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Before the

Subcommittee on Seapower

COMMITTEE ON
ARMED SERVICES

# UNITED STATES SENATE

HEARING TO RECEIVE TESTIMONY ON NAVY AND MARINE CORPS AVIATION PROGRAMS IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2016 AND THE FUTURE YEARS DEFENSE PROGRAM

Wednesday, March 25, 2015

Washington, D.C.

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The subcommittee met, pursuant to notice, at 9:02 a.m. in Room SR-222, Russell Senate Office Building, Hon. Roger Wicker, chairman of the subcommittee, presiding.

Committee Members Present: Senators Wicker [presiding], Ayotte, Tillis, Hirono, and Kaine.

OPENING STATEMENT OF HON. ROGER WICKER, U.S. SENATOR FROM MISSISSIPPI

Senator Wicker: The meeting will come to order. Thank you very much.

We convene this morning to examine Navy and Marine Corps aviation programs.

I want to thank everyone for accommodating an earlier than usual start to our hearing. The President of Afghanistan, Dr. Ashraf Ghani, will address a joint session of Congress at 11:00. President Ghani took his oath of office last September, marking Afghanistan's first peaceful and democratic transition of power.

I view the situation now in Afghanistan as a success story. I am pleased that the administration announced that it will slow the withdrawal of troops during the remainder of 2015. These decisions should be made based on conditions on the ground, not political calculations.

We are grateful for our service members and veterans who have served in Operation Enduring Freedom, and we pay tribute to the 2,215 brave Americans who made the ultimate sacrifice in Afghanistan.

This morning our subcommittee welcomes three distinguished witnesses: Vice Admiral Paul Grosklags, Principal Military Deputy for the Assistant Secretary of the Navy for Research, Development, and Acquisitions; Lieutenant

General Jon M. Davis, Deputy Commandant for Marine Corps Aviation; and Rear Admiral Michael C. Manazir, Director of Air Warfare for the Department of the Navy. Our subcommittee is grateful to you for your decades of service to our Nation.

Well-respected expert witnesses have testified before the Senate Armed Services Committee that our Nation faces the most diverse, complex, and potentially dangerous threats to national security in recent history. However, instead of strengthening our military and ensuring our men and women in uniform have comprehensive training and world-class equipment they need, sustained budget cuts and mindless sequestration are damaging our military's force structure, modernization, and readiness. The stakes are high during these challenging times.

For example, hard-earned gains in the Middle East are increasingly challenged by the extremists of the Islamic State. Vladimir Putin's belligerence continues to test NATO's resolve in Eastern Europe, and the Peoples Republic of China continues to expand and modernize its military, threatening to alter the balance of power in the Pacific.

Given these global threats, I hope our witnesses today will elaborate on the impact that sequestration would have on Navy and Marine Corps aviation programs, the Navy and Marine Corps' ability to execute our country's national

security strategy, and the vitality of our aviation industrial base.

This morning our subcommittee will examine four key areas related to the Navy's aviation programs.

First, aircraft readiness. There are problems with the Navy's inventory of 600 legacy F/A-18C strike fighters. Half of the fleet is out-of-reporting status. This means that the aircraft are not available to train our aviators or execute combatant commander requests for aviation support. We face these challenges because of delays in the F-35 Joint Strike Fighter program, budget reductions that have caused an acute backlog in aircraft depot maintenance, and an extremely high OPSTEMPO. This situation has led the Navy to fly its newer F/A-18E and F Super Hornets at higher rates than expected, accelerating the consumption of their service lives.

We also hope to hear about the gap in fighter aircraft. Our subcommittee would like to learn more about gaps in the fighter fleet. The Chief of Naval Operations, Admiral Greenert, estimates that the Navy needs up to 36 new strike fighters to help mitigate a current shortfall of 104 strike fighters, with a potential peak shortfall of 134 aircraft in 2020. Although Congress has not yet received an fiscal year 2016 unfunded priority list from the Department of the Navy, I hope our witnesses today will be able to provide more

details on unfunded requirements for multi-role fighter aircraft.

Third, we would like to know more about the Navy's plans for its next generation naval cargo aircraft. Admiral Greenert recently made the decision to propose the replacement of the aging COD aircraft, with the V-22 Osprey. I understand this plan involves shifting some planned procurement of V-22 aircraft from the Marine Corps to the Navy. We would appreciate the Navy providing this subcommittee with details and ramifications of this proposal, including the ability of the F-22 to fulfill COD mission requirements.

Fourth, I would like an update on the status of the Navy's UCLASS manned aerial vehicle program. I understand that program requirements are still in the process of being finalized. Our subcommittee has a particular interest in learning why the Navy does not plan to support the continuation of the Navy unmanned combat air system demonstration program in the interim. This demonstration program could reduce risk in technology development for follow-on programs such as UCLASS. We have already invested $1.5 billion to develop and construct two cutting-edge aircraft. Over 85 percent of the projected service life remains on these two aircraft. So help us understand the Navy's reasons for ending this development program.

Turning to the Marine Corps aviation, our subcommittee is aware of the Marine Corps' issues with their legacy fighter fleet. Testing is underway in Yuma, Arizona and other locations on the F-35B Joint Strike Fighter. This summer, a significant milestone will occur with initial operational capability for the F-35B.

However, there are concerns about the warfighting capability of these initial aircraft. For example, the Department of Defense's Director of Operational Test and Evaluation, Dr. J. Michael Gilmore, observed in his annual report for 2014 that the annual software for these Marine Corps aircraft will be delivered with troubling capability shortfalls. Our subcommittee would like our witnesses to elaborate on whether the marine aviators flying the F-35B in hostile environments after declaration of IOC have the appropriate levels of safety, reliability, and combat effectiveness they need.

Finally, I would like an update on Navy and Marine Corps munitions. Earlier this month, Admiral Greenert and Commandant Dunford testified before the Senate Armed Services Committee that Navy and Marine Corps munition inventories may not be sufficient to support combatant commander requirements. This subcommittee needs to understand the nature of the shortfalls in air-to-air weapons, as well as air-to-surface munitions such as the

joint standoff weapon and advanced anti-radiation guided missile. I would like to hear about the levels of risk associated with insufficient levels of these weapons which are absolutely vital to the execution of our current and near-term contingency operations.

Once again, I want to thank our witnesses for their service to our Nation and recognize the ranking member, Senator Hirono, for whatever opening remarks she might have.

STATEMENT OF HON. MAZIE HIRONO, U.S. SENATOR FROM HAWAII

Senator Hirono: Thank you, Mr. Chairman.

I join the chair in thanking you for your service and, of course, for the wonderful work that all of our men and women are doing in Afghanistan and other parts of the world. Our thoughts and prayers go with those who are actively serving and also with their families who, of course, also serve and sacrifice every day.

The chair and I share many similar concerns, especially relating to gaps in our fighter fleet and concerns surrounding the F-35's.

So our witnesses this afternoon face huge challenges as you strive to balance the need to support ongoing operations and sustain readiness with the need to modernize and keep the technological edge so critical to military success. These challenges have been made particularly difficult by the spending caps imposed by the Budget Control Act, caps that were modestly relieved for fiscal year 2015 in the Bipartisan Budget Act that we enacted earlier this year. However, these caps are scheduled to resume full blast in fiscal year 2016 and beyond. These caps already seriously challenge our ability to meet our national security needs and have already forced the military departments to make painful tradeoffs. Unless modified for years after fiscal

year 2015, these caps will threaten our long-term national security interests.

This year, I believe we have two pivotal situations in naval aviation. This is the year when, if the schedule works out as planned, the Marine Corps will be in a position to declare initial operating capability for the F-35B, the short takeoff, vertical landing STOVL. We need to hear how the testing is proceeding, something already mentioned by the chair, and how other parts of the program are supporting that IOC declaration later this year.

Second, the Navy is facing a major shortfall in its strike fighter inventory. The Navy responded to forecasts of a shortage of almost 200 aircraft several years ago by better managing the remaining life of the existing aircraft by redistributing aircraft within the force, designing a series of maintenance and rehabilitation measures, including a service life extension program, or a SLEP, for older aircraft, and buying new F-18 aircraft.

After several years of predicting significant improvements in the Navy's ability to support operating forces, including aircraft carrier squadrons and Marine Corps squadrons, with strike fighter aircraft, the Navy this year is predicting a major erosion in that ability. This year, the Navy estimates that their shortfall has risen from a level last year of roughly 30 aircraft to a level this

year of more than 100 aircraft to as high as 134 aircraft. The committee received previous testimony from Navy witnesses and a shortfall of roughly 65 strike fighters was manageable.

We need to understand why there is an increased projection of a shortfall, what effect a shortfall of 134 aircraft means, and what actions the Navy will take to reduce or mitigate that shortfall.

So I will stop now and let us hear from the witnesses this morning. Thank you very much, Mr. Chairman.

Senator Wicker: Thank you, Senator Hirono.

I understand Vice Admiral Grosklags will make a statement representing the views of all three witnesses. Is that correct, Vice Admiral?

Admiral Grosklags: Yes, sir, that is correct.

Senator Wicker: Proceed then. Thank you so much.

STATEMENT OF VICE ADMIRAL PAUL A. GROSKLAGS, USN, PRINCIPAL MILITARY DEPUTY, ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH, DEVELOPMENT, AND ACQUISITIONS

Admiral Grosklags: Mr. Chairman, Ranking Member Hirono, distinguished members of the subcommittee, thank you for the opportunity to appear before you today to talk about our naval and Marine Corps aviation programs.

As you are aware, we have submitted a formal statement for the record, and I will give a single brief opening statement.

The United States is a maritime nation. We have global interests and global responsibilities. Our Navy and Marine Corps provide the continuously forward-deployed, persistent presence which ensures our Nation's global reach, global access, and ability to project power regardless of changing alliances, permissions, or circumstances on the ground. We move at will across the world's oceans, seas, and littorals, providing our Nation's leaders with offshore options where it matters and when it matters.

The aviation component of our Marine Corps and Marine Corps team enables our sea-based and expeditionary naval forces to bring simultaneous influence over vast stretches of the maritime environment, across the shoreline, and deep inland. As such, it is critical that our aviation forces remain always ready, poised to engage at a moment's notice

with the required capacity and capability to influence events and, if necessary, to fight and to win.

Last year, we saw significant advancements in many of our aviation programs such as the first P-8 deployment to the western Pacific, standup of a second special purpose MAGTF formed around the unique capabilities of the V-22 and the KC-130J. We saw initial qualification of the Joint Strike Fighter on board our aircraft carrier, and we had initial operational capability with the MH-6 this year and its advanced precision kill weapons system.

This year, we look forward to a number of additional milestones, to include the initial operational capability of the F-35B that the ranking member just referred to, initiation of sensor testing on our MQ-4C Triton unmanned ISR vehicle, first flight of the CH-53K for the Marine Corps by the end of this calendar year. Our first deployment of our E-2D began this month, and along with the Air Force, we have declared initial operational capability for the AIM-120D, the most current version of that weapon, and we will declare initial operational capability for the AIM-9X block 2 this month.

For 2016, our naval aviation budget request is based on a number of central themes: fifth generation fighter attack capability; netted persistent multi-role intelligence, surveillance, reconnaissance; critical supporting

capabilities in electronic attack, maritime patrol, and vertical lift; advanced strike weapons programs; readiness recovery; and targeted modernization of the force to ensure our continued relevance and sustainability.

Now, as this subcommittee is well aware and as you alluded to in your opening remarks, Mr. Chairman, our security interests face an increasing array of threats and demands. However, our budget position grows ever more challenging. We will continue to prioritize the readiness of the forces currently forward deployed over all of other investments. However, we must also recognize that those Navy and Marine Corps forces that this Nation deploys to meet the future threat will be dependent upon the equipment and the readiness modernization programs of today.

Across the department, our strategies for the development, procurement, and sustainment of both current and future systems are critically dependent upon stable and predictable funding at a level consistent with the President's budget 2016 request. We believe the alternative has been made clear by our Secretary and by the service chiefs. It will be a smaller force, a force less forward deployed, a force slower to respond to a crisis, and a force which, when it does respond, will be less capable and more vulnerable.

Mr. Chairman, we request your leadership and the

support of this subcommittee to provide the resources that enable your Navy and Marine Corps team to be our Nation's first responders.

Again, thank you for the opportunity to appear before you today to discuss our programs, and we look forward to your questions.

[The prepared joint statement of Admiral Grosklags, Admiral Manazir, and General Davis follows:]

Senator Wicker: Thank you very much. Thank you for your testimony and for your service.

Let me just ask then about some things I brought up in my opening statement.

What about the observation by Dr. Gilmore in his annual report that the initial software for the F-35B has capability shortfalls? Help us understand how this might affect our aviators in hostile environments. General Davis, are they pointing to you to answer?

General Davis: Senator Wicker, they are. Good morning, sir. Good morning, ma'am.

Senator Wicker: Thank you.

General Davis: The F-35B is on track right now for us to declare an IOC in July of this year. We will not declare IOC unless we meet all of our gates. We have got 13 things we track continuously to make sure that our pilots, the aircraft, the maintainers, and the test program makes its gates. We still have some data points we have got to pull in to go do that. But the software we see, which is called the 2 Bravo software, 2B, is giving us what we need, that initial operating capability to go actually take this aircraft to combat.

Some of the things that Dr. Gilmore's report pointed out -- they are all true. A lot of those are true. I believe actually the EMF A121, which is our first squadron

which will be the squadron that we declare to be initial operational capability out in Yuma, Arizona has been working through those software shortfalls but actually finding tactical workarounds for our pilots. In many ways, that software is giving us a lot more capability than we have in our current fleet today.

The fusion things that Dr. Gilmore talked about -- we do have four-ship fusion issues right now, but we do not have two-ship fusion issues. So right now, I can take two aircraft and tie them together and another two aircraft, tie them together, and then tie all four together through a link 16 and give a tremendous capability that we do not have today.

The F-35B, when it comes to initial operational capability, will give us through the weather close air support attack capability. It will also give us the ability to attack targets in contested environments that we do not have today. And we can take that aircraft to amphibious ships. We can take that aircraft to short-fueled 3,000-foot runways and operate. We see that we are getting actually a step up in capability than what we have in our legacy aircraft today. I have no fusion in the airplanes that operate today. We believe we are getting a great warfighting capability for our marines.

We are going to continue to advance the F-35, as we do

with everything we buy and operate, to deliver the close air support, the interdiction, the reconnaissance, and the air-to-air capabilities that our marines need forward deployed.

Senator Wicker: So let me be specific. Do you take issue with any of the observations Dr. Gilmore made in this report?

General Davis: I read through the report, and I know Dr. Gilmore. I would say that we are in a better position than Dr. Gilmore lays out that we are in the F-35B. You talk to the pilots that are flying that airplane right now. They are F-18, they are Harrier, and they are Prowler pilots. They love the F-35B and they would not go back to their original platforms. So they think they have got a tremendous capability. When you talk to young captains and majors and lieutenant colonels that are flying that airplane, they think they have got a great capability.

The software issues that we are dealing with, 2B software -- we actually think it is tracking the way it is supposed to. We still have more test points that we have got to pull in. We will look at that in July. If the aircraft and the pilots and the squadron is not ready to declare IOC with all the things we say they have to have for an IOC declaration, we will not declare initial operating capability.

Senator Wicker: Well, many of the points he made were

valid, I understand you to say, and you have worked through them.

General Davis: We have.

Senator Wicker: Just for the record -- I mean, we do not have all of them in front of us -- do this. Get back to us on the record as to what he might have said that you disagree with, the issues that do not need any more tinkering. Will you do that?

General Davis: Absolutely, sir.

[The information follows:]

[SUBCOMMITTEE INSERT]

Senator Wicker: I appreciate that.

Now, let me ask. Who wants to take the question about the unmanned aerial demonstration program as to the point that 85 percent of the projected life remains on the two aircraft? And is it a good use of the taxpayer money not to continue to utilize these in the interim? Who would like to take that?

Admiral Grosklags: Senator, I have got that one, sir.

So we continue to look at this very closely. The UCAS program that you are talking about, U-C-A-S dash D -- the "D" is for demonstrator. This is without a doubt a demonstrator aircraft. It is not a prototype for one of our future UCLASS aircraft. It is clearly a demonstrator.

The primary goal of that demonstrator was to demonstrate the ability to land and take off from an aircraft carrier with an unmanned system. We accomplished that about a year and a half ago. It was a great milestone for the Navy and for naval aviation.

Subsequent to that, we have continued to work with the aircraft carrier in the aircraft landing environment, including with manned aircraft at the same time. And we are within a couple weeks of finishing the last scheduled event with that demonstrator aircraft which is an actual air-to-air refueling hookup and transfer of fuel from a tanker to that demonstrator.

However, we have looked at additional opportunities, as you say, to wisely spend the taxpayers' dollars on for the utilization of that aircraft, and we do not believe that it is warranted. In terms of informing us --

Senator Wicker: So there is no use that can be made of the 85 percent of the life of these two aircraft.

Admiral Grosklags: Sir, it is less about the life of the aircraft than it is the ability of that demonstrator to further our goals for unmanned carrier aviation. This aircraft has a unique landing system. It has a unique control system. It uses a unique data link. And the network architecture is not the architecture that we will use for our future unmanned aircraft or for the unmanned aircraft that we have in our inventory today. So it does not have the ability to carry a sensor package today. It cannot carry weapons or release weapons. It is a flying demonstrator to get on and off of the aircraft carrier primarily.

We believe we have run that out as far as we need to and that our resources would be better spent pursuing the follow-on capability which is the true capability for the fleet that they need with UCLASS.

Senator Wicker: Was it a mistake the develop the UCAS?

Admiral Grosklags: No, sir, I do not believe so. We learned a tremendous amount about operating an unmanned

aircraft in that carrier environment. That was a high-risk/high-reward demonstration event, and it worked. A lot of effort went into it and a lot of engineering and a lot of expertise. We proved to ourselves that we could do it. We proved to ourselves we could do it safely in that very dynamic flight deck environment. But we are beyond that now, and we need to move on to a program that actually can bring a capability to the fleet for weapons capability, intelligence, surveillance, reconnaissance capability. And that is what we are looking forward to with the UCLASS program.

Senator Wicker: Thank you very much.

I am going to recognize the ranking member and also reiterate the policy of this chairman in terms of recognizing members. We are going to recognize members in the order of their appearance. So it will be Hirono, Kaine, and Tillis. Senator Hirono?

Senator Hirono: Thank you, Mr. Chairman.

A few follow-up questions for General Davis regarding the F-35's. The Marine Corps is planning, as you said, to declare IOC on the F-35's July of this year. Now, you have already been asked a series of questions regarding Dr. Gilmore's report. And he has charged that the various attributes in the block 2B software release will provide less capability than the aircraft that the Marine Corps

currently operates, the F-18 Hornet and the AV-8B Harrier.

General Davis, which Marine Corps official will decide to declare IOC, or in other words, what level of capability is acceptable from the Marine Corps perspective?

I just wanted to note that my understanding is the software in the F-35 is very, very complex and that there are some 22 million lines of code in that aircraft. And I think that is what leads to concerns about its readiness. So is the IOC declaration event-based or being driven by a need to meet a calendar deadline for readiness?

General Davis: Senator Hirono, thanks for the question. Absolutely the decision to declare IOC will be event-based and conditions-based based on us achieving what we have to do to deliver a combat capability to our marines.

I will tell you they talk about not as capable an airplane as the fourth generation, third generation airplanes. That is absolutely not our position at all, not our view of it, not the guys who fly it. The F-35B, even in 2B software, gives us capability we do not have with legacy fighters. The first thing I talked about earlier was fusion. We have no fusion capability today in any of our legacy fighters in the Marine Corps. We do not have that. So being able to share information, high bandwidth information real-time -- we cannot do that. Being able to do close air support for our marines in a contested

environment -- we cannot do that right now, not to the degree you can do it with a fifth generation airplane like the F-35.

And the other one is through the weather, providing close air support through the weather, interdiction through the weather with high fidelity using the APG-81 radar to go do a SAR map. We cannot do that today.

So the way that we provide close air support will be different than we do today, but in many, many ways we think it is a lot more capable than the aircraft we are replacing.

Senator Hirono: Excuse me, General. I think there is some question that the software in the F-35 will provide us with a lot more capability, but only if it is working. And I think that is the question we have. Reassure us that the testing will occur. And we all know about software and all the glitches that can occur and especially one that is as complicated. So you are providing us with that reassurance that everything will be a go.

General Davis: Absolutely, ma'am. We will. And like I said, what we have been seeing to date, the software we are flying with today and the 2B software being loaded and tested now -- we are seeing actually it is a stable software load. It is working very well. Not many of the system crashes. This has been a very reliable airplane for us. Our readiness numbers are coming up. The readiness includes

the software and the reliability of that software. So we are seeing nothing but positive trends as we work closer to IOC. But if conditions are met, I will make a recommendation to General Dunford that we declare IOC but only if those conditions are met, not until, and software will be a part of that.

Senator Wicker: Thank you.

Admiral Grosklags, we both mentioned that there is going to be a shortfall estimate this year, and we were told in an earlier hearing that a shortfall of 65 aircraft is manageable, but if we are looking at a shortfall of 134 aircraft -- perhaps it is Admiral Manazir who could answer this. How would you describe this estimated shortfall of 134 aircraft? Is it manageable? What do we need to do?

Admiral Manazir: Yes, ma'am. Thank you for the question. And it was very meaningful for me and Rear Admiral Tom Moore to meet with you about aircraft carriers as well previously.

And, of course, on top of those aircraft carriers, we fill those with 44 strike fighters of the United States Navy. So managing the inventory is a complex task that actually connects not only the F-18A plus pluses flown by the Marine Corps, the F-18C flown by the Marine Corps and the Navy, the F-18E and F and the F-35 -- so as we look at strike fighter inventory management -- I use the term

"shortfall" when you have a set supply, a set demand, and a set utilization rate, with a set depot condition. And if you do not change any condition that we have right now with the current supply on our flight lines, the current depot throughput, the utilization in the fleet on deployment and in training, and the acquisition of new aircraft, you will have a shortage that is depicted as 134 airplanes at the high. But we are changing all of that.

It is meaningful. And I will agree with the chairman and Ranking Member Hirono that sequestration is devastating. The reason we are where we are in the depot today is because of sequestration in 2013. When we brought the F-18A's through D's into the depot, we brought them to extend the flying hours from 6,000 hours per airframe. Through inspections, we got to eight and we are now extending their service life to 10. Just that planned work is significant. For the first time in history, naval aviation is maintaining three type model series in the same mission area, F-18 legacy, Super Hornets, and F-35. We are sustaining. We are modernizing and we are procuring three type model series. It is very complex. So the planned work with the F-18A through D's coming in was to extend the service life.

Beyond 6,000 hours, we did not plan for the amount of corrosion we found inside the airframes due to extended service at sea and in the environments we operate in: in

the desert in Afghanistan and Iraq; at sea in saltwater corrosion. In fact, the airplane was designed to go away at 6,000 hours. You would not have to do the same kind of corrosion work. Now that we have had to extend that, we have a significant amount of unplanned work. That unplanned work is causing depot throughput problems.

So if you look at the whole condition, the shortfall at a high goes to 134. At a low, it is actually less than that. The way the United States Navy operates our forces, we have a profile called a "fleet response training plan." That fleet response training plan works up squadrons into integrated units and deploys them at the highest level of readiness they can be. In fact, we always meet that bell in the Navy and Marine Corps. We have not failed to meet deployed readiness yet. The priority is deployed readiness.

And then we tail that readiness off at the other side. So it looks kind of like a hump. If you drew a line across the deployed readiness, all the way across, and you kept everybody at that level you would have no shortfall. We actually intentionally tier the readiness so that if you can picture that rising hump and then going down to the two blank areas between the lower humps and the top part, that represents 65 airplanes. That difference is 65 airplanes. We manage that in tiered readiness. If you look at the static shortfall average for the next 5 years, it is about

100 airplanes. The difference between 65 and 100 is about 36 airplanes. That is why the CNO said I need about two to three squadrons. If we keep the conditions the way they are, we reduce the risk by that if we infuse F-18E's and F's that the CNO talked about.

But what we are changing, Ranking Member Hirono, is the depot process through a new process called "critical chain project management," CCPM. And that is being organized to strengthen the depot throughput to get more airplanes on the flight line and to increase our readiness. We are also changing the demand signal in the training aspect of what we do. Vice Admiral Mike Shoemaker, Commander of Naval Air Forces, is looking at the amount of training we do before and after we go on deployment to make sure that we have got just the right amount of training but not too much. And while we increase the depot and while we change the utilization of those airplanes and if we can procure more F-35's sooner -- the Navy and the Marine Corps need to get the F-35C -- and we get the two to three squadrons that the CNO talked about, you will alleviate the shortfall. And we have plans in place to do all of that, ma'am.

Senator Hirono: So I get that inventory management. And there are a lot of moving parts to what you are doing, and you are using all the depots that are available as part of what you are doing?

Admiral Manazir: Yes, ma'am. And not only that, looking at the capacity that we have and also asking Boeing to step in and use their resources to solve additional challenges that we have.

Senator Hirono: Thank you, Mr. Chairman, for your indulgence.

Senator Wicker: Thank you, Senator Hirono.

Senator Kaine, followed by Senator Tillis.

Senator Kaine: Thank you, Mr. Chair, and thank you to the witnesses for the testimony.

I think, Admiral Grosklags, this question may be for you. In the fall of 2014, the Navy released a record of decision about the F-35C basing on the West Coast. Talk a little bit about what the Navy's plans are vis-a-vis basing decisions, process timing for East Coast basing for the F-35C. And whoever wants to answer that.

Admiral Manazir: Senator Kaine, thank you very much.

I am a fighter pilot. I have flown out of Oceana. It is a wonderful base. I also flew out of Cecil and Jacksonville. And the facilities on the East Coast, particularly in Virginia, are very, very good.

Having said that, sir, we have not decided, nor have commenced a process to look at East Coast basing. The current procurement profile of the F-35C allows us to look at NAS Lemoore on the West Coast and to fill those

squadrons, up and then at the right time, we will start the entire environmental assessment process to look and see where we would base the F-35C on the East coast. We have not started that yet, sir.

Senator Kaine: Do you have a sense of when you would start that process?

Admiral Manazir: That process typically takes 18 months to 2 years to do the EIS. We would do the EIS 18 months to 2 years prior. Then we would assess after the EIS the MILCON that it would take. It would be another 2-year process. So I would assess, sir, that probably fiscal year 2018 to 2019 we would be looking at a rate at which we need to start looking at the East Coast base.

Senator Kaine: Great. That is helpful.

General Davis: Sir?

Senator Kaine: Yes, please.

General Davis: If I could, on the F-35C's and the East Coast laydown of F-35's to the Marine Corps, we will have at least one C squadron at Marine Corps Air Station Beaufort. We have an F-35B squadron right there, a training squadron. We will have four squadrons. And then we also are flowing up to Cherry Point as well. So we will have a large number of Marine Corps F-35's on the East Coast.

Senator Kaine: Great. Thank you, General.

The President's budget indicates that depot level

maintenance -- I think it is at 83 percent of the requirement. I am curious how the Navy prioritizes between variants awaiting maintenance if you are at 83 percent. Assuming we get the President's budget level -- that is a big assumption, but if you do or even if you do not, how do you prioritize among the variants in line for maintenance?

Admiral Grosklags: Sir, well, as Admiral Manazir just spoke about, the depot induction process is rather complicated. The 83 percent that we have requested is sufficient to fully fund the work that we know we can accomplish in fiscal year 2016 at our depots. So we do not want to request more money than what we can actually execute.

One of our challenges that was alluded to earlier is that when we went through sequestration 2 years ago and a subsequent furlough, we lost a significant number of our workforce from our Government depots. We today have a shortfall of about 700 aircraft artisans spread across all type model series, but they are somewhat focused right now on the F-18 and our Hornet shortage. That is 700 out of about a 6,800-person requirement. So it is a significant impact to us. We have to build that workforce back up.

We have to build up our engineering workforce because, in addition to the artisans, we have engineering decisions that need to be made when we open up these aircraft and find

a discrepancy. We need an engineer to come in and look at it and determine what type of repair has to happen. So we have to beef up our engineering expertise and numbers of people as well.

Until we get through that hiring process, we can only execute so many aircraft at a time. The fleet prioritizes which aircraft come in, even within a certain type of aircraft and then across all the type model series that come into our Government depots. So it is a multi-pronged approach, but we believe what has been requested in PB 2016 is the funding we need to execute our depot workload.

Senator Kaine: General Davis?

General Davis: Thank you, Senator.

On the depot issue, inside the Marine Corps, we are having a difficult time getting our ready bench -- what General Dunford calls a ready bench -- ready to deploy. It would be that crisis response force. We do a great job getting the guys out the door with assets and training, but it is training that next group that is ready to go.

One of the prime reasons we have a hard time with that right now is because we have about 19 percent of our flight line inventory that we should have up and in operation that is not available to fly. A large portion of that is because of depot. The airplanes are stacked up in the depot and they cannot get through. So in the Marine Corps, I have got

20 percent of my F-18's are stuck and not able to get through. But I have also got CH-53 helicopters. I have got Harriers. I have got V-22's that are coming through for normal depot rework, H-1's. So we have about a 19 percent shortfall across the spectrum inside the Marine Corps, and it extends beyond the F-18.

So just like Admiral Grosklags said, the depots can handle so much. And what we have done is they have done, I think, a brilliant job, as Admiral Manazir said, working out the strategy to get our legacy Hornets back on the line, basically getting our young aviators out there flying and training. But we have had to go to industry to help to plus-up that capability, to get rid of the backlog that is on the back side of our depots because the real issue is getting those airplanes back on the line that the taxpayers have spent a lot of money to buy for us but we need to have them fixed or get them through the depot.

The other part of that is -- part of sequestration -- we have constricted our operations and maintenance accounts, our parts and spares accounts. And so if I got an airplane on the line that is not depot but it cannot be flown because I do not have the parts to put on there, that impacts our ability to generate readiness as well.

Senator Kaine: I just want to summarize because I only have 20 seconds left. But it sounds like a sequester effect

is kind of a compounding effect. So because of sequester, it is affecting our purchase of new platforms. So to deal with that, we pushed the life from 6,000 to 10,000 hours. But to do that, we also need a more robust depot program because not only are we keeping these planes going longer, but the corrosion and other challenges of a plane late in life are more difficult than early. But then the third compounding factor is sequester and furloughs have caused you to lose some of your workforce because they have other options. They can go into the private sector. And so those factors, not procuring as much, pushing the extension of life, more complex depot issues, but sequester and furlough also costing us some of the workforce -- these issues kind of compound together to really affect our readiness. Am I understand the chain of events correctly?

Admiral Grosklags: Yes, sir. I think you hit it right on the head. And this is one of the complications that we warned the Congress about when we were talking about sequestration several years ago was particularly our depot throughput and the implications and the fact that it would take us several years to recover. That was compounded by the description that Admiral Manazir gave earlier about our high flight hour inspections kind of hitting us in the face for the F-18's as well.

Senator Kaine: All right. Thank you.

Thank you, Mr. Chair.

Senator Wicker: Senator Kaine, that was the best use of 20 seconds I have ever seen.

[Laughter.]

Senator Wicker: Senator Tillis, I am sure that testimony about Cherry Point was music to your ears.

Senator Tillis: I was going to get him to repeat himself.

[Laughter.]

Senator Tillis: No, I appreciate that.

I was kind of curious between the East Coast and West Coast deployment. Do you all have a rough idea as a percentage of the base that will be deployed, how that will go East Coast/West Coast?

General Davis: Senator, the first base to stand up is MCS Yuma in Arizona. We are also standing up -- next is Beaufort, and then it is between Cherry Point and Miramar for our four bases in the continental United States. And then also Japan as well to MCS Iwakuni. So we have got a fairly aggressive, but sustainable flow, thanks to your support and buying us those airplanes.

Senator Tillis: And what is the timeline on that?

General Davis: I can get back to you as to exactly. We have been adjusting that a little bit. We are actually trying to move it to the left a little bit to go a little

bit sooner into Cherry Point. It was further out in the late 2020's. We are trying to move that back in the 2024-2025. But I can get you exactly when the first squadron is supposed to go into Cherry Point. As long as we keep our ramp whole for both F-35B and C, that is going to help us out and make sure we fill those.

[The information follows:]

[SUBCOMMITTEE INSERT]

Senator Tillis: The other question I had was back to the question the chair and the ranking member asked. But just to be clear on the software capabilities that will be deployed with the F-35 and your confidence that when it is ready, it is ready, that you will deal with any issues. There has been some discussion about fewer features and functions, but it sounds like to me the fusion capability, which is kind of a real-time network capability among several craft, would far outweigh a few features and functions that are isolated to the specific craft. Is that a --

General Davis: Absolutely correct. They have had problems when they tied. It is a fighter-to-fighter data link, and they have had some problems. It is really a latency problem with tying all four together. When we tie just two together and two sections, it works out really, really well.

Senator Tillis: It is just scaling it.

General Davis: And we are still connecting in through a link 16. So it actually has two data links in the airplane, which really exceptional.

It was real interesting. We did some close air support the other day, and initially the forward air control on the ground wanted to see streaming video. The F-35 will not get that till block 4 in 2019. But the clouds were coming in.

So he says, well, the clouds are coming in. We cannot do the close air support anyway. And the pilot in the F-35 says, hey, I see the target. I can see though the clouds. Let us do this thing.

So we do not have that capability today. We do not. We will have that with the F-35. So we will do close air support and support our marines on the ground differently, but we will do it in a contested environment and we will do it also from our amphibious ships and we will do it through the weather. I think it is some breakthrough capability for us. Kind of like the V-22 10 years ago, we are just scratching the itch and scratching the surface of what we can do with this airplane. I think it is going to be as wildly successful as the V-22 is right now.

Senator Tillis: Thank you.

Admiral Manazir, I think the Navy had in the President's 2015 budget some 4,600 joint standoff weapons budgeted. In the 2016 budget, there are none. What has changed and what are we doing to replace that capability?

Admiral Manazir: Thank you, Mr. Senator, for that question.

What has changed is we did a joint assessment of our targeting plans in the most stressing operational plans against the highest end threat. And we recognized when we did the joint assessment that we actually had planned for

too many of those joint standoff weapons.

Senator Tillis: So it was not a capability you needed?

Admiral Manazir: Yes, sir. Yes, we definitely need the capability, but we realize that we actually have enough.

Senator Tillis: You have the scale.

Admiral Manazir: Yes, sir. We have the scale. We have the capability. We do not have any gaps with the joint standoff weapon.

What we are doing, however, in all of our weapons is modernizing our capability to do things like the JSOW with small diameter bomb to moving targets. The ability to reach into denied areas with our weapons is a capability we are looking at.

But specific to your question, sir, when we did the joint look at it, we realized that we had been double counting and we actually have enough.

Senator Tillis: I mean, that is an example of a good outcome on a downward pressure on budgeting. A bad outcome on budgeting is sequestration. That is the worst thing that I have seen up here that has been put into law in my opinion from a budgeting tool standpoint.

General Grosklags -- is that the right way to pronounce your name?

Admiral Grosklags: It is Grosklags.

Senator Tillis: I have heard it pronounced three

different ways on this panel, so I thought I would try and get it right.

[Laughter.]

Senator Tillis: Back to sequestration, I am kind of interested in the lack of certainty that we have with sequestration, how it affects our industrial base because if I am out there trying to figure out what we are going to buy from our industrial, I am making decisions that downsize my capacity right now, just based on the sort of paycheck-to-paycheck approach we have for budgeting right now. Do you have any specific areas of concerns? I know we talked about shipyards, but other areas within the industrial base that you are concerned that we are reaching a tipping point in terms of being able to ramp up if necessary?

Admiral Grosklags: Yes, sir. We are concerned across the industrial base. You just alluded to weapons. It is true in the aircraft industry, as well as you alluded to the shipbuilding industry.

It is two-pronged. One is the uncertainty. As I mentioned in my opening statement, what we really need is a stable, predictable budget, and that is what industry needs as well to temper their investments. What areas are they going to invest in long-term? And we as a department and we as taxpayers absolutely need those investments by industry to support our programs. So it is a two-way street there.

And we are making it very, very difficult on industry.

From our internal Department of Defense perspective, if you will, the uncertainty in the planning quite honestly makes us much less efficient. We are not able to put in place some of the acquisition strategies and some of the long-term plans with industry that we would like to that would drive down our program costs. So much as Senator Kaine alluded to and kind of the vicious circle we got into with the depots and readiness and flying hours, we end up with the same problem with some of our acquisition strategies. The more uncertainty, the more it costs us. The more it costs us, the less certain we can become about the future.

So I think your concern is right on the money, the unpredictability in stability and even the threat of sequestration, whether it is realized or not, hampers our ability to work with industry and get them to invest in the areas we think are important to our future.

Senator Tillis: Thank you.

Thank you, Mr. Chair.

Senator Wicker: You know, Senator Tillis, I think the Senate is almost unanimous in agreeing that a return to sequestration would be most harmful. The question is how do we find the offsets to avoid it. There is the rub, absolutely.

Senator Ayotte, you are recognized.

Senator Ayotte: Thank you, Mr. Chairman.

I want to thank all of you for being here.

I wanted to ask about some specific programs. And, General Davis, I understand that the CH-53K is on schedule to conduct its first flight by the end of 2015. Is that true, and are we on track there?

General Davis: We are on track. That is true.

Senator Ayotte: How important is that new CH-53 to the Marine Corps in its modernization effort?

General Davis: The 53 Kilo -- ma'am, thanks for that question -- is absolutely essential to our modernization effort. We talked a little bit earlier about the flight line deficit we have in all of our aircraft, and CH-53 Echo is our only heavy lift airplane. It lifts heavy equipment from a sea base and takes it ashore. So it is kind part and parcel of what the Marine Corps does and what we be able to do. The CH-53 Kilo replaces those 53 Echoes. Echoes have done 95,000 hours in combat in the last 14 years. So really performed brilliantly for us. But they are getting old and wearing out. We can only keep them going for so long. The 53 Kilo gives us three times the lift capability. It will lift 27,000 pounds. Unprecedented. The only helicopter in the world that can do that and take a 27,000-pound load on a hot, heavy day and transport that gear 110 miles. So

absolutely critical for our Marine Corps.

It is on track. Like every program, it has got its episodic things we learn in tests, but nothing would stop us from believing that we will fly that airplane this year and also too, we make an initial operating capability of the 53 Kilo in 2019.

Senator Ayotte: So fly this year and then operational capability in 2019?

General Davis: Yes, ma'am.

Senator Ayotte: Great. I appreciate that.

And Rear Admiral Manazir, I also wanted to ask about a particular program, and that is the P-8A Poseidon's first operational deployment was completed, I understand, in June of 2014 and that continuous 7th fleet operational deployments are underway. How is the P-8 performing and how is that going?

Admiral Manazir: Yes, ma'am. Thanks for the question.

The P-8A is now in its third deployment. The 3rd squadron is deploying it with their P-45 and have been essentially wildly successful.

Senator Ayotte: I like to hear that. We hear about delays and things. Wildly successful --

Admiral Manazir: Yes, ma'am. I was the deputy to my current position a couple years ago for 24 years, and now I have been the Director of Naval Warfare in the Navy here for

a year and a half. The P-8A is the most successful acquisition program that you have funded for us. Taking a commercial 737 and filling it with high-end equipment works very well.

I actually flew that airplane last week. I went out of Jacksonville with an LRIP airplane, essentially a block 0 P-8A. We went out. They demonstrated for me dropping sonar buoys in a simulated targeted, tracking that target, building a synthetic aperture map of the eastern seaboard, connecting with platforms that were ALRIP as far north as Norfolk and seeing the entire picture out over the water, and then the electronic support that it does. So that what we have in the back of that airplane is very good.

On its very first flight out of Seattle, the very first flight of that airplane, they put it over the top of the P-3 looking at a blue submarine, a United States Navy submarine, and the P-8 had more information right away than the P-3 had.

We are incrementally improving that airplane to increments 1, 2 and 3. Increment 1 is already funded. Increment 2 is fully funded. Increment 3 is in part this budget. We are completing the kill chain that it takes from high altitude ASW by buying a torpedo, the Mark 54. You put a wing kit on it. You can launch it from high altitude, which covers more water space and reduces the fatigue life

on the airplane.

So, ma'am, in summary, very successful.

Senator Ayotte: Excellent. I appreciate that update.

I wanted to ask. I am sure this was addressed to some extent by my colleagues, but I wanted to make sure that I understood where we are with the F-35, both the Marine Corps and Navy variants, and how things are going and what challenges remain. Who would love to go first on that?

Admiral Grosklags: So let me touch on it just at kind of a macro level and cover both services and then General Davis and Admiral Manazir might tag back in.

We follow that program very closely. Obviously, Mr. Stackley is the service acquisition executive responsible for that program today. We believe they are making steady progress. As you are well aware, they rebaselined the program back about 4 years ago. Since that time, they have largely been executing to that schedule and to that funding profile. So from that perspective, they are making steady progress. They are making progress in development of the software that General Davis has talked about previously. The testing is moving forward. The production line is moving forward. And we are spending a tremendous amount of time working with the JPO and our partners in both the Air Force, as well as the international community, on attacking affordability on that aircraft.

Now, that is not to say that everything is perfect, and we have alluded to some of the problems or discussed some of the problems we are having already. We are very much focused on the software development. That will continue to be a challenge as long as we are in this development phase, which runs out through 2018. We continue to focus on the availability of the aircraft, its readiness, its maintainability, and the support from the autonomic logistics system that supports the operations and the maintenance. And as I mentioned, we are very focused on affordability.

And we can talk more in detail about any one of those aspects, but the bottom line is they are making as a program steady progress forward to the IOC capability that General Davis has been talking about, and perhaps Admiral Manazir would like to talk just briefly about how we are progressing toward the Navy's IOC in 2018.

Admiral Manazir: Ma'am, thanks.

The Navy needs the F-35C to win the high-end fight.

We have been very discerning customers. There is a healthy debate. In fact, tomorrow is the third joint executive steering board to go into the specifics of F-35, all models, all services. I am comfortable that in the last year and a half the program has stabilized to where we will achieve our IOC, following the Marine Corps and following

the Air Force, in August of 2018. Our risks are in software. The risks to block 3F, which is post-2B software, to development have been 4 to 6 months of the original baseline that has been stabilized now at that 4- to 6-month risk now for over a year and a half. And I am starting to get comfortable that we have that risk right.

We have identified other challenges in modifications to the airplane, and we are comfortable those modifications will be on track.

We think the funding is adequate to execute the plan. We just work with the Joint Program Office to actually execute that funding. So I believe that we are on a good track, but I will tell you that your scrutiny joins our scrutiny in working with the contractor to deliver this airplane.

To General Davis' point, this is a game-changing airplane. The fusion that we talked about earlier is simply making what looks like four targets actually down into the reality that is one target. So it is making all of those signals come out and show us that one target without a shadow of a doubt, and that is what we are working towards. But the capabilities of that F-35C are such that we need that for the war fight, and I believe that General Bogden and the rest of the program coupled with the services has us on a good track for both models, F-35B and C.

Senator Ayotte: Thank you.

Senator Wicker: Rear Admiral Manazir, help me remember what you said about the unexpected corrosion because of sea air and desert. Was that with regard to the Hornets?

Admiral Manazir: Yes, sir. Actually every airplane that we fly in the environments that we fly in, be it a desert environment or a salt air environment, experience some type of corrosion.

Senator Wicker: Of course. But you did not expect to have to deal with it because you did not expect the aircraft life to be that lengthy. Is that your testimony?

Admiral Manazir: That is correct, sir.

Senator Wicker: When was the Hornet developed?

Admiral Manazir: Early 1980's, sir. We IOCed the airplane in 1983, the F-18C -- F-18A and took it to C in 1983.

Senator Wicker: We fly aircraft a long time.

Admiral Manazir: Yes, sir.

Senator Wicker: I got in the Air Force in 1976, and we were talking about how well the B-22's were. You know, here we are.

With regard to programs going forward, are we being a little more realistic about the expected timeframe in which we are going to have to use these aircraft?

Admiral Manazir: Sir, I believe we have been realistic

the whole time. When we developed --

Senator Wicker: Even with regard to the Hornets?

Admiral Manazir: Yes, sir. NAVAIR SYSCOM assesses the airframe and designs the airplane with the contractor to go to a certain service length, every aspect of that airplane, including projected corrosion. We successfully got the entire fleet of 614 F-18A pluses through C's to 6,000 hours through a maintenance program that was viable and it was positive, and we got them home at 6,000 hours. When we opened up the airplanes after -- and we inspected them to 8,000 hours, by the way. So we increased the life another third. When we inspected them and opened them up after 8,000 hours, we saw corrosion that we had not planned on. When you couple the --

Senator Wicker: It was not supposed to matter.

Admiral Manazir: That is right, sir. It was not supposed to matter. We were not supposed to be flying out here.

So we did the assessment of the service life, but when you opened the airplane deeply and look way inside -- we are talking taking panels off and structure off -- and the parts that we do not build anymore because they have become obsolete, and we need a range and depth -- those parts were corroded. And so the depot has had to design, engineer, build, and then install these parts that used to be put

together by Boeing. That is the unplanned work we have, sir.

Senator Wicker: I am not making a good point about whether we should have expected to have to use these aircraft longer.

Admiral Manazir: You are making a great point, sir. A 30-year service life, 6,000 hours, the F-35 was designed for 30 years and 6,000 hours -- 8,000 hours.

We will probably have to assess extension of the service life. Now, I will tell you, sir, that what we have learned -- we did not do an early enough service life extension program assessment of the F-18A through C. So we found ourselves without the analysis and we are behind. But we learned that lesson with our F-18E/F.

We are going to extend the service life of the F-18E/F to 9,000 hours. That extension will occur in the mid-2020's. We are already in phase two of the service life assessment program, which will also show us the corrosion that occurs at 6,000 hours. So we have learned our lesson on the extension part.

But I would still say, sir, we buy and procure aircraft with the planned service life and we engineer to that service life.

I hope that answers your question.

Senator Wicker: Thank you very much.

Admiral Manazir, the Navy trains its future rotary wing pilots utilizing the legacy TH-57C Ranger helicopters. The B model is used for VFR and the C model is used for IFR. My understanding is that 125 helicopters currently support the Navy's daily requirement for 90 operational available aircraft. They are equipped with dated avionics and the maintenance and sustainment costs associated with these legacy aircraft are also increasing as the aircraft age.

So give us an assessment of operational reliability, sustainment plan, and replacement intentions.

Admiral Manazir: Yes, sir. You have characterized exactly how we train our initial rotary wing aviators. And that TH-57 is a very effective initial trainer. I flew that. It is a good way to teach a kid how to fly a skid helicopter. It is obsolete.

A couple of years ago, we tried to replace it with a TH-57D. We were essentially going to make a glass cockpit in the Jet Ranger, and the FAA -- we could not get the right configuration, so we canceled that program.

So we have just come through about two-thirds of an analysis to see how we train our rotary wing aviators, not necessarily how to replace the 57, but how do we train them.

But in the interim, sir, what I am really doing is working with the NAVAIR SYSCOM staff and the Army to bring down some of the TH-67 trainers that they have in Army

training and to convert them to 57 configurations so at least we can give them a short-term better simulation than they have now. So we have a short-term plan for simulation and a longer-term plan potentially from a programmatic standpoint about how to train our rotary wing aviators. But we are looking at that very hard.

Senator Wicker: Thank you.

Senator Hirono?

Senator Hirono: Thank you.

Admiral Grosklags, so there has been discussion about corrosion which occurs on our planes, on our ships. Is there a DOD-funded research and development as to anti-corrosion research? Because we are probably living in an environment where we need to get a lot more life out of our assets.

Admiral Grosklags: I will have to get back to you on specific programs. I do know that there are a number of programs, including with our office in naval research, that address corrosion. It has, obviously, been an issue that we have dealt with as long as we have put aircraft and ships to sea. I cannot give you the specifics of any of those programs today, but I will certainly get back to you.

[The information follows:]

[SUBCOMMITTEE INSERT]

Senator Hirono: Are we making progress in a longer life for parts and anti-corrosive research?

Admiral Grosklags: Yes, ma'am, absolutely, not only in terms of the materials that the parts are made of but also the coatings that we use to protect them from the environment. As we go through modification programs on our aircraft and update them over time, we use those new materials and those new coatings which not only prevent the corrosion in many cases, but they also reduce the workload for our technicians that have to work on those aircraft.

But the materials science continues to advance, but it is something we pay very close attention to. And the difficulty is sometimes compounded by the other mission capabilities that we try to employ at the same time on those aircraft such as low observable coatings. That combination is not always the easiest to deal with. So there is a lot of effort going forward, and if you would like more details on specific programs, I can get that to you.

Senator Hirono: There may be some nanotechnology that could be useful in this area. I know that every time you put a coating on, that reduces -- that adds to the weight of the plane and all of that. So I understand that.

I would be interested to know who is funding that kind of research for the Department of Defense.

Can you also talk a little bit more about the specific

improvements that have been implemented at our depots, I assume to effect efficiencies, and how long it takes for them to get the planes back out? Anyone?

Admiral Manazir: Ma'am, the specific method that we are using now is called "critical chain project management." It is a theory of constraints-based profile. The commanding officers of the depots have trained or are training their artisans, engineers, and supervisors to create a line in the depot that understands what the constraint on the airplane would be. So whether it is materials, a part, an engineering disposition, or some other factor, they understand what the constraint is for the airplanes coming through. They understand the organization.

For instance, down at FRC Southeast in Jacksonville, Florida, they took a holistic look over the last several months, the last year at their system, and they figured out, they thought, that they had a capacity in their engineering force to run 17 airplanes through at a time. When they did an assessment of their engineers, they figured out they only had the engineering capacity to put six through. If they had not done that analysis, they would continue to be choked by the amount of work that goes through the depot.

So they leaned out the line to bring it down to six, while at the same time they are hiring, certifying, and training the engineers to bring those through. So what they

are going to do by the end of this year -- they are projected to not only come back up to 17, but to double that to 34. That new critical chain project management is also being projected to go out to FRC Southwest and North Island in Coronado, California, and they will apply that same methodology to double, then triple the output that we are currently seeing right now.

Admiral Grosklags' point about the funding at 83 percent -- until we get that depot leaned out, the engineers hired, the artisans hired, and the parts in place, the funding is not the constraint. And so once we get that all up, then we will go back up to 100 percent funding.

I hope that answers the question.

Senator Hirono: So can you give an estimate as to -- by using this kind of critical project management process, how much more efficient we have become?

Admiral Manazir: The depot will be easily efficient by 200 percent more, so 100 percent more efficient. And we see some projections that will take us up to even 300 percent. For instance, right now, we are putting 65 airplanes a year through that. We forecast in the next couple of years to get to 90 aircraft through the depot, and we will be out of this current near-term shortfall problem by 2018.

Senator Hirono: That is very commendable. We note that you do have a shortage of workers -- right -- skilled

people?

Admiral Manazir: Yes, ma'am.

Senator Hirono: What can we do besides getting rid of sequester --

Admiral Manazir: Do not sequester again. I have to join the chair and the ranking member to say that the sequestration was inherently deleterious to everything we were doing. It particularly hit us in the depots where the artisans were told to go home because we then furloughed them and they went to work somewhere else. And so we are trying to recover from that labor shortage right now, and they do not exist. It is hard to hire them. We have to train them, and then we have to get that workforce on the airplanes and start to generate. So that is why the CNO testified that about 15 months -- about 13 months from now, we will start to see the depot effect because they have hired all the resources and now we can see that they are starting to put out those airplanes at the rate that we know we can do.

Senator Hirono: Thank you.

Senator Wicker: And Senator Tillis.

Senator Tillis: Thank you, Mr. Chair.

Going back to the discussion about the corrosion, it occurred to me if you have got a tactical fighter you said had a 30-year life and 8,000 hours, you design for that. So

if you wanted to have a 50-year life and 12,000 hours, you are going to pay the incremental costs for doing that up front which reduces the number of craft that are going to be deployed, which affects readiness. So you got to set limits.

But then there is another question. When we have this discussion about extending the life of a 30-year-old tactical platform, are there not only certain capabilities that you can bring that underlying platform up to as compared to, say, an F-35? So you are kind of putting a $100 saddle on a $10 horse in terms of the new technological platform that you have today. Is that a fair way to say it?

General Davis: It is, sir. First off, as taxpayers, you would expect us to extract maximum value out of everything you give to us, and we do that. So an airplane that is designed for 30 years like the F-18 and the Harrier -- we are going to fly them as long as we possibly can and do good work. But there comes a knee in the curve where you can only modify and improve to a certain point to include I think actually doing a better job with corrosion control inside, teaching our maintenance marines and sailors how to do a better job with that. So we have kind of re-embraced that.

But there comes a time out there you have got to embrace the technology and move out. And I think we are

there kind of with the V-22 and the F-35 inside the naval service P8.

Senator Tillis: I was thinking back when that plane was being deployed, I had a Mustang II. It was a dark chapter in Ford's history. The Mustangs of today I would much rather want to build capabilities and go fast in.

So that is why I think we get into this discussion because of sequestration.

General Davis: You remember the Mustang III.

Senator Tillis: It was an upgrade from the Pinto.

The sequestration mindset I think is getting into a discussion that does something that the Commandant says we ought not do. We should never get a point where our capabilities put our folks into a position of a fair fight. And if we do not start looking at a way to get -- see, one question I have for you all -- just you all opine as much as you want.

It seems to me that sequestration -- the way that they go about it is a way that no business would go about driving efficiencies out of your organization. And I know we had discussion about the worry about how we pay for increased defense spending, but I wonder whether the question should be if we gave you maximum flexibility to use your resources in the most efficient way, how could we -- we talked about JSOW's. You found by looking at that, having the time to

look and optimize your organization, you found a weapons system that you did not need any more of.

If we got the distraction of sequestration out of the way and we started looking more at strategic sourcing, lean execution of processes, it seems to me that a lot of the net reductions achieved by sequestration, increases in efficiencies could be achieved but in a much more strategic way that gives you all the flexibility to do what you do for the highest level of readiness, for the lowest cost.

I mean, if we were to go back and say, you know what, we are going to achieve roughly within some range, the ultimate bending of the curve in defense spending, but we want you all to tell us how to go about allowing you to do that, can you think through ways where it is not just spend more, spend more, spend more, but spend more smartly? Is there some way that we can actually get out of this rut of saying we want to get rid of sequestration, but we do not know how to actually budget in a way that achieves our budget priorities? Have you all given thought to how you can give us advice on how to get out of this rut?

Admiral Manazir: Sir, let me try a couple of things.

The first one is maybe my two colleagues will but I am not going to give you advice, sir. I thank you very much for the support of the programs that we do field.

Back to the capability piece, I would like the

opportunity to come give you a brief on the capabilities going into the F-18E and F. The airplane we have in there is eye-watering. The things that we are putting into that E and F -- we are going to fly that airplane almost to 2040. We will require the airplane to wind with the F-35C. And so we do put those modernization points in there.

To your point about sequestration, it does affect our readiness. We have talked about that. It also affects our decisions to modernize, and so if the funding comes down, I cannot make those airplanes relevant.

Admiral Grosklags testified that the stability of the funding is what is most important. General Davis and I are focused on a horizon that is out about 2025.

Unfortunately for us, the threat gets a vote. They are expanding across the world. The threats to our forces are going up. We have to have the PB 2016 funding at least to address with risk all of the missions that we are going to do out there.

But the stability of that funding is very important. As we program for the modernization, if you plan for a funding level that allows us to program the modernization in and then drop that level by 10 percent, fence some programs so the immediate effect on the rest of the discretionary budget is 14 percent, I have to stop the modernization. That disrupts the vendor base. That disrupts my

modernization. It disrupts my research. It disrupts the --

Senator Tillis: It ultimately drives up your long-term costs.

Admiral Manazir: And it is going to drive up the cost. Yes, sir.

So while we are trying drive down the costs with sequestration, you are actually driving up the end cost of the things that we are trying to build. And if we cannot build them and deploy them, we will not win.

Admiral Grosklags: Yes, sir. I do not want to try to give you specifics, but much as we have discussed on a couple of topics here, kind of that vicious cycle that spirals us downward, I think what you are looking for is kind of that virtuous cycle that would enable us to put in place acquisition strategies to incentive industry to invest, to enable us to go to more of a commercial model where it is appropriate, which requires the stability and the predictability that we just talked about. And there would be a certain virtuous cycle associated with that.

The simple example is our ability to do multiyear contracts. And I know there is House language that Congressman Thornberry has proposed that would ease our ability to put in place multiyear contracts where it is appropriate. It is that type of virtuous cycle where if we can drive down the cost of a particular capability or the

capacity associated with it, then we have the choice of either buying more of those or investing more in readiness or simply not spending those dollars.

Today, we have so many things on the unfunded list because we have been kind of nicked over time -- even the BBA agreement that was alluded to earlier was a significant decrease from what we had proposed in the President's budget that year.

So what I would propose is we need to get in that virtuous cycle as opposed to the death spiral that we kind of find ourselves in.

Senator Tillis: Thank you, Mr. Chair.

Senator Wicker: Thank you. Senator Tillis, when did you drive that Mustang?

Senator Tillis: 1977 and 1978.

Senator Wicker: Can we agree that the best thing to come out of the early Mustang was "Mustang Sally"?

[Laughter.]

Senator Tillis: That is true. But it was the nicest car in my trailer park.

Senator Wicker: Gentlemen, this has been a very productive hearing, and I think we are all agreed, a very impressive panel. So we thank you for your testimony and your give and take with us, and I think we are much better informed. Thank you so much, and we look forward to working

with you.

And this hearing is adjourned.

[Whereupon, at 10:18 a.m., the hearing was adjourned.]