continues to grapple with the immaturity of the F-35's Autonomic Logistics Information System (ALIS), a complex information technology system that supports operations, mission planning, supply-chain management, maintenance, and other processes. It is intended to provide the necessary logistics tools to F-35 users as they operate and sustain the aircraft.

In March 2020, we reported that while DOD had made some improvements to ALIS, users continued to report significant challenges.<sup>55</sup> For example, users at all 5 locations we visited stated that electronic records of F-35 parts in ALIS are frequently incorrect, corrupt, or missing, resulting in the system signaling that an aircraft should be grounded in

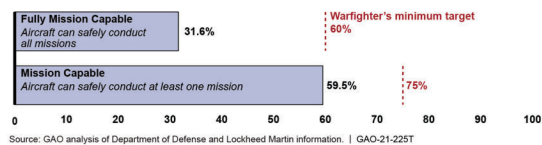
<sup>54</sup>GAO, *Warfighter Support: DOD Needs to Share F-35 Operational Lessons Across the Military Services*, [GAO-18-464R](#) (Washington, D.C.: Apr. 25, 2018). This was a public version of a more detailed March 2018 classified report.

<sup>55</sup>GAO, *Weapon System Sustainment: DOD Needs a Strategy for Re-Designing the F-35's Central Logistics System*, [GAO-20-316](#) (Washington, D.C.: Mar. 6, 2020).

cases where personnel know that parts have been correctly installed and are safe for flight. At times, F-35 squadron leaders have decided to fly an aircraft when ALIS has signaled not to, thus assuming operational risk to meet mission requirements.

We also found that problems with ALIS could be affecting the overall readiness of the F-35 fleet, including the Navy and Marine Corps aircraft. Users at all five F-35 locations we visited also stated that problems with ALIS are affecting the overall readiness of the F-35 fleet; however, they were unable to tell us the degree to which this is the case. Overall F-35 fleet-wide performance has been falling short of warfighter requirements—that is, aircraft cannot perform as many missions or fly as often as required. Figure 10 shows F-35 fleet aircraft performance from October 2018 through September 2019. Full mission capability, or the percentage of time during which the aircraft can perform all of its tasked missions, was 31.6 percent across the fleet, as compared with the warfighter minimum target of 60 percent. Mission capability, or the percentage of time during which the aircraft can safely fly and perform at least one tasked mission, was 59.5 percent across the fleet, as compared with the warfighter minimum target of 75 percent.

Figure 10: F-35 Fleet Aircraft Performance, October 2018-September 2019



DOD had not (1) developed a performance-measurement process for ALIS to define how the system should perform or (2) determined how ALIS issues were affecting overall F-35 fleet readiness, which remains below warfighter requirements. DOD recognizes that ALIS needs improvement and plans to leverage ongoing re-design efforts to eventually replace ALIS with a new logistics system that it has named the Operational Data Integrated Network (ODIN). However, DOD has not developed a strategy for the re-design of the F-35's logistics system that includes clearly identifying and assessing goals, key risks or uncertainties, and costs. We recommended in our March 2020 report that DOD develop such a strategy, and DOD concurred.

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DOD's current F-35 sustainment challenges have largely resulted from insufficient planning. Our work has shown that planning for sustainment and aligning its funding are critical if DOD wants to meet its F-35 availability goals and effectively deploy to support operations. We have found that DOD lacks information about the technical characteristics and costs of the F-35, which will impair its ability to plan for the long-term sustainment of the F-35 fleet.<sup>56</sup> DOD's costs to purchase the F-35 are expected to exceed \$428 billion, and the department expects to spend more than \$1.2 trillion to sustain its F-35 fleet. As a result, as DOD takes action to increase the readiness of the F-35 fleet and improve its sustainment efforts, it must also deliver an aircraft that the military services can successfully operate and maintain over the long term within their budgetary realities. DOD's continued attention to our F-35 recommendations will be important as it balances readiness, sustainment, and affordability goals.

In sum, the Navy and Marine Corps continue to face significant readiness challenges that have developed over more than a decade of conflict, budget uncertainty, and reductions in force structure. The ongoing COVID-19 pandemic will further affect the ability of the Navy and Marine Corps to address the multiple readiness challenges we have discussed in this statement and to rebuild readiness. In response to the pandemic, the Navy and Marine Corps have extended operational deployments, curtailed training, and suffered impacts to their maintenance workforce and operations that will affect both current and future readiness. In addition, the military industrial base, which has an important role in maintaining surface ships and supplying spare parts, has also been affected by pandemic-related disruptions.

Further, in June 2020, we reported that COVID-19 has affected the Navy's and Marine Corps' ability to conduct work at its depots.<sup>57</sup> For example, reductions in operations at the Albany, Georgia and Barstow, California production plants—both Marine Corps depots—have decreased operating capacity to less than 20 percent. Navy and Marine Corps officials stated that slowed or stopped work due to COVID-19 will also affect the cash balance of the Navy and Marine Corps depots.

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<sup>56</sup>GAO, *F-35 Aircraft Sustainment: DOD Needs to Address Challenges Affecting Readiness and Cost Transparency*, [GAO-18-75](#) (Washington, D.C.: October 26, 2017).

<sup>57</sup>GAO, *COVID-19: Opportunities to Improve Federal Response and Recovery Efforts* [GAO-20-625](#) (Washington, D.C.: June 25, 2020).

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The CARES Act appropriated \$475 million to the Navy Working Capital Fund to prevent, position, prepare for, and respond to the coronavirus, domestically or internationally. The Navy Working Capital Fund was below its lower cash requirement for most of fiscal year 2020, even after receiving the CARES Act appropriation. However, the fund's cash balance ended fiscal year 2020 at about \$2.2 billion, which is above its lower cash requirement. This was achieved in part by transferring an additional \$731 million from other DOD accounts into the Navy Working Capital Fund in September 2020, and other management actions that increased the fund's balance. We have ongoing work examining the impact of COVID-19 on Navy and Marine Corps depots and their associated working capital funds. We plan to report on the results of that work in early 2021.

We also have ongoing work examining the pandemic's effects on the Military Health System, including a review of DOD's force health protection efforts. Additionally, we plan to address the pandemic's readiness effects in our upcoming review assessing the readiness of DOD's major force elements in each of the warfighting domains.

The Navy's and Marine Corps' longstanding readiness challenges have been compounded by the effects of the pandemic and several debilitating accidents in recent years. Altogether, these challenges hinder the services from reaping the full benefit of their forces and keeping them in a higher state of readiness.

Both services have made encouraging progress in identifying the causes of their readiness declines and have begun efforts to arrest and reverse it. However, our work shows that fully addressing the persistent readiness challenges will require years of sustained management attention. Continued progress implementing our prior recommendations will bolster ongoing Navy and Marine Corps efforts to address these readiness challenges.

Chairman Sullivan, Ranking Member Kaine, and Members of the Subcommittee, this concludes my statement for the record.

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## GAO Contact and Staff Acknowledgments

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*Navy Maintenance: Navy Report Did Not Fully Address Causes of Delays or Results-Oriented Elements.* [GAO-21-66](#). Washington, D.C.: October 29, 2020.

*COVID-19: Federal Efforts Could Be Strengthened by Timely and Concerted Actions.* [GAO-20-701](#). Washington, D.C.: September 21, 2020.

*Weapon System Sustainment: Aircraft Mission Capable Rates Generally Did Not Meet Goals and Cost of Sustaining Selected Weapon Systems Varied Widely.* [GAO-20-67SPSU](#). Washington, D.C.: August 27, 2020.

*Navy Shipyards: Actions Needed to Address the Main Factors Causing Maintenance Delays for Aircraft Carriers and Submarines.* [GAO-20-588](#). Washington, D.C.: August 20, 2020.

*F-35 Sustainment: DOD Needs to Address Key Uncertainties as it Re-Designs the Aircraft's Logistics System.* [GAO-20-665T](#). Washington, D.C.: July 22, 2020.

*COVID-19: Opportunities to Improve Federal Response and Recovery Efforts.* [GAO-20-625](#). Washington, D.C.: June 25, 2020.

*Military Depots: The Navy Needs Improved Planning to Address Persistent Aircraft Maintenance Delays While Air Force Maintenance Has Generally Been Timely.* [GAO-20-390](#). Washington, D.C.: June 23, 2020.

*Navy Ship Maintenance: Evaluating Pilot Program Outcomes Could Inform Decisions to Address Persistent Schedule Challenges.* [GAO-20-370](#). Washington, D.C.: May 11, 2020.

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---

*Weapon System Sustainment: DOD Needs a Strategy for Re-Designing the F-35's Central Logistics System.* [GAO-20-316](#). Washington, D.C.: March 6, 2020.

*Navy Ship Maintenance: Actions Needed to Address Maintenance Delays for Surface Ships Based Overseas.* [GAO-20-86](#). Washington, D.C.: February 26, 2020.

*Navy Maintenance: Persistent and Substantial Ship and Submarine Maintenance Delays Hinder Efforts to Rebuild Readiness.* [GAO-20-257T](#). Washington, D.C.: December 4, 2019.

*Naval Shipyards: Key Actions Remain to Improve Infrastructure to Better Support Navy Operations.* [GAO-20-64](#). Washington, D.C.: November 25, 2019.

*Navy Readiness: Actions Needed to Evaluate the Effectiveness of Changes to Surface Warfare Officer Training.* [GAO-20-154](#). Washington, D.C.: November 14, 2019.

*F-35 Aircraft Sustainment: DOD Faces Challenges in Sustaining a Growing Fleet.* [GAO-20-234T](#). Washington, D.C.: November 13, 2019.

*Military Aviation: DOD Should Take Actions to Conduct More Comprehensive Analyses of Rotary-Wing Mishaps.* [GAO-19-236C](#). Washington, D.C.: September 11, 2019. (SECRET)

*Military Readiness: Readiness Improved in the Ground and Cyber Domains, But Declined in the Sea, Air, and Space Domains from Fiscal Year 2017 to Fiscal Year 2018.* [GAO-19-499C](#). Washington, D.C.: August 30, 2019. (SECRET)

*Military Depots: Actions Needed to Improve Poor Conditions of Facilities and Equipment That Affect Maintenance Timeliness and Efficiency.* [GAO-19-242](#). Washington, D.C.: April 29, 2019.

*F-35 Joint Strike Fighter: Action Needed to Improve Reliability and Prepare for Modernization Efforts.* [GAO-19-341](#). Washington, D.C.: April 29, 2019.

*F-35 Aircraft Sustainment: DOD Needs to Address Substantial Supply Chain Challenges.* [GAO-19-321](#). Washington, D.C.: April 25, 2019.

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*DOD Depot Workforce: Services Need to Assess the Effectiveness of Their Initiative to Maintain Critical Skills.* [GAO-19-51](#). Washington, D.C.: December 14, 2018 (Reissued on December 26, 2018).

*Navy and Marine Corps: Rebuilding Ship, Submarine, and Aviation Readiness Will Require Time and Sustained Management Attention.* [GAO-19-225T](#). Washington, D.C.: December 12, 2018.

*Navy Readiness: Actions Needed to Address Costly Maintenance Delays Facing the Attack Submarine Fleet.* [GAO-19-229](#). Washington, D.C.: November 19, 2018.

*Navy Readiness: Actions Needed to Address Costly Maintenance Delays Affecting the Attack Submarine Fleet.* GAO-19-192C. Washington, D.C.: October 31, 2018. (SECRET)

*Air Force Readiness: Actions Needed to Rebuild Readiness and Prepare for the Future.* [GAO-19-120T](#). Washington, D.C.: October 10, 2018.

*Weapon System Sustainment: Selected Air Force and Navy Aircraft Generally Have Not Met Availability Goals, and DOD and Navy Guidance Need to Be Clarified.* [GAO-18-678](#). Washington, D.C.: September 10, 2018.

*Military Readiness: Update on DOD's Progress in Developing a Readiness Rebuilding Plan.* GAO-18-441RC. Washington, D.C.: August 10, 2018. (SECRET)

*Military Personnel: Collecting Additional Data Could Enhance Pilot Retention Efforts.* [GAO-18-439](#). Washington, D.C.: June 21, 2018.

*F-35 Joint Strike Fighter: Development Is Nearly Complete, but Deficiencies Found in Testing Need to Be Resolved.* [GAO-18-321](#). Washington, D.C.: June 5, 2018.

*Warfighter Support: DOD Needs to Share F-35 Operational Lessons Across the Military Services.* [GAO-18-464R](#). Washington, D.C.: April 25, 2018.

*Military Readiness: Clear Policy and Reliable Data Would Help DOD Better Manage Service Members' Time Away from Home.* [GAO-18-253](#). Washington, D.C.: April 25, 2018.

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*Weapon System Sustainment: Selected Air Force and Navy Aircraft Generally Have Not Met Availability Goals, and DOD and Navy Guidance Need Clarification.* GAO-18-146SU. Washington, D.C.: April 25, 2018.

*Military Personnel: DOD Needs to Reevaluate Fighter Pilot Workforce Requirements.* [GAO-18-113](#). Washington, D.C.: April 11, 2018.

*Military Aircraft: F-35 Brings Increased Capabilities, but the Marine Corps Needs to Assess Challenges Associated with Operating in the Pacific.* GAO-18-79C. Washington, D.C.: March 28, 2018. (SECRET)

*Navy and Marine Corps Training: Further Planning Needed for Amphibious Operations Training.* [GAO-18-212T](#). Washington, DC: December 1, 2017.

*F-35 Aircraft Sustainment: DOD Needs to Address Challenges Affecting Readiness and Cost Transparency.* [GAO-18-75](#). Washington, D.C.: October 26, 2017.

*Defense Supply Chain: DOD Needs Complete Information on Single Sources of Supply to Proactively Manage the Risks.* [GAO-17-768](#). Washington, D.C.: September 28, 2017.

*Navy and Marine Corps Training: Further Planning Needed for Amphibious Operations Training.* [GAO-17-789](#). Washington, D.C.: September 26, 2017.

*Navy Readiness: Actions Needed to Address Persistent Maintenance, Training, and Other Challenges Facing the Fleet.* [GAO-17-809T](#). Washington, D.C.: September 19, 2017.

*Naval Shipyards: Actions Needed to Improve Poor Conditions that Affect Operation.* [GAO-17-548](#). Washington, D.C.: September 12, 2017.

*Navy Readiness: Actions Needed to Address Persistent Maintenance, Training, and Other Challenges Facing the Fleet.* [GAO-17-798T](#). Washington, D.C.: September 7, 2017.

*Navy Readiness: Actions Needed to Maintain Viable Surge Sealift and Combat Logistics Fleets.* [GAO-17-503](#). Washington, D.C.: August 22, 2017 (Reissued on Oct 31, 2017).

---

*Navy Shipbuilding: Policy Changes Needed to Improve the Post-Delivery Process and Ship Quality.* [GAO-17-418](#). Washington, D.C.: July 13, 2017.

*Offshore Petroleum Discharge System: The Navy Has Not Mitigated Risk Associated with System Limitations.* GAO-17-531C. Washington, D.C.: June 22, 2017. (SECRET)

*Department of Defense: Actions Needed to Address Five Key Mission Challenges.* [GAO-17-369](#). Washington, D.C.: June 13, 2017.

*Military Readiness: Coastal Riverine Force Challenges.* GAO-17-462C. Washington, D.C.: June 13, 2017. (SECRET)

*Navy Force Structure: Actions Needed to Ensure Proper Size and Composition of Ship Crews.* [GAO-17-413](#). Washington, D.C.: May 18, 2017.

*Military Readiness: DOD's Readiness Rebuilding Efforts May Be at Risk without a Comprehensive Plan.* [GAO-16-841](#). Washington, D.C.: September 7, 2016.

*Military Readiness: DOD's Readiness Rebuilding Efforts May Be at Risk without a Comprehensive Plan.* GAO-16-534C. Washington, D.C.: June 30, 2016. (SECRET)

*Defense Inventory: Further Analysis and Enhanced Metrics Could Improve Service Supply and Depot Operations.* [GAO-16-450](#). Washington, D.C.: June 9, 2016.

*Navy and Marine Corps: Services Face Challenges to Rebuilding Readiness.* GAO-16-481RC. Washington, D.C.: May 25, 2016. (SECRET//NOFORN)

*Military Readiness: Progress and Challenges in Implementing the Navy's Optimized Fleet Response Plan.* [GAO-16-466R](#). Washington, D.C.: May 2, 2016.

*F-35 Sustainment: DOD Needs a Plan to Address Risks Related to Its Central Logistics System.* [GAO-16-439](#). Washington, D.C.: April 14, 2016.



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