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HEARING

ON

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2019

AND

OVERSIGHT OF PREVIOUSLY AUTHORIZED PROGRAMS

BEFORE THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON READINESS HEARING

ON

NAVY AND AIR FORCE DEPOT POLICY ISSUES AND INFRASTRUCTURE CONCERNS

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NAVY AND AIR FORCE DEPOT POLICY ISSUES AND INFRASTRUCTURE CONCERNS

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON READINESS,
Washington, DC, Thursday, June 14, 2018.

The subcommittee met, pursuant to call, at 9:02 a.m., in Room 2212, Rayburn House Office Building, Hon. Joe Wilson (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. JOE WILSON, A REPRESENTATIVE FROM SOUTH CAROLINA, CHAIRMAN, SUBCOMMITTEE ON READINESS

Mr. WILSON. Ladies and gentlemen, good morning. I call to order the House Armed Services Subcommittee on Readiness.

I would like to welcome everyone to this morning's hearing, and would like to thank our panel of witnesses for being here today to discuss the defense organic industrial base, and the significant role it has in maintaining and restoring readiness back to our armed services.

This hearing will specifically focus on the current state of the United States Navy and the United States Air Force depot policy issues and infrastructure concerns. Our shipyards, fleet readiness centers, and air logistics complexes are critical in America's ability to project power and to properly train and equip our warfighters. This sustainment industrial base provides the backbone for the military to respond to a variety of contingencies, surge capacity, and provide unique solutions to requirements. Our readiness recovery is fragile and it is important to understand exactly what is in jeopardy.

During this hearing, I would like for you to help answer the basic question: In terms of risk, what does it mean to our national security, particularly our sustainment industrial base, to have ships moored to the pier or sitting in the dry dock for extended periods of time, or have aircraft waiting for depot maintenance?

The depots saw diminished workloads when major combat operations ended in Iraq and Afghanistan. This decreased workload, coupled with the unpredictable budgets and continuing resolutions, forced the services to divest a portion of the technically skilled workforce and limit reinvestment in depot facilities. We know these variables have significant effects on the people, depot rates, and long-term organic industrial base viability.

We are particularly interested in your infrastructure concerns and proposed solutions. Other common issues I am aware of across

military depots relate to the carryover, infrastructure strategic planning, and civilian hiring.

We want to hear what the issues are from your perspective and how they are impacting your mission. It is our responsibility, as members of this subcommittee, to understand the readiness challenges of our armed services, and how the resources and authorities provided impact capabilities this Nation needs.

Before I introduce the witnesses, I turn to the ranking member, Congressman Madeleine Bordallo, the distinguished gentlelady from Guam, for opening comments she would like to make.

[The prepared statement of Mr. Wilson can be found in the Appendix on page 43.]

STATEMENT OF HON. MADELEINE Z. BORDALLO, A DELEGATE FROM GUAM, RANKING MEMBER, SUBCOMMITTEE ON READINESS

Ms. BORDALLO. Thank you very much, Mr. Chairman. And I thank all of our witnesses for being here this morning.

I think that we all agree that when the American public thinks of the term "national defense," they envision our proud service members stationed around the world, and the equipment, the ships, tanks, and aircraft that we supply so they can carry out their missions.

What is not often thought of are the capabilities needed to maintain these assets, especially the depots and shipyards of the organic industrial base that play a critical role in the readiness of our military forces.

Without properly maintained ships, submarines, aircraft, and weapon systems, our forces cannot perform necessary training required to build readiness or meet the operational requirements that are placed upon them. So I am concerned that in a year where readiness has been cited as the Department's top priority, the Department's budget request only supports 93 percent of the Air Force depot maintenance requirements and 92 percent of the Navy's aviation depot maintenance requirement.

When questioned about why these accounts were not funded to 100 percent of the requirement, the Department stated that the accounts were funded to the maximum executable rate. Thus far, no analysis has been shared with the committee on how the maximum executable rate was calculated or what the limiting factors are to increasing execution rates.

I have long stated that just as important as it is to provide our service members with new, updated equipment, we must fully maintain the assets that we already have. And I hope that our witnesses can share their perspectives on this issue today.

Your workforce is the backbone of your depot operations. This diverse assembly of people possess invaluable skills and expertise that must be cultivated, taking years of schooling and experience to acquire. Keeping a workforce of such caliber requires constant effort to hire, train and retain. Past NDAA [National Defense Authorization Act] provisions have granted additional authorities, allowing depots to expedite hiring, and I look forward to hearing if these provisions are sufficient or whether additional changes are necessary.

I also hope that the witnesses will provide their perspective on the continued need and support provided by non-DOD [Department of Defense] shipyards and depots, especially with growing requirements and deferred maintenance backlogs.

Without our shipyards and depots, our ability to ensure the safety of our Nation and pursue our national interests are severely impacted. Gentlemen, your shipyards and depots must accomplish their missions. If we are going to rebuild readiness, we need to ensure that the depot maintenance accounts are fully funded to meet the requirement. If there are policies, authorities, workforce, infrastructure, or other challenges that are impediments to increasing the execution rates of the depots, this subcommittee needs to hear about them.

So I, today, this morning, look forward to hearing your testimony on the challenges that our shipyards and depots are experiencing in personnel, operations, and infrastructure management, and how this committee can help you address them. So thank you.

And with that, Mr. Chairman, I yield back.

Mr. WILSON. And thank you very much, Congresswoman Bordallo.

We are grateful to recognize the witnesses here today. We thank them for taking the time to be with us. Welcome, Vice Admiral Thomas Moore, Commander, Naval Sea Systems Command, U.S. Navy; Vice Admiral Dean Peters, Commander, Naval Air Systems Command, U.S. Navy; and Lieutenant General Lee Levy, Commander, Air Force Sustainment Center, U.S. Air Force.

Before we begin, I would like to remind our witnesses that your written statements have been submitted for the record and ask that you summarize your comments to 5 minutes or less.

As a reminder to our members, we will adhere to the 5-minute rule for questions by our witnesses, and it will be ably controlled by our professional staff member, Drew Warren.

At this time, we would proceed with General Levy.

STATEMENT OF LT GEN LEE K. LEVY II, USAF, COMMANDER, AIR FORCE SUSTAINMENT CENTER, AIR FORCE MATERIEL COMMAND, U.S. AIR FORCE

General LEVY. Good morning, Chairman Wilson, Ranking Member Bordallo, distinguished members of the subcommittee. Thank you for the opportunity to testify along with my joint partners on the readiness of your United States Air Force. It is a real privilege.

On behalf of our Secretary, the Honorable Heather Wilson, and our Chief of Staff, General Dave Goldfein, thanks for your support and demonstrating commitment to our airmen, our Air Force civilians, families, and veterans, particularly on this Flag Day.

Without pause, your United States Air Force continues to deliver global vigilance, reach, and power for our Nation. We are always in demand and we are always there. We have supported joint and coalition forces throughout every operation, and we have secured our homeland through continuous surveillance and air defense and nuclear deterrence.

We have been in nonstop combat, your Air Force, for 27 years. We have done all this with a force that is 30 percent smaller than

at the outset of Desert Storm, and with aircraft and infrastructure that continues to age and present new challenges.

But the 43,000 total force airmen of the Air Force Sustainment Center, Active Duty, National Guard, Reserve, and civil servants, operating from 74 locations across the globe, are amazing and they continue to seek new and innovative ways to get the job done.

Make no mistake, your United States Air Force is ready to fight tonight, but I am concerned about our ability to sustain our Air Force to fight tomorrow. Threats to the Nation and our vital national interests continue to evolve, adapt, and present formidable challenges that threaten us and our allies.

We have returned to an era of great power conflict. That competition challenges our security and prosperity. As we develop advanced air, space, and cyber capabilities for tomorrow, we must continue to adapt our readiness, sustainment, and logistics enterprises as well.

The organic industrial base, simply put, is the Nation's insurance policy. It underpins our readiness to fight not only tonight, but to be prepared to fight and sustain into the future.

The Air Force Sustainment Center underwrites this for our Air Force, our joint partners, and allies. Our command has responsibility for nuclear sustainment and supply chain management for two-thirds of the Nation's strategic nuclear triad. Nuclear deterrence operations are the bedrock of our national security. We operate a global logistics and sustainment network, a global supply chain, three Air Logistics Complexes, airpower factories, if you will.

Our command also has the responsibility to set, open, and sustain theaters in time of peace and conflict with weapons systems that are, on average, approximately 28 years old. In short, we are a $16 billion a year joint, interagency, and coalition readiness engine.

The defense industrial base is brittle. We find an ever-diminishing vendor base for sustaining our platforms. The workforce underpinning the industrial base is also brittle, and we face increasing challenges recruiting the kind of talent our force simply must have for the future. A fifth-generation Air Force must have a fifth-generation workforce.

I could go on and talk about this at length, and I look forward to your questions, but, again, it is a real honor and a privilege to be with you, and I yield my time back. Thank you.

[The prepared statement of General Levy can be found in the Appendix on page 44.]

Mr. WILSON. And thank you very much, General.

We now proceed to Admiral Moore.

STATEMENT OF VADM THOMAS J. MOORE, USN, COMMANDER, NAVAL SEA SYSTEMS COMMAND, U.S. NAVY

Admiral MOORE. Thank you, Mr. Chairman. Mr. Chairman, Ranking Member Bordallo, distinguished members of the committee, I appreciate the opportunity to testify today to discuss Navy readiness and, in particular, readiness in our depots.

Before I begin, I would like to thank the Congress for your support of the Bipartisan Budget Act of 2018 and the fiscal year 2018 Consolidated Appropriations Act. This legislation provides the pre-

dictability and stability in funding that allows us to continue the work we started in fiscal year 2017 to restore the Navy's organic industrial base.

At any given time, the Naval Sea Systems Command has under its care approximately one-third of the battle force as they undergo maintenance and modernization. For that reason, NAVSEA's number one priority remains the on-time delivery of ships and submarines to the fleet for both new construction and maintenance availabilities.

NAVSEA is executing a number of initiatives to improve its on-time performance, starting with growing our organic workforce. Between the beginning of fiscal year 2013 and today, the four naval shipyards have hired 21,000 people and are on a path to reaching our goal of having 36,100 full-time shipyard employees by the end of fiscal year 2019.

The growing and better trained workforce is beginning to have a positive impact. In 2017, all four aircraft carrier availabilities were completed on time, and we significantly reduced the delays in delivery of our submarine force. That trend continues in 2018. More work remains, but we are on the right track.

Prior-year capacity and limitations and the overall priority of work towards our ballistic missile submarines and aircraft carriers resulted in our attack submarines absorbing much of the delays, causing several submarine maintenance availabilities that were originally scheduled to last between 22 and 25 months to require 45 months or more to complete.

This situation reached a boiling point in the summer of 2016, when, because of a lack of capacity in our public shipyards, the Navy decided to defer the scheduled maintenance availability of USS *Boise* that will take it offline until 2020. Ultimately, *Boise*'s availability was contracted to the private sector and will begin in January 2019.

Going forward, the Navy will take a longer term view as we consider the private sector for future maintenance work during peak workload periods as both relief to our naval shipyards and to ensure we maintain the health and proficiency of the private-sector nuclear industrial base.

People alone will not provide the throughput and productivity needed to meet the maintenance and readiness requirements of today. As outlined in our recent report to Congress on the naval shipyard infrastructure optimization plan, we must also make substantial investments in our foreign nuclear-capable shipyards to ensure we have 21st-century shipyards ready for the challenges of maintaining a growing fleet.

This 20-year plan includes repairing and upgrading our public shipyard dry docks to accommodate future *Virginia*-class payload module submarines and new *Ford*-class carriers, recapitalizes equipment to replace aging equipment with up-to-date technology, and optimizes the layout of the shipyard by moving and upgrading facilities closer to actual work. We look forward to working with Congress in the execution of this plan.

The challenges facing our private sector nonnuclear surface ship repair base are similar to those seen in our naval shipyards, with the private sector also facing capacity and workload challenges

they need to make—and the need to make investments to upgrade facilities, equipment, and dry docks.

A lack of stable and predictable budgets over the past 10 years has had an even bigger impact on our private sector ship repair facilities and is a core reason why the capacity of our private sector today is about 75 percent of our workload requirements, with the net result being the late delivery of our ships for maintenance availabilities.

The Navy is committed to working collaboratively with industry to provide them a stable and predictable workload in a competitive environment, moving forward, so they can also hire the workforce and make the investments necessary to maintain and modernize a growing nonnuclear fleet.

We are as dependent on their capabilities and capacity as we are on the public depots. As we build the 355-ship Navy, we must have the maintenance capacity and infrastructure needed to ensure our growing fleet is maintained and modernized on time and on budget to deliver forward-deployed combat-ready ships.

Our ongoing efforts to hire more people and invest in our naval shipyards, combined with the Navy's continuous dialogue with industry, lays the foundation required to maintain today's force, while also looking to the future.

We have challenges ahead, but we are on an improving trend and it will ensure we have the capacity today and into the future to maintain and modernize our Navy.

I look forward to your questions. And I yield back my time.

[The joint prepared statement of Admiral Moore and Admiral Peters can be found in the Appendix on page 58.]

Mr. WILSON. Thank you very much, Admiral Moore.

We now proceed to Admiral Peters.

STATEMENT OF VADM G. DEAN PETERS, USN, COMMANDER, NAVAL AIR SYSTEMS COMMAND, U.S. NAVY

Admiral PETERS. Good morning. Chairman Wilson, Ranking Member Bordallo, distinguished members of the subcommittee, thank you for the opportunity to appear before you and discuss naval aviation readiness and the health of our organic industrial base.

Although I have only been on the job 2 weeks, I was actually pleased to see this hearing on the schedule, because NAVAIR [Naval Air Systems Command] industrial workforce, our civilian sailors, and our infrastructure are my top priorities for focus and attention.

In conjunction with the air boss, Vice Admiral Miller, and Deputy Commandant for Aviation Lieutenant General Rudder, we are aggressively stabilizing naval aviation readiness for the present and starting to put in place long-term strategies for lasting health and improvement.

In regard to the current status, we are making definite progress, but there's still a long way to go. One of the most critical components of readiness, as has been mentioned, is our organic maintenance/repair capability. That is both our intermediate-level maintenance and our depot-level maintenance. The depot industrial base,

which we call Fleet Readiness Centers [FRCs], is critical to our overall health and wholeness.

I am pleased to report on fiscal year 2017. For the first time in over 5 years, our FRCs were largely able to meet the fleet demand for production of aircraft and engines. We produced 485 of 487 expected aircraft, including 69 F–18 A–D and we delivered more than the required number of F–18E and F. This was done while also improving the turnaround time by 5 percent, which you can imagine is critical to being able to produce those numbers.

Over the last 2 years, we have also been able to reduce the backlog of aircraft that need in-service depot-level repairs. These are the repairs that are done at the field. This was reduced by about 25 percent, which means that we put more aircraft back into the hands of the warfighters.

The improved performance in these two areas are the good news. We have got to keep this production going. The not-so-good news is that our FRCs are not performing as needed in the area of component repair and overhaul, which is about 20 percent of our FRC workload and includes over 50,000 parts.

To date, in fiscal year 2018, we are lagging this production by about 20 percent, which is better than previous years but still unacceptable. Areas that we are working on are workforce hiring, developmental training, quality manufacturing, all the things you would think of, and also infrastructure upgrades. It is this last area where we need to concentrate.

Thanks to an infusion of repair funds in fiscal year 2018, we are able to schedule repairs on our highest priority equipment. As an example, let me just mention a water tower that we have down in FRC East in Cherry Point that is used for the qualification of nozzles on our T–64 engines. This is a 50-year-old piece of equipment that was continually unreliable, and for several months in 2017, we were unable to repair T–64 engines.

With this infusion of cash, we were able to develop a redesign and requalify that piece of equipment. Now the next step is actually to modernize that piece of equipment and go from a water tower type of process, which we are—I think we are the only ones that still use that technology, to an airflow type of qualification for our engine nozzles.

So we absolutely appreciate the fiscal year 2018 increase. It is going to go towards those most critical components which are greater than 25 years old on average. But also of importance is our facilities that have an average age of 58 years. More than half of our facilities are greater than 67 years old.

A few examples. We have no air conditioning down in our avionics maintenance facility in FRC Southeast in Jacksonville. That one actually, I think, is going to be funded in 2019, so we are looking forward to that one. But we also still have a paint and strip facility in Norfolk that has to shut down every time it rains. We have an environmental control ventilation system in FRC Southwest that fails on a weekly basis.

So these are the type of things that our artisans are working around. Our future investments in facilities and equipment modernization will be vital to ensure that our organic industrial facilities have the capability and capacity to not only improve current

performance but to support the next generation of aircraft and engines.

So, similar to the Navy shipboard optimization plan, Naval Aviation will put forward a modernization plan for our fleet readiness centers. We are starting this year with a comprehensive baseline of our facilities, test equipment, tooling.

Naval Aviation looks forward to working with this subcommittee and the larger Congress to achieve this end-state and we very much appreciate your continued support of our sailors and Marines. I look forward to your questions.

Mr. WILSON. Thank you very much, Admiral.

And we will now proceed with a round of questions. And again Drew Warren will be maintaining the—strictly, beginning right now, the 5-minute rule.

And for Vice Admiral Peters and Lieutenant General Levy, is there a backlog for depot maintenance [on any] airframe at either the Fleet Readiness Centers or the Air Logistic Complexes? If so, how long, what is the operational impact, what is the cause, and what is the fix?

General LEVY. Thank you, sir. So, I will answer on behalf of the Air Force.

And to your question is there a backlog for airframe depot maintenance, the Air Force answer is no. Our system of how we perform depot maintenance and high-level overhaul requires that the airplane come in regularly, get serviced, and go back out. So we have maintained a steady rhythm of aircraft; and I would also offer components of the engines because the airplane needs all the parts to be complete, obviously. We have maintained that steady flow of aircraft and components throughout the many decades in the past.

Where we have seen some challenges, however, has been in the supply chain that feeds some of that. That is a bit—has some challenges inside of it, with a small industrial base, in some cases, some small vendors. And perturbations in funding that have occurred through CRs [continuing resolutions] and sequestration have exacerbated that.

But to your direct question about delays, the answer is no. In fact, we have actually used some of our capacity to help our shipmates to my left. So when we talk about depots and the industrial base, we often think of it as service-unique; Air Force does Air Force, Navy does Navy, et cetera. But we are—our destinies are interconnected.

So, for example, sir, I—in my command, I have what you commonly hear called the boneyard in Davis-Monthan—at Davis-Monthan Air Force Base in Arizona. I call it a national reservoir of aerospace capacity, frankly. So we have pulled F–18s out and restored them to service to help our shipmates in the Navy—well, the Department of the Navy with their readiness challenges. At our Air Logistics Complex in Warner Robins at Robins Air Force Base in Georgia, we are actually making center wing spars for F–18s.

And that is an example of how our enterprise interconnects to try to help each other out, because even though we budget separately as services, we fight together as a joint team. And an impact on Navy readiness is an impact on Air Force combat effectiveness. Thank you, sir.

Mr. WILSON. And—and it is really encouraging to hear the interservice cooperation. This is not always recognized, so thank you very much.

General LEVY. Thank you, sir.

Mr. WILSON. Admiral.

Admiral PETERS. Yes, sir. I agree completely with General Levy, and especially about the interconnectedness of our services. And we do rely on each other for capability that is common, and especially across the components and in our airframes that are common. For instance, our E–6s are repaired at Tinker Air Force Base. Our KC–130Js are repaired at Hill Air Force Base. And so we have a very close relationship with the Air Force.

In terms of backlog, we do not have a substantial backlog on the aircraft and engine side. We have eliminated that, over the last couple years, in rightsizing our work in progress. On the component side, we do have aged work in progress [WIP], and the impact of that is it is a financial impact, for one thing, on the depots. And bringing down that aged WIP is incredibly important to us.

The financial impact is we end up working on components that may have been inducted several years previously, and now we are working on a different rate structure. So that is a—a focus area for the—the Navy depots.

And I believe I have answered your questions.

Mr. WILSON. You—you certainly have, and thank you both.

And, Admiral Moore, how are we posturing shipyards so that they will be able to adapt to future challenges from technology and workforce perspectives?

Admiral MOORE. Yes, sir, and thank you for the question. I think the naval shipyard optimization plan that we submitted to Congress this year addresses exactly your question, and—we looked at the naval shipyards, you know, many of them over 200 years old.

You know, we recognized that these shipyards, which were set up initially to build ships, were not positioned properly to repair ships, going into the future. And some of that was just the infrastructure was degraded, and some of it was that, from a technology standpoint, we didn't have the technology we needed in terms of infrastructure, IT backbones, et cetera.

So the naval shipyard optimization plan is going to—is the Navy's plan to address your concerns, going forward. It is a 20-year plan, $21 billion over 20 years that will get after all four naval shipyards. And, as result of that, you know, we will see increased productivity in—going forward, to support the 355-ship Navy.

Mr. WILSON. Super. Thank you, and it is very appropriate.

And we now proceed to the beautiful territory of Guam, the site of the Guam Naval Shipyard.

Ms. BORDALLO. Thank you very much, Mr. Chairman.

My question is for Admiral Moore. The fiscal year 2018 NDAA directed the Navy to complete a review of depot-level ship repair in the Western Pacific. Is this review nearing completion? And when does the Navy expect to submit it to the committee?

Admiral MOORE. Thank you for the question, ma'am. Yes, that study is underway. That is being led by the Pentagon. We expect to have that completed before the end of the fiscal year.

Ms. BORDALLO. Before the end of——

Admiral MOORE. This fiscal year.

Ms. BORDALLO. I see. All right. And we can depend on that, right?

Admiral MOORE. Yes, ma'am.

Ms. BORDALLO. Okay.

My second question is for both Admiral Moore and General Levy. Can you discuss the benefits permanent civilian personnel provide as part of your workforce at your depots and shipyards, and suggested strategies for continuing to incentivize and retain this part of your workforce?

Admiral MOORE. We—since I have the microphone on, I will go ahead and continue. One, our civilian workforce is the backbone of our ability to get the depot maintenance done. The 36,100 people in our public shipyards are primarily civilian personnel. I mean, we don't—and I—at NAVSEA, we are quick to distinguish them as shipmates, as well. There's no difference.

What we need to do to—is we need to continue to hire. We need to continue to support pay raises, where those are appropriate. We need to upgrade our infrastructure and facilities. They are not looking for a Taj Mahal to work in, but they certainly want facilities that, you know, are clean and are air-conditioned, et cetera. And that is not the case in all of our depots today. I think the naval shipyard optimization plan addresses that.

And, as far as hiring authorities, you know, the hiring authorities that you gave us for expedited hiring is crucial, and we appreciate that hiring authority going forward.

I would say there's one thing that would help us there. You know, we have a 180-day cooling-off period for retired military personnel before they can enter our depots. There's an opportunity, as we try to hire them. We are in a competition for talent, not only in our naval shipyards, but with the private sector.

Now, that would be something that would be helpful to us, as we take these young men and women that are coming out of the—our services who are technically capable and ready to go into the depots. And if they have to wait 180 days, sometimes we lose the opportunity to get them.

Ms. BORDALLO. So to lessen that 180 days?

Admiral MOORE. Yes, ma'am.

Ms. BORDALLO. General.

General LEVY. Thank you, ma'am. So I am going to piggyback on what Admiral Moore said about the 180 day, and then I am going to move to the civilian piece, if you don't mind.

So, in my command, we perform depot maintenance on the intercontinental ballistic missile [ICBM] fleet. So I have members of my airmen at our ICBM bases in the northern tier of the United States.

If you are a 20-plus-year Air Force missile maintenance mechanic and you get out of the Air Force and you want to become a civil servant and work for us, doing many of the same tasks, but a—at a overhaul level, you must wait 180 days.

So, if you retire from Minot Air Force Base as a master sergeant, and you have to wait 180 days, and you have a mortgage and a family, et cetera, then, before you can apply and then wait, depending on what hiring authority they hire under, sometimes up to 4

months to get hired, you can imagine we are going to lose that workforce.

And there are not a lot of trade schools in the United States where we teach people how to do maintenance on intercontinental ballistic missiles, same thing with jet engine mechanics, et cetera, et cetera. And the Navy has the same problem across a variety of its skill sets. So relief in that area would be particularly useful for us.

My sense is that the services have complied with the intent of Congress, which says, "Don't hire retired military before 180 days," and, while there's a waiver authority, the services don't want to go against the will of Congress, so they have been very reluctant to exercise that waiver authority. I think the time is ripe for us. As we enter this era of a competition for talent, ma'am, our services, and particularly our industrial artisans, are a high-demand workforce.

Recently, I just had a meeting with the Aerospace Industries Association and some others about competition for talent in the aerospace industry. We talk about a pilot shortage in the Air Force. But we have software engineer shortages, we have jet engine mechanic shortages, et cetera, because, as the economy recovers, as airlines hire, both domestically and internationally, what we see is that demand signal for talent.

And I would echo Admiral Moore's comment about our appreciation for the expedited and direct hiring authorities. I would ask that they be allowed to continue. I have mentioned before to some of the members that we would like to see that expanded, because the way the language is written currently, what it does is it allows us to direct-hire and—expedited hiring of—in a limited set. I often liken it to this: I can direct-hire the quarterback on my team today, but I can't direct-hire the other members of the team. I need all of the team in order to be successful.

So the expansion of that so we can achieve the kind of velocity in our hiring system and bring those permanent civilian airmen onto our team and keep them there is essential for us to generate combat power for our fifth-generation Air Force.

Ms. BORDALLO. My time has run out, but one—just final, from the two of you. Do you want it completely eliminated, or just a shorter period?

General LEVY. Since I have the mic, I would say I would like to see us have the opportunity to completely eliminate it, and here's why. Back to my example about a retiring master sergeant, if he or she has a mortgage or they have kids in school——

Ms. BORDALLO. Oh, I understand.

General LEVY. We don't want to lose that talent. We want them to be able to take that vital skill set and directly translate it, as a civilian, to our civil service workforce and keep adding value and capture that experience—not only technical experience, ma'am, but often leadership experience, because that is equally essential to getting the job done for us.

Ms. BORDALLO. Well, thank you very much. And, Mr. Chairman, I do have a second round, if you——

Mr. WILSON. And—and thank you, Congresswoman Bordallo. We now proceed to Chairman Rob Bishop.

Mr. BISHOP. Thank you. I appreciate you guys being here when you could be actually out doing something worthwhile.

[Laughter.]

And you can take the last answer off my time, because I want to finish off on—on the last thing you said, General Levy. Also, at the end of your oral statement, you talked about how, as our weapons system is advancing technologically, so must our workforce to maintain it. And it is very clear that there is a nationwide shortage in STEM [science, technology, engineering, and math] workers.

As a liberal arts guy, that hurts me to say that, but it happens to be true, as well as the fact that our national employment rate is very high—is great, and it makes it more difficult to find people who are willing to work.

So I would like you to follow up on what you were talking about. What can we specifically do to incentivize the depots in their hiring practice? And what other—you mentioned some, but are there other specific obstacles that we can eliminate to help in this process of getting a talented workforce?

General LEVY. Yes, sir. Thank you for the question. So there are a number of things I think we should collectively be doing as a nation. First of all, I would offer, and this is a long-term strategy, is we need to change the conversation about STEM education in the United States.

Otherwise, we are—we are just sort of managing the shortages, which has near-term implications, of course, but, in reality, until we—until the Nation produces enough STEM graduates, we are going to continue to have this problem. And this isn't just a defense issue, sir. This is an economics issue. This is an international competitiveness issue, in my view. And, when I talk about an industrial base, both commercial and organic, that suffers from some shortages, this is one of the ways you get at that.

I would offer that expanding the direct and expedited hiring authorities is really important. I would also offer that steady funding that allows us to have a steady drumbeat for demand signal to colleges and universities is also really important.

We have had some really good success in our organization working with some of the State 4-year engineering schools because we have been a pretty predictable partner. So they have been able to make infrastructure investments in engineering student output.

Another thing that I would offer is our delays in getting security clearances create some significant challenges for us. That is not, probably, a hiring issue, but it is a—I call it an attractiveness place to work issue.

Right, if you are going to—if we are going to hire you, if we had all the hiring authorities we thought we wanted and needed and we are going to make you wait for some period of time to get your security clearance, that is not really very incentivizing to you to come to work for us.

And, frankly, we are in a competition for talent. The work is complicated and the skill sets required are very high, and the—as you mentioned, sir, the unemployment rate is going down.

That is a good problem to have for the Nation, but it certainly creates some challenges for all of us in the kind of skilled artisanship that we need to sustain our weapons systems, whether they

are air-breathing, whether they go at sea, whether they are cyber or in space. Thank you, sir.

Mr. BISHOP. No, I—I appreciate that, especially you are talking about hiring authority and the security clearance delays. That is something I think Congress needs to look at to see how we can expedite that with you.

I got, like, 2 minutes. Let me come at one last thing. GAO [Government Accountability Office] did a report that talked about challenges and concerns with the global pool of spare parts for the F–35 for us and our international partners.

Can you explain in a—in like a minute and a half anything about that issue and the construct that goes there? And, additionally, if we were to authorize additional funding for spare parts, how can we assure that we get value in that global parts pool?

General LEVY. Yes, sir. Thank you for the question. I can talk about it a little bit. And I would say that the construct we have is the construct that we signed up to, which creates a global spares pool where the U.S. services and the partner nations in the F–35—and I am not the F–35 program executive officer, so I want to be careful not to get out of my lane—but we created this global spares pool where we all put money in and we all receive some benefit.

I would say it is early in the program yet. I think I will see—I would expect to see that mature and the depth of that sparing and spares pool grow over time.

I think the larger issue, frankly, is the industrial repair capability for those spares. And it is somewhat in its infancy as a weapon system. Remember, we are just now starting to get to the point where we are go—where we are going into full-rate production. We just had our 300th airplane delivered just last week, I believe it was.

So we are early days yet. The funding would be helpful. I won't—I wouldn't necessarily disagree with that. But the construct says that the partner nations, the original nine people in the discussion, all benefit relatively equally from the money that is invested. And so I will leave it at that, sir.

Mr. WILSON. And thank you very much, Chairman Bishop. We now proceed to Congressman Joe Courtney of Connecticut.

Mr. COURTNEY. Thank you, Mr. Chairman, and thank you to the witnesses this morning.

Admiral Moore, on page 3 of your testimony, again, you walked through the issue of the backup regarding attack sub repair work—you know, the fact that, again, NAVSEA says that it wants to protect industrial base health, and maybe that is a way of trying to solve that problem, in terms of the SSN [attack submarine] work that needs to happen.

You know, we had Secretary Spencer and Under Secretary Geurts, up in Groton a couple months ago, walk through the imminent short-term valley, which nobody disputes, once the *Montpelier* work wraps up and the fact that, again, with the commencement of the *Virginia* Payload Module program as well as *Columbia,* if we—if that valley occurs, you are adding risk to those programs in terms of just, you know, a workforce that is showing really good, strong growth in both metal trades and design work.

So, you know, I guess we are really very close to that event occurring. And I just—I don't see in—in this testimony, you know, a response to that issue, which, again, the Secretary and the Under Secretary completely did not dispute the fact that that is happening.

So—so, you know, you have tools. I mean, I have been through this with your predecessor two times removed. You have heard me say this before—Admiral McCoy's contracting process, which allows the Navy to move quickly to try and deal with these issues of industrial base issues.

So can you help us this morning, in terms of just whether or not NAVSEA intends to do anything in terms of that imminent valley?

Admiral MOORE. Well, you know, the short answer, yes, we do. And we are looking right now at the fiscal year 2020 and 2021 workload, not only in the naval shipyards, but, obviously, up at EB [Electric Boat]. And, frankly, we have responsibility for the health of the entire industrial base.

So I think you are going to see, here, in the relatively short term, we are going to come to some decisions that would—would move—was going to move some submarine work into the private sector in that timeframe to address your concerns.

And I think we learned a pretty hard lesson on *Boise,* which was we waited, you know, too late in the game to make that decision. So what I have talked to naval leadership about is two things. One, we need to look 2 to 3 years or more out, because I have a pretty good sense of what workload I need and what I have in the public shipyards. And, where I have workload peaks, we should, instead of waiting to the last second to see if we can hang onto that work ourselves, I think it make sense for us to go ahead and—let's provide ourselves some additional capacity by putting the work in the private sector.

So I think you are going to see here, pretty shortly, we are going to make some decisions that will, I think, address your specific concern. But I think, also, the other thing is that we have learned, you know, with *Montpelier* at Electric Boat and *Helena* and *Columbus* now at Newport News, that, you know, the skill set required to do maintenance is different than it is for new construction. So, when you give them repair work after they haven't had repair work in a while and you expect them to immediately perform like a Swiss watch, you find they are challenged to do that.

So we are challenged—EB's been challenged on *Montpelier*—we are going to be late there—and Newport News is being challenged on *Helena,* and we will—going to be a little late there. Some of that is because we haven't built that proficiency up.

And so the Navy's having discussions that maybe would be in our best interest to, on a regular basis, keep some submarine repair work in the private sector, not only as a relief valve for the public yards as we level out them, but also to establish that proficiency level so that, you know, when we do get ourselves into a crisis, we have got a partner over there that has performed that work on a regular basis, that can do that, going forward.

So I think we are ready to address your concerns. And I think, going forward, I think we will be able to satisfy what—you know, what you and I have been talking about here.

Mr. COURTNEY. Well, thank you. I mean, we obviously will be watching, you know, great—very closely to what develops. The—so I think your analysis regarding repairs versus construction, you know, makes perfect sense. And, certainly, we have heard that up in the yard there.

I would—you know, obviously, a layoff and a potential loss of skills is even more harmful to the overall program. So, you know, having some repetition in terms of repair work to keep—you know, to avoid delays, I think, makes a lot of sense. And, again, as usual, our office, you know, looks forward to working with you in terms of how this unfolds.

With that, I yield back.

Mr. WILSON. Thank you, Congressman Courtney. We now proceed to Congressman Austin Scott of Georgia.

Mr. SCOTT. General Levy, it is not often you hear an LSU [Louisiana State University] grad admit to the direct hiring of a quarterback, but I appreciate your admission.

As you know, our depots are an essential component of our readiness and our national security. We have discussed this many times. And we have discussed the increased funding by this committee for sustainment.

What steps are you taking at Warner Robins Air Logistics Center to invest in the workforce, to recapitalize the assets, to improve operations efficiencies and capabilities? And how do you expect this will improve readiness for the aviation fleets and the Air Force?

General LEVY. Thank you, sir. Thanks for the comment about the LSU football. Duly noted, sir.

So, with respect to Warner Robins, we have made a variety of investments both in infrastructure and in the human capital, because, because frankly, sir, people are more important than hardware. And you just heard Admiral Moore talk about the skill set deltas between making new stuff versus repairing things.

And the skill sets of the artisans at Robins are what actually sets it apart. So, in the past year or so we have hired over 1,000 new employees to accommodate the increasing workload, and we have partnered with the technical college system in Georgia to give us the skill set so when they come in, they are much more mission-ready than we have had in the past.

In years gone by, that has not necessarily been a feature of how we have brought people on board. Coupled with the direct hiring authority that we have been allowed to have, thanks to the Congress, that has given us some additional velocity.

So, on the workforce side, I think we are on the right trajectory. Then, on the infrastructure side—and I would tell you, there's never enough money for infrastructure. That is probably a whole separate conversation in and of itself, but we have actually taken some of our own investment dollars and put it into an advanced metal finishing facility at Warner Robins Air Logistics Complex.

Now, advanced metal finishing is probably not the glitziest topic that comes before this subcommittee, but I would tell you, when it comes to chrome plating or cadmium plating of important aerospace components, it is essential, because you have to have them for the airplane. They are—they can be environmentally difficult to work with, and they are—can be hazardous to the workforce.

But we took investments and we automated that process so we can take the humans out of the loop, achieve a better product much more quickly for us and our joint teammates. So hopefully that gets to your question, sir.

Mr. SCOTT. So one of the things that is changing in aeronautics is the—how we are integrating data and, effectively, artificial intelligence into forecasting repairs and the need for repair parts and components and improve the process for conducting maintenance.

What are the Air Force's greatest obstacles to fully integrating the available analytical tools into fleet maintenance?

General LEVY. That is a terrific question. So the—currently, in the logistics and sustainment system, sir, we operate over 230 information technology systems—IT systems. It is disparate. They don't talk to each other.

I often describe it as we are data-rich and knowledge-poor. We have lakes of data, but given our disparate IT systems that have evolved over the years, it is very difficult for us to pull that together to make—to gain the kinds of insights that we want.

We have recently undertaken an initiative for condition-based maintenance, whereby we are now developing analytical engines to look at that data, draw some meaningful insights so we can do more predictive maintenance; have the parts, have the people, either at the Air Logistics Complexes or in the field because, remember, unlike the Navy, my two Navy colleagues to the left, I own the supply chain for the Air Force; the Navy has a separate supply corps.

That is important for me, right? It is not just what I do at the Air Logistics Complexes. It is what I do at Al Udeid in the desert. It is what I do at Misawa in Japan. It is what I do at Osan in Korea.

And so having that analytic engine allows me to understand what the demand signal is going to look like, based on the wear and usage and break patterns of the weapon system. It is not just the airplane, either. It is the support equipment, the vehicles, the test equipment. You need all of that to make the airplane serviceable.

So that condition-based maintenance system that we have undertaken has really started to yield dividends with us on things like the B–1, the B–52, and the C–5, which, as you well know, sir, is currently sustained at the Air Logistics Complex at Warner Robins.

Mr. SCOTT. I—as we proceed through the year, I am interested in any comments. I know one of the key issues is who actually owns the data. When we, as the American taxpayers, pay for the development of the system, it baffles me that, in the contracting—that we don't own the data rights.

And so I hope that, in any addition—any future contracting for any weapon systems, that that is a part of it—that we actually own the data. The idea that they can charge us for something that we paid to develop—it is just absolutely unfair to the taxpayers of the United States.

Gentlemen, I appreciate your service.

Mr. WILSON. Thank you, Congressman Scott.

We now proceed to Congressman Salud Carbajal of California.

Mr. CARBAJAL. Thank you, Chairman Wilson.

My questions are both for Admiral Moore and General Levy, on the civilian workforce. Last month, the Office of Personnel Management [OPM] sent to Congress a request to cut annuities; reduce, then eliminate the Federal retiree cost of living adjustments; and eliminate the Federal Employee Retirement System annuity supplement for Federal Government civilians.

With all this, how would these proposals affect your ability to recruit and retain a qualified Federal workforce, civilian workforce?

Admiral MOORE. Sir, I would have to take that as a look-up. I am not familiar with the specifics of the OPM proposals. You know, I can speak to the fact that, you know, the workforce itself, you know, is an important part of what we do.

They are proud of the work they do. They are—while they don't get paid on the same par as, maybe, their civilian counterparts do, they do it because they are working on something that is bigger than themselves.

So I don't know that I can comment on this—on the specifics of the issue there, relative to the workforce, without knowing the specifics of what is going on from OPM, sir.

Mr. CARBAJAL. Admiral, I appreciate your patriotism, but I think we all do it for our country. But our men and women in the military, as well as the civilian workforce that supports our national security deserve to have good benefits.

So I am sure, if our military personnel didn't have good health care, pensions, that would affect our ability to retain and attract individuals in the military, as well.

General Levy.

General LEVY. Sir, I, too, am not familiar with the OPM language, so I can't comment directly. But what I would offer is, maybe, a way to think about the problem that is before us.

Often, in government service, we have had the mindset that—that people were cheap, cost-wise, they were plentiful, and that the work was easy. I would say that, in the modern DOD that we find ourselves in, as we move from an iron-age DOD to an information-age DOD, people are scarce, they cost more, and the work is infinitely more sophisticated.

And I would add that we are in a war for talent. We talked about pilot shortages in the Air Force, but I would tell you I have software engineer challenges. I have jet engine mechanic challenges. And we could talk about a variety of skills, but I think you get the message.

My point is, we need to—we need to be an attractive place to work in this competition for talent. Benefits is important. So is good working conditions—you heard the admiral refer to that a few moments ago. But so is the notion that they are serving their Nation.

In fact, much of my workforce are veterans. They have—they have worn the uniform of some branch of the military and then they come over to the civil servant side.

And so this is all part and parcel, I think, of a larger discussion, sir, about, are we, the U.S. Government, an attractive place to work to bring the best and brightest talent in, whether it is the DOD or the Department of the Treasury or Interior, et cetera? That is—that would be my—my perspective.

Mr. CARBAJAL. Thank you. And secondly, the recently published fiscal year 2018–2019 National Defense Business Operations Plan, a supplement to the 2018 National Defense Strategy, stated, quote, the Department's lethality and readiness are not just a function of our service members. DOD's civilian workforce is essential to sustaining the viability and capabilities of all—of an All-Volunteer Force, providing critical equipment, maintenance, logistics and engineering expertise.

Can you both elaborate on the value of the civilian workforce to the Department's mission? I think you have already touched on that, but if you could just touch on it a little bit more.

General LEVY. Yes, sir. I would—I would say that, simply put, we can't get the job done without them. So, of the 43,000 airmen in my command, approximately 70 percent are civil servants. Now, I wouldn't tell you that unless you asked me, because I don't distinguish what outfit they wear. They are airmen, and I have the expectations of them as I would anybody that wore the uniform.

They are essential. We simply can't get the job done without them. We can't sustain. We can't project. We can't set theaters open and fight theaters. It is just that simple; we could talk for hours, but it is just that simple.

But the other thing that I think is lost on many is that our civilians deploy. Now, our Department and our Nation can compel me to deploy. We can't compel our civilians to deploy. But yet many of them volunteer, when they don't have to, to deploy. That is the caliber of the men and women that join our civil service.

And so being the right kind of workplace, the right kind of employer with the right kinds of opportunities is how you continue to attract and retain that kind of talent that will provide for the common defense in the years going forward. Thank you, sir.

Mr. CARBAJAL. Thank you very much. We really needed to hear that, because sometimes we lose sight of that importance.

Mr. Chairman, I yield back.

Mr. WILSON. Thank you, Congressman Carbajal.

We now proceed to Congressman Steve Russell, a very appreciated combat veteran himself.

Mr. RUSSELL. Thank you, Mr. Chairman, and thank you for being here today, all three of you. And, General Levy, I appreciate the comments on IP [intellectual property] data and how it affects sustainment. I know this is something that we have talked about in the past. And I associate with Representative Scott's comments about the—the technical data, and I know this is something that all the services face. It can really throw a monkey wrench on sustainment.

I would like to ask you about the health of the defensive supply chain. You touched on it briefly. And, Admiral Moore, I would like to also get your—because I know it is a different system for each of you.

General LEVY. Yes, sir. So thank you for the—for the question. The intellectual property is a significant challenge, and Representative Scott brought up a great point about what do we fund, what do we get, how do we get it.

I would say that, in the 21st century, the intellectual property and the—and the data will be probably more valuable than the

hardware itself. So, to your question about supply chain and intellectual property, for example, the absence of intellectual property creates some challenges for us in managing the supply chain.

The supply chain that I do manage—and I will come back to that. I have actually brought a couple of examples for the—for the subcommittee to see. But the problem in the supply chain is it is extraordinarily brittle.

We believe that the defense industrial base, both commercial and organic, is sort of this arsenal of democracy. That is simply not the case anymore, particularly for sustainment. We have an—a large number of the vendors that we buy from are—there's only one vendor in the marketplace—single-source vendor—not sole-source contract; single-source vendor.

And in some cases, we have no vendors. And these are small companies, sir, 10, 15, 20 employees. And when there's irregular or—and/or inadequate funding and we perpetuate the funding chain, which perpetuate the demand signal, which then radiates uncertainty to those small businesses, they make decisions.

And there is no 1–800 B–52 parts phone number I call. There is no 1–800 F–18 parts that the Navy calls. These are small businesses that are essential. An airplane needs all the parts. The ship needs all the parts, right, whether it is a $300,000 part or a 50-cent part.

And so, in many cases, that is an impactor to readiness for us. If we can't get someone to build or make the part for us, we sometimes end up doing it ourselves. And that sometimes takes longer, and that delays readiness. That means a ship's not out at sea, an airplane's not in the sky. And that means that we, as joint teammates, are not being good wingmen to one another. And so we worry very much about that.

We have—I actually brought, sir, a couple examples of what happens when the supply chain goes right and when it goes wrong. And this one's actually all about intellectual property. And I will leave these exhibits for the subcommittee, because my lawyers tell me that is what I have to say.

But this is actually an ejection seat cover—I am sorry, an ejection seat handle cover for a B–52 bomber. Looks like a fairly innocuous piece of plastic, right? We tried for over a year to get industry to bid on this—the normal FedBizOpps, all the things you normally do in government contracting. Nobody would bid on this. The airplane needs this part. The last B–52 was built before I was born. Finally, some of my engineers, with some of our additive manufacturing capabilities, said you know, I think we can do this. So we invested 40 hours of our engineering workforce time, they reverse-engineered this part and they 3D printed it for $56.

Imagine if we had more intellectual property and we could do more of this. When we talk about 3D printing, we tend to talk about the really glitzy things that you see hanging off of an airplane. But this is just as important as some of those other parts and just as hard to come by.

I will give you another example. This is a bracket. It is used to hold a piece of tooling to drill out holes in a bulkhead on an F–16. That doesn't sound very exciting. But, if you don't drill those holes out right, you can't put the landing gear on the F–16, and

you can't see where the holes get drilled until our guys came up with a way to make this bracket.

So you can put the drill in the right place, drill the hole, and go from 2 weeks of downtime, to 2 days of downtime. That is readiness. That is what the organic industrial base can bring to the fight, in terms of driving up readiness, driving down cost, driving down risk. But it is heavily dependent on intellectual property. Thank you, sir.

Mr. RUSSELL. That was a good answer. Admiral Moore, would you care to comment on some of—and, of course, Admiral Peters. I am limited on time, but——

Admiral MOORE. I brought a couple of parts from an aircraft carrier, but they are too big to fit in the conference room——

[Laughter.]

Admiral MOORE. [continuing]. And so I have left them—left them outside.

I would echo General Levy's comment on, you know, the predictability and stability of funding. We often talk at the Tier 1 level—you know, the folks that are actually—you know, the Northrop Grummans, the Boeings, building the planes and the ships. And they are impacted by unpredictable funding, but less so than the smaller Tier 2, Tier 3 ma-and-pa shops that are providing the—really, the supply chain for building these things.

I would echo exactly what he said—is that, when we talk about funding instability, I think what really hurts the Navy the most is down at the folks that are actually—you know, the small businesses that are providing the critical supply chain parts for our ability to go build these aircraft carriers and ships and maintain them, going forward.

Mr. RUSSELL. Thank you. I yield back—sorry, unless the chairman wants——

Mr. SCOTT [presiding]. No.

Mr. RUSSELL [continuing]. Admiral Peters.

Mr. SCOTT. Sorry. Mr. Khanna.

Mr. KHANNA. Thank you, Mr. Chairman. Thank you for your service to the country. We have been working on a bipartisan bill—Congressman Russell is actually on it—about how do we modernize the Federal agencies' information technology systems.

And I would be curious your experience in modernizing the information technology systems with our military and how that has gone and whether there's anything Federal agencies can learn from that or whether there is still more work to be done.

Admiral PETERS. Thank you for the question, sir. I will address it in terms of Navy ERP [enterprise resource planning]. That is a system that we have had some success with, but it is not deployed across all of our organizations. In particular, we are just now beginning to deploy it across our aviation depots, and that is an area that we need to accelerate so that we have end-to-end visibility on all of our assets.

And, just as an example, we have recently stood up ERP capability at a kitting facility down in FRC Southeast. And we are—so we are going through the growing pains of establishing that capability there.

But even as we move through and complete those kits and they are ready to be shipped out to the fleet, at—when they are shipped out, then that system, the tracking of that system is now dependent on different databases and spreadsheets.

And so I think the first priority is, modernize ERP, open up all the functionality that is available there, expand it across our industrial base, and then maybe even move to the next phase, which is operational.

Admiral MOORE. Thank you, sir. It is a great question, and one of the—you know, one of the big challenges we have in our depots today is we try to update the IT systems we have.

We have got an ongoing effort in the naval shipyards to provide a 21st-century infrastructure and IT that will allow us to kind of link together all the processes we have there to buy material, build innovative plans, et cetera. It is a real challenge.

I think that the thing that we have learned here is you have got to plan ahead and think far enough in advance. Don't bite off more than you can chew. There's a tendency to want too many bells and whistles on these things up front. Go after commonality as much as you can.

And so we have—as we have worked through what we call NMMES [Navy Maritime Maintenance Enterprise Solution]-Tech Refresh in the naval shipyards, we are trying to leverage off of ERP so we don't create these boutique solutions which over the long haul really hurts us. And the last thing is, you've got to build the cyber piece in up front and factor that into your decision making. I think those would be kind of things we have learned, on the Navy side of the house.

General LEVY. Thank you, sir.

So we have similar challenges. And part of this I think we all face is becoming fire compliant so we are audit-ready, too. That is the other piece of this, which our systems have not historically been designed to do.

I would also offer that the acquisition process for buying ERP and ERP-like systems has been somewhat disruptive. We have been trying for a number of years to get a maintenance repair and overhaul ERP in our Air Logistics Complex system. We just got that on contract.

We also, now, have our supply chain forecasting system on contract, and those two systems actually integrate very nicely together. Again, that is a little bit different than the Navy model, because I own the supply chain and the repair chain, so I, in essence, have the entire logistics kill chain, from factory to flight line and back. And so that is what we are in the process of doing—taking those 230 systems and necking them down.

I would offer, though, that one thing that we don't talk about with these IT systems is the IT infrastructure. We tend to talk about the IT system, but you need comm pipes and bandwidth and switches and all of those things that aren't very glamorous. But as the amount of IT systems have exploded in the DOD and across the entire Federal Government, I am not sure that our—I will call it IT infrastructure—has kept up.

And so, as we go to these systems that I just referred to, one of the key components for us is to make sure that we have the infra-

structure so the system has something to work on, so you don't have an exquisite system, but you watch the little blue swirly wheel.

And then, of course, as Admiral Moore said, baking in the cybersecurity is absolutely critical up front, not just for the system itself, but for the rest of the airpower factory that we operate. Thank you, sir.

Mr. KHANNA. Quick question—comment. I was struck by your comment, General Levy, about retention in your previous question. It reminded me of Ronald Reagan's quote where he said, "I know the best civilians aren't in government, because the private sector would hire them away."

And I represent a district with Apple, Google, Intel. On this committee, of course, you have people like Congressmen Carbajal and Gallagher and Russell who have answered the call to service in the military. But I wonder, what can you do with the young tech folks to attract them to go into public service?

General LEVY. Well we talked somewhat about the—kind of the HR [human resources] policies that the government has. But I would say that—and I will give you a good example from my engineering workforce—if I can get them on board, they stay. My turnover rate for software engineers is lower than industry. And you say to yourself, well, why is that, because you don't pay as much?

Because they do something that is meaningful; it is impactful. We give those young men and women, out of college—once we get them on board, you know, all the hiring stuff aside—we give them something that—that most college graduates don't get to do.

For example, recently, we hired somebody from Georgia Tech, brought them in. Once they got on board, within 2 weeks, they were working on night vision targeting systems for AC–130 gunships. That is compelling.

That is—you can tell your family and friends, I went to work today and I made a difference. Yeah, I didn't make the salary that my friend over at this other commercial firm made, but I made a difference. And so part of this is a call—a national call to service. We often believe the call to service looks like this.

Mr. SCOTT. General Levy, if I may——

General LEVY. Sir.

Mr. SCOTT. I am sorry, the time is expired. But we are going to have time, I believe, for a second round of questioning. But I——

General LEVY. My apologies.

Mr. SCOTT [continuing]. Think it was an excellent question. Mr. Gallagher, 5 minutes.

Mr. GALLAGHER. Thank you, Mr. Chairman. It sounds good to call you that. Awesome—don't get too, you know, excited about it, though.

Mr. SCOTT. Thank you——

[Laughter.]

Mr. GALLAGHER. I would like to circle back on what I think is sort of an emerging focal point in this hearing. We had this—the Annual Industrial Capabilities Report, which was released in—last May, I believe, from the Pentagon.

And they talked about a lot of things we have been talking about, which is that the greatest challenge that could harm domestic defense capabilities is the demographics of the workforce. Right?

And, in particular, they said only 39 percent of current workforce is under the age of 45, and that is a huge long-term threat. And, General Levy, I would like to sort of highlight a portion of your testimony which I think is very good and very important.

I mean, you talk about how 80 percent of what you do—well, you depend on 80 percent civilian workforce—89 percent, if you include contractors or commercial airmen. And you have—you talk a lot about how an antiquated civilian hiring system constrains our ability to effectively compete with industry for qualified workforce.

And also, all of you have talked about the need to attract our STEM patriots, the next generation, which this report also highlights. So, at the risk of being repetitive, could you kind of, again, explain in simple language that even a Marine like me could understand, what—where do the constraints come from?

And then, what is the right fix for us to pursue? You talked about a waiver process before, but DOD is not really interested in exercising the waiver because they think it defies congressional intent. Can you just sort of clarify both the problem, and then the prospective solution, if you will?

General LEVY. Yes, sir. So I will try to make it Marine-friendly. But I would happen to quote a Marine——

Mr. GALLAGHER. Pictures would be a big help.

[Laughter.]

General LEVY. But—but a famous Marine once said, amateurs talk tactics; professionals talk logistics.

Mr. GALLAGHER. Indeed.

General LEVY. And that is what this—that is what this hearing really is about. So, first of all, I would offer that we need a national-level conversation about the value of work in this kind of trade space.

We really just don't talk to young men and women about what—what does it mean to become a jet engine mechanic or an—or an aerospace worker or any of the other skill sets that we all collectively need in order to do our job. So I think that is really important for us.

Then the other thing I will go back to is being able to bring people in quickly and capture them into the company fast. I will give you a great example. Commercial firms go to colleges, and they hire you when you are a junior, if you are an engineer. They say, basically, if you graduate, here's a letter of offer. If you—as long as you get your degree, you are coming to work for us.

That is the kind of agility in the marketplace that we need to have. So there's a conversation about the value of non-4-year-degreed work. And then there's a series of hiring—I will call them personnel actions or modifications that you have to have. And then the third thing you talked about was former military, the 180-day waiver. I believe that is really—I think we are leaving a lot of talent behind when we do that. And so how we modify that, I think, is essential.

We face an aging workforce. I don't think any of us would push back on that commentary. And so incentivizing, by word and deed,

the next generation of airmen, whether it is civilian airmen or military airmen or sailor, I think, is going to be essential for us to have this national insurance policy that we call the defense industrial, organic industrial base for our kids and our grandkids, sir.

Mr. GALLAGHER. Can I just—because I am running out of time—you know, I have—we—the big conceptual shift in the National Defense Strategy, National Security Strategy is sort of moving towards recognizing that we are in and must continue to prepare for an era of great power competition with China and Russia.

Obviously, we would like to prevent great power conflict with Russia and China, avoid World War III. But in the unfortunate circumstance that we find ourselves in such a great power conflict—a conflict, how do you assess the ability of the industrial base and the associated logistics infrastructure to surge to meet what our demands would be?

Admiral MOORE. Well, today, the industrial base is sized to meet the capacity that we have. And so it has limited surge capacity. And, frankly, I think, you know, you can go back and read Freedom's Forge and talk about World War II and lessons learned there.

But, if we were to get into a major conflict today, we would respond rapidly. But the surge capacity doesn't exist on day one, and we would have to work pretty quickly to go—to raise the number of people and have the facilities ready to do that.

Mr. GALLAGHER. And I have run out of time. But I think it is—I mean, it is difficult because, in contrast to World War II, I mean, you can't sort of, like, take these Ford factories and get them to start producing aircraft now. It is just far more complex.

So I will hopefully circle back in the next round. Thank you all.

Mr. SCOTT. Ms. Hartzler.

Mrs. HARTZLER. Thank you very much and good to see you again, General Levy. I enjoyed touring Tinker and seeing the great work that you are doing down there in my colleague's district and wanted to follow up on what you were saying about the security clearance backlog, because that is something that we are looking at in O&I [Oversight and Investigations] committee and that is something we are trying to address.

And as the DOD takes on that responsibility through the NDAA and they are working on that, what do you think is the timeline that would be acceptable to civilians? What should be the goal? I mean, do you think if we could get a security clearance process so it is down to 6 months, do you think they would stick around? Or—you know, it is far beyond that, sometimes, right now.

General LEVY. Yes, ma'am. Great to be with you as well, thank you.

The security clearance problem has been a problem since I have been in uniform, 33 years. And I have not seen it really significantly improve. It gets a little better, a little worse, but it sort of—I mean, it took 2 years for my last update, for example—just incredibly long time.

To your question, so when the DOD takes that responsibility back in-house, my understanding of the language is that security clearances that are already in process, and I think it is 300,000-

plus, will remain with OPM, and only new ones, going forward, will be initiated and processed by the DOD.

So my only point of bringing that up is to manage expectations that, once DOD does it, all these things are already in process probably won't—I wouldn't expect to necessarily see those resolved quickly.

To your specific question about timeline, I would like to see us get it done in 4 months. That is a stretch goal, I know that. And I also know that doing a security clearance is—requires a lot of legwork, a lot of investigating, a lot of—and, if you have lived a lot of places, it is more complicated, et cetera. But I am not 100 percent convinced that we are leveraging technology as much as we should be, and I think there's some opportunity for compressing.

I would offer, too, that one of the things we do in my command, is we do constraints-based management. We map the process, from soup to nuts, and then we look at the constraints, and we go attack that first, biggest constraint and shrink it, and then the next and the next.

I would offer that the security clearance process might be—might be overdue for an analysis like that, so we can figure out where the real friction points are and drive that down, whether it is in OPM, DOD, or at the—at the member/local level, if that makes any sense.

Mrs. HARTZLER. Very good. I appreciate that input.

Vice Admiral Moore, I understand the Department of Defense has sought significant increases in facility sustainment, restoration, and modernization [FSRM] funding, specifically for demolition of facilities that do not meet operational requirements and, in some cases, hinder the readiness of the military across the globe.

In response, Congress has boosted funding for FSRM in previous fiscal years to tackle the challenge of maintaining facilities. Demolition of these buildings is important to sustaining readiness for the warfighter and reducing potential health and safety risk at DOD installations.

For instance, I understand that Norfolk Naval Shipyard will require some infrastructure demolition and improvement in order to meet the Navy's growing demand signal for submarine maintenance. So can you explain the process used to identify buildings for demolition, as well as the process used to prioritize demolitions across the DOD?

Admiral MOORE. Yes, ma'am. Thank you for the questions. Absolutely, Norfolk Naval Shipyard has some buildings that have been there for, in many cases, 100 years or more that we need to get rid of. I think if you were to go to Portsmouth Naval Shipyard or Puget or Pearl Harbor, you would find the same challenges there.

We have tried to address this in our comprehensive report to Congress on naval shipyard optimization. That plan actually addresses and prioritizes the work in the shipyards and which buildings we would go after first. In particular, you know, we will try and demolish buildings where we can take that greenfield and put something there immediately that would help us become more productive. So we are going to prioritize the removal of buildings where we could—we could insert a new building or new technology

the quickest that would get us more productive at the naval shipyards.

Mrs. HARTZLER. Very good. Thank you very much. I yield back.

Mr. SCOTT. Mr. Rogers.

Mr. ROGERS. Thank you, Mr. Chairman.

The Army depots have conveyed to me for years they—how they have struggled with carryover limitations. And I am—I have been informed that it is not as much of a concern for the naval shipyards. Is that—is that accurate?

Admiral MOORE. Yes, sir. I think the part of that is because the naval shipyards are mission funded. So the working capital fund rules on carryover are different. So, in the naval shipyards, we are not as constrained there, although I would tell you, at the end of the day, we try to limit the carryover because——

Mr. ROGERS. Everybody does.

Admiral MOORE [continuing]. Because the carryover just means churn in the future years. So I don't have the same challenges, I think, that Admiral Peters has in his ready centers or General Levy may have in his air depots.

Mr. ROGERS. So, tell me, what kind of carryover would you have?

Admiral PETERS. Thank you, sir.

The main constraint associated with carryover is, when you are accomplishing work that was paid for in a prior year and your cost is higher the following year, then you are going to—that is going to upset your—your norm, your net operating result, which we watch very carefully, and it will have some implications for future funding years.

But I think we manage the carryover accordingly. So I wouldn't—I would not describe that the carryover limitations are a major issue for us, because we have to manage our carryover.

Mr. ROGERS. General, are they a major issue for you?

General LEVY. Sir, thanks for the question. We typically break carryover into three buckets, if you will: the airplanes, the airframes, the commodities, and software. In the airframe and commodity area, I would echo my two colleagues and say that—I mean, there are puts and takes every year, but, just at a macro level, it is not really something that keeps us that awake at night. I run a $16 billion a year business, and so, as the CEO [chief executive officer], I think about that from a business perspective. And, as the admiral said, you know, managing the rate structures and the cost structures and what that means to my shareholders, i.e., the Air Force and the taxpayer and my joint partners, is really important to me.

What I would tell you is that we do have some challenges with carryover and software. The software construct—the way we define software, the DOD 5000, the way we fund it, and with different appropriations, et cetera, we want to buy it and build it and take care of it like we do hardware, it is an antiquated notion. It is intellectually not compatible with a 21st-century DOD.

And, by extension, because I have 4,000 software engineers in my organization who do much of that work, the work that they do—the carryover in the software universe, I think, is really a bit of a challenge for us. Software really doesn't care about the fiscal year boundaries, and it doesn't necessarily get produced in the

same kind of discrete chunks that a jet engine or an airplane or a ship gets produced in.

So, if there were some things we could do to change that piece of the universe, we would be very appreciative, because, frankly, our ability to wield and launch ones and zeros in the future will be the key to combat dominance in a great powers conflict.

Mr. ROGERS. Well, to that end, because this has been something expressed to me repeatedly over the years from the Army depots around the country, I asked General Turner to draft the language that he thought would remedy that, and he did. And I put it in this year's NDAA.

I don't know if you all have seen that, but I would ask you to look at it and see if it scratches your itch. If not, let me know what you need, because this is something that we didn't—we don't need let go on any longer. But I would urge you to look at that language.

Last question I wanted to ask of you all, we have heard about this technology challenge—you know, trying to get high-tech young people to want to go into public service. What are the other critical skill sets that you-all need, because I don't hear that much from my world. But what are the critical skill sets you-all are worried about retaining in the industrial base?

Admiral PETERS. Sir, to answer that question, I would point us back to the comment associated with our aging workforce. And so our more modern aircraft, in particular, are not just about drilling holes and bucking rivets.

We need to educate the current workforce even as we try to attract, you know, the future workforce. And we are doing that through some education programs. And the workforce has actually responded to it very positively, which I was a little surprised, but pleasantly surprised about.

And so we are putting our workforce under a kind of an education development program, those that are interested in that, and so they are learning new skills and learning how to use the computer-controlled equipment like lathes and jigs and things like that that make our work more precise.

And then, on the engineering and logistics side, we are using new technologies and new tools to be able to provide repairs. So thank you.

Mr. ROGERS. My time is expired. Thank you.

Mr. WILSON [presiding]. Thank you, Chairman Mike Rogers. And these answers are so important, we will proceed to a second round. And, even before—as we begin, and—I will ask the first question.

But, as I think of depots, something so inspiring to me with the technologies we have today of—of barcode that—equipment can be identified instantly and found instantly, with the cell phone's capability, where people can communicate in the most remote areas of the world.

How opportunities—it was so inspiring to me. I visited the theater distribution center in Kuwait, during the conflict, with General Abe Turner. And it was just incredible to me to see how sophisticated and the opportunities that you have to serve our service members.

I can particularly remember visiting a National Guard unit in Afghanistan, and they weren't—they weren't really complaining,

but they said the roller in front of their vehicle was not working properly. It missed a pin. And I said, "Well, where's the pin?" And they said, "Well, we are looking into it." I said, "okay."

The moment I got into the car—I think that Congresswoman Bordallo was there to make sure that I followed through appropriately—I immediately called back to General Turner. I said, "Hey, please get the pin here to Khost as soon as possible." And so, again, the capabilities we have today—I want to thank you for advancing the technologies.

And so, Admiral Peters, we have learned many lessons, as I have indicated, from the sustained equipment during the Iraq and Afghanistan wars, as well as—we conducted equipment resets in the global war on terrorism, following the periods of the highest operational tempo.

So how do we ensure that we have incorporated these lessons and technologies and are applying them to the future, anticipated sustainment needs?

Admiral PETERS. Sir, I agree completely. The barcode technology is actually fairly simple to incorporate, and we generally established a dollar value for where that makes sense. The next step of that, discussed a little bit earlier, is incorporating that into our Navy ERP system so that we have end-to-end visibility for all of our assets. So tracked—so implementing barcode, easy; actually having complete inventory management is the next step.

Mr. WILSON. Well, I just—the opportunities we have today are just unimaginable. I can remember, as a second lieutenant, being in charge of the supply room at the armory, and it was overwhelming to find anything.

And so, on another positive note, we now proceed to Congresswoman Bordallo.

Ms. BORDALLO. Thank you very much, Mr. Chairman.

I think any three of you could answer it, I guess—my next question. How does the Air Force and the Navy assess the maximum executable level of depot workload when developing the budget request? And what are the primary factors that limit the ability to increase the maximum executable level?

Admiral MOORE. Well, the maximum executable level is based on how many people we use, the capacity in the yards to do work. And we want to prevent a *Boise*-like availability we have had in the past.

So, when we determine the maximum funding, we look at a couple things. We look at the—what workload do we have, what capacity do I have in the yard. And then the big constraint is, how fast can I hire? That is really the driving factor.

In today's environment, where the unemployment rate is at 3.8 percent, as General Levy has articulated many times, we are in this competition for talent there. That is the thing that is—that is the biggest challenge for me today is how fast can I ramp up?

And so, you know, when I go back and have this discussion about max executable, it is really—the discussion really gets down to, how fast can I hire and then train them to be ready to be the artisans that I need?

Ms. BORDALLO. General, is it the same thing for you, or?

General LEVY. Yes, ma'am. I would say it is very similar. We operate, you know, in a—from a fairly similar perspective. I would offer, from a strategic level, though, one of the things we have done over the past 20 or so years is that we have set an organic industrial base that is designed for optimal efficiency and perhaps not optimal effectiveness.

So you heard Admiral Moore talk about, well, you know, if you—if you tell me you want me to do more, I am lead time away from hiring/training my workforce, because we have built a system that has just enough workforce for just the amount of work we want to do today.

So somebody mentioned—or Admiral Moore mentioned a few minutes ago about surge capability and capacity, right? This really goes to, what do you want the organic industrial base to do? Do you want it to be sort of a just enough, just in time? Or do you want it to have some buffer, some—what I call elasticity in it so that, when the crisis occurs, you have got that expansion capability?

And I would submit that you absolutely need that, because we won't have 6 months to prepare and build up for the next war. It is going to happen like that.

And some would suggest that we are already in the early stages of conflict, right? Hybrid warfare—are we—you know, what is—when is cyber, versus kinetic sorts of conflicts—when does that mean that a conflict has occurred or is occurring? All of those things mean that we need to be—be prepared at a moment's notice.

And the second piece of that, besides the hiring piece of that, is the supply chain piece of that. So I am going to put words in your mouth, and you tell me if I am wrong, Admiral, but I think we are probably on the same sheet of music here. But, even if we had the people—that, if I haven't given the indications and warning—the tipping and cueing, if you will, to the supply chain, to buy advance—you know, to advance-purchase the materials to do the work, having the people doesn't really get us the readiness and capability that we think we—you know, that we expect or what the Nation expects from us.

So I would say that our—our challenges are similar, but it is probably more a function of a system designed for optimal efficiency, based on many decades at war and challenges with funding. So it is more about efficiency than it probably is about effectiveness. I hope that answers your question.

Ms. BORDALLO. Yes, it does, thank you, General.

And I have a question for you, Admiral Peters. Earlier this year, the Navy delivered a comprehensive plan for investing in the modernization of its shipyards. For the Fleet Readiness Centers and Air Logistics Complexes, do you have similar comprehensive plans to invest in the infrastructure and the capital equipment not just to support new weapon systems, but to also sustain the legacy platforms? And can you describe some of these initiatives and budget requirements?

And I don't have much time left, so.

Admiral PETERS. Yes, ma'am. Just briefly, we are behind NAVSEA in this, and we are going to follow their lead and what they have done with the shipboard optimization plan.

So, just last week—I mentioned that I have been on the job 2 weeks, but, just last week, I ordered the baselining of all of our depot equipment—that is 71,000 pieces of equipment, starting with the first 800 critical items that—the production line is stopped if that equipment doesn't work.

So we are going to start this year with the baselining, and then, the following year, we will put the modernization plan in place.

Ms. BORDALLO. Thank you. And General, do you also——

General LEVY. Yes, ma'am. So we do have a comprehensive plan for both infrastructure and capital investment. And, of course, as you know, we, by law, invest 6 percent of—of our earnings every year back into the infrastructure, if you will.

So we put that both in the physical infrastructure and in the plant, property, and equipment. Good example would be F–22 robotic coating. We now do that. We don't expose workers to that hazard. We go faster and we do it cheaper.

And there are a variety of additional examples. We do it also in facilities. But the one thing I would tell you is that our 6 percent depot investment language does not allow us to buy MILCON [military construction] with that.

We—and so I would suggest that, in ways of thinking about, how do we go faster and, by going faster, I go cheaper and deliver more readiness, I think that is an additional area that we should collectively explore.

Ms. BORDALLO. That is a very good point.

And my time is up, so I yield back, Mr. Chairman.

Mr. WILSON. Thank you, Congresswoman Bordallo.

Congressman Austin Scott.

Mr. SCOTT. Thank you, Mr. Chairman.

General Levy, I want to go back to the data issue and if you could share your insights into the need for the services to own or obtain data rights and, specifically, how the link—that links to additive manufacturing.

And then one of the questions in regard to that is, is it possible for the data to be both secure, as we know it has to be secure, but we also, at the depots we need it to be on demand. And so how do you balance that security with on-demand access to it?

General LEVY. So, sir, I am going to answer that question first and then go—kind of go back to the data rights piece. Whenever we think about doing something like this, we think about it not from a—just a technical perspective.

We think about it from a cybersecurity perspective, because, ultimately, what I want to do is I don't want to print this at one of my Air Logistics Complexes. I want to send these ones and zeros downrange, to Guam, where I have got continuous bomber presence, and I want my folks to be able to print it out right there.

And so, when we develop our technical data packages, we do it in a way such that we can ensure cybersecurity and a cyber pedigree. So, if I send you those ones and zeros downrange, you know and I know that the ones and zeros I sent you are the ones and zeros you got, so when you print this out, you will know it is exactly what you expected it to be. And so that is an absolutely—that is a nonnegotiable requirement of how we do this business.

And I would suggest to you, because some have criticized the Department for its slow pace of adopting additive manufacturing, that that is a—that is an area where there's risk, and so it is an area where we proceed with caution to make sure we get it right. This is—it is not an area where we need to be arbitrary or capricious.

With respect to intellectual property, what I would say is that we need better laws with respect to intellectual property. Intellectual property is the ink in an inkjet printer. You can get an inkjet printer, generally, for not a whole lot of money, but you are going to have to buy the ink, year over year over year.

And I don't know that, necessarily, we, as the DOD, understand that, as we migrate to an information-age Department from an iron-age Department. And so our procurement laws, our procurement strategies, I don't think have adapted.

And when we say intellectual property, some people, I think, believe that it is an all-or-nothing proposition. Most of the time, at least in my universe, we don't want all of the intellectual property to sell it on the open market or compete it.

What we really want is enough of the intellectual property and the data rights so we can take care of what the Nation has asked us to take care of. And, quite frankly, a lot of companies lose interest in taking care of some of these weapon systems over time.

Dean worries about the E–6, our only airborne nuclear command and control platform—lives at Tinker, is sustained at Tinker, but it is in his portfolio. We collectively worry about companies who may not want to take care of that anymore; B–52, KC–135, B–1, we could go on and on, but you get the message.

And so having that intellectual property gives us the ability to do these kinds of things with—without having to reverse-engineer it. Thank you, sir.

Mr. SCOTT. Admiral, so I have heard Secretary Wilson speak about this repeatedly, and—better contracting and owning our data when we pay to develop a system. Is the Navy pursuing this, as well, with the contracting? Is—I haven't heard as much from the Navy about it as I have heard from the Air Force.

Admiral PETERS. Yes, sir. Let me mention that, just having finished a tour as a program executive officer, I can tell you that technical data rights are a source of friction between the government and industry. And it seems to be getting worse.

I think what we need to be careful of is that we don't overreach. And that is—I think has driven industry back into their corner a little bit and put up the barrier.

So we absolutely need those critical pieces for—from a sustainment standpoint. We want to—we don't want reach into their intellectual property. I think that is when we are going to bring the lawyers out, if we are not careful.

Mr. SCOTT. I would suggest to that, when the United States taxpayer pays for the development of a system, we have paid for the development of the data, and that issue needs to be handled up front.

Our defense industrial complex is extremely important to our national security, and they deserve a square deal. The United States taxpayers deserve a square deal as well. And if it takes bringing

out the lawyers to straighten this out, then that is just what it is going to take.

But I cannot imagine anybody in private business paying to develop a system, and then turning around and—and not being able to service that system because the person you paid to develop it says, no, you don't own the system. I actually own what it takes to operate it. It is the key to the engine of the boat.

With that, I yield the remainder of my time. Gentlemen, thank you.

Mr. WILSON. Thank you, Congressman Scott. We now proceed to Congressman Steve Russell.

Mr. RUSSELL. Thank you, Mr. Chairman. And thank you for being willing to take a second round of questions.

And, Admiral Moore, a couple weeks ago I was out looking at the great capacity of our shipyards in San Diego, and I was surprised to learn from the partners that are out there—NASSCO [National Steel and Shipbuilding Company], BAE, others—they do such fantastic work out there. It is a vital national asset. But I was surprised to learn from them there was an idle dock—dry dock. And, you know, I am sure that there's reasons for that. They seemed a bit puzzled on why that dock would be sitting idle and couldn't be jumped with ships that were in waiting.

But, for whatever reason, I realize deployments or extensions sometimes do that. Could you speak a little bit to that? Because, you know, we have very limited capacity with full-service shipyards like San Diego. How do you address those challenges, when—when you have an extension of a deployment and you have got a schedule, and yet you have got an empty dock, and there's not that many of those?

Admiral MOORE. Thank you for the question. So, absolutely, we have—you know, the dry-dock capacity that we have today is about—it doesn't have a lot of extra surge in it. So we ought to be making use of every dry dock we have.

There's a graving dock in San Diego that the government owns that—there's money on the end for the priority list that we have—looking for this year, in 2019, to go upgrade that dry dock. I think that would be good. In this particular case, I think what BAE and NASSCO is referring to is, you know, a floating dry dock that they own.

The maintenance schedules themselves are cyclic. And so, sometimes, you know, we have periods of time where we just don't have a requirement to use the dry dock. That is going to change, going forward, you know, as we grow the size of the Navy and the littoral combat ships have additional docking requirements associated with it.

So, while there may have been a dry dock empty in San Diego right now, that is—that is generally not the case. And we are generally in a situation where we are looking to find more capacity than less.

So I certainly, you know, agree with you up front that, you know, the BAEs and the NASSCOs of the world, our private sector partners in the industrial base management, are absolutely critical to our ability to get that done. So where we are not using that capacity, we need to look to do that.

Mr. RUSSELL. Yeah, thank you. And I appreciate that, and I know that you all are sensitive to that. Just, if there's any way, you know, that we could help—because I know, sometimes, between the base shipyards and then, you know, the contracted shipyard—or dock capacity—and we certainly don't want anything to be sitting idle.

General Levy, the commercial industry has developed quick depot turnaround times for the airline industry. Are there ways to leverage industrial practices to improve similar turnarounds? And I know we have talked about data, and I agree wholeheartedly with all of that. We have got to come up with some legislation to help—and future procurement. But, with regard to the other things, you know, the best practices on depot-level turnaround, how can we leverage some of those best practices?

General LEVY. So, sir, you would be, I think, happy to know that we have a robust engagement with the commercial aviation industry. They actually come and learn from us, and we learn from them. In fact, about 6 weeks ago, the president of Delta TechOps was at my headquarters at Tinker Air Force Base in Oklahoma City. It was the first time he had been there, and some of his other people had been, over the years. And it was the first time he had been there. He said, wow, you guys do this better than we do. And specifically, he was talking about jet engine repair, because that is the jet engine center of excellence for our Air Force.

So we—and we send people to the commercial industry to leverage best practices. So there's a lot of back and forth dialogue by which we can either adopt their technologies, and/or their management practices. But I would say we are very competitive, very competitive. And I am—on any day, I will put my folks up against the commercial industry. I think where we have some challenges, though, are some of the laws and rules about how we fund our organic facilities.

For example, a commercial airline would never bring an airplane in for overhaul unless it had all the parts, and then some, that it thought it might need, because that airplane, not carrying passengers, is not making money. And so they are willing to take a little risk on spare parts, if you will, to have them sitting there, waiting, when the airplane comes in.

We are subject to the bona fide need rule, which then limits us in terms of how much we can sort of lean into it. I run—although I run a $16 billion a year P&L [profit and loss], I am still constrained by some of these laws and policies. Frankly, I would take a little bit of financial risk and I would bring some parts on board and have them sitting there, waiting, when the airplane showed up. And, even if I didn't sell them today or use them today, I might use them on the next plane or the plane after that.

But I have to be careful, because I either violate the bona fide need rule, or the GAO comes in and tells me that I have got too many parts sitting around, and then I am forced to divest them and buy them again later, and then Congress tells me that I am irresponsible with funding.

So there are some things there that I think we could do through policy and law that would allow us, collectively, to accelerate the

velocity by which we bring things in, get them serviced and back out in the hands of the warfighters.

Mr. RUSSELL. Thank you. And I yield back my time.

Mr. WILSON. And thank you, Congressman Russell.

We now proceed to Chairman Mike Rogers.

Mr. ROGERS. Thank you, Mr. Chairman.

I just wanted to follow up on my last question with the other two witnesses about critical skills that you are concerned about us losing in the industrial base, other than the high-tech workforce.

Admiral MOORE. Yes, sir, thanks. You know, we tend to focus today—and the young kids come in on the STEM world and they all want to be IT software. I would sort of go back to something General Levy mentioned earlier.

You know, a lot of the work that we do in the depots, and particularly in ship repair—it is blue-collar work, and I think we have lost some of that tradition of—in the shipyards.

I have, you know, been around shipyards most of my naval career and there's a proud tradition of second-, third-generation folks that are in the yards. So, you know, what I worry about is not just the IT folks and the people that are doing software, but I need pipefitters. I need electricians. You know, I need welders. And, you know, that is a trade that—you know, you are doing great work as a—in that particular field. I think we need to be encouraging the work—the young kids today that not everybody has to be a software engineer, not everybody has to be white-collar, that there is a real national need for these.

And that hands-on mechanic can do things that—as an artisan that nobody else can do is really a challenge in the shipyards. And I have more challenge finding those qualified folks, sometimes, than I do, you know, the other end of the spectrum.

Mr. ROGERS. Yeah, it—it is a challenge, and—and it goes back to this aging workforce issue, too, because you are correct: There's an art to some of this. We—in my jurisdiction, in my committee, we have the nuclear weapon systems. And we have people working at places like Pantex in Texas that—they have developed an art as to how to work on these nuclear weapons that, when they retire, we don't know how we are going to replace them. It is a—it is a real, critical skill that—that we are confronting, and we don't know what—what the answer is.

But what about you, General?

General LEVY. So thank you, sir. I would offer—first of all, it is a national conversation about—about what we value from our young men and women. And rarely do we hear a national conversation about, hey, go to—go to a trade school and learn how to do these—some of these skill sets that we are talking about. It is, go to college, get a degree, et cetera.

And so part of this is about, what do we value as a nation and, by extension, what do we tell our young men and women? If you have ever tried to get your house repaired, a plumber to come to your house, get your car fixed, any one of these thousands of things, you know exactly what I am talking about.

These skill sets that we have in our portfolios are exquisite, and they are very rare, and they are essential to the national defense. I would invite you to come out to Hill Air Force Base. And you talk

about nuclear weapons. I sustain two-thirds of the nuclear triad in my command.

Come out to Hill Air Force Base and watch those people perform maintenance on an ICBM rocket motor and slice it in half for aging surveillance testing, or watch them do the work on a transporter-erector launcher that actually puts the ICBM down in the hole, and you will see that that is incredibly skilled work, but it doesn't require a 4-year degree.

And, as Admiral Moore said, that workforce is starting to age, and we have a very difficult time recruiting them. Lay on top of it some of the human capital system things that we have, and lay on top of that an economy where there's fairly low unemployment, and what you have is a building case for a significant problem that we don't want to find ourselves in.

Mr. ROGERS. Yes. Well, we have a challenge as a nation to try to do a better job of communicating to our young people and their parents that not everybody needs a 4-year degree.

I am—I have got a liberal arts education. I don't have anything against it. But the fact is, a lot of these kids go to a 4-year school and get a—a bachelor's degree and they are lucky if they can get a job paying $30,000 or $40,000 a year, whereas, if they had gone to a 2-year community college and gotten a trade skill—welding, whatever—they can start off making a lot more than that and have potential to make a lot more, and there are more job opportunities. But there's a stigma that we have got to get away from, that shouldn't be there, that that is not a good path to pursue. So I am interested in how you confront that.

I have Anniston Army Depot in my district and one of the things they have done is they set up a training program where the high schools will send people to come there to learn how to be a welder or whatever and they are guaranteed a job in the depot if they go through that program. And they have really dealt with a lot of their shortfalls, as far as critical skills, through that program.

General LEVY. We have very similar programs across my command. They—the challenge, really, is young men and women—young men and women who want to go into that. And there is just not enough of them.

And, in the aerospace industry in particular, as the economy recovers and the domestic airlines recover and the international airlines recover, there is a large demand signal pulling those people away from government service to those other parts of the industry.

And so, whether you are a jet engine mechanic or—or something else, it is very difficult to find and keep them. And that is, sir, that is art. It is—I mean—and, if you have ever seen a pipefitter or somebody fix a bracket on a B–52 or an F–16, that is art. It is an exquisite piece of craftsmanship that is the underappreciated key to our combat capability in the Nation.

Mr. ROGERS. Well, that is my point. The private sector's facing the same challenge you all are facing, is too many kids are going to college instead of getting these trade skills. And we have got to find a way to help educate young people that this is a path they ought to be considering.

I am sorry. I went over time. But thank you for your service and thank you for being here. I yield back.

Mr. WILSON. And Chairman Rogers, thank you. And what an excellent point you are making.

I would now proceed to Congressman Mike Gallagher, a very appreciated veteran himself.

Mr. GALLAGHER. Thank you, Mr. Chairman.

I would like to commend you on what I think is a—one of the most productive hearings we have had. This has been a great conversation on a topic that I tend to think is probably the most important one that no one's really paying attention to. But perhaps this suggests that we could get more attention paid to it.

I would just like to go back to the issue of surge capacity, which we talked about briefly, and maybe start with you, General Levy. Just, how do I put this—I mean, maybe, in your opinion, what has changed, when it comes to the defense industrial base, from the days of Freedom's Forge to the present? What vulnerabilities have sort of crept into the base that didn't exist back then, that would complicate our ability to surge?

General LEVY. Thank you, sir.

The first thing I would tell you is years of budgetary uncertainty and budgetary pressure, right? And so that becomes a bit of a corrosive effect over time. You have heard our service chiefs and secretaries talk about the corrosive nature of sequestration.

And we typically think about that in our uniformed force. But this is the foundation upon which our—our combat readiness rides, for all of us, right? If we get this wrong, it doesn't matter how many men and women we have in uniform, because we won't be able to project power.

The second piece of that is, somewhere along the way, we lost—first of all, we are not as—an industrialized nation. Our economy has shifted. That is another component to it. The economy has globalized, and I don't—while we realize that from an economic perspective, I don't know that, necessarily, from a defense sustainment perspective, we—we have necessarily caught up with that.

And then we have really migrated towards efficiency, over combat effectiveness—or effectiveness in many of our structures. And then, lastly, I would offer that perhaps we fail to appreciate how much of the supply chain is globalized, in terms of the materials it takes to make modern weapons systems.

And so, when you put all of those things into the recipe, I think that is what has caused us to perhaps lose some of our focus. And then, lastly, and I see this occasionally in the Department, the concept that logistics and sustainment is a cost center—in fact, if you read some of the literature, occasionally it will say, well, we have got to cut the cost of logistics and sustainment. Okay. That is true, but the implication is that, if I cut the cost, I will still get the same readiness, but I just won't spend as much money. I would offer that logistics and sustainment is a combat effect. If you get it right, you could—you can impose your will on the enemy. If we get it wrong, the enemy will impose his will on us.

Mr. GALLAGHER. I appreciate that. And I pose the same question to the Navy. But perhaps maybe touch, if you would, on sort of the decline of commercial shipbuilding and how that relates to naval shipbuilding, as well.

Admiral MOORE. Exact—I was going to touch on that exactly. I think we still have—we somewhat have this nostalgic view that, you know, World War II happened, Pearl Harbor happened, and in 2 months we were—ramped up the machine.

If you go read the book, that is not the case. It took us years, even back then. And that is with unemployment at 16 percent and a—and a Nation that was hungry for jobs. So, today, you are going to have that challenge. You know, one of the things that has changed over the years is the number of private yards that build ships for us today has significantly gone down over the last, you know, 20 to 25 years.

We were at 17 or 18 yards that could build naval ships for us. Now, we are down to probably—I don't know about the exact number, but probably five or six core yards. And the same thing goes for commercial shipbuilding.

Most of that has been—you know, is overseas. You know, most of the commercial shipbuilding now, other than the things that, you know, we have to follow by law, that is done overseas. That is going to be a real challenge for us. And then, getting back to the conversation we just had with Representative Rogers is, you know, the workforce today. Where are you going to go find the people that have kind of those blue-collar artisan skills is really going to be a challenge. So I think the combination that—you know, the industrial base, as it exists today, looks completely different than it did 50, 60 years ago. A lot of that work is done overseas.

The work, also, on the platforms, is a lot more complicated. We are not talking about building Liberty ships in 90 days. We are talking about warships that are a lot more complicated. So there's a—there's a number of things here that are going to complicate that problem for us.

I will say, though, that the American worker and the American people, you know, when—when the challenges arise, they have always risen to the challenge in the past. I have no doubt that we would do that going forward, sir.

Admiral PETERS. Nothing, really, to add other than that if you look at it from a constraints standpoint, I think we have the tooling that we need to surge, but it is those other aspects. Can we hire the people to do the work? And can we get the supply chain predictive enough?

Mr. GALLAGHER. I appreciate that. I am running out of time.

I just would say, I think, particularly as the Pentagon finalizes its response to the White House directive on a review of the industrial base, it might be useful for Congress, I think, to do something similar, a parallel effort in a sort of systematic way, both to analyze that report and also kind of do our own analysis of the industrial base, kind of as a follow-on to this hearing.

So thank you for getting that conversation started with us today.

Mr. WILSON. And thank you, Congressman Mike Gallagher.

And thank each of you, as witnesses today. This—I—I agree with the member from Wisconsin, Congressman Gallagher. This has been a very helpful hearing, and I just appreciate everyone being here and the participation—record participation by members who are really dedicated to work with you on behalf of the American military.

I also want to thank Drew Warren for his service. And with this, we are adjourned.

[Whereupon, at 10:51 a.m., the subcommittee was adjourned.]

A P P E N D I X

JUNE 14, 2018

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

JUNE 14, 2018

Statement of the Honorable Joe Wilson
Chairman, Readiness Subcommittee

United States Navy and United States Air Force Depot Policy Issues and Infrastructure Concerns

June 14, 2018

Good morning. I call to order the House Armed Services Subcommittee on Readiness. I want to welcome you to this morning's hearing, and I would like to thank our panel of witnesses for being here today to discuss the defense organic industrial base and the significant role it has in maintaining and restoring readiness back to our armed services. This hearing will specifically focus on the current state of "United States Navy and United States Air Force Depot Policy Issues and Infrastructure Concerns".

Our Shipyards, Fleet Readiness Centers, and Air Logistics Complexes are critical to this country's ability to project power and to properly train and equip our warfighters. The sustainment industrial base provides the backbone for the military to respond to a variety of contingencies, surge capacity, and provide unique solutions to requirements.

Our readiness recovery is fragile and it is important to understand exactly what is in jeopardy. During this hearing, I would like you to help us answer this basic question:

In terms of risk, what does it mean to our national security, particularly our sustainment industrial base to have ships moored to the pier or sitting in dry dock for extended periods of time, or have aircraft waiting for depot maintenance?

The depots saw diminished workloads when major combat operations ended in Iraq and Afghanistan. This decreased workload coupled with unpredictable budgets and continuing resolutions forced the services to divest a portion of the technically skilled workforce, and limit re-investment into depot facilities. We know these variables have significant effects on people, depot rates, and long-term organic industrial base viability. We are particularly interested in your infrastructure concerns and proposed solutions. Other common issues I am aware of across military depots relate to carryover, infrastructure strategic planning, and civilian hiring. We want to hear what the issues are from your perspective and how they are impacting your mission.

It is our responsibility as members of this subcommittee to understand the readiness challenges of our armed services and how the resources and authorities provided impact capabilities this nation needs.

Before I introduce the witnesses, I turn to Ranking Member Bordallo, the distinguished gentlelady from Guam, for opening comments she would like to make.

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE SUBCOMMITTEE

ON

READINESS

UNITED STATES HOUSE OF REPRESENTATIVES

SUBJECT: THE CURRENT STATE OF THE ORGANIC INDUSTRIAL BASE AND SERVICE DEPOTS

STATEMENT OF: LIEUTENANT GENERAL LEE K. LEVY, II
COMMANDER
AIR FORCE SUSTAINMENT CENTER

JUNE 14, 2018

INTRODUCTION

Chairman Wilson, Ranking Member Bordallo, distinguished Members of the Subcommittee, thank you for the opportunity to testify on the readiness of your United States Air Force. On behalf of our Secretary, the Honorable Heather Wilson, and our Chief of Staff, General David Goldfein, thank you for your support and demonstrated commitment to our Airmen, Air Force Civilians, Families, and Veterans.

Since established as a separate service in 1947, our Air Force has secured peace through the full spectrum of conflict with a decisive warfighting advantage in, through, and from air, space, and cyberspace. Since Desert Storm in 1991, we have been operating in a continuous state of combat. Without pause, the United States Air Force has: delivered global combat power to deter and defeat our nation's adversaries; supported joint and coalition forces at the beginning, middle, and end of every operation; and secured our homeland through continuous surveillance and air defense. We have done this with a force that is shrinking in size, with a fleet that is now an average age of 28 years old, and infrastructure that continues to age and present new challenges. Yet, our Total Force Airmen—Active Duty, National Guard, Air Force Reserve and our dedicated civil servants—continue to seek new and innovative ways to get the job done. Make no mistake, the United States Air Force is ready to fight tonight, but I am concerned about our ability to sustain our Air Force to fight tomorrow. Threats to this nation and our interests continue to evolve, adapt, and present formidable challenges that threaten our nation and our allies. As we develop advanced air, space, and cyber capabilities for tomorrow, we must continue to invest in our sustainment and logistics enterprise as well, for it is the very foundation

of readiness, power projection and combat capability. The Organic Industrial Base, simply put, is our Nation's insurance policy.

As the Commander of the Air Force Sustainment Center, I am extremely proud to represent the nearly 43,000 Total Force Airmen across 28 locations in 18 states and several overseas locations that are laser focused on providing the best sustainment and logistics capabilities with the available resources to meet the challenges of tomorrow. Literally, we are finding ways to do more with less.

Since its creation as part of Air Force Materiel Command's reorganization in 2012, the Air Force Sustainment Center has delivered combat power for America through a globally integrated, agile logistics and sustainment machine spanning from factory to flight line and back, representing and supporting all aspects of logistics. We directly support every combatant commander, service, and interagency partners, as well as 63 allied countries with depot-level maintenance, supply chain management, and power projection for legacy and 5th generation weapons systems. By achieving the right results the right way through our disciplined "Art of the Possible" leadership and constraints-based management methodology, we continue to yield significant results. Since 2013, we considerably reduced by an average of 70 days each the time it takes to inspect, repair, and return bomber, fighter, mobility, and special mission aircraft to operational units. Across the entire Air Force Sustainment Center, we delivered back to the operational commands 69 more aircraft in fiscal year (FY) 2016 than FY 2012 and we reduced critical parts shortages by 28% from FY12 to FY16. Since 2013, through cost savings or cost avoidance, the Air Force Sustainment Center has returned $2.4 billion to the Air Force to invest

in other areas of readiness or modernization. But we cannot continue to rely on savings within our current budgets to fund our future modernization and sustainment requirements.

The Air Force Sustainment Center is more than the three "depots" in Georgia, Utah, and Oklahoma. Our world-class Air Logistics Complexes at Robins, Hill, and Tinker Air Force Bases are interconnected "engines of readiness" for the Air Force as well as joint partners and allies, and they work as one team to deliver combat effects. The active duty, reserve, guard, civilian, and contractor Airmen that make up the Air Force Sustainment Center deliver combat power to warfighters by adding service life to weapons systems and creating additional capabilities through modernizations and upgrades in 28 locations in the U.S. and several locations across the globe.

Additionally, the Air Force Sustainment Center is the Air Force global supply chain manager for planning, sourcing, managing, and delivering over eight billion dollars of parts annually to the combatant commands. As both the wholesale and retail provider of supplies and parts, the supply chain is the shock absorber for Air Force readiness.

The Air Force Sustainment Center is critically involved in, and essential to, sustaining our nation's nuclear enterprise—not just for the United States Air Force, but for the United States Navy as well. This mission area is our number one responsibility and our sustainment of components for each leg of the nuclear triad is vital to our nation maintaining a credible nuclear deterrent. We directly enable bombers, inter-continental ballistic missiles, dual capable fighters, air launched cruise missiles, and Navy command and control aircraft that communicate with submerged nuclear assets.

To continue to provide Air, Space, and Cyber supremacy in today's evolving global security environment, our Air Force requires sustained, long-term, and predictable funding. If Budget Control Act-level funding returns in FY19 and beyond, it will have severe impacts on our Airmen and readiness. The most important actions this Congress can take to ensure the world's most powerful Air Force will continue to dominate the skies tomorrow will be to repeal the 2011 Budget Control Act and ensure sufficient funding to modernize our weapons systems and infrastructure. We appreciate your support to build the force up to about 325,000 in 2018, yet we will remain stretched to meet national security requirements. We must increase our Active Duty, Guard and Reserve manning levels in key skill areas to meet the emerging mission requirements while continuing to support enduring combat operations.

CHALLENGES TO READINESS

The Air Force Sustainment Center—with its organic industrial base—is the nation's readiness and war sustaining insurance policy. We are proud to sustain America's first and most agile response to crisis and conflict, underwriting every joint operation. We provide critical enablers in the air, space, and cyber domains and those demand signals are going to continue to increase over time. But we continue to experience significant readiness challenges due to a federal work force hiring process that is out of date with today's environment, aging infrastructure, and the increasing cost and complexity of weapon system sustainment.

The Vice Chief of Staff of the United States Air Force, General Wilson, testified last year: "…being 'always there' comes at a cost to our Airmen, equipment, and infrastructure; we are now at a tipping point. Sustained global commitments combined with continuous fiscal turmoil continue to have a lasting impact on readiness, capacity, and capability for a full-

spectrum fight against a near-peer adversary." Those costs have unique implications within the Air Force Sustainment Center.

CIVILIAN WORKFORCE HIRING INITIATIVES

The Air Force Sustainment Center depends on an 80% civilian workforce; 89% if you include contractors, our "commercial Airmen." Our civilian Airmen bleed equally blue as those who wear our uniforms and they serve and sacrifice for our nation as well. As we evolve and adapt our weapons systems and concepts of operations, we must evolve and adapt our workforce. A 5th Generation Air Force requires a 5th Generation work force. Requirements for a Science-Technology-Engineering-Math (STEM) educated workforce and advanced manufacturing and technical skills are ever increasing. We no longer just buy airplanes; we buy highly integrated, sophisticated software packages that come in sophisticated airframes. Each weapon system we procure brings with it an increasing requirement for software development and maintenance to perform almost every function on the aircraft, from controlling flight controls, interfacing with weapons, navigation and communication, recording system health and status, etc. All of this "cyber" capability must be designed so it is resilient to sophisticated cyber warfare. Our requirements for scientists and engineers to sustain these software-intensive weapons systems are increasing dramatically. In addition to developing and sustaining new weapons systems, our engineers must also find ways to sustain our aging legacy systems. From understanding airframe stress, metallurgy, non-destructive inspection techniques, and reverse engineering parts, it takes a talented pool of engineers to help us sustain our legacy Air Force. As we bring new weapons systems on line and continue to sustain our legacy fleet, our civilian engineers are a pivotal component of readiness. As we project a steady increase in the technical workforce needed to

support critical warfighting systems, any government actions that make it more difficult to recruit and retain a skilled workforce are detrimental to our readiness.

An antiquated civilian hiring system also constrains our ability to effectively compete with industry for a qualified workforce. The ability to hire engineers to sustain our Air Force is a strategic issue for our nation. We are experiencing a sustained annual growth in our requirements for the number of software engineers by 10-15%. While we aggressively try to hire qualified engineers, we simply cannot get enough qualified applicants to meet our demand. In FY17, we recruited at 88 universities across 30 states and electronically recruited at 241 universities in 47 states. This year, our hiring target is 561 new scientists and engineers. To meet this growing demand, we continue to devote significant resources to our recruiting efforts. However, over the past three years, we did not meet our hiring goals, resulting in being short 198 hires at the end of FY17. Without these engineers, our ability to sustain our Air Force today and into tomorrow is in jeopardy. Our nation's Air Force is rapidly transitioning into an information-age fighting force and our ability to sustain and rapidly modify key software in our weapons systems will prove to be a decisive capability in the conflicts of tomorrow.

Two key programs have yielded great benefits in hiring and retaining our scientist and engineer workforce. First, the Defense Acquisition Workforce Development Funds have been a valuable resource supporting our efforts to recruit, hire, retain, train, and develop our scientist and engineer workforce. Second, the Air Force Materiel Command implemented the DoD Civilian Acquisition Workforce Personnel Demonstration Project (AcqDemo) for the acquisition workforce, including scientists and engineers. Although we are just getting started, AcqDemo provides vital flexibilities that enable us to offer competitive salaries and compensate our

technical workforce according to performance. The Air Force Sustainment Center appreciates your continued support of these programs.

Manning shortfalls impact our ability to keep pace with our current workloads as well as prepare for future workloads like the KC-46A. Our scientist and engineer hiring efforts presume a healthy supply of graduates with the right degrees. We must continue to expand this pipeline, especially in the area of software developers and cyber experts (electrical engineers, computer engineers, and computer scientists). As a nation, we must continue the full-court press to attract, excite, and educate the next generation of STEM patriots. Last year, volunteers from the Air Force Sustainment Center donated over 7,100 hours to STEM outreach initiatives. Through funding in the Department of Defense for STEM outreach programs, such as STARBASE, we provided $700,000 in FY17 to support competition teams, sponsor events, and do classroom enhancements. Continued fiscal support for K-12 STEM outreach, scholarships, and internships like the DoD SMART scholarship program, will help expand the supply for STEM graduates that will enable the Air Force Sustainment Center to hire the technical workforce we need in the future.

Our workforce challenges are not just confined to engineers and scientists. We also rely on a very large labor force of highly skilled technicians and mechanics. The populations of trained mechanics is simply not available in the same quantities as in the past. While we work very closely with vocational training centers around our Air Logistics Complexes, we must still rely heavily on former military technicians that separate or retire from military service and seek a government civilian position. The 180-day waiting period to hire military retirees also reduces our ability to hire required personnel.

OTHER CHALLENGES

In addition to workforce challenges, the unpredictable state of defense appropriations over the past few years significantly impacts our ability to hire personnel and work with industry partners. Many companies are not eager to invest in advanced technology or sustain existing sustainment capacity when the future of defense funding is volatile and uncertain. Many talented personnel are deterred from working for the government when they are faced with furloughs and other uncertainties. Industry partners are disincentivized to bid on contracts when budgets are unpredictable or when it is not cost-effective for them to manufacture small quantities of parts. As a result, we receive fewer bids or "no-bids", which translates into less competition, increased costs, and operational impacts to our warfighters. A smaller industrial base is also creating diminishing manufacturing and repair sources for many of our aging weapon systems.

The Air Force Sustainment Center works closely with industry leaders to leverage technology and advanced manufacturing and repair capabilities to help us sustain our Air Force. We must lean on industry partners to develop engine test capabilities for the future. We watch major Maintenance Repair and Overhaul (MRO) and Supply Chain companies adapt and evolve to meet the demands of their customers, and we learn what we can from their experiences, while they continue to learn from us. We must continue to reduce barriers to collective innovation that will benefit commercial business as well as government systems. Currently, there are barriers to collective innovation because of statutes that prevent collaboration with industry and academia to utilize depot resources for collaborative problem solving.

SHAPING FUTURE LOGISTICS CAPABILITIES

The future of warfare is hybrid and multi-domain. Air dominance is not a national birthright. Our adversary's increased capabilities in advanced air defense systems and 5th generation aircraft compel us to find more ways to sustain our Air Force through agility and global integration. Despite possessing the most capable air combat fleet in the world, the Air Force does not yet have a logistics common operating picture that provides an up-to-date and dynamic status of key parts and equipment availability, which is a hallmark of the most efficient and profitable commercial logistics enterprises that we seek to emulate. Lack of dynamic visibility prevent the type of 'load balancing' between theaters and operations that allows commanders to optimize repair schedules and operational availability of aircraft, for example. The Air Force is currently in the design phase for the next generation of logistics system, called Log C2, which will provide real-time visibility and allow dynamic resource allocation.

Log C2 will allow logistics commanders and combatant commanders to make data-informed decisions on allocating scarce resources of parts, aircraft, and sustainment capability that result in the optimal tradeoff between competing requirements. It will decrease controllable risk by providing combatant commanders with quantitative data on the benefits and drawbacks of resource allocation options. Further, it will provide visibility to and include input from all military domains—air, ground, cyber, and space—as well as across geographic commands and at appropriate levels with the Joint Force.

Log C2 will create a complete global asset visibility and decision support toolset to best assign and allocate limited global resources to meet immediate theater needs. This new way of operating will allow us to integrate with global and theater planning, articulate risk to the combatant commanders, provide intelligent logistics command and control in anti-access and

area denial environments, prioritize and synchronize resources, set and re-set the theaters, and interact with a global distribution network. Our adversaries do not limit their thinking by lines on a map or combatant commander boundaries. Their perspective is hybrid, global, and multi-domain. Global Logistics agility and the management of scarce assets can only be achieved via a robust global logistics command and control architecture and supporting networks—this is the goal of Log C2 and it will be essential for combatant commanders to have this capability in future conflicts.

CLOSING

The Air Force Sustainment Center continues to deliver combat power to our combatant commanders. We can fight and win tonight. But we must continue to adapt and rely on additional investments and resources to ensure we are ready to deter and defeat potential adversaries tomorrow. As the logistics enterprise evolves and adapts, we must have a multi-domain logistics command and control capability that will be able to prioritize and utilize limited resources across multiple theaters in multi-domains in order to synchronize logistics across the full spectrum of conflict. High velocity combat support to the warfighter through pre-positioned resources and the ability to swing logistics forces from one point of need to another point of need will be essential. General Eric Shinseki once said, "If you don't like change, you'll like irrelevance even less." We, as the Air Force Sustainment Center, simply cannot afford to be irrelevant because the risks are just too great…the Air Force and the nation rely on us.

Since 1947, the Air Force has relentlessly provided America with credible deterrence and decisive combat power in times of peace, crisis, contingency, and conflict. However, our relative advantage over potential adversaries is shrinking and we must be prepared to win decisively against any adversary. We owe this to our nation, our joint teammates, and our allies.

The nation requires full-spectrum ready air, space, and cyber power, now more than ever. America expects it; combatant commanders require it; and with your support, Airmen will deliver it.

Lieutenant General Lee K. Levy II

Lt. Gen. Lee K. Levy II is the Commander, Air Force Sustainment Center, Air Force Materiel Command, headquartered at Tinker Air Force Base, Oklahoma. As the AFSC Commander, he leads nearly 43,000 Total Force Airmen to deliver combat effects for the immediate and long-term requirements of component and combatant commanders in every area of responsibility.

Serving as the Logistics Numbered Air Force, AFSC is the supporting command for the readiness of Logistics and Sustainment activities around the world. The Center comprises three Air Logistics Complexes, three Air Base Wings, two Supply Chain Wings, and 23 CONUS and OCONUS geographically separated operating locations. The AFSC has $16 billion in execution authority and $26 billion in assets providing logistics operations, supply chain management, supply chain operations, depot maintenance and modifications, as well as sustainment for the nuclear enterprise, joint and interagency operations and foreign military sales partners.

General Levy was born in New Orleans, Louisiana. He entered the Air Force in 1985 as a Louisiana State University graduate. General Levy has had numerous operational, command, and staff assignments leading logistics, civil engineering, operational contracting and nuclear operations. Prior to his current position, he was Vice Director for Logistics, the Joint Staff, Washington, D.C.

EDUCATION

1985 Bachelor of Science degree in business administration, Louisiana State University, Baton Rouge
1988 Squadron Officer School, Maxwell AFB, Ala.
1990 Graduate certificate in systems management, University of Southern California, Los Angeles
1994 Master of Science degree in international relations, Troy State University, Troy, Ala.
1998 Air Command and Staff College, Maxwell AFB, Ala. 2001 Air War College, by correspondence
2004 Master of Arts degree in national security and strategic studies, Naval War College, Newport, R.I.
2007 Joint and Combined Warfare School, Joint Forces Staff College, Norfolk, Va.
2008 Air Force Enterprise Leadership Seminar, University of North Carolina, Chapel Hill
2008 Senior Executive Fellows Program, John F. Kennedy School of Government, Harvard University, Cambridge, Mass.
2010 Air Force Enterprise Leadership Seminar, Darden School of Business, University of Virginia, Charlottesville
2011 Senior Joint Information Operations Applications Course, Maxwell AFB, Ala.
2012 Senior Executives in National and International Security Program, John F. Kennedy School of Government, Harvard University, Cambridge, Mass.

ASSIGNMENTS

August 1985 – December 1985, Student, Munitions Maintenance Officer Course, Lowry AFB, Colo.
December 1985 – September 1987, Officer in Charge, Munitions Services Branch, 7th Munitions Maintenance Squadron, Carswell AFB, Texas
September 1987 – December 1988, Maintenance Supervisor, Weapons Storage Area, 7th Munitions Maintenance Squadron, Carswell AFB, Texas
December 1988 – August 1990, Officer in Charge, Munitions Services, and emergency actions officer, 7362nd Munitions Support Squadron, Volkel Air Base, Netherlands
August 1990 – December 1991, Officer in Charge, Munitions Maintenance, and emergency actions officer, 7362nd Munitions Support Squadron, Volkel AB, Netherlands
January 1992 – July 1993, Commander, Munitions Flight, 48th Equipment Maintenance Squadron, Royal Air Force Lakenheath, England
July 1993 – March 1994, Executive Officer, 48th Fighter Wing, RAF Lakenheath, England
March 1994 – May 1995, Commander, Sortie Generation Flight, 492nd Fighter Squadron, RAF Lakenheath, England
May 1995 – August 1997, Logistics Evaluation Manager, Headquarters Air Force Operational Test and Evaluation Center, Kirtland AFB, N.M.

August 1997 – June 1998, Student, Air Command and Staff College, Maxwell AFB, Ala.
July 1998 – July 2000, Commander, 9th Munitions Squadron, Beale AFB, Calif.
August 2000 – May 2002, Strategy Planner, Deputy Director for Strategy and Policy, Strategic Plans and Policy Directorate (J5), Joint Staff, Washington, D.C.
May 2002 – July 2003, Executive Officer, Deputy Chief of Staff for Installations and Logistics, Headquarters U.S. Air Force, Washington, D.C.
July 2003 – July 2004, Student, U.S. Naval War College, Newport, R.I.
July 2004 – August 2005, Chief, Depot Maintenance Transformation Division, 76th Maintenance Wing, Oklahoma City Air Logistics Center, Tinker AFB, Okla.
August 2005 – January 2006, Commander, 654th Combat Logistics Support Squadron, Oklahoma City ALC, Tinker AFB, Okla.
January 2006 – April 2007, Commander, 76th Aircraft Maintenance Group, Oklahoma City ALC, Tinker AFB, Okla.
April 2007 – May 2009, Deputy Director of Logistics, Headquarters Air Force Materiel Command, Wright- Patterson AFB, Ohio
May 2009 – June 2011, Commander, 402nd Maintenance Wing, Warner Robins ALC, Robins AFB, Ga.
June 2011 – September 2013, Director of Logistics, Headquarters Air Mobility Command, Scott AFB, Ill.
September 2013 – June 2015, Vice Director for Logistics (J4), Joint Staff, Washington, D.C.
June 2015 – present, Commander, Air Force Sustainment Center, Tinker AFB, Okla.

SUMMARY OF JOINT ASSIGNMENTS
August 2000 – May 2002, Strategy Planner, Deputy Director for Strategy and Policy, Strategic Plans and Policy Directorate (J5), Joint Staff, Washington, D.C., as a lieutenant colonel
June 2011 – September 2013, Director of Logistics, Task Force 294, U.S. Strategic Command, Scott AFB, Illinois, as a brigadier general
January 2013 – August 2013, Director, CENTCOM Deployment and Distribution Operations Center, Southwest Asia, as a brigadier general
September 2013 – June 2015, Vice Director for Logistics (J4), Joint Staff, Washington, D.C., as a major general

MAJOR AWARDS AND DECORATIONS
Distinguished Service Medal
Defense Superior Service Medal
Legion of Merit
Defense Meritorious Service Medal with oak leaf cluster
Meritorious Service Medal with four oak leaf clusters
Air Force Commendation Medal with oak leaf cluster
Joint Service Achievement Medal
Air Force Achievement Medal
Nuclear Deterrence Operations Service Medal with oak leaf cluster

OTHER ACHIEVEMENTS
1999 Lt. Gen. Leo Marquez Award for Field Grade Munitions/Missile Manager of the Year

EFFECTIVE DATES OF PROMOTION
Second Lieutenant July 5, 1985
First Lieutenant July 5, 1987
Captain July 5, 1989
Major May 1, 1997
Lieutenant Colonel Nov. 1, 2001
Colonel March 1, 2006
Brigadier General Dec. 4, 2009
Major General Aug. 2, 2013
Lieutenant General June 5, 2015

(Current as of March 2017)

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RELEASED BY THE HOUSE ARMED
SERVICES COMMITTEE

STATEMENT OF

VICE ADMIRAL THOMAS J. MOORE
COMMANDER, NAVAL SEA SYSTEMS COMMAND

AND

VICE ADMIRAL G. DEAN PETERS
COMMANDER, NAVAL AIR SYSTEMS COMMAND

BEFORE THE

SUBCOMMITTEE ON READINESS AND MANAGEMENT SUPPORT

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

ORGANIC INDUSTRIAL BASE ISSUES

JUNE 14, 2018

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SERVICES COMMITTEE

Mr. Chairman, Ranking Member Bordallo, and distinguished members of the Subcommittee, we appreciate the opportunity to testify on organic industrial base issues, the current state of Navy readiness, progress we have made to improve readiness, and the challenges we face today and in the future. Before we begin, we would like to thank Congress for your support of the Bipartisan Budget Act of 2018 and the Fiscal Year (FY) 2018 Consolidated Appropriations Act. This legislation provides the predictability and stability in funding that allows us to continue the work we started in FY 2017 to restore the Navy's organic industrial base.

Our Navy provides the Nation with timely, agile, and lethal options to win wars, deter aggression and maintain freedom of the seas. Today's dynamic maritime environment, coupled with proliferating threats from nation-state actors and terrorist organizations, requires a global presence of Naval forces not seen in the past 25 years. However, as a result of Budget Control Act (BCA) funding caps, years of Continuing Resolutions, and associated budget uncertainty, the Navy has been challenged in its ability to adequately address the full range of investments required to fully support near term commitments. The resultant confluence of high demand for Naval forces, constrained funding levels, and budget uncertainty, impeded our ability to build, maintain and modernize the workforce and infrastructure to support current and future readiness at the levels the Navy and DoD require.

In previous testimony, we described the challenges of restoring readiness, and how the requested funds would support that recovery. Today, with your help, we have stemmed the tide of readiness degradation. The FY 2017 Request for Additional Appropriations (RAA) helped us arrest some of our most critical readiness problems. We executed 13 more ship depot maintenance availabilities, increased aviation depot throughput with 35 additional air frames, increased our investments in ship and aircraft spares, and funded much needed shore infrastructure projects. The FY18 budget and President's FY19 budget submission will reverse previous trends, improving readiness.

The FY 2018 Consolidated Appropriations Act continues to strongly support our readiness recovery efforts, which include increased investments in infrastructure, equipment recapitalization and modernization. The Operation and Maintenance account flexibilities provided are key to ensure the most efficient and effective use of taxpayers' dollars and further support our efforts to restore readiness.

The Navy's 2019 President's Budget continues to build upon the foundations enacted in the FY 2017 and FY 2018 defense appropriations. It funds afloat readiness to historically high levels, and continues the course for full readiness recovery, while simultaneously investing in modernization, increased capacity, lethality and improvements in infrastructure that are necessary to maximize naval power. The majority of our Readiness accounts are funded to 100 percent of the requirement or maximum executable levels. It includes funds that would support 57 ship maintenance availabilities

across the public and private shipyards and funding to support 100 percent of the required ship operations necessary to ensure ships and crews get the dedicated time at sea to train and hone skills. In addition, the budget request would fund aircraft depot maintenance and aviation spares, at significantly increased levels to allow Navy to induct 652 airframes and 1,887 engines, reduce part shortages, and improve flight line availability of operational aircraft. We look forward to working with this committee and with the entire Congress to ensure continued support in future budgets for adequate and predictable funding for readiness.

Naval Shipyards

As Vice Chief of Naval Operations Moran said earlier this year, hiring all the people and buying all the ships and aircraft will not produce a ready Navy if we do not conduct the required maintenance on our ships and systems. Too much time spent in maintenance availabilities impacts our Sailor's ability to operate and fight their ship; conversely, our ships operating without their scheduled maintenance degrades readiness. At any given time, the Naval Sea Systems Command (NAVSEA) has under its care approximately one-third of the battle force as they undergo maintenance and modernization availabilities. For that reason, NAVSEA's number one priority remains the on-time delivery of ships and submarines to the Fleet, from both new construction and maintenance availabilities. Whether a ship is in a public Naval Shipyard or a private shipyard, NAVSEA is focused on executing the planned work on time and on cost so our warfighters have the most capable platforms and systems they need to defend our nation.

NAVSEA is executing a number of initiatives to improve its on-time performance, starting with growing our organic workforce. Between the beginning of FY 2013 and May 2018, the four Naval Shipyards have hired 21,000 people are on the path to reaching our goal of having 36,100 full time shipyard employees by the end of FY 2019. The growing and better trained workforce is beginning to have a positive impact. In 2017, all four aircraft carrier availabilities were completed on time and we significantly reduced the delays in delivery of our submarine force. More work remains as we continue to train this workforce, improve our planning, material availability, and execution performance, but we are on the right track.

One notable highlight worth discussion is our Shipyards' improved training model. Where once a newly-hired apprentice would require one or more years of training to become proficient in their trade, we have accelerated their learning through the innovative use of trade-specific mock-ups and learning centers so that we are now delivering productive workers in a matter of months from on-boarding.

The capacity limitations and the overall priority of work toward our Ballistic Missile Submarines (SSBNs) and Aircraft Carriers (CVNs) resulted in our Attack Submarines (SSNs) absorbing much of the burden in prior years, causing several submarine availabilities that were originally scheduled to last between 22 and 25 months to require 45 months or more to complete. This situation reached a boiling point last summer when, because of a lack of capacity in our public shipyards, the Navy decided to defer the scheduled maintenance availability on USS BOISE (SSN 764) that will take it off-line until 2020. Ultimately BOISE's availability was contracted to the private sector and will begin in January 2019. The Navy will continue to consider the private sector for future maintenance work during peak workload periods in our Naval Shipyards and to ensure we maintain the health of the private sector nuclear industrial base.

People alone will not provide the throughput and productivity needed to meet the maintenance and readiness requirements today into the future. As outlined in our recent report to Congress on the Naval Shipyard Infrastructure Optimization Plan, we must also make substantial investments in our four nuclear capable shipyards to ensure we have 21st century Naval Shipyards ready for the challenges of maintaining a growing fleet. This plan has three key investment priorities over the next 20 years. This includes repairing and upgrading our public shipyard dry-docks to accommodate future VIRGINIA Class Payload Module submarines and the new FORD Class carriers, recapitalizing the equipment to replace aging equipment with up-to-date technology, and optimizing the layout of the shipyards by moving and upgrading facilities closer to the actual work to improve productivity and throughput. We look forward to working with the Congress in the execution of this plan.

The challenges facing our private sector non-nuclear surface ship repair base are similar to those seen in our Naval Shipyards with the private sector also facing capacity versus workload challenges and the need to make investments to upgrade facilities, equipment, and dry docks. The lack of stable and predictable budgets over the past ten plus years has had an even bigger impact on our private sector ship repair facilities. The Navy is committed to working collaboratively with industry to provide them a stable and predictable workload in a competitive environment moving forward so they can hire the workforce and make the investments necessary to maintain and modernize a growing non-nuclear fleet. As the Navy executes readiness recovery, and begins to grow capacity to provide the Navy the Nation Needs, our industry partners must grow capacity in stride. We are as dependent on their capabilities and capacity as we are on the public depots. To that end, the Navy has begun working with industry to develop a similar plan to the one detailed in the Naval Shipyard Infrastructure Optimization Plan report to Congress.

As we build the 355-ship Navy, we must have the maintenance capacity and infrastructure needed to ensure our growing fleet is maintained and modernized on-time and on-budget to deliver forward deployable combat ready ships. Our ongoing efforts to hire more people and invest in our Naval Shipyards, combined with the Navy's continuous dialogue with industry, lays the foundation required to maintain today's force while also looking to future requirements. We have challenges ahead of us, but we are on an improving trend that will ensure we have the capacity today and into the future to maintain and modernize the Navy the Nation needs.

Naval Aviation Fleet Readiness Centers

Our Commander for Fleet Readiness Centers (COMFRC) oversees three depots, ten intermediate level sites and 25 tenant sites. Our workforce consists of 19,000 shore-based aviation sailors, civilians, and support personnel working to deliver flight-line readiness by providing Maintenance, Repair and Overhaul (MRO) of Navy and Marine Corps aircraft, engines, components and support equipment, as well as logistics and engineering support to Navy and Marine Corps squadrons throughout the world. Our highly skilled workforce spans five countries and territories, 13 states, and is made up of approximately 10,000 civilians, 6,000 Sailors and Marines, and 3,000 contractors.

Continuous high operational tempo, and financial uncertainty have resulted in challenges for our depots. The capability and capacity of our Fleet Readiness Centers (FRCs) are slowly recovering from the impacts of the 2011 Budget Control Act, FY 2013 sequestration driven furloughs, and years of reduced funding.

Despite these challenges, the Navy and Marine Corps are working to stem the tide of Naval Aviation readiness degradation. Across the FRCs, we are focused on three primary efforts: (1) Aircraft overhaul; (2) In-Service Repairs; and (3) Organic component repair. The enablers for these three efforts are a qualified proficient workforce; facilities and infrastructure; and supply.

Sustained improvement in the readiness of our Naval Aviation forces requires successful execution of multiple ongoing activities across these efforts, as well as consistent and predictable resourcing.

In particular, we must maintain a focus on increasing throughput to put aircraft back in the hands of our warfighters faster, investing in our FRC workforce and infrastructure, and achieving optimal funding of our "enabler" sustainment accounts.

To increase throughput, we are focusing on readiness efforts such as In-Service Repairs (ISRs). These are emergent, unscheduled repairs that take place in the field, rather than planned maintenance completed at a depot. Annually, FRC artisans complete more than 3,000 ISRs around the world. Before

2015, these repairs were managed locally with use of existing staffs and equipment. Since then, we have incorporated better management tools to have corporate visibility into the work at the sites and quickly assigned artisans, engineers, equipment and material to where the work is building up. As a result, we have seen an average "Work-in-Progress" status reduction of 24 percent since FY 2016.

We are now meeting Fleet aircraft production goals. During FY 2016 and 2017, the FRCs eliminated production aircraft backlog through the use of Critical Chain Program Management. Now we are focused on component production through the use of a similar Work-in-Progress management strategy to systematically release tasking into the industrial shops.

To recover from sequestration and support the increased aircraft and component workload, we are continuing to rebuild and strengthen our workforce. Our artisan and industrial workforce was 6,300 at the beginning of FY 13, compared to 6,800 as of January 2018. Our FY 18 hiring goals are designed to meet fleet production demands, particularly in the area of organic component production, and in support of readiness recovery initiatives and target and end strength of 7750. Other targets for FY 18 include 2240 engineers and 800 logisticians. As we rebuild, we strive to provide opportunities for our veterans. In FY 17, 23 percent of all new hires were wounded warriors, and veterans make up more than half of our work-force.

Our FY 2018 hiring goals are structured to hire artisans to meet fleet production demands, particularly in the area of organic component production, and also include targets for engineers and logisticians to support readiness recovery initiatives.

Direct Hiring Authority provided by Congress has been vital to our workforce rebuilding efforts, and we request your support in providing continuation of that authority, which currently expires in September 2018. To attract the best talent, we are also using incentives such as the Special Wage Increase in the San Diego area. Despite these levers, normal workforce attrition, regional competition and economic conditions continue to challenge hiring plans. In addition, it can take up to 18 months to fully train and certify an artisan. To streamline training, we have established an apprenticeship program across the enterprise to build a workforce structure that produces skilled tradespersons capable of filling key artisan, managerial and supervisory positions.

Increasing the trained workforce size is only one part of the equation. Our skilled and diverse artisans must have the proper equipment and modern facilities to execute their work. Furthermore, proper equipment and facilities are essential to ensuring we have the capacity to support next generation aircraft that provide the tactical edge over our adversaries.

Infrastructure – particularly Military Construction (MILCON) – is a significant challenge. For many years while working in a resource-constrained environment, we did not maximize the Navy

Working Capital Fund to invest in infrastructure and equipment readiness. We are now at a point where we must maximize that internal Navy Working Capital Fund investment.

Finally, creating a path to continued full funding of aviation sustainment accounts will enable optimum FRC production support and overall flight-line readiness. These accounts support activities ranging from procurement of spare parts, updating technical and repair manuals, and continually improving the maintenance plans used by the FRCs and on the flight line. As we have painfully experienced over the last few years, being underfunded and "unbalanced" in these accounts has resulted in significantly decreased flight-line readiness.

We look forward to continuing to work with Congress to provide the Fleet Readiness Centers with the resources necessary to recover and sustain Naval Aviation readiness. I look forward to your questions.

Vice Admiral Thomas J. Moore
Commander , Naval Sea Systems Command

A second generation naval officer, Vice Adm. Thomas Moore graduated from the United States Naval Academy in 1981 with a Bachelor of Science in Math/Operations Analysis. He also holds a degree in information systems management from George Washington University and a Master of Science and an engineer's degree in Nuclear Engineering from the Massachusetts Institute of Technology.

As a surface nuclear trained officer for 13 years, he served in various operational and engineering billets aboard USS South Carolina (CGN 37) as machinery division officer, reactor training assistant and electrical officer; USS Virginia (CGN 38) as main propulsion assistant; USS Conyngham (DDG 17) as weapons officer; and USS Enterprise (CVN 65) as the number one plant station officer responsible for the de-fueling, refueling and testing of the ship's two lead reactor plants during her 1991-1994 refueling complex overhaul (RCOH). Additionally, ashore he served two years as a company officer at the United States Naval Academy.

In 1994, he was selected for lateral transfer to the engineering duty officer community where he served in various staff engineering, maintenance, technical and program management positions including, carrier overhaul project officer at the Supervisor of Shipbuilding, Newport News, Virginia, where he led the overhaul of the USS Enterprise (CVN 65), USS Theodore Roosevelt (CVN 71) and the first year of the USS Nimitz (CVN 68) RCOH; assistant program manager for In-Service Aircraft Carriers (PMS 312) in the office of the Program Executive Officer, Aircraft Carriers, Aircraft Carrier Hull, Mechanical and Electrical (HM&E) requirements officer on the staff of the chief of Naval Operations Air Warfare Division (OPNAV N78); and, five years in command as the major program manager for In-Service Aircraft Carriers (PMS 312) where he was responsible for the new construction of the George H.W. Bush (CVN 77), the RCOH of the USS Dwight D. Eisenhower (CVN 69) and the USS Carl Vinson (CVN 70) and the life cycle management of all In-Service Aircraft Carriers.

In April 2008, he reported to the staff of the chief of Naval Operations as the deputy director, Fleet Readiness, Office of the Chief of Naval Operations (OPNAV) N43B. From May 2010 to July 2011, he served as the director, Fleet Readiness, OPNAV N43.

Moore commanded the Program Executive Office for Aircraft Carriers from August 11, 2011 to June 1, 2016. Over this five year period, he led the largest ship acquisition program in the U.S. Navy portfolio; was responsible for designing, building, testing and delivering Ford-class carriers; led the Navy's first-ever inactivation of a nuclear-powered aircraft carrier, USS Enterprise (CVN-65); and was the lead in the U.S.-India Joint Working Group Aircraft Carrier Technology Cooperation.

Moore became the 44th commander of Naval Sea Systems Command (NAVSEA) June 10, 2016. As NAVSEA commander, he oversees a global workforce of more than 73,000 military and civilian personnel responsible for the development, delivery and maintenance of the Navy's ships, submarines and systems.

Moore's personal awards include the Distinguished Service Medal, Legion of Merit (three awards), Meritorious Service Medal (four awards), and the Navy and Marine Corps Commendation Medal (three awards).

Vice Admiral G. Dean Peters
Commander, Naval Air Systems Command

Vice Adm. Dean Peters is a native of Louisville, Kentucky. He's a 1985 graduate of the U.S. Naval Academy. Peters has earned post- graduate degrees in Aeronautical Engineering and Telecommunications and is a graduate of the U.S. Naval Test Pilot School, Class 102.

After earning his wings as a naval aviator in 1986, he flew the SH-2F Seasprite in support of multiple detachments deployed to the North Atlantic, Persian Gulf and Gulf of Mexico, completing anti-submarine warfare, surface warfare and counter-narcotics operations embarked on four different ship classes. He served as detachment officer-in- charge aboard USS Thomas C. Hart (FF 1092).

As commanding officer of Air Test and Evaluation Squadron (HX) 21, the squadron accomplished over 11,000 flight test hours and was the 2006 recipient of the CNO Safety Award.

Peters has served in numerous acquisition billets. From Nov. 2007 through July 2011, Peters served as program manager for the H-60 Helicopters Program Office (PMA-299), delivering over 150 helicopters, numerous upgrades, and supporting the first three carrier strike group deployments of the MH-60R and MH-60S Seahawks. From Aug. 2011 to July 2014, Peters commanded the Presidential Helicopters Program Office (PMA-274), leading the program through Milestone B and contract award for the Engineering and Manufacturing Development Program.

Peters' flag assignments include commander, Naval Air Warfare Center Aircraft Division; assistant NAVAIR Commander for Research and Engineering; and program executive officer, Air Anti-Submarine Warfare, Assault and Special Mission Programs (PEO(A)).

He has more than 3,800 flight hours in fixed wing and rotary wing aircraft.

Peters assumed responsibilities as Commander, Naval Air Systems Command in May 2018.

Updated: 5 June 2018

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

JUNE 14, 2018

QUESTIONS SUBMITTED BY MR. COURTNEY

Mr. COURTNEY. A recent press report indicates that Assistant Secretary Geurts is interested in developing an annual 30-year repair plan alongside the 30-year shipbuilding plan.

Do you agree that the Navy, Congress, and our shipyards would benefit from having a long-term, comprehensive ship maintenance plan?

Do you believe that planning ahead would provide both the public shipyards and the private shipyards with increased predictability so they can better manage their workforce and workload?

If Congress were to require such a plan, what challenges do you foresee that we should take into account?

Admiral MOORE. Yes. The Navy supports the need for a long-term, comprehensive ship maintenance and modernization plan. Congressional language is not required as efforts have already commenced to develop a plan that will provide a 30-year outlook of naval vessel maintenance and modernization requirements. In addition to workload requirements, the plan will also examine the infrastructure required in both the Navy's public shipyards and those owned by industry to ensure an increasing force structure has the industrial capability and capacity required to sustain it.

QUESTIONS SUBMITTED BY MR. CARBAJAL

Mr. CARBAJAL. The recently published FY2018–2019 National Defense Business Operations Plan, a supplement to the 2018 National Defense Strategy stated that "[t]he Department's lethality and readiness are not just a function of our service members. DOD's civilian workforce is essential to sustaining the viability and capabilities of the All-Volunteer Force—providing critical equipment maintenance . . . logistics and engineering expertise." Can you elaborate on the value of the civilian workforce to the Department's missions?

Admiral MOORE. NAVSEA cannot execute its mission without highly-skilled civilian employees. NAVSEA conducts the research, design, acquisition, maintenance, modernization, and life cycle support for all the Navy warships and associated combat systems. The Navy's civilian workforce is the force behind the fleet and integral to the Navy's ability to maintain a technological advantage over its adversaries. Nearly 32,000 of the 210,000 Navy civilians work directly for NAVSEA either at one of the 10 Warfare Centers, four Supervisors of Shipbuilding, multiple Headquarters directorates and Program Executive Offices, or subordinate field activities. Additionally, there are more than 39,000 women and men at NAVSEA's four Naval Shipyards and six Regional Maintenance Centers who report for accounting purposes to Fleet Commanders.

Specific to the Naval Shipyards, we are currently working to grow the workforce to 36,100 full-time equivalents by Fiscal Year 2020 to create the organic capacity required to execute the planned maintenance workload and to mitigate future workload carryover. This workforce consists of highly skilled tradespersons and engineers who are available to deploy anywhere in the world to perform maintenance on our Nation's most strategic military assets in addition to executing the Navy's current maintenance and modernization work on our nuclear-powered aircraft carriers and submarines. Maintaining and growing this organic workforce is essential to delivering ships and submarines on time to the fleet for the best value to the taxpayer.

Personnel alone will not allow us to deliver these critical warships back to the fleet on time—our people need modern facilities. The Naval Shipyards were built more than a century ago and designed to build conventional-powered ships. They were not built to maintain the complicated platforms of today's Navy. Therefore, we are executing the Shipyard Infrastructure Optimization Plan that will recapitalize our dry docks, optimize the layout of our shipyards to streamline work, and make the required investments in capital equipment. When the plan is complete, we will have the Naval Shipyards our Navy needs.