

Stenographic Transcript
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 2018 AND THE
FUTURE YEARS DEFENSE PROGRAM

Tuesday, June 13, 2017

Washington, D.C.

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U.S. Senate

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Subcommittee on Seapower

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Committee on Armed Services

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Washington, D.C.

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13 The subcommittee met, pursuant to notice, at 2:34 p.m.
14 in Room SR-222, Russell Senate Office Building, Hon. Roger
15 Wicker, chairman of the subcommittee, presiding.

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Committee Members Present: Senators Wicker

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[presiding], Rounds, Tillis, Sullivan, Hirono, Kaine, and

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King.

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

3 Senator Wicker: The hearing will come to order.

4 We've been advised by minority staff that Senator
5 Hirono is on her way from the vote and that in the interest
6 of time it might be best if I went ahead, so we'll do that.
7 I certainly would not have done that without permission of
8 Senator Hirono's staff.

9 The Senate Armed Services Subcommittee on Seapower
10 convenes this afternoon to examine Navy and Marine Corps
11 aviation programs.

12 Our subcommittee welcomes three distinguished
13 witnesses: Vice Admiral Paul A. Grosklags, Commander, Naval
14 Air System Command; Lieutenant General Jon M. Davis, Deputy
15 Commandant for Marine Corps Aviation; and Rear Admiral Chip
16 Miller, Director of Air Warfare for the Department of the
17 Navy.

18 Our subcommittee is grateful to these witnesses for
19 being here, for their decades of dedicated service. I'd
20 like to offer special thanks to General Davis, who for some
21 reason is retiring next month after nearly 37 years of
22 service. Best wishes to General Davis and his family.

23 The United States faces a complex and increasingly
24 dangerous security environment. This subcommittee is well
25 aware of the challenges posed by China and Russia's military

1 modernization and assertive behavior, North Korea's
2 belligerence, and Iran's malign activities. The Islamic
3 State also remains a potent threat.

4 To confront these challenges, our country relies
5 heavily on Navy and Marine Corps aviation. However, 15
6 years of continuous, high-tempo operations and years of
7 inadequate budgets have strained our aviation forces.
8 Congress has not delivered sufficient and predictable
9 funding to our naval aviation forces. I look forward to
10 hearing from the witnesses about the long-term funding
11 requirements necessary to regain full-spectrum readiness.

12 Today, our subcommittee will examine five key areas
13 related to the Navy and Marine Corps aviation programs.
14 First, physiological episodes. First and foremost, the
15 safety of our Navy and Marine Corps aviators remains
16 paramount. The subcommittee remains concerned about the
17 persistence of these PE episodes experienced in Navy
18 aircraft, particularly the F/A-18 Hornets and Super Hornets,
19 EA-18G and T-45s. This situation is naval aviation's
20 number-one safety priority.

21 As subcommittee chairman, it remains a matter of great
22 personal interest. In early April, I made a fact-finding
23 trip to Naval Air Station Meridian following a widely
24 observed instructor pilot boycott of training flights at
25 Meridian, Kingsville, and Pensacola. I spoke with

1 instructors and students, and also senior leadership,
2 including the commander of naval forces, Vice Admiral
3 Shoemaker, and the chief of naval air training, Rear Admiral
4 Bull. I've also received updates from each of our
5 witnesses, which I appreciate.

6 After my visit to NAS Meridian, the Vice CNO directed
7 the Commander of Pacific Fleet, Admiral Scott Swift, to
8 conduct a review of the facts, circumstances, and processes
9 surrounding the PE issue. We hope to get an update on this
10 today.

11 Overall, the Navy needs a plan to get T-45 students
12 back flying safely and to fix the problem for the long term.
13 Looking toward the future, the subcommittee would like to
14 hear assurances from the witnesses that the Navy and Marine
15 Corps are taking action to prevent the F-35 from suffering
16 the same problems. It's worth noting that Luke Air Force
17 Base temporarily canceled flying operations last week after
18 five Air Force pilots experienced physiological episodes.

19 Next, aircraft readiness, our second area of interest.
20 The Navy and Marine Corps lack sufficient numbers of ready,
21 basic aircraft for aviators to remain qualified, proficient,
22 and motivated. The witnesses should discuss the Navy's
23 budget request for depot maintenance, flying hours, and
24 spare parts.

25 Third, our subcommittee would like to learn more about

1 gaps in the Navy fighter fleet. The Navy's Strike Fighter
2 shortfall will continue to expand unless enough aircraft are
3 procured to replace the 24 to 36 aircraft which are retired
4 annually. The CNO and Commandant both included Strike
5 Fighters on their unfunded priority lists. In fact, the
6 Navy's number one and number three unfunded priorities are
7 Super Hornets and F-35C Joint Strike Fighters, respectively.
8 Our witnesses should provide more details on unfunded
9 requirements for multi-role fighter aircraft.

10 The fourth area of interest is development of
11 operations of the F-35B and F-35C Joint Strike Fighter.
12 While F-35 is approaching the end of its development phase,
13 the Marines are already flying the aircraft operationally.
14 Earlier this year the Green Knights permanently changed
15 their home station to Iwakuni, Japan, and will make the
16 first F-35 shipboard deployment in 2018. The subcommittee
17 looks forward to hearing an update on F-35 operations and
18 the lessons learned from the first units to fly the
19 aircraft.

20 Finally, our subcommittee would like an update on
21 inventories for air-launched munitions. Inventories for
22 many of our weapons remain critically low. At the same
23 time, technological advances of our potential adversaries
24 require us to modernize our munitions to remain relevant.
25 The subcommittee needs to understand where the Department is

1 taking risk, what is being done to mitigate that risk, and
2 also comment on the industrial base's ability to produce the
3 required munitions.

4 So I welcome our witnesses, and if we will pause for a
5 moment, we will check on the whereabouts of our
6 distinguished --

7 Senator Hirono: Here she is.

8 Senator Wicker: My goodness, I couldn't have timed it
9 better.

10 Senator Hirono: I heard my name and --

11 Senator Wicker: Now, Maize, you know I went ahead only
12 with permission.

13 Senator Hirono: Oh, of course. You always have.

14 Senator Wicker: Well, we're delighted to see you, and
15 we know you are very, very busy this afternoon and will have
16 to leave to attend another very important matter.

17 Senator Hirono: Yes, thank you.

18 Senator Wicker: You are recognized.

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

3 Senator Hirono: Thank you. Thank you, Mr. Chairman.

4 I would also, of course, like to welcome our witnesses
5 for this afternoon's hearing. We are grateful for your
6 service and for the professional service of the men and
7 women who are under your command.

8 Today we have an opportunity to discuss how the
9 Department of the Navy's Fiscal Year 2018 budget request for
10 Navy and Marine Corps aviation programs would help increase
11 readiness, a huge issue for all of our services, address
12 shortfalls in munitions, pilots, and maintenance personnel,
13 and modernize our strategic deterrence capability.

14 Navy and Marine Corps aviation programs play a critical
15 role in supporting and advancing our country's strategic
16 interests in the Indo-Asia Pacific region, including, of
17 course, from bases in Hawaii.

18 Last summer I attended the dedication of the first of
19 two new MV-22 hangars at Marine Corps base Kaneohe. In
20 April, four Ospreys operating from those hangars departed
21 Kaneohe Bay for the Royal Australian Air Force Base Starwin
22 after flying nearly 6,000 miles. This flight demonstrated
23 how the operating range of our MV-22s and the strategic
24 location of Hawaii permit us to reach across the Pacific
25 Ocean to respond to the ever-growing threats in the region.

1 These threats require us to consider how best to get
2 the Navy and Marine Corps the resources that you need, but
3 we must also make sure that any increases in resources do
4 not come at the expense of important domestic programs that
5 families, including our military families, rely on every
6 day.

7 In this request, the administration is asking for a \$54
8 billion top-line increase above the total budget for Fiscal
9 Year 2018, prescribed in the Budget Control Act, or BCA. Of
10 that total, the Department of the Navy budget would receive
11 an increase of roughly \$12 billion. Unless Congress can
12 achieve a broad and bipartisan agreement to repeal or modify
13 the BCA, any approval of the \$12 billion increase for the
14 Navy and Marine Corps will trigger sequestration of a
15 similar amount in domestic programs.

16 This increase would come at the expense of huge cuts to
17 health care, environmental protection, and State Department
18 programs critical to our national security, and I'd like to
19 mention in that regard Hawaii's East-West Center. This is a
20 non-starter. As Secretary Mattis said this morning, no
21 enemy has done more damage to the U.S. forces than what
22 we've done to ourselves with the BCA.

23 Mr. Chairman, I look forward to working with you and
24 other members to eliminate sequestration in a way that
25 balances the needs of our military with critical domestic

1 programs. We cannot continue down this path.

2 As we consider the Fiscal Year 2018 budget, we must
3 also consider the significant challenges we face in naval
4 aviation. While the Marine Corps has been operating the F-
5 35B variant, we need to hear more about how testing on the
6 F-35C is proceeding. We also need to understand better how
7 other parts of the program are supporting the Navy's initial
8 Operating Capability Declaration plan for 2018, or OCD.

9 In the budget, the Defense Department is also asking
10 for authority to execute economic order quantity, EOQ,
11 contracts with the F-35 program in advance of successful
12 completion of operational testing. Normally, Congress has
13 not approved EOQ authority unless and until the weapon
14 system in question has completed a successful operational
15 test, and we will have to consider this matter carefully.

16 Second, the Navy is facing a major shortfall in its
17 Strike Fighter inventory. The Navy responded to forecasts
18 of a shortage of almost 200 aircraft several years ago by
19 better managing the remaining life on the existing aircraft.
20 They've done this by redistributing aircraft within the
21 force, designing a series of maintenance and rehabilitation
22 measures, including a service life extension program, or
23 SLEP, for older aircraft, and by new F-18 aircraft. The
24 Navy has predicted that SLEP would lead to significant
25 improvements in its ability to support operating forces such

1 as aircraft carrier squadrons and Marine Corps squadrons for
2 several years.

3 This year, however, the Navy is still having difficulty
4 moving F-18 aircraft through the SLEP lines, which means
5 that fleet squadrons are having to make due with fewer
6 aircraft. This puts a strain on the whole system. We need
7 to hear about actions the Navy is taking to improve this
8 situation.

9 Navy and Marine Corps pilots have been experiencing
10 problems with the environmental control systems in certain
11 aircraft, mainly F-18s and T-45s, that have resulted in what
12 is referred to as "physiological episodes." We need to hear
13 from the services what progress is being made to address
14 those problems.

15 I'd also like to hear about the investments the Navy
16 and Marine Corps are making in training and maintenance
17 operations.

18 General Davis, yesterday at our meeting, I was
19 encouraged to hear that Marine Corps aviation has chosen to
20 focus significantly on training and development for pilots
21 and maintenance workers, both officers and enlisted
22 personnel. Sending Marine aviators and maintainers to the
23 advanced aviation management training course is a
24 demonstration of your commitment to improving readiness and
25 getting the aviation fleet back to where it needs to be.

1 Thank you again, Mr. Chairman. I certainly look
2 forward to hearing from our witnesses. Mahalo.

3 Senator Wicker: Very good. Our distinguished ranking
4 member has to testify at a hearing and may be able to come
5 back and be with us.

6 Admiral Grosklags?

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1 STATEMENT OF VICE ADMIRAL PAUL A. GROSKLAGS, USN,
2 COMMANDER, NAVAL AIR SYSTEMS, DEPARTMENT OF THE NAVY;
3 ACCOMPANIED BY LIEUTENANT GENERAL JON M. DAVIS, USMC, DEPUTY
4 COMMANDANT FOR AVIATION, UNITED STATES MARINE CORPS; AND
5 REAR ADMIRAL DEWOLFE H. MILLER, III, USN, DIRECTOR, AIR
6 WARFARE (OPNAV N98), DEPARTMENT OF THE NAVY

7 Admiral Grosklags: Sir, I'll be giving an opening
8 statement for all three of us.

9 Senator Wicker: Oh, okay. Good.

10 Admiral Grosklags: Mr. Chairman, Ranking Member
11 Hirono-- I hope she comes back -- and distinguished members
12 of the subcommittee, it's our pleasure to be here with you
13 today to talk about naval aviation and our programs.

14 Our 2018 President's budget submission is governed by
15 the Secretary's priorities to improve war-fighting readiness
16 by addressing pressing programmatic shortfalls that have
17 accrued from 15 years of wartime operational tempo and
18 chronic under-funding of many of our readiness accounts.
19 This budget request is designed to maintain the operational
20 effectiveness of our current force, also building a bridge
21 to growing the future force starting in 2019.

22 Current readiness of our naval aviation forces is
23 clearly, as you stated, less than it needs to be. The
24 Fiscal Year 2017 enacted budget provided much needed
25 increases in funding for many of our naval aviation

1 readiness accounts. Our Fiscal Year 2018 request builds on
2 2017 with a request for funding of these readiness accounts
3 that both in real terms and as a percentage of the
4 requirement is to a level not seen in eight to ten years.
5 Support for these readiness accounts is the most important
6 leverage that we have in returning our aircraft to the
7 required state of readiness.

8 Close behind is the need to continue, and in some cases
9 to accelerate, the procurement of new aircraft. This
10 includes F-35s for both the Marine Corps and the Navy, as
11 well as additional F-18 Super Hornets for the Navy. As we
12 continue to struggle with extending the service life and
13 maintaining the readiness of our legacy F-18s, both services
14 are working to accelerate the transition to other aircraft.

15 In addition to the F-35B and C models, critical
16 priorities for the Marine Corps include initiation and the
17 ramp-up of CH-53K production, completing the procurement of
18 the KC-130J, execution of the V-22 common configuration
19 readiness and modernization initiative, also known as CCRAM,
20 and initiation of the MAGTF Expeditionary Unmanned Air
21 System, also known as MUX, M-U-X.

22 Each of these priorities is a key contributor today and
23 in the future to the Marine Corps' capability and capacity
24 to meet plans and combatant commander requirements.

25 On the Navy side of the house, in addition to the F-18s

1 and the F-35s required to minimize our Strike Fighter
2 inventory challenges, priorities include initiating service
3 life extension of our F-18 Super Hornets, pushing forward
4 with MQ-4 Triton procurement, awarding a development
5 contract for the MQ-25 carrier-based unmanned tanking
6 aircraft, continued development of the next-generation
7 jammer for our Growlers, and fielding of the long-range
8 anti-ship missile on initially the B-1 and then the F-18.

9 We will continue to leverage every tool and opportunity
10 available to drive down the cost of each of our programs,
11 and this subcommittee has been very supportive of our
12 efforts in the past, and we are again asking for your
13 support for a couple of initiatives.

14 One is the V-22 multi-year program which will support
15 the final seven years of planned Marine, Navy, and Air Force
16 procurements; and the second one, already mentioned by the
17 ranking member, is the F-35 EOQ associated with a block buy,
18 and I'd be happy to talk about the importance of that in
19 more detail if we have the opportunity.

20 Separate from the procurement focus, this subcommittee
21 is well aware, as you stated, of the continued challenges
22 that we face in resolving the high rate of physiological
23 episodes that we have seen in our T-45s and F-18s. It bears
24 repeating that this is naval aviation's number-one safety
25 issue, and we continue to approach our mitigation steps and

1 our search for root cause in an unconstrained funding
2 perspective.

3 As we continue to assess potential root causes, we in
4 parallel are focused on implementation of air crew alerting
5 and protection devices and systems so that we can resume
6 student training in the T-45 just as soon as possible, but
7 keeping in mind that safety is the number-one priority.

8 Now, our aviation priorities are directly tied to the
9 increasing worldwide security challenges. Our ability to
10 achieve the improved readiness, increased capacity, and
11 enhanced capabilities required to deal with these challenges
12 remains constrained by the overall resourcing constraints
13 imposed by the Budget Control Act and the often inefficient
14 use of resources driven by the seemingly chronic extended
15 execution under continuing resolutions. You have our
16 commitment to making the best possible use of the resources
17 we are given, and we ask this subcommittee's continued
18 support in working to eliminate these barriers.

19 I want to thank you again for your support of our
20 sailors and Marines, and we look forward to answering your
21 questions.

22 [The prepared statement of Admiral Grosklags follows:]

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1 Senator Wicker: Well, thank you very much.

2 I said this this morning at the full committee, and
3 I'll say it again today at the subcommittee level, about the
4 chronic underfunding. We really do need to join hands and
5 address this once and for all. I would remind members and
6 guests and everyone listening or watching that the reason we
7 adopted sequestration in the first place was as an incentive
8 to make us come to grips with entitlement programs,
9 entitlement programs like Medicare, Medicaid, Social
10 Security, and, of course, interest on the debt, which is
11 only partially within our control.

12 The good news about these very valuable safety-net
13 programs is that we don't have to cut them. They need to
14 grow and will continue to grow, but we simply need to grow
15 them at a slower rate. And it is the inability of the House
16 and Senate and the collective administrations to deal with
17 this issue that got us to sequestration.

18 So, I am not the least bit proud of our record with
19 regard to this chronic underfunding. We certainly don't
20 need to use sequestration as a way to short-change the war
21 fighter, and we certainly don't need to short-change
22 national security, the security of Americans. But it is
23 worth saying that it is a failure because we have been
24 unwilling, for whatever reason, unable, for whatever reason,
25 in both parties and at both ends of Pennsylvania Avenue, to

1 come to grips with simply slowing the growth rate of these
2 excellent programs that we all depend on.

3 Admiral Grosklags, I appreciate the information your
4 team has given to all of us about the PE issue, and you
5 mention it in your testimony. But if you're sick, if a
6 person is sick, the most important step is a good diagnosis.
7 Once we get the diagnosis, physicians know how to come in
8 and give the right medicine or the right treatments.

9 We're having a diagnosis problem with the physiological
10 episodes, so tell us where we are. And I appreciate Admiral
11 Miller and General Davis coming in and speaking to me
12 yesterday about this. But how are we doing on the
13 diagnosis? Are you able to give us any hope on a timeline
14 to solving this problem?

15 Admiral Grosklags: Sir, we're not doing well on the
16 diagnosis. We have two parallel paths under execution right
17 now. As you said, it would be far easier if we could find
18 out what the root cause was and then go after correcting
19 that root cause. To date, we have been unable to find any
20 smoking guns. I will refer back to an exception to that
21 here in just a second.

22 But for T-45s specifically, where most of our issues to
23 date, almost all of them, have been associated with what
24 we'll call breathing gas issues, as opposed to the
25 pressurization issues in the cockpit that we've seen with

1 some of our F-18 incidents, we do not --

2 Senator Wicker: Toxic oxygen, actually.

3 Admiral Grosklags: Well, to date, we have not been
4 able to discover a toxin or a contaminant in the breathing
5 gas despite our testing. Just to give you a snapshot
6 without going into great detail, we have taken several of
7 the aircraft from Sinatra from the training squadrons,
8 brought them up to Patuxent River, and we have torn some of
9 them apart to the extent that we took every component, every
10 single component in that gas path, that breathing gas path
11 if you will, out of the aircraft, starting with the engine
12 and going through the entire system, inspecting all the
13 piping in-between, all the way up to the mask and the vests
14 that the air crew wear. We've subjected each one of those
15 individual components to extremes of testing, extremes of
16 environmental conditions in excess of what we would ever
17 expect to see in the aircraft, and we still have not been
18 able to find what we would consider a proximate cause of
19 contamination or something being released into that gas
20 path.

21 We are also doing testing at the system level. We're
22 flying the entire aircraft -- again, these are aircraft that
23 had issues down at Sinatra. We're flying the entire
24 aircraft with additional instrumentation on the aircraft,
25 trying to detect stuff in-flight, real time. To date, we

1 have not been able to find that root cause or been able to
2 diagnose the problem.

3 In parallel, for T-45, because obviously one of our
4 concerns is getting back into the training environment as
5 quickly as possible, but we focused on 10 to 12 different
6 alerting or protective measures for the air crew, and it is
7 our plan that once we are comfortable that we've got those
8 individual items all in place for every single aircraft and
9 air crew down at Sinatra, that is at the point where we will
10 consider resuming the training syllabus.

11 We believe that will probably be a matter of weeks
12 instead of months, but there is still some testing of new
13 equipment that we intend to --

14 Senator Wicker: The full training syllabus.

15 Admiral Grosklags: Yes, sir. So that's kind of our
16 path, the two parallel paths on T-45s.

17 On F-18s --

18 Senator Wicker: Well, sir, on the training syllabus
19 now, what are you able to do and what are you not able to
20 do?

21 Admiral Grosklags: To date, since the beginning of
22 April/end of March, we have not flown any training events
23 with the students. The students have not flown at all. Our
24 instructor pilots are flying some currency flights. They
25 are not using the oxygen generation system, so they're

1 basically breathing ambient cockpit air, and because of that
2 we've restricted their flight envelope to 5,000 feet and
3 below and less than 2 G's. So a relatively benign
4 environment but sufficient for them to remain proficient in
5 flying the aircraft.

6 Senator Wicker: We're going to lose a crop of
7 undergraduate pilots?

8 Admiral Grosklags: We won't lose them permanently, but
9 we lose about -- we delay about 25 a month if we don't start
10 flying students again. So if you say the end of June, we
11 will have racked up about 75 students that have been delayed
12 going to the next squadron, which would be the fleet
13 replacement squadron.

14 Senator Wicker: Senator Kaine?

15 Senator Kaine: Thank you, Mr. Chairman.

16 Thanks to the witnesses for your testimony and service.

17 A couple of disparate items. The force structure
18 assessment recently has led the Navy to readjust their
19 thought about the size, the number of ships, from 308 to
20 355. But I was interested that the force structure
21 assessment didn't talk about what that would dictate in
22 terms of aviation. And since a lot of the ships have an
23 aviation component, I would suspect that that's kind of the
24 next ask, there would be kind of an aviation follow-on
25 component that would change if we were able to grow the Navy

1 that size of ships. I'm sure there isn't an answer to that
2 question today, but I would just love you to address that
3 issue, what are we likely to see as the Navy contemplates
4 the shift in the number of ships and what that would mean in
5 terms of additional need for aviation assets.

6 Admiral Miller: Yes, sir. I'll go ahead and take
7 that. As you know, in the budget in '17, the whole focus
8 was on readiness, and on '18 now it's to continue that
9 readiness and look at the wholeness. So the question that
10 you ask is really what we're working in the building right
11 now as we're putting together the '19 budget. Part of that
12 is, okay, we envision eventually getting back to 12 aircraft
13 carriers, which is going to require an extra air wing. So
14 with the timing of that, how you would then flow in the
15 aircraft to be able to support an extra air wing to be able
16 to deploy on that 12th carrier is something that would have
17 to be mapped out and, of course, have the available
18 resources to be able to do that.

19 On the surface side, the largest contributor to
20 aviation support to our surface Navy has to do with our
21 helicopters. Currently, the H-60 inventory that we have
22 meets the requirements that we have currently in our surface
23 fleet. Again, once those plans are determined on when and
24 if we're able to grow the Navy per what we assess the needs
25 are, then we would obviously lay in a procurement program

1 that would be able to support that on the aviation side.

2 Senator Kaine: Okay. I just wanted to have some
3 sense, as you point out, for the future. I'm on the Budget
4 Committee too, and I'm curious about this.

5 We've had some posture hearings in the main committee
6 with Air Force, and one of the issues we've talked about is
7 the issue of maintainers. So we're talking about aviation
8 programs. Platforms is one thing; pilots are critically
9 important. I was a little struck in the Air Force
10 discussions we've had that some of the workforce gaps are
11 more significant on the maintainer side than even on the
12 pilot side, and both are significant.

13 Talk a little bit on the Navy and Marine side about
14 what you're doing to deal with the maintainer workforce.

15 General Davis: Thanks for that question, Senator.
16 We've done five independent range reviews in the Marine
17 Corps and looked at all the things we need to do to make
18 sure our legacy fleet generates the range requirements we
19 use in the Marine Corps. One of the things that came out of
20 that was not the numbers of maintainers we have but the
21 overall qualifications of the maintainers we have,
22 especially with a little bit different readiness model for
23 the United States Marine Corps and the United States Navy.

24 So we actually needed to hire density of maintainers in
25 each unit and tailored for each unit's mission out there to

1 make the range requirements. We looked at those
2 qualifications and how hard it is. It takes two years to
3 make a collateral duty inspector. It takes four years to
4 make what they call a CDQAR, which is the next level up.
5 Your master mechanic takes seven years on average to make
6 those, and it's kind of consistent between the Navy and the
7 Marine Corps.

8 What we have done is we've mapped out for each and
9 every unit, and now providing incentives, starting this
10 July, to keep both Marines who earn those qualifications,
11 and those are the very best Marines and sailors inside those
12 units that do that, and keep them in the densities we need
13 to make our range requirements out there.

14 The second thing is we've looked at -- I ran our
15 fighter weapons school in Yuma, Arizona for two years, great
16 job as the CO of that schoolhouse, and almost 40 years ago
17 we created Match 1 to make sure we were at the top of our
18 game in standards and best tactics, techniques, and
19 procedures to go fight the looming threat on our nation's
20 bow. We didn't do that for our aviation maintainers. We
21 are doing that now.

22 So a kind of companion schoolhouse, a top wrench, if
23 you want to call it that, for our young officers and our
24 maintenance Marines to make sure that they are sharing best
25 practices and getting the very biggest bang for the buck we

1 can out of our Marines.

2 Senator Kaine: Excellent, excellent. I'll ask you one
3 other question, if I could. This is one for me and for
4 Senator Tillis. So if he comes in, tell him I had his back.

5 We have training ranges that we use heavily, Navy and
6 Marines, in Virginia and North Carolina. With the advent of
7 fifth-generation aircraft, are we making the investments
8 that we need in maintaining the usefulness of those ranges,
9 or do the ranges maintain continuing viability? Because
10 some of the platforms have some additional bells and
11 whistles to them.

12 Admiral Miller: Yes, sir. Thank you for that
13 question, because when we talk about wholeness, everyone
14 likes to look at, hey, I'm providing this object, whether
15 it's a new F-35, but with that comes the whole training
16 apparatus that goes with it. So not only from the
17 maintainers that are maintaining the aircraft but for the
18 aviators that have to fly it, the decision-makers as we put
19 together, and as you well know, COM 2 exercises are pretty
20 large events that we do off of the coast of Virginia.

21 So we are making investments in live virtual
22 constructive. We have to, with the threat that's continuing
23 to evolve, with the tactics that continue to keep pace with
24 the threat, and with a lot of the new equipment, we have to
25 transition the way we train.

1 So it's a combination of using simulation, combining
2 that with live assets, and also being able to throw
3 constructive threats out there. For example, to be able to
4 have a scenario that has representative threat aircraft, we
5 probably don't have the adversary support to be able to do
6 that.

7 So we need to evolve the way we train. So that live
8 virtual constructive aspect absolutely needs to start down
9 at the basic level where I'm learning how to fly an airplane
10 and, hey, I need to connect an E-2 to an F-18 in a
11 simulator. And then as we use the building block approach,
12 as we prepare our carrier strike groups and our amphibious
13 groups to deploy, to be able to take it up to the fleet-wide
14 level of training as well.

15 So there are definite investments in live virtual
16 constructive, and it's all part of the wholeness aspect of
17 our approach to new weapon systems and new platforms.

18 Senator Kaine: No other questions. Thanks, Mr.
19 Chairman. Although I see -- I think maybe General Davis
20 wanted to weigh in briefly, if that would be acceptable?

21 Senator Wicker: That would certainly be acceptable.

22 General Davis: Thank you, sir. That's a great
23 question, sir. What we're finding with operating our fifth-
24 generation airplanes, we actually expanded Townsend Range to
25 accommodate the mission profiles the F-35s can bring to

1 flight, and we're seeing it every day in Yuma. For Senator
2 Tillis, we're already looking at what we need to do off the
3 coast of North Carolina to make sure that the Cherry Point
4 facility is ready to take those airplanes.

5 The fifth-gen airplanes are changing the way we train
6 and changing the way we fight and changing the way we think
7 about fighting in a very dynamic way, in a very good way.
8 It's really good news for the nation. But these airplanes,
9 we're finding, require -- the standard formations aren't the
10 close formations like I grew up flying. They are separated
11 by tens of miles. The bottom line is the airplane is
12 perfectly comfortable flying like that. It will also fly
13 and fight in bad weather as well, and allow our training.

14 It's not just how we train in the air component; it's
15 how we train with our surface forces and our land forces out
16 there as well. The other day, doing close air support
17 through the cloud with F-35s with guys on the ground, that
18 was something we probably wouldn't do with a high degree of
19 fidelity, but now they actually not only do that but see the
20 targets through the cloud.

21 I think it's going to change the way we do business,
22 both live virtual constructive and also, too, the mandate
23 for us to protect our training ranges and the air space over
24 those training ranges. It's going to require some different
25 thinking, and it will be a national asset for all of us with

1 these new airplanes.

2 Senator Kaine: Thanks, Mr. Chairman.

3 Senator Wicker: Senator Rounds?

4 Senator Rounds: Thank you, Mr. Chairman.

5 Gentlemen, thank you for your service.

6 When it comes to the readiness and the capabilities or
7 the availability of your aircraft right now, could you share
8 with me what the readiness percentages are? I think the
9 last couple of months it seems like the unavailability was
10 somewhere in excess of 60 percent for FA-18s and so forth.
11 Could you share with me what your readiness capabilities
12 are? It seems to me that the F-35B variant, being new, was
13 actually having a pretty good capability rating, even this
14 early in its current development, if you want to call being
15 seven years late current. But it seems like its
16 capabilities were maintaining in excess of 80 percent. So
17 could you share with me?

18 Admiral Grosklags: I can give you some generic
19 numbers. We can drill down on each platform if you want,
20 but you're about on the money. We're currently at a mission
21 capable percentage as of the 24th of last month, at 56
22 percent. So it's mission capable across the fleet.

23 For the F-35 in particular, for the F-35B, we're
24 actually above 80 percent, as you stated. So it's doing
25 very well.

1 General Davis: Sir, if I could, looking at the VMF/A-
2 121, the VMF/A-211, getting ready to be VMF/A-122, and then
3 the 501, which is our training squadron at Buford, South
4 Carolina, focusing on 121, very active squadron. Ten of the
5 16 are over there now. The next six show up this summer. I
6 track them every day between 70, 75 and 80, 85 percent, so
7 very high rates. The Marine F-18s in particular right now
8 running a little bit less than 50 percent, although we're
9 trending up, and Harriers is better than that.

10 But bottom line, the newer metal gets us to higher
11 rates across the force. Those F-18s are old, trusty
12 airplanes, but we're finding that with the readiness rate --
13 and we're doing better in F-18 now. Our flight time per
14 pilot has gone up significantly from the last time we
15 talked. We're still shy of our objective, but we have a
16 break. We start off in the morning, we have a 55 percent
17 break rate with the older airplanes. So we start off in the
18 morning, we've got them on the line, you worked all night to
19 get them up. We used to do a six turn, six turn four, to
20 get your training objectives, and that's how we fight as
21 well.

22 A lot of those airplanes, half those airplanes are
23 breaking after the first go, so we're not getting the
24 numbers and the production we need out of those old
25 platforms.

1 Senator Rounds: I have to share. I had the
2 opportunity to fly with the Blue Angels last fall in a
3 demonstration, and I think these guys do their best to break
4 them sometimes. I know I was going left when he was going
5 right on several different occasions, and I wasn't that far
6 away from him.

7 Senator Wicker: You're scaring me, Senator.

8 Senator Rounds: I'm just telling you, these guys are
9 good, but they put those aircraft through their paces, and
10 you can see why they have some challenges once in a while.
11 But that's the way that they need to train, the way that
12 they need to fight, and those aircraft have got to be as
13 top-notch as we can keep them.

14 I'm just curious, Admiral, you indicated 56 percent.
15 Is that across the entire fleet, or is that across the
16 fighter fleet?

17 Admiral Grosklags: That's across the entire fleet,
18 sir.

19 Senator Rounds: How about if we just change that to
20 the fighter fleet right now? Where are we at then?

21 Admiral Grosklags: Probably -- well, certainly a
22 little bit less than that. If we're talking about F-18s of
23 all makes and models, it's probably right around 50 percent.

24 Senator Rounds: Okay. Thank you.

25 You indicated that the anti-ship missile that's being

1 developed -- and if I heard you correctly, originally or to
2 begin with you were going to be placing it on the B-1.

3 Admiral Grosklags: Yes, sir.

4 Senator Rounds: And then eventually transitioning over
5 to the FA-18. I presume that would be on the Super Hornet?

6 Admiral Grosklags: That's correct.

7 Senator Rounds: Okay. Can you share how that would be
8 utilized if it's on a B-1? I mean, it seems to me that
9 that's a new capability that we're talking about for the B-1
10 or a new use for the B-1.

11 Admiral Grosklags: I've got to be a little bit careful
12 here.

13 Senator Rounds: Okay.

14 Admiral Grosklags: It's a derivative of the JASSM
15 missile that's already carried on board the B-1. It has a
16 different target set, and it will be used differently, but
17 the mission is very compatible with that aircraft, as well
18 as with the Super Hornet.

19 Senator Rounds: Having the Ellsworth Air Force Base as
20 one of the homes of the B-1, we're always happy to hear of
21 new mission sets for the B-1 as well.

22 When it comes to the F-35 -- and I recognize this is
23 the aircraft of the future for the Navy and the Air Force
24 and the Marines. Over its lifetime, the F-35 sustainment is
25 projected to cost over \$1 trillion. Most alarming is that

1 the cost may be underestimated. Based on data from the Air
2 Force and the Marine Corps concerning F-35 variance at
3 testing and operational sites, parts are being replaced on
4 average 15 to 16 times higher than the assumptions used
5 across the life cycle of the Joint Program or JPO estimate.
6 A GAO report highlights a multi-billion-dollar increase in
7 each of the service's flying hour programs.

8 My question, based on the procurement of 20 additional
9 F-35Bs and four additional F-35Cs in 2018, what impact will
10 this have on the U.S. Navy and the U.S. Marine Corps in
11 terms of your O&M challenges?

12 General Davis: I can answer that one if you want?

13 Senator Rounds: Yes.

14 General Davis: First off, we've got to be driving
15 costs out of all of our programs. So we're actually running
16 actually shy of the estimates for what it's going to be to
17 run the F-35 for the Marine Corps. So we're kind of out
18 there in front. The Air Force is building up steam right
19 now.

20 But what we're spending to fly the airplane is actually
21 less than we estimated. And we also just ran a -- hired an
22 outside firm to go look at it, because even though it's
23 less, I'd like it to be even less. We believe we can take
24 significant amounts of money out of what we're spending just
25 by doing it differently, working that in conjunction with

1 the Joint Program Office, Lockheed Martin and the engine
2 manufacturers to drive cost out of this program.

3 So what we do know is we have a winner on our hands.
4 As we have more airplanes in the fleet, you actually will be
5 able to drive cost out. Right now it's costing a heck of a
6 lot of money to fly the legacy airplanes and get readiness
7 out of that, and that's a very expensive proposition when
8 you have airplanes you can't fly but you're still trying to
9 maintain them because they're broken.

10 The F-35 has a high readiness rate for us right now,
11 also working and driving cost per flight hour down and the
12 O&S cost out. So we're attacking it very aggressively. The
13 Marine Corps did that as a beta test, but we're sharing our
14 information with both the Navy and the Air Force, and we'll
15 do that at the CEO conference coming up this week. But we
16 believe we can drive cost down significantly, sir.

17 Senator Wicker: What about that replacement rate that
18 Senator Rounds mentioned? Is that accurate?

19 General Davis: I'd have to get back to you on break
20 rates for parts.

21 Senator Wicker: Admiral Grosklags, is that going to
22 continue?

23 Admiral Grosklags: I think we'd have to get to the
24 specific components. I would not be, quite honestly,
25 surprised if we saw that for some number of components on

1 the airplane. I would also be willing to bet that there is
2 some number that are having lives in excess of what we
3 predicted, and that's pretty typical with every new aircraft
4 we introduce to the fleet. We and the industry make
5 assumptions and calculations on what the reliability of
6 every single component is going to be, and then we are
7 continually surprised. We have to either buy more spares,
8 which is not a good answer, or we figure out how to deal
9 with the specific reliability issue associated with those
10 components you're talking about.

11 Senator Wicker: General Davis, since this is a winner,
12 Admiral Grosklags, should we be proud of this aircraft?

13 Admiral Grosklags: I'll answer it quickly and turn it
14 over to Admiral Miller.

15 I think so, sir. I think we are in a fairly good place
16 as I've been watching the completion of developmental tests.
17 General Davis can certainly talk more about how it's
18 performing for them operationally, but I think in terms of
19 the development process, we're on very solid ground at this
20 point, and I look at a couple of key metrics, one of them
21 being software stability. As we want to get to the final 3F
22 software configuration before we introduce the aircraft in
23 the Navy, we're very closely watching the stability, and we
24 have seen over the last year to 18 months the in-flight
25 stability go from where they were having a system reset or

1 having to do something with the system in-flight from about
2 every five hours to the most recent software releases are
3 about every 40 hours, which is more than acceptable for us
4 right now.

5 Senator Wicker: Good to hear it.

6 Admiral Miller?

7 Admiral Miller: What's that, sir?

8 Senator Wicker: That's good to hear, isn't it?

9 Admiral Miller: Oh, it's great to hear. We're quite
10 excited. General Davis says it's a winner. We absolutely
11 agree.

12 I get the question a lot, hey, tell me about the F-35
13 versus F-18, and I say it's not a versus. The complementary
14 nature of both of these aircraft into the future for our
15 aircraft carrier Navy is very exciting. We've taken F-35
16 out to the ship already. About 150 traps, this is with
17 fleet pilots, 100 percent boarding rate, no 1 wires -- it
18 was a dream to bring aboard.

19 So as we integrate it, the fact that we're getting
20 supersonic stealth, data fusion, the sensor netting that
21 this airplane is going to be able to provide, it adds
22 capability, lethality and survivability not just to the air
23 wing but to the entire carrier strike group. The way we
24 integrate it with our Aegis ships and our baseline 9
25 configuration, the way we fight it alongside of our -- the

1 capability that it brings with the capacity that the Super
2 Hornet brings under the control of an E2D and with the
3 capability of a Growler is just exciting for us guys who are
4 carrier aviators.

5 Senator Wicker: Thank you.

6 General Davis: Sir?

7 Senator Wicker: Yes, General Davis.

8 General Davis: On the Marine Corps side, we also track
9 the Air Force numbers as well. It's hard to put a
10 qualitative number on what an airplane brings to the fight,
11 but the Air Force -- and we are seeing similar operation in
12 our major exercise. We just got back from a big exercise in
13 Alaska, sir, 20 to zero, 21 to zero. I mean, the exchange
14 rates for these airplanes going into highly contested
15 environments, operating in weather that we wouldn't be able
16 to operate in before, electronic warfare mission, strike
17 mission, air-to-air mission, in the hands of what were
18 pretty inexperienced, younger guys flying airplanes, it's
19 exceptional.

20 The other thing, if you combine that with the Marine
21 Corps being all F-35 and F-35C4s. But the ability to go
22 land in an expeditionary base -- 75 percent of our error in
23 the big fight is ashore with the capability to go back
24 aboard the ship and 25 percent aboard the ship.

25 For the Marines, where we go, we're probably going to

1 be in a kinetic fight. You cannot rule that out. So the
2 ability to go, take the airplane from an amphibious ship, go
3 to a strike mission, land at a forward operating base
4 ashore, get rearmed with the motor down, which we practice
5 with the F-35 right now in our weapon school, and get
6 airborne again to go basically take whatever number of
7 airplanes that you have look like more and be more is a
8 truly incredible capability, and you can do that any
9 climate, any place, and any threat.

10 Senator Wicker: Thank you.

11 Senator Sullivan?

12 Senator Sullivan: Thank you, Mr. Chairman.

13 I wanted to discuss an issue that doesn't come up too
14 much on the readiness with regard to naval aviation. There
15 was an article -- and, Mr. Chairman, I'll ask that this be
16 submitted in the record. It was from the Marine Corps Times
17 last year titled "Marine Corps Aviation Fleet is in Peril."

18 Senator Wicker: Without objective.

19 [The information referred to follows:]

20 [SUBCOMMITTEE INSERT]

21

22

23

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25

1 Senator Sullivan: Thank you.

2 One of the things that this article highlighted was
3 it's not just readiness but actually the safety of our
4 aviators when they're not being able to fly. So this whole
5 article talked about how Marine aviation-related deaths hit
6 a five-year high in September. This was last year, when
7 fatalities reached 18 during the first nine months of 2015,
8 and there's a quote from a retired Navy commander who is a
9 pilot saying there's a direct line between flight hours and
10 mishaps. The less they're flying, the less they're
11 training, the less maintenance personnel are getting
12 involved, the higher the mishap rate.

13 So can you talk about that? We always talk about, hey,
14 we're not ready to fight, but maybe even more troubling is
15 our lack of readiness is potentially risking the lives of
16 our aviators who are already in a very dangerous profession.

17 General Davis: Here's how I'd couch that, Senator,
18 watch it very closely. Every one of those losses affected
19 me personally, deeply. What I would say is we're flying
20 safe airplanes. We're not flying them enough.

21 I would say probably the bigger threat out there is
22 when you don't have enough hours, you can fly according to
23 the book safely, but what you're not getting is the looks at
24 the ball, not being as proficient as you should be. To me,
25 the primary player at risk is the Marine infantryman. They

1 deliver close support fire, air-to-air fire, assaults aboard
2 for them, that the pilots and the crews aren't as practiced
3 as they should be, and doing that under every threat
4 condition that's out there.

5 We've not been able to draw a line with the mishaps
6 we've had to a lack of proficiency with those crews out
7 there.

8 Senator Sullivan: I think it's good, General, that you
9 guys are focusing on that because, obviously, readiness is
10 one thing, we want that, but if we're losing lives because
11 we're not training enough, I think that's -- shame on all of
12 us.

13 General Davis: As the nation's force, on readiness, we
14 have to be ready to go, especially a small force, small in
15 size. We're supposed to be in a high state of readiness.
16 That readiness has taken a hit over 16 years of fighting,
17 flying airplanes that were built in the '80s at a depth to
18 dwell of 1 to 2 that General Miller talked about this
19 morning, sir.

20 Senator Sullivan: Yes.

21 General Davis: All that puts wear and tear, and it's
22 just not enough time and not enough power tools to train the
23 aviators to the degree they need to be truly on their A game
24 for that force of readiness. So the risk for us is there.
25 We need to get out of this zone of low readiness, low

1 inventory, as quickly as we can to provide the fires that we
2 need for the Marine Corps to be that force we need.

3 Senator Sullivan: I wanted to follow on to Senator
4 Kaine's point and what you mentioned, General. I did get to
5 see just briefly the F-35 Bravos that were in Alaska. As
6 the Navy and the Marine Corps are fielding the F-35s, the
7 discussion about having a much bigger range complex for the
8 standoff to be able to train better with these fifth-
9 generation aircraft is critical.

10 So I would welcome all of you to come on up and see the
11 Joint Pacific Alaska Range complex, JPARC, which some of you
12 might be familiar with. The Air Force, obviously, is very
13 familiar. But that has an air size bigger than Florida, and
14 we're actually expanding it. You can do CAS. It's got the
15 SAM simulations.

16 The Air Force is up there a lot. I had General Neller
17 up in Alaska two summers ago, and there was a squadron of
18 Hornets that had just done the Red Flag exercise and stayed
19 after, and they happened to bump into the commandant of the
20 Marine Corps on a Sunday morning, which was a little bit, I
21 think, stunning for them. But the squadron commander said
22 to the general, to General Neller, that that was the best
23 air-to-air training he had ever done in his entire career.

24 So we would welcome whether it's Northern Edge or Red
25 Flag, getting up and seeing that, because there's a

1 dedicated F-16 Aggressor squadron up there. It's probably
2 the best air-to-air training on the planet, and it's only
3 going to get better when the F-35s are fully fielded because
4 the space is so huge.

5 Any comments on that, about the great training at
6 JPARC?

7 General Davis: Sir, I wish I was still flying gray
8 airplanes like that so I could be up there in Alaska flying
9 with those. I'll tell you, though, and I'll speak for the
10 brothers as well, but we like to deploy, we like to go
11 train, we like to train hard. It's a great place to train
12 hard, up there in Alaska. It's new. It's great adversary
13 support.

14 Again, we need to be able to train, as General Miller
15 said and the CNO said, to the high-end fight. That's a
16 great place to train to the high-end fight. You can do
17 everything you need to do in the theory books and all that
18 stuff, and training transactionally in garrison. When you
19 get out, you get on the road, you go someplace else, you
20 take your unit out there, you focus on the task at hand,
21 it's great training in Alaska.

22 Senator Sullivan: Also, a lot of CAS opportunity.

23 General Davis: Absolutely.

24 Senator Sullivan: Admiral, have you ever trained at
25 JPARC?

1 Admiral Grosklags: I have not. I'm a helicopter
2 pilot, so we try to stay out of those cold weather areas if
3 we can.

4 [Laughter.]

5 Admiral Grosklags: I will comment that one of the
6 critical things, whether in Alaska or other places, that we
7 need to continue to invest in is the threat simulations or
8 the actual threats on the range. That is one of the places
9 where, I'll say, we've fallen a little behind. I think
10 there's some investment in our budget request exactly for
11 that.

12 Senator Sullivan: Thank you.

13 Thank you, Mr. Chairman.

14 Senator Wicker: Senator Tillis?

15 Senator Tillis: Thank you, Mr. Chairman.

16 Gentlemen, thank you for your service, and thank you
17 for being here.

18 Admiral Grosklags, I wanted to ask you -- I think last
19 year I asked the question. I assume it's the same answer,
20 that the LAFAM facility down at Cherry Point is still a
21 priority, and it looks like we're probably two or three
22 years away from beginning to see a flow of Joint Strike
23 Fighters -- I woke up thinking about it this morning --
24 going down to that area. So, do you feel like -- we were
25 talking about the limits at the Rolls Royce factory and the

1 need to stand this thing up. I mean, is the run rate in
2 reaching maximum capacity at the Rolls Royce facility
3 roughly the same? So the need, the priority is still there?

4 Admiral Grosklags: Yes, sir, the priority is still
5 there. And as we were talking just a minute ago about
6 combatting the cost of sustaining these aircraft, one of the
7 things that we need to do sooner and one of the things that
8 has been a large topic of discussion over the last six
9 months or so with the F-35 program office and all the
10 services is standing up that depot capability across the
11 board, organic depot capability much more quickly.

12 So we're trying to pull all of that stuff to the left
13 so that we can not only support the aircraft more cost
14 effectively but in cases like this just support the
15 aircraft, because the vendors, the OEMs are quickly, I
16 believe, going to be in a spot where they're trying to
17 support a significant increase in production at the same
18 time they're seeing increase in demand for their repair
19 capability, and that's truly our challenge.

20 Senator Tillis: Yes. Just to finish this thought and
21 move to a related topic, I worked with the state
22 legislature, and they're negotiating a budget right now that
23 is a specific appropriation for things that the states can
24 do to anticipate some of the broader needs that will occur
25 with getting the LAFAM facility there and maybe an increase

1 in depot operations down there.

2 Another topic that came up that I told the legislature
3 to look at is the potential hangar capacity to really be
4 able to expand and leverage that site down there. Is that
5 something that you all agree has potential and a part of
6 that solution?

7 General Davis: Sir, we are already starting to lay in
8 the money in our five-year plan to start to build out Cherry
9 Point. Part of that is hangars. It's ramp improvements to
10 handle F-35s. So not only the lift facility at the FRC but
11 also, too, the hangars and the construction we need in the
12 simulator buildings to bring in F-35s. So we're starting to
13 get to a healthier ramp-up. We can certainly use more and
14 faster to replace those older airplanes that we're using up.
15 But that money is starting to go into the budget now to go
16 build those hangars.

17 Senator Tillis: Well, there are a number. If you all
18 think more broadly when you do that and you increase the
19 operations, the number of either civilian or uniformed
20 personnel that are going to be down there, to the extent
21 that that suggests some need for underlying infrastructure
22 that may be appropriate for state investment, I would very
23 much appreciate. We've certainly gotten the attention.

24 I, for one, wouldn't want you to put the LAFAM facility
25 or the hangar in any place that's not what you all consider

1 to be the best and highest use. So if you've arrived at the
2 conclusion that Cherry Point is one of those places, what I
3 would also like to do is make sure that we're ahead of the
4 curve on things that we may be able to work with the state
5 legislature and the governor, who are very open and
6 supportive, because it has an economic impact for the state,
7 and we want to make sure that we're doing everything at the
8 state and local level to knock down any other challenges
9 that come when you expand the capacity down there.

10 General Davis: A lot of the infrastructure at Cherry
11 Point, sir, is World War II infrastructure. It has not been
12 improved since then. So this is sorely needed out there,
13 and it's in the plan right now, so we'll look forward to
14 teaming with the State of North Carolina to build hangars
15 and build facilities as quickly as we can so we get a place
16 to bed these airplanes down.

17 Senator Tillis: And we'll probably submit some
18 questions for the record.

19 Mr. Chair, I apologize for coming late. I've got to go
20 off to another commitment, but I wanted to thank you all. I
21 appreciate you getting it on the priorities list and
22 appreciate your feedback on anything we can do to facilitate
23 the process. Thank you for your service.

24 Senator Wicker: Thank you, Senator Tillis.

25 Senator Hirono?

1 Senator Hirono: Thank you, Mr. Chairman.

2 General Davis and Admiral Miller, when Congress agrees
3 to support an administration request for multi-year
4 procurement authority, it is a serious matter, and this year
5 the Department is seeking authority to enter into contracts
6 for economic order quantity items with the F-35 contract.
7 EOQ contracting authority is typically limited to the
8 programs that have been approved for multi-year contracting
9 authority.

10 So why is the Department asking for a multi-year-like
11 contracting authority when the F-35 program has not
12 completed operational testing? And how can you assure us
13 that this is a low-risk kind of authorization?

14 Admiral Grosklags: Senator, I'll take that one, if I
15 may. What we're specifically asking for is taking
16 approximately 4 percent of the Fiscal Year 2019 and 4
17 percent of the Fiscal Year 2020 EOQ and pulling it forward
18 and executing it with the Fiscal Year 2018 EOQ. So it's a
19 total across all the services -- Navy, Marine Corps, and Air
20 Force -- of about \$616 million that we would pull forward.
21 That enables Lockheed and the other vendors, the makers of
22 the airplanes, the engines, et cetera, to go out and buy
23 those long-lead materials and get the economic order
24 quantity cost savings.

25 What outside agencies have told us, as well as our own

1 calculations, the savings associated with pulling that money
2 forward would be about \$800 million across the three
3 services for the aircraft, reduction in aircraft unit cost,
4 because we're able to pull that relatively small amount of
5 money forward.

6 So it's not additional money. It's money that would
7 already be spent in Fiscal Year 2019 or Fiscal Year 2020 for
8 those lots of airplanes. It's only 4 percent of the EOQ in
9 each one of those years, and it does not commit the services
10 nor the Congress to actually buying a set number of aircraft
11 in those years. So it is not a multi-year procurement from
12 that extent. We are committing to absolutely nothing, other
13 than a cost savings.

14 Senator Hirono: Well, that's good, because I was going
15 to say if we're committing to absolutely nothing, why do you
16 even need authorization? But, be that as it may, we'll be
17 talking with you further about that.

18 I have a question regarding -- this is for General
19 Davis. The commandant's unfunded priority list includes a
20 request for two C-40A aircraft this year, similar to the
21 request the commandant made last year. Last year, the
22 Congress provided two C-40 aircraft for the Navy in
23 accordance with the CNO's unfunded priority list but failed
24 to address the commandant's request.

25 I understand that the current aging C-9 aircraft that

1 the C-40s would be replacing are now, in the words of
2 Reserve Commander Lieutenant General McMillan, hard down and
3 not safe to fly. General Davis, do you agree with General
4 McMillan's assessment? And if you agree that they are hard
5 down and not safe to fly, why doesn't the budget request fix
6 this problem?

7 General Davis: Senator Hirono, thanks for the
8 question. I would say the C-9s are not only hard down but
9 we've transitioned them out of the Marine Corps inventory.
10 They're gone. We're the only people in the United States
11 military flying those airplanes, those old C-9s. It's very
12 difficult to get them parts, to get them worked on, and it
13 was, frankly, we thought it was too much of a high-risk
14 proposition to be flying our Marines around on those
15 airplanes, so we transitioned them out. So they're out of
16 the inventory now. We don't own them anymore.

17 We have a lot of requirements. The C-40s are on the
18 unfunded priority list, but if you looked at our other
19 inventory challenges with the nation's force and readiness,
20 what we have to be ready to do, we do need those C-40s, but
21 we also need F-35s, we need 53 kilos, we need C-130Js even
22 more. So we are asking for the C-40s, but as far as rank
23 order priority, at the end of the day the nation needs the
24 Marine Corps to be able to go forward, and I have no options
25 for the jets, I have no options for the helicopters, I have

1 no options for the C-130Js. So I had to put the priority
2 there. It's not a perfect world, but we laid out what we
3 thought we were going to be called on to do as a nation.

4 But right now, to fulfill that mission, we count on the
5 Navy to fly us around when they can. We use C-130s to go
6 with the cargo seats, or commercial carriers to do the C-40
7 mission right now.

8 Senator Hirono: So with the C-9 aircraft out of your
9 inventory, has that impeded the operational support aircraft
10 mission flown by the Marine Corps Reserve?

11 General Davis: It has. The Marine Corps Reserve is
12 flying the UC-35 and the UC-12 for the bigger missions, and
13 we transitioned the VMR-1 down to the Reserve unit down
14 there in Texas. We're waiting for airplanes to arrive.
15 They're co-located with some of the Navy C-40s that are
16 there and looking for some help from this body to get those
17 airplanes. It's just there's not enough money in our budget
18 to cover everything, so they are on the unfunded priority
19 list, ma'am.

20 Senator Hirono: And then would you consider the need
21 for the C-40 replacements critical at this point for cargo
22 and passenger movement?

23 General Davis: They are critical for cargo and
24 passenger movement, but also too we have war-fighting
25 requirements that have to be met as well, ma'am, and that's

1 why they're not right at the top of the list.

2 Senator Hirono: You and I talked about the problem of
3 corrosion, Admiral Miller, and this is something that
4 Admiral Grosklags -- am I pronouncing the name correctly?
5 Close enough? Sorry.

6 Admiral Grosklags: Grosklags.

7 Senator Hirono: Grosklags. About two years ago Rear
8 Admiral Manazir, speaking before a conference here in D.C.,
9 said that the corrosion damage on the F-18 fleet was more
10 than expected. Many Navy and Marine Corps airplanes and
11 helicopters are grounded due to corrosion issues. As
12 corrosion costs the Department about \$20 billion annually,
13 it seems to make sense to provide for preventing corrosion
14 where possible, including robust R&D work in this area.

15 So can you tell me how the Fiscal Year 2018 budget
16 request impacts the Department's corrosion program and what
17 the Department of the Navy is doing in terms of meeting the
18 challenges caused by corrosion, and are steps being taken in
19 new acquisition programs to ensure that, to the extent
20 possible, corrosion can be controlled or prevented?

21 Admiral Grosklags: Ma'am, I can tell you that there is
22 not a specific RDT&E line or other line for corrosion
23 prevention in our budget. There are funding corrosion
24 efforts that are embedded in a number of lines. I'll give
25 you at least one example from aviation, and we can go beyond

1 that if you want.

2 We fund today about 60, 65 individuals that are called
3 our corrosion maintenance readiness team, and those
4 individuals are at every one of our fleet sites, and their
5 sole purpose in life is to help the squadron maintenance
6 professionals understand what they need to do in terms of
7 corrosion prevention work on the aircraft in those
8 squadrons.

9 We've been doing that -- we started that back in about
10 2011. We started with F-18s because of the very issue that
11 you mentioned earlier, and we had gotten away from it. We
12 had gotten away from doing that basic level of corrosion
13 control at some of our squadrons. This has reinvigorated
14 that, and we're starting to see the benefits. So as we've
15 been tracking this, what we have been measuring is the
16 change in the number of corrosion hours that our depot
17 artisans have to do on aircraft in areas that should have
18 been done at the squadron level. And for those aircraft
19 that we started this on several years ago, we are seeing a
20 significant decrease in the labor hours at the depot, so we
21 know we're having an impact and it's worth the investment in
22 this particular area.

23 On the research and development side, I can also tell
24 you we have about nine ongoing projects with universities
25 around the nation where we're involved in basic research on

1 materials and coatings and that type of thing. We also have
2 as of today about 60 funded projects that are being run.
3 This was OSD money that was given to the services. We have
4 about 60 projects that we are running with various
5 organizations and companies around the nation, again looking
6 at materials, coatings, how to combine the two and how to
7 stay away from -- I dropped the sink on the word I'm looking
8 for, but how to prevent this similar metal corrosion even in
9 cases where, from a technical aircraft structure aspect, it
10 may make sense, and I'll give you an example.

11 Our F-18Es and Fs, considerably greater use of
12 composites, a titanium center barrel. These are as opposed
13 to our F-18A through D, where we're seeing the problems that
14 you mentioned earlier and that Admiral Manazir talked about.

15 So on F-18E and F, we're seeing significantly less of
16 that deeply embedded corrosion in the aircraft because we
17 changed materials, we changed the build process, and we
18 added corrosion protection into those aircraft as we built
19 them.

20 Senator Hirono: I think it's really important that you
21 are paying attention to the corrosion issue because the
22 lifetime use of our aircraft can be extended by that kind of
23 attention to that matter.

24 Thank you very much, Mr. Chairman.

25 Senator Wicker: Thank you, Senator Hirono.

1 General Davis, let's talk about the CH-53K and the
2 costs having a marked rise. Can you explain the causes of
3 the cost inflation?

4 General Davis: I can, sir. A couple of things. The
5 costs are staying in band with the estimates that we have.
6 There's no threat of a Nunn-McCurdy breach or anything like
7 that. So we're staying inside the band for the cost.
8 Sometimes people get confused about the cost, are
9 acquisition costs really staying very close to what we
10 originally projected. A lot of times people dump in the
11 cost out there that includes the military construction,
12 includes all spare parts, all the engineering and the cost
13 of the airplane. But when you compare apples to apples,
14 we're staying very close to our original cost.

15 We did have a quill problem that we worked our way
16 through last year. We are going to build the airplane up in
17 Connecticut in case some of the labor rates that we dealt
18 with, with Sikorsky and Lockheed Corporation to build the
19 airplane. But at the end of the day, this airplane is going
20 to -- right now what we're seeing in tests is incredible
21 capability. We have to work every day --

22 Senator Wicker: Another winner.

23 General Davis: It is, actually, and there's nothing
24 like it in the world that does what the 53K will do. It's
25 designed with kind of a clean sheet design to take a Marine

1 battalion's worth of gear and lift that in one area of
2 darkness from a sea base ashore at a 100-mile distance.
3 That's a 36,000-pound lift capability. No airplane in the
4 world can do that. The 53K can. So it's an incredible
5 capability.

6 I would tell you that as a guy who spent a lot of time
7 in college working for minimum wage, you want to keep all
8 the costs of these things down. I think we need to hawk
9 that, and Admiral Grosklags, Admiral Miller and myself, the
10 commandant worked very hard to keep the cost under control
11 and make sure that the company is doing right by us, right
12 by the taxpayer in keeping costs down.

13 What we are finding is an airplane that is very easy to
14 maintain. So if you look at the amount of hours, not just
15 what it cost to buy it but how many man hours it takes to
16 maintain the airplane, a much easier airplane to maintain
17 and sustain than the 53E.

18 And I think also too is -- you and I have talked,
19 Senator Hirono, about the lessons learned about the 53E and
20 what we have to do to extract maximum value from that
21 airplane. We did an independent range review and, frankly,
22 we stole a playbook from the United States Army, who were
23 doing a better job resetting their helicopters than we were.
24 We are adopting that very same strategy that the United
25 States Army did. So bringing all of our 53E's out,

1 resetting them completely, and those airplanes on the back
2 side of that reset are much lower cost per flight hour.
3 They're running about half what it costs to run an airplane
4 that's not been through reset. A properly reset, sustained
5 airplane is half the cost per flight hour, which is a lot of
6 money.

7 So if we maintain it, if we sustain it, we train those
8 enlisted Marines the right way, we'll be in much better
9 shape, and we'll keep the cost, the total ownership cost of
10 the 53K down and have a winning capability for our nation.

11 Senator Wicker: So the cost is no surprise.

12 General Davis: Right now it's an expensive airplane,
13 but it's staying within its cost band, and we have every
14 intention of keeping it within its cost band, sir.

15 Senator Wicker: At the top of it.

16 General Davis: We don't want it to go to the top
17 because if we go to the top, we go into a Nunn-McCurdy
18 breach. We're not interested in that. We're interested in
19 keeping that very close to what the original estimates were
20 for that airplane.

21 Senator Wicker: Do you think Admiral Grosklags could
22 fly it?

23 General Davis: I do, and I think he would actually
24 want to fly that one in cold weather too, because the
25 Marines do fly our helicopters in cold weather, and I've

1 seen pictures of Navy helicopters in my first deployment up
2 north of the Arctic Circle, in some very cold weather.

3 Admiral Grosklags: Not intentionally.

4 Senator Wicker: Admiral Grosklags --

5 Admiral Grosklags: Yes, sir.

6 Senator Wicker: I guess this is the first hearing
7 you've ever had in which your name has been mispronounced.

8 Admiral Grosklags: Absolutely.

9 Senator Wicker: I'm so sorry for that.

10 [Laughter.]

11 Senator Wicker: Let's talk about the Osprey. There's
12 a request for multi-year procurement for seven years. Can
13 you describe the need for such a long multi-year?

14 General Davis, I understand the Marine Corps is
15 studying the potential need to increase the V-22 program, a
16 record, from 360 to 380. Can you update us on that?

17 Admiral Grosklags?

18 Admiral Grosklags: I'll start with the multi-year and
19 then pass it over to the General.

20 Seven years. Typically we ask for five years for a
21 multi-year. Seven years would enable us to buy the
22 remaining total of 67 Navy, Marine Corps, and Air Force
23 aircraft that are currently in the three services' plans,
24 notwithstanding your question about potentially increasing
25 the Marine Corps requirement. Otherwise, if we just got a

1 five-year multi-year, we would have the two years and about
2 20-plus airplanes hanging out.

3 We've got the cheap single-year cost estimate, which is
4 the foundational piece of understanding what our savings
5 will be by going to a multi-year. Last week we received the
6 not-to-exceed letters from the OEMs, Bell and Boeing in this
7 case, that really justify that, and you should see that
8 package coming over here to the Hill shortly.

9 But the savings in those NTE letters get us 10 percent
10 per aircraft. So without getting into the street costs
11 right now, we're looking at about \$650 million-plus of
12 savings across that seven-year multi-year. So it is a bit
13 unusual to ask for seven versus five, but we think it's
14 justifiable given the savings and the fact that if we leave
15 two years hanging out on the end, those aircraft will
16 certainly cost us more than if we were able to include them
17 in the multi-year.

18 Senator Wicker: General Davis?

19 General Davis: Sir, we have a study that looks at
20 would we want to increase the total program of V-22, and as
21 you know, the Marine Corps, we pride ourselves on our
22 ability to stay on our mark-up there as far as staying with
23 the program of record.

24 On the V-22, though, the priority for us is this thing
25 that Admiral Grosklags talked about earlier, this common

1 configuration reliability and maintainability initiative,
2 which is basically going to take all of our earliest V-22s
3 through -- basically, it's more than a reset. It would
4 bring us up to a common configuration. We introduced the V-
5 22 in 2007 and sent it directly into combat, and every
6 single year we had it in combat we would have these urgent
7 changes to make sure we were adapting the airplane for
8 threat conditions, reliability conditions for the
9 battlefield.

10 On the back side of that, one of our range reviews
11 showed us that we had about 77 different variations of V-22s
12 in the Marine Corps. If you were a young enlisted Marine,
13 that makes it very difficult to maintain, to get high manage
14 rates out of that airplane. So job 1 for us is to make them
15 all one configuration, V-22, one parts list for the V-22,
16 high reliability components on there, and drive costs out of
17 owning that airplane. That's job 1 for us right now, and
18 we'll look at increasing the -- buying the additional 20
19 airplanes.

20 But right now we want to continue our fielding and
21 deliver a very high readiness aircraft to the fleet, and
22 that requires [inaudible], which is where 52 percent of the
23 readiness challenges in the V-22 reside, and then making it
24 so we have one parts list, one repair manual, and one
25 configuration of the V-22.

1 Admiral Miller: Senator, if I may, normally when we're
2 having a V-22 conversation, I'd be silent, but this year is
3 different in that this budget, the 2018 budget, is the first
4 year of the CMV-22 for the Navy. Our request is for six
5 aircraft, and the CMV-22 takes the Marine Corps MV-22, adds
6 some extra fuel, puts an intercom for passengers in the
7 back, and also adds a SATCOM radio for long-distance
8 operations overseas, and this is going to replace the
9 carrier on-board delivery, the C-2, for our carrier strike
10 groups embedded on our aircraft carriers.

11 The reason for this change and the reason that we're
12 making the move to the CMV-22 is twofold. One, our cods are
13 old and need to be recapitalized. And secondly and most
14 importantly, you'll see that the CMV-22s are going to be
15 tied to our F-35C deployments on the carriers. It's the
16 only thing that can actually carry the engine on board, and
17 that's clearly going to be critical as we sustain that
18 airplane into the future. So CMV-22 will now be a part of
19 the air wing of the future.

20 Senator Wicker: Last question, Admiral Miller. What
21 do you think about General Davis' upcoming retirement?

22 Admiral Miller: I think it's a great day to celebrate
23 a fantastic Marine who has dedicated his entire life to the
24 defense of this country, sir.

25 Senator Wicker: So do I. Is this the sort of career

1 you'd recommend to the next generation?

2 Admiral Miller: In a heartbeat. As a matter of fact,
3 I'd do a re-do if I could, and I'm sure he would as well.

4 Senator Wicker: General Davis, you have the last word.

5 General Davis: I walked into a recruiting office 40
6 years ago as a college freshman needing discipline. I found
7 that in the United States Marine Corps, and I didn't even
8 know they had airplanes. So the fact that I'm running
9 Marine Corps aviation -- the three of us, we support and
10 defend the greatest country the world has ever seen. It's
11 been an absolute honor every single day on active duty.
12 I'll miss it, but like Cincinnatus, I'll be ready to go help
13 out any way I can in the years to come. I love this
14 country, love the Corps, love the naval services. Semper
15 fidelis.

16 Senator Wicker: Thank you very much.

17 Let's get our questions for the record in by Friday
18 afternoon.

19 Senator Hirono: And, General Davis, we want to wish
20 you the best in your retirement. Didn't you tell me that
21 your wife wanted to move to Hawaii?

22 General Davis: She does, she does. She was very angry
23 that I never got orders to Hawaii in 37 years.

24 Senator Wicker: This hearing is adjourned.

25 [Whereupon, at 3:49 p.m., the hearing was adjourned.]