

**DEPARTMENT OF DEFENSE AUTHORIZATION
OF APPROPRIATIONS FOR FISCAL YEAR
2015 AND THE FUTURE YEARS DEFENSE
PROGRAM**

TUESDAY, APRIL 8, 2014

U.S. SENATE,
SUBCOMMITTEE ON AIRLAND,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

TACTICAL AIRCRAFT PROGRAMS

The subcommittee met, pursuant to notice, at 3:36 p.m. in room SR-232A, Russell Senate Office Building, Senator Richard Blumenthal (chairman of the subcommittee) presiding.

Committee members present: Senators Blumenthal, Donnelly, McCain, Sessions, and Wicker.

Committee staff member present: Leah C. Brewer, nominations and hearings clerk.

Majority staff member present: Creighton Greene, professional staff member.

Minority staff member present: Anthony J. Lazarski, professional staff member.

Staff assistant present: Robert T. Waisanen.

Committee members' assistants present: Ethan A. Saxon, assistant to Senator Blumenthal; David J. Park, assistant to Senator Donnelly; Elizabeth O'Bagy, assistant to Senator McCain; Lenwood A. Landrum, assistant to Senator Sessions; and Joseph G. Lai, assistant to Senator Wicker.

**OPENING STATEMENT OF SENATOR RICHARD BLUMENTHAL,
CHAIRMAN**

Senator BLUMENTHAL. The committee will come to order.

As you can tell, this is my first subcommittee meeting, and I am very pleased to be joined by my colleague, Senator McCain, who is pinch hitting temporarily for Senator Wicker.

And I want to extend a welcome to each of our witnesses. Thank you very much for your service. Thank you for being here today.

We are joined by Lieutenant General Christopher Bogdan of the U.S. Air Force, Lieutenant General Charles Davis of the Air Force, Vice Admiral Paul Grosklags of the U.S. Navy, and Lieutenant General Robert Schmidle of the U.S. Marine Corps.

I want to thank each of you again for representing the men and women of our armed services so ably and for the great job they do

around the globe, in the continuing war in Afghanistan, and elsewhere. And we keep them in our thoughts and prayers, as I know you do.

Our witnesses this afternoon face really huge challenges as they strive to balance the need to support ongoing operations and sustain readiness with the need to modernize and keep the technological edge that is so critical to our military success. These challenges, as you well know, have been made particularly difficult by the spending caps imposed by the Budget Control Act. Those caps which bedevil us all were modestly relieved for fiscal year 2015 in the Bipartisan Budget Act that we enacted earlier this year, but they are scheduled to resume in full blast in 2016 and beyond. These caps seriously challenge our ability to meet our national security needs and they have already forced military departments to make painful tradeoffs. Unless they are modified after the fiscal year 2015, they will threaten our long-term national security interests, and no one knows those facts better than the military leaders who are with us today.

Every year we are challenged to make decisions balancing a number of competing demands for resources, including resources for current operations, and investment in future modernization. In this case, we will be assessing plans and programs regarding the current status and future prospects for tactical aviation programs.

We meet today to talk about the F-35 Joint Strike Fighter and the other aviation programs. We all know that the JSF program is important since it has been central to the long-term modernization plans for all the relevant services, Air Force, Navy, Marine Corps, for more than 15 years now. Given that fact, any change in the cost, schedule, performance of that JSF program sends shock waves literally through the Department and raises many questions of achieving that balance between the demands of maintaining readiness in the near future and those of modernizing for tomorrow. For instance, the GAO has estimated that extending the service lives of existing F-16 and F-18 aircraft would cost about \$5 billion.

So today we are going to seek a better understanding of implementation of the corrective actions the Department identified in the Joint Strike Fighter program after Nunn-McCurdy certification 4 years ago and what levels of risk remain in the development and fielding program.

I know that a number of you have seen problems in testing since last year, and while we are always concerned anytime we hear about problems during R&D, I understand that you have identified the problems and have mapped a way ahead, a path to deal with these problems to minimize the effect of the problems on testing and development programs. I hope you will discuss these problems very specifically and fully during your testimony. And there have also been some other problems. I hope you will discuss those as well. I know you will be very frank and forthcoming with the committee, as you have been customarily.

The subcommittee has been following the Department of the Navy's attempts to reduce the Strike Fighter shortfall to manageable levels. Five years ago, the Navy Department was estimating that we would be facing a shortfall in 2017 that optimistically would amount of 125 tactical fighters needed to outfit our 10 air-

craft carrier air wings and 3 Marine Corps air wings. Three years ago, based on further analysis, the Navy was estimating the maximum shortfall could be nearly twice that large, or roughly 250 aircraft. But in the past several years, the Navy and Marine Corps have taken action, such as reducing the squadron size, conducting service life extensions on some aircraft, and reducing the time aircraft spend in depots. That could reduce the gap to as small as 35 aircraft, I understand. That level is an increase from the level of 18 aircraft last year. It was only marginally, as I understand, from delaying F-35 purchases for the Navy.

Unfortunately, there has been a similar story in the Air Force. Previous Air Force witnesses at our aviation hearings have also projected a potential shortfall of Air Force tactical fighters in excess of 800 aircraft by about 2025. If any of these numbers are wrong or if I am misstating them, I hope you will correct me.

Two years ago, the Air Force, as part of the new defense strategy, reduced the fighter force structure. This year the Air Force is proposing further reductions, including eliminating the entire A-10 aircraft fleet to generate savings of about \$3.7 billion. I am not clear as to what extent this change in demand for tactical fighters has ameliorated the shortfall that the Air Force projected, but we hope to hear more about that issue as well this afternoon.

There are a lot of other issues, or at least a number, that I hope you will discuss. I know my colleagues will have questions on those other issues.

And again, I just want to thank our witnesses for being here today, and I yield to Senator Wicker. '

STATEMENT OF SENATOR ROGER F. WICKER

Senator WICKER. Thank you, Senator Blumenthal, and congratulations on your first hearing as chair of this distinguished subcommittee. Thank you for holding the hearing and I thank the witnesses for their attendance today.

Also, on behalf of the Southeastern Conference, I want to congratulate the State of Connecticut and Senator Blumenthal on winning the NCAA basketball championship.

Senator DONNELLY. Senator, there will be no congratulations to them tonight, I will tell you that, as the Notre Dame women take on the Connecticut women.

Senator BLUMENTHAL. In the interest of avoiding an altercation at this august committee meeting, I am going to refrain from reacting. [Laughter.]

But I do thank Senator Wicker for his congratulations.

Senator WICKER. Well, I would say both women's programs are to be commended for getting to the finals undefeated.

But back to the business at hand. We have immense responsibilities on this subcommittee. They include programmatic and budget oversight of most Army and Air Force programs, as well as an oversight of our Navy and Marine Corps tactical aviation activities.

I look forward to working with you, Mr. Chairman, to ensure that our armed forces remain the best trained, best equipped, and most professional fighting force in the world.

I would like to begin by saying that I continue to be concerned about the Air Force total force plan. I remain convinced that some

elements of the total force plan, such as its proposal to relocate C-130J aircraft from Kiesler Air Force Base to Little Rock, are short-sighted and may adversely impact our intra-theater airlift capability at a time when our Services are evolving toward a more rotational deployment model.

Similar to our committee's bipartisan efforts last year, Mr. Chairman, I look forward to working with you on initiatives to help ensure the Air Force makes force structure decisions based on long-term global force requirements, as well as concrete and defensible data. These decisions should not be based solely on self-imposed constraints.

Mr. Chairman, our military has fought four major regional conflicts over the last 23 years: Kuwait, the former Yugoslavia, Afghanistan, and Iraq. America's security challenges continue to persist across the globe. I would note that just last month on multiple occasions, Russian nuclear-capable bombers circled our Pacific Island of Guam and were intercepted by our F-15s based at Kadina Air Base on Okinawa. Air power will no doubt continue to play a central role in our national security.

Since 1953, no U.S. ground personnel have been killed in an attack by enemy aircraft. America's superiority and dominance in the air protects our homeland, deters potential adversaries, and ensures that our joint and coalition forces never have to question if the aircraft flying above them is friend or foe.

However, our air dominance is being challenged. Both Russia and China are currently fielding fifth generation fighters. Like our ground forces, America's combat air assets are worn out and spread thin after 2 decades of deferred modernization programs and curtailed purchases of key platforms. The service lives of many of these aircraft now extend beyond 30 years. These extensions come at a price. Extending the lives of legacy aircraft means increased operation and maintenance cost, as well as decreased technical superiority.

America must continue to be able to deter and defeat any threat be it an asymmetric threat from a terrorist organization or a conventional challenge from a near peer competitor. To do so, we must be able to modernize and sustain our military, including our tactical aircraft. We cannot continue to kick the modernization can down the road. Successfully modernizing means we must be cognizant of the negative impact of the overly expensive and slow acquisition process we currently have in place. We must find ways to deliver new, innovative systems on time and on budget. Changing the system will require the combined efforts of Congress, DOD, and industry.

Specifically, DOD must get its acquisition process in order by defining program risks upfront, setting realistic requirements, adequately prioritizing research and development, and leveraging the power of competition.

Second, DOD's industry partners must submit realistic contract proposals and be held accountable to their contractual obligations.

Third, Congress must uphold its responsibility to provide timely and adequate funding for key acquisition programs to help ensure predictability and long-term affordability for DOD and our foreign government partners.

I conclude by observing that national defense is solely a Federal responsibility, but it requires assistance from all levels of Government and civilian industry. We need our States to maintain business-friendly policies that will encourage the industrial base to grow and add high-tech manufacturing jobs. We need defense companies to meet their contractual obligations to the taxpayer by delivering products on time and on budget. And finally, we need better cooperation and transparency between the executive branch, DOD, and the Congress in order to ensure all parties fully understand our national security challenges and the means our military leaders require to meet them.

So, again, thank you to the witnesses and to the members who are here, and thank you, Mr. Chairman.

Senator BLUMENTHAL. Thank you very much, Senator Wicker. I look forward to working with you on this very important assignment.

We will hear from our witnesses, First, General Bogdan.

**STATEMENT OF LT. GEN. CHRISTOPHER C. BOGDAN, USAF,
PROGRAM EXECUTIVE OFFICER, F-35 LIGHTNING II JOINT
PROGRAM OFFICE**

General BOGDAN. Thank you, sir. Chairman Blumenthal, Ranking Member Wicker, and distinguished members of the committee, thank you for the opportunity to address this committee and discuss the F-35 Lightning II program.

Over the past few years, we have focused on creating and maintaining a realistic program baseline for DOD's largest acquisition program, and despite a turbulent past, the program is making slow but steady progress on all fronts, to include technical improvements and driving costs out of the program.

I believe the F-35 is headed in the right direction and I am confident in our ability to meet the U.S. Marine Corps' initial operating capability and the Air Force's initial operating capability in the summer of 2015 and the summer of 2016, respectively, with all the capabilities our warfighters need. We are now seeing the benefits of the disciplined systems engineering process that we instituted a few years ago in response to technical issues, including improvements in our helmet, the C-model hook, fuel dump capability, weapons capability, lightning restrictions, and night all-weather flying. We are closely managing the F-35 onboard and offboard software, and software remains the number one technical risk on the program. We have also fundamentally changed the way we are developing ALIS, our logistics information system, and are also fully committed to making the F-35 more affordable in both the cost of buying the aircraft and the cost of operating and sustaining the aircraft.

Finally, I want to thank Congress and the Department of Defense for their support during the past 2 years of budget instability. The program has weathered this storm relatively intact with no changes to the development program and our aircraft quantities were preserved in fiscal year 2013 and fiscal year 2014, though the Department has reduced those quantities in fiscal year 2015.

I would like to close by saying that my team is focused and committed to doing the very best we can for the warfighters, taxpayers,

and our partners to ensure that the F-35 meets the needs of all our Nation's defenses. To that end, my team is rising to the challenge of managing this very large, complex program with integrity, transparency, accountability, and discipline. I ask that you hold me and my team accountable in the coming years to ensure that we develop and deliver the warfighting capability this country needs and expects.

I look forward to answering your questions.

[The prepared statement of General Bogdan follows:]

Senator BLUMENTHAL. Thanks, General.

General Davis?

STATEMENT OF LT. GEN. CHARLES R. DAVIS, USAF, MILITARY DEPUTY TO THE ASSISTANT SECRETARY OF THE AIR FORCE FOR ACQUISITION

General DAVIS. Chairman Blumenthal, Ranking Member Wicker, and distinguished members, thank you for this opportunity.

I will try to keep these brief. I know there are questions, as you have already mentioned, we would like to get to.

But let me just mention the fact that I think our Chief and our Secretary has been very clear that there are some enduring capabilities your U.S. Air Force provides, and these are missions they are expected to perform at any time on any given day. And that translates to what I think that the Nation's citizens expect of the Air Force, and that means basically in simple terms your Air Force has to strike anywhere in the world at any time on any target that the President directs.

We must also be able to observe critical portions of the world any time, day or night, around the year and sustain the capability to do so. And that also means providing the assured launch capabilities to get those assets on orbit to be able to do that.

It also means that the U.S. Air Force must transport or return critical cargo, personnel, and other things anywhere around the world at any time and sustain that capability over long periods to be able to do any missions the joint force requires. And we must defend the homeland.

And we can do these missions today. We can do them tomorrow. We can probably do them for the near future. But clearly, as we look out into the extended future, there is serious modernization the Air Force requires to be able to do that based on a threat that is evolving more rapidly than at any point I have seen in my 35-year career. What we are seeing is it takes very little for a threat to be able to evolve quite effectively if all it has to do is defend a coast land or defend a fairly unique part of the geographic terrain around a certain country, and it becomes much more cost effective to defend and to be able to project that power I just described with the Air Force.

So that threat and its ability to change and morph quite rapidly is what presents us the problem that melds with the budget that you have referenced here in all of the opening comments. And the more we focus on individual systems within the budget, the more we risk the potential of neglecting the capabilities we are going to need for that long-term future that I think is so vital to what the Nation expects of the U.S. Air Force.

So while we debate the 2015 budget, I will tell you there is some comfort—and Senator Wicker, you mentioned it in terms of predictability. The Bipartisan Budget Act was agreed to. Our program managers got some relief in that they had a certainty to plan to in the fiscal year 2015 budget.

But I will tell you those same program managers now worry what happens next because if you look at the budget that was submitted—and we are going to debate the items here today—as you move into 2016, the Air Force budget shows a projection of growth of about \$8 billion and then another \$2 billion in 2017. I do not think any of us really expect that will quite happen that way. But as our program managers try to plan how they modernize all these forces you just mentioned, that creates a level of unpredictability that we will certainly have to work very closely with you in great partnership to try to figure out how we survive that planning process.

So if you consider the fact that certain parts of our budget, in addition to the things that we will talk about today, have largely been fenced or directed in certain ways to be spent because of bills we have to pay, and as you meld that with the fact that I mentioned the threats evolving rapidly, then we have a very challenging situation as we go forward.

Now, there are not easy choices and we will debate many of those today. There are some choices that are better than others that will provide the enduring capabilities I think the United States expects the U.S. Air Force to provide. And we are going to talk about those today, and we will have to continue to work with you in partnership to be able to deliver the best way to get those capabilities.

So with that, I look forward to your questions.

[The prepared statement of General Davis follows:]

Senator BLUMENTHAL. Thank you very much, General.

Admiral Grosklags?

STATEMENT OF VADM PAUL A. GROSKLAGS, USN, PRINCIPAL MILITARY DEPUTY TO THE ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH, DEVELOPMENT, AND ACQUISITION; AND LTGEN ROBERT E. SCHMIDLE, JR., USMC, DEPUTY COMMANDANT FOR AVIATION

Admiral GROSKLAGS. Chairman Blumenthal, Senator Wicker, distinguished members of the subcommittee, thanks for the opportunity to appear before you today to discuss our Navy and Marine Corps aviation programs.

I think you are aware we had to make many difficult decisions in building our fiscal year 2015 budget submission, but what we have submitted for your consideration is a plan which ensures sufficient capacity and capability to fight and win if necessary. But it is also a plan that includes increased levels of risk.

Our fiscal year 2015 submission—we are continuing development and procurement of fifth generation tactical aircraft. We are fully committed to both the F-35B and the F-35C and believe the program is on a solid path to meeting the initial operational capability for both our Marine Corps in 2015 and our Navy in 2019.

Unmanned aircraft systems also maintain a full measure of our attention from already fielded unit-size aircraft such as the Marine Corps RQ-21 Blackjack to future carrier strike group assets such as the unmanned carrier-launched airborne surveillance and strike program, also known as UCLASS.

We continue investment in our critical development programs such as the CH-53K heavy lift helicopter, the MQ-4C maritime surveillance aircraft, and the presidential replacement helicopter program.

We are recapitalizing in other areas as well. Maritime patrol with the P-8, our carrier-based early warning aircraft with the E-2D and virtually all of our helicopter and tilt rotor aircraft are being replaced with H-60s, new H-1s, and V-22s.

And finally, we are making focused investments in our currently fielded aircraft and systems to ensure they remain relevant, safe, and can counter the threat in the coming decade.

But as I mentioned earlier, the efforts I just described are not without risk. Even with the spending levels supported by the Bipartisan Budget Agreement, we have been forced to extend development timelines. We have reduced procurement rates, and we have reduced the rate at which we are modernizing both our capability and our capacity. A transition back to the Budget Control Act levels of spending would have significant negative impacts on our readiness, our modernization, and our relevancy, which ultimately results in increased risk to our deployed forces.

Mr. Chairman, we appreciate the opportunity to appear before you today and look forward to your questions.

[The prepared joint statement of Admiral Grosklags and General Schmidle follows:]

Senator BLUMENTHAL. Thanks very much.

General Schmidle?

General SCHMIDLE. Sir, Admiral Grosklags had the statement from the Department of the Navy.

Senator BLUMENTHAL. Thank you.

Let me begin with a 5-minute round of questioning, and we will see how far we can get before the vote. We have a vote at 4:30, and then we can try to come back, if possible, depending on how many votes we have.

Let me begin. On the F-35, General Bogdan, I have heard varying estimates about how long the software has been delayed. I think you perhaps used the number of 6 months. The GAO has talked about 13 months. Could you give us your assessment, your most up-to-date assessment, on whether it has been delayed, and if so, by how much?

General BOGDAN. Yes, sir. I would like to go through a little terminology so I am very clear with what I am saying and I am not misinterpreted.

We have three blocks of software on the F-35 program. The first block of software—we call it the 2B capability. 2 with a B. That is the initial capability that the U.S. Marine Corps will declare IOC with. The date we need that software ready for the U.S. Marine Corps is 1 July 2015. As of today, the software development for the 2B block of airplanes is not delayed at all.

What is more critical to the Marine Corps' IOC in July 2015 is making sure that the 10 airplanes that they need to declare IOC are modified with hardware so that they can have what we call a production representative and a combat-capable airplane. We have fixes on the airplane that we need to put in, changes to the engine, changes to pieces and parts on the airplane. That in itself is on the critical path to July 2015, not the software for the initial capability.

We have a second block of software called 3I, for 3 initial. That block of software is basically the same capability as the 2B capability, but it is exportable. That will be the software that our partners get when they first take airplanes outside the United States. That software also is on a defined path that we put in place in 2011, and none of the dates that we need that software for, to include U.S. Air Force IOC, as well as our Italian partners and our Israeli FMS customers or the first two participants to get that software—none of the dates for their airplanes has been delayed by the software either.

Now, when you get to the final block of software in the F-35, what we call 3F, that is the full capability. If we do not change anything in the way we are doing business today and we do not get smarter or figure out a way to go faster or do things better, I project that that software will be 4 to 6 months late. But I have until 2018 to try and figure out ways to bring that 4 to 6 months late back. That software is the software that the U.S. Navy will declare IOC with in August 2018. So I will not tell you today that the U.S. Navy's IOC is being delayed because I have a lot of time to try and catch up that 4 to 6 months.

Senator BLUMENTHAL. And what do we do to get smarter and do better?

General BOGDAN. There is a number of things we have done already that we are seeing the fruits of, sir. We have fundamentally changed the way we are developing the software on this airplane. I can frankly tell you that until 2011, the contractor was in charge of all software development, and the U.S. Government and the Department of Defense was watching. We are no longer watching. We are directing. And as a result of that, we have directed them to have various metrics. We have upgraded the laboratories down in Fort Worth. We have also created governance boards where we know each and every increment of software when it gets to the airplane for flight test, we know what it is supposed to do. We are starting to see the fruits of that change because we are much more predictable now. For the last year and a half, each and every increment of software we have put in the field has been on time with the capability we expected. So that in and of itself will help us in the future bring that 4 to 6 months back.

The additional thing that we will be using is we have many operational test airplanes that are going to be possessed by all three services. The operational test airplanes can also be used to help finish the development program by doing some of the extra testing that we need to get through. The combination of those things leads me to believe that over time we will bring that number back in, the 4 to 6 months.

Senator BLUMENTHAL. Thank you.
Senator Wicker.

Senator WICKER. Thank you. I am going to defer to Senator McCain and then Senator Sessions and save my questions for last.

Senator BLUMENTHAL. Senator McCain?

Senator MCCAIN. I thank you, Mr. Chairman. I thank Senator Wicker.

So, General Bogdan, if I understand your testimony and the answer to the chairman's question, there is a 4- to 6-month delay in the third block of software. Is that what you are saying?

General BOGDAN. That is correct, sir. There is a risk of a 4- to 6-month delay because we have 3 or 4 years before we actually incur that. But, yes, sir.

Senator MCCAIN. If there is a risk of it, I would think you would know whether it is going to happen or not.

General BOGDAN. If I do not do anything else, it will happen, sir.

Senator MCCAIN. And what else can you do?

General BOGDAN. We can use operational test airplanes to help shorten the development span time. We can improve—

Senator MCCAIN. Did we not try that before in concurrency?

General BOGDAN. The fact that we have operational test airplanes out there today, sir, while it was part of the problem with concurrency early on, now we can use that to our advantage.

Senator MCCAIN. Does a 4- to 6-month delay mean an increase in costs?

General BOGDAN. It does not, sir.

Senator MCCAIN. It does not.

General BOGDAN. It does not. I have management Reserve and Lockheed Martin has management Reserve and Pratt & Whitney has management reserve to cover that delay because when we re-baselined the program in 2010, we put a much more realistic budget and a much more realistic schedule in place.

Senator MCCAIN. This is the first trillion dollar system that we have ever had. What are the lessons learned in this imbroglio where we have gone from \$233 billion in 2001 to over \$391 billion this year? What are the lessons learned here, General?

General BOGDAN. Sir, we could probably, you and I, get together and write a book about this. But I will give you a couple of the things from my perspective on some good lessons learned.

The first lesson is we tend to be overly optimistic when we start programs in terms of how much they are going to cost, what the real risk is, and how long they are going to take. We need to do a better job up front of being more realistic and more honest with ourselves about how much programs are really going to cost and what the real technical and fiscal risks are. I do not think we did that on this program. That is one.

Two, it is very, very hard to run a program when you start production before you have ever tested a single airplane because every time you find something new in flight test, you now have to not only go back and fix airplanes you have already produced, but you have to cut all those fixes into the production line. That creates a complexity that is pretty significant and it costs some money.

Three—

Senator MCCAIN. Has anybody ever been held responsible for that decision that you know of?

General BOGDAN. Sir, I do know one of the previous PEOs on this program was asked to leave the program.

Senator MCCAIN. Certainly Lockheed Martin has not. They have just jacked up the cost.

General BOGDAN. Well, sir, what I can tell you is from my perspective, I promise you that I am doing everything I can to hold Lockheed Martin and Pratt accountable and balancing the risk on this program because I think the third thing I have learned from the program in your lessons learned is you have to have a balancing of risk. When we started this program, all the risk was on the Government. Every cost overrun on this program was going to be borne by the Government. Today, at least, when we build airplanes—

Senator MCCAIN. Well, at least we ought to know the names of the people made this kind of cockamamie agreement to start with because there were many of us that—you forgot the fundamental that we adopted during the Reagan years: fly before you buy. Fly before you buy.

General BOGDAN. I do not disagree with you, sir.

Senator MCCAIN. If we had adhered to that principle, we probably would not find ourselves in the situation we are in.

I just have a short time left. General Davis, right now I understand the A-10s are to be phased out. Is that your understanding?

General DAVIS. Sir, that is.

Senator MCCAIN. What is going to replace it?

General DAVIS. Sir, if you look at the systems we are using today and have used since Iraq, the A-10s have basically failed about 20 percent of the call for CAS missions. So that means we are doing it with F-16s. We are doing it with F-15Es. We are doing it with B-1s and B-52s. We are doing it with precision weapons that were not part of the A-10 suite.

Senator MCCAIN. So they are better suited for close air support than the A-10 is. Is that correct?

General DAVIS. Sir, I did not say they are better suited. I said they can do that mission based on—

Senator MCCAIN. Depending on what kind of conflict we are in. Right?

General DAVIS. It does.

Senator MCCAIN. If we are in a more conventional conflict, there is no aircraft or weapons system that does the job of the A-10. Is there?

General DAVIS. Sir, it does its mission very well. It is designed for one mission. It does that mission well.

Senator MCCAIN. That one mission happens to be close air support.

General DAVIS. Yes, sir.

Senator MCCAIN. I thank the chairman.

Senator BLUMENTHAL. Thank you very much. Thank you, Senator McCain.

Senator DONNELLY.

Senator DONNELLY. Thank you, Mr. Chairman.

As the Air Force retires its A-10 fleet, there are several wings around the country that will be transitioning to a new mission, including the 122nd Fighter Wing in my home State. Can you ex-

plain how the Air Force determined the timeline for these conversions?

General DAVIS. Sir, I cannot do that, but I can take that for you on the record. All I know is that your unit in your State is going to be transitioning to F-16s in about the 2019 timeframe.

[The information referred to follows:]

[SUBCOMMITTEE INSERT]

Senator DONNELLY. And also if you could get for me what factors are taken into account in determining when to transition each unit and how the transition goes as to who goes first.

[The information referred to follows:]

[SUBCOMMITTEE INSERT]

Senator DONNELLY. And also in regards to that, as we transition back to F-16s, making sure we have the frontline fighters until JSF comes into full production is critical. I was wondering if you have a timeline showing when specific units will undergo the SLEP enhancements.

General DAVIS. Sir, we know basically that we are going to upgrade 300 of the future force structure of F-16s with the extension that will keep them viable through their lifetime. It really depends on where those F-16s will be coming from, what unit, and what the structure is. We can see if I can give you an answer as to when those 18 F-16s will be going into your unit in 2019. We will get the SLEP mods. But I am almost certain by then those airplanes will be SLEPed, but I will verify that.

[The information referred to follows:]

[SUBCOMMITTEE INSERT]

Senator DONNELLY. Obviously, hopefully, the F-35 stays on schedule, but are you confident the SLEP program, as envisioned in this year's budget in the FYDP, is sufficient to maintain the F-16 fleet to maintain combat effectiveness until the F-35s are procured in sufficient numbers?

General DAVIS. Sir, I think I am. I think our Chief has mentioned that, and I think that the money we have set aside to keep that 300 fleet of F-16s viable, some of which will, obviously, replace the A-10s—we will certainly keep that very well-suited for that combat mission they are going to be stepping into that we just discussed with Senator McCain.

Senator DONNELLY. Could you also let us know how you intend to distribute the F-35s in regards to the Active, the Reserve, and the Guard? Is it going to be proportional or how will it be done?

General DAVIS. Sir, again, I will have to dig that one up. I mean, we are kind of going mission-by-mission area now. We are going through the training bases. We are going through the first operational units. We are looking at whether the first OCONUS base is going to be. Then we will continue to fill out the rest of the units from that point on. I will have to see. I imagine those decisions, to be honest with you, sir, are yet to be made down the road, but I will see how we are looking at balancing guard and Reserve.

[The information referred to follows:]

[SUBCOMMITTEE INSERT]

Senator DONNELLY. With the ultimate intention for the F-35 to take over the close air support role of A-10s.

How many F-35's do you expect to be fully operational over the next 5 years to replace those A-10s on the retirement timeline?

General DAVIS. Well, again, sir, like I was trying to mention there, we will go through an interim transition of what is going to replace the A-10s. It will not be the F-35s. It will be the F-16s. It will be the F-15Es. When the CAS mission is called for, those will be the airplanes. As we get to the point where we field more F-35s—and our view of when we would declare initial operational capability on the F-35 is around 2016—we will have over 100 airplanes fielded at that point. At that point, we believe those airplanes will be fully capable of doing CAS missions. And so at some point, then they will start to relieve other units of F-16s that will move on to other areas. So by the end of the FYDP, as you talk about, we will continue to buy airplanes at the rate of about 60 a year and gradually fill out all those other units. But, again, like I mentioned earlier, we will have to get you the full schedule on that.

Senator DONNELLY. One more A-10 question real quick is how will address the engagement time differences between the A-10s and those aircrafts that will be filling in the interim role.

General DAVIS. Sir, to be honest with you, I think the engagement time would actually be a lot quicker because what we have put into place—and this is why CAS is affected today between your joint terminal air controller on the ground that has data links to an F-16 sitting on a cap that has an advanced targeting pod that can then pick up where the troops and contact are occurring. They can then relay that quite effectively between the individual on the ground and the displays on the pilots to the precision weapons that have a lot of capability to go in places that other weapons have not to be even updated by data link on the way down to that point. So I am thinking that your timeline for these troops and contacts is probably a lot shorter today—

Senator DONNELLY. You think it will be better. Okay.

I just got back from Ukraine about 2 weeks ago, and we have seen just in the last day what has again happened in Donetsk and in other areas. And I was wondering if you are or the Air Force is making any plans to step up aviation ops with other NATO partners in the Eastern European region, what additional plans are being made to show some commitment to try to make sure that we show strength in that area.

General DAVIS. Sir, I am going to have let our operations folks try to give you a better and more detailed answer on that one. I do not have any insight on that right not, to tell you truth.

Senator DONNELLY. Okay. Does anybody on the panel have any insight on that? [No response.]

Thank you, Mr. Chairman.

Senator BLUMENTHAL. Thanks very much, Senator Donnelly.

Senator Sessions.

Senator SESSIONS. Thank you, Mr. Chairman.

General Bogdan, I would just like to ask a few fundamental questions to get my head straight on these programs. If you can work with me quickly, that would be good.

What is the current cost of each one of the aircraft?

General BOGDAN. If you wanted to buy an F-35A today, sir, it would cost you about \$112 million.

Senator SESSIONS. And how has the cost increased with reduction or decreased and where do you see the trends on that?

General BOGDAN. We have seen the price of the airplane come down lot after lot after lot. We believe that will continue well into the 2020s. And the target we have set for ourselves and our industry partners have set for us is in the year 2019, an airplane with an engine, with profit on top of that for Lockheed and Pratt & Whitney, in fiscal year 2019 dollars will cost between \$80 million and \$85 million, sir. We think we can get there. I would not call that a stretch goal. I would call that a realistic goal. So we think lot after lot over the next 5 years, we are going to see a continued decrease in the price of the airplane. That is my promise to everyone in the enterprise. I will negotiate that. We will work to do that. And by 2019, we should have an airplane that is about \$80 million.

Senator SESSIONS. And it is just not a myth that once the bugs are out of an aircraft or ship or any major procurement and you are buying in large numbers, the price goes down.

General BOGDAN. That is a fact, sir. That is a physics fact of acquisition.

Senator SESSIONS. Well, the last 2 budgets showed that planned production has fallen from 40 to 50 aircraft per year to 30 aircraft per year. Is that correct? The last 2 budgets, as I have it here, projected our production would be 40 to 50 aircraft per year. Well, their last 2 reduced it to 30.

Well, let me just ask you. What is our production rate per year now, and is it at a level that adds cost per copy because it is lower than otherwise had been projected?

General BOGDAN. Yes. That is an interesting way to put it. The profile over the next 4 years, just to let you know what I believe the profile is, is next year we will buy and produce 43 airplanes. The year after that will be 57. The year after that will be 96, and then the year after that will be 121. That is the next 4 years.

Senator SESSIONS. So 121 would be cruising speed?

General BOGDAN. No. Cruising speed on this program is actually going to be in the order of about 180 airplanes a year, sir. So we will not even get there until about 2023.

But you made a very interesting point, sir, and I will try and explain it very quickly. The price of this airplane continues to come down as long as we continue to buy the same number or more airplanes as we move out in years. But if you move airplanes further out to buy, then the price does not come down as rapidly as you would like. It is not that the price would ever go up anymore. It just will not go down as fast as you would have otherwise had it come down if all those airplanes had been bought when you thought. So by pushing airplanes to the right and not buying them, the price does not come down as fast. It still comes down, sir.

Senator SESSIONS. General Davis or Admiral Grosklags, maybe you can contribute to this, and I will let you answer. What is the need for the F-35? How do we intend to utilize it, and what is the threat that is driving this production?

General DAVIS. Well, sir, our average fighter is 30 years old today, and so there is no doubt that that has to be replaced. And if you just look at what we consider to be any region around the world, the thing that probably is most concerning is that if we ever

have to conduct ops in many regions around the world, there are advanced integrated air defense systems that have been sold by Russia and China to at least 10 to 12 nations today. It will probably be 20 by the end of the FYDP. So, in other words, the areas that we would go into are becoming increasingly denied if it becomes the President's direction that we do so.

And so the threat is growing. The threat is growing faster. You have seen the Chinese have produced two versions of their own stealth fighter in about a 3-year period.

And so if we are going to carry out the national military strategy or the Defense Strategic Guidance, then clearly the fighters that we have done well with in the last four wars will continue to do well for some period of time, but their usefulness is going to gradually degrade and it is going to become increasingly degraded over time. We already see that with some of our legacy weapons.

So it has been the intent of the Chief and General Hostage and the folks in the Air Combat Command that the F-35 is the future for tactical air combat in the U.S. Air Force. Its capabilities not only bring the ability to penetrate those threats, but it brings a net enabled linkage that shares data with the entire Joint Force. And it is that alone that probably makes this airplane more valuable than any of its capabilities right there because of the information it can collect and supply across everybody that is in the battle space. And so it is for that reason that we think it is very important that we try to replace as much of our fleet as we can with the F-35s.

Senator SESSIONS. My time is up. I will let the chair decide whether he wants more answers on that. I mean, he was going to contribute to the same question, but I will let you decide whether you want to go forward. I am satisfied.

Senator BLUMENTHAL. Thank you.

Senator WICKER.

Senator WICKER. Well, General Bogdan, let me just ask. I think 11 countries have agreed to purchase the F-35. Is that correct?

General BOGDAN. Yes, sir. We have eight partner countries and two for sure FMS customers in Israel and Japan, and I believe before the end of the year, we will have a signed contract with the South Koreans. So 8 plus 3 is 11, plus our 3 Services.

Senator WICKER. So that would be the UK, Turkey, Australia, Italy, the Netherlands, Canada, Norway, and Denmark, in addition to those three that you mentioned.

General BOGDAN. You got them right, sir.

Senator WICKER. Now, are you briefing, giving formal briefings, to other countries on the F-35?

General BOGDAN. When you say other countries, you mean other than the partners?

Senator WICKER. Other than—

General BOGDAN. Yes, sir. Just in February, I visited Singapore, and I spent a week there at their annual international air show, and they have shown significant interest in the F-35. And we sat down with them and had a discussion about the F-35. They actually have a very small FMS case with us now where they have paid for some information about the F-35 so they could decide if it would meet their requirements.

Senator WICKER. And, of course, you are keeping them informed and engaged on the program status and schedule.

General BOGDAN. That is correct, sir.

Senator WICKER. However, is it also true that several foreign partners have reduced their projected buys, namely Canada, Italy, and the Netherlands, or they are considering doing so?

General BOGDAN. Yes, sir. Let me go on record here and give you the latest of what I know.

Canada has yet to decide if they are going to buy an F-35.

Senator WICKER. At all?

General BOGDAN. At all. They initially chose the F-35 as their replacement for their F/A-18s. Their parliament did not believe that that process for selection was up to snuff I guess you would say, and they have got what we call a seven-point plan we are going through to revalidate or decide to start another competition for their replacement for their F/A-18s. But they are still in the program, but they have yet to commit to buying a single airplane.

Senator WICKER. And what aircraft are our toughest competitors there?

General BOGDAN. I would tell you that the Super Hornet is a great airplane. I would imagine that some of the European airplanes, the Eurofighter and the Typhoon, would also be potential competitors in that market for Canada.

Italy is committed to buying airplanes, but they reduced their buy from 130 to 90 2 years ago. So they are committed to buying 90.

Senator WICKER. Budgetary constraints there in Italy?

General BOGDAN. Yes, sir.

The Netherlands originally committed to buying 80 airplanes. Now they are committed to only buying 37. Budgetary problems.

And Turkey, who was supposed to buy their first two airplanes this year, have made no commitment whatsoever.

Senator WICKER. With regard to Italy and the Netherlands and Turkey, they are not buying from anyone else.

General BOGDAN. They are not.

Senator WICKER. But Canada is thinking of doing so.

General BOGDAN. Correct.

Senator WICKER. Now, this goes to what Senator Sessions was talking about. That hurts us in trying to reduce the cost each year. Does it not?

General BOGDAN. It does. Anytime a partner or anyone on this program reduces their total buy or pushes airplanes out to buy them later, everyone else will pay the price for that because the unit cost of the airplane will go up.

Now, on the flip side of that, sir, is we do have some FMS customers like Singapore in the future, like the South Koreans and like Israel, who I believe will buy more airplanes than the first 19 they have committed to. They actually help offset some of the partners that are not buying so many airplanes. So it is kind of a give and a take there.

Senator WICKER. Could you quantify how much one cancellation costs us?

General BOGDAN. It is hard to do it that way, sir. How I about I do it in little more general terms, but I will give you an answer.

With all the movement—

Senator WICKER. That would be great.

General BOGDAN. I wish I could give it to you by airplane, but that is a very small number.

With all the movement we have seen from last year to this year—and that includes the U.S. Services moving 37 airplanes out, Turkey moving their buy out a year, Canada moving their buy out a year, the Netherlands reducing their buy—the price of any one of the variants of the airplane goes up 2 percent. So everybody else who is buying airplanes next year will pay 2 percent more because of all those plans to move airplanes out. For an A model, that is \$2 million to \$3 million, if you assume it is about a \$100 million airplane.

The partnership is an interesting thing, sir. Folks will sink and swim together.

Senator WICKER. Thank you.

Mr. Chairman, I may take another round.

Senator BLUMENTHAL. Do you want to just continue your questions now?

Senator WICKER. I think I will take another round because I have to go.

Senator BLUMENTHAL. Please do. Go ahead.

I have some additional questions. Your estimates that you gave earlier about the reduction in costs are dependent on all of those allied purchases going through. Are they not?

General BOGDAN. Sir, what we do in the Program Office is we look at the cost of the airplane under a best case scenario. We look at the cost of the airplane under what we call a worst case scenario, and we look at the cost of the airplane under a most likely scenario. In all three of those cases, the price of the airplane year after year still goes down but does not go down as much.

Senator BLUMENTHAL. But you gave us an estimate earlier, going by memory, that it would go from \$112 million a copy down to about \$80 million—

General BOGDAN. \$80 million to \$85 million. That includes all the things we just talked about, sir.

Senator BLUMENTHAL. The reductions in purchases by our allies.

General BOGDAN. Correct. That is the most current estimate I have today, including all the movement of the partner airplanes and the known FMS buys we have with Japan and Israel.

Senator BLUMENTHAL. If I may, General, let me ask you about a related technology issue, and I think I may know the answer but I want to be sure we have it on the record. The Gen 3 helmet that I understand will not be available until the block 3I, as you referred to it, 3I capabilities fielded in 2016. Is that still on schedule? And whatever the obstacles or challenges were, the glitches in that helmet to make it suitable—have those been overcome?

General BOGDAN. Yes, sir. The Gen 2 helmet, which will be available from now until 2016, is adequate to meet the U.S. Marine Corps' IOC. And I defer to General Schmidle because he is the gentleman I asked when we went and talked about is it good enough. He is the guy that said it is good enough. Beyond 2016, when we get the Gen 3 helmet, I believe that from a technical standpoint we

will have a fully capable helmet that meets all of the requirements at the end of the program for everybody.

We had a tough time over the last 2 years, but I think we have turned the corner on that, sir.

Senator BLUMENTHAL. General Schmidle, I think you have commented on that helmet, the Gen 2 helmet, as being suitable for the IOC. Is that correct?

General SCHMIDLE. Yes, sir, we did, Chairman. From talking to the pilots that are flying in the helmet today and putting it through its paces, we believe that that helmet will, in fact, be adequate to get us to the initial operational capability.

What General Bogdan just said is in 2016, we look forward to getting the Gen 3 helmet which will give us the full capability prior to the squadron's first deployment in 2017.

Senator BLUMENTHAL. Thank you.

Admiral Grosklags, the Navy's unfunded priority list, UPL, includes \$2.1 billion to buy 22 more E/A-18G electronic warfare aircraft. But I understand that 22 additional Growlers do not appear on the Secretary of Defense's Opportunity Growth and Security Initiative. When we authorized and appropriated 21 E/A-18G aircraft in the fiscal year 2014 budget, we were led to believe that with delivery of the fiscal year 2014 aircraft, we had met the requirement for the airborne electronic attack, AEA. Have requirements changed since last year? If so, why?

Admiral GROSKLAGS. Sir, we are currently looking at the total number of aircraft that we require. Our program of record—you are correct—is 138 aircraft, which is fulfilled by the fiscal year 2014 procurement. As we have continued to look at the electronic warfare environment that we see coming in the future, growing ever more complex, ever more difficult, we believe that an additional 22 aircraft would significantly reduce the risk to not only the Navy but the joint force in that integrated air and defense environment that General Davis mentioned earlier.

Specifically, in 2019 when we retire all of our E/A-6Bs across the Department of the Navy, the E/A-18 Growler will represent the only, I will call it, high-end, full spectrum airborne electronic attack capability within the Department of Defense. So that provides a standoff jamming capability that enables the rest of the joint force to use some of their equipment in a more stand-in role. So we can address radars and com systems from a greater distance with the Growler with its combined ALQ-99 and in the follow-on next gen jammer pod.

So when we looked at this, we said if we are going to buy any additional aircraft, we need to do it now because it is the end of the production line if we do not procure those 22 aircraft. So the CNO quite honestly said it would be a prudent time to look at this option now rather than waiting to the future.

So we do have a couple of analyses ongoing. We have one from the Naval Air Systems Command that was completed late last year which shows that the ability to increase the number of aircraft in one of our carrier air wings deployed on a carrier from five to seven represents a significant improvement in capability in not only defending the carrier but also supporting our strike packages as they go forward or go over the beach. That 22 aircraft would enable us

to increase 5 of our carrier air wing squadrons from 5 aircraft, which is the current program of record, to 7 aircraft and give us that additional capability.

Now, we are going to conduct a fleet battle experiment this summer off the east coast with one of our carriers. We are actually going to put eight Growlers on board that carrier, fly it through a bunch of exercises, and determine whether five or seven or eight truly provides what we believe will be that knee in the curve for a significant increase in capability.

Senator BLUMENTHAL. So what will you do then in coming to us with the results of those more up-to-date analyses and the exercises that you have planned?

Admiral GROSKLAGS. Well, I think after we finish the exercise this summer, we have an ongoing warfare analysis which will take that information, combine it with what I will call the paper analysis, and see if the two line up. Ideally they will. And then we will have to come back to the Congress and have that discussion.

Senator BLUMENTHAL. Thank you.

I think we may have time before the vote for another round. I do not know whether Senator Sessions might have some additional questions. Sorry to interrupt. I just want to give you an opportunity if you have additional questions.

Senator SESSIONS. Are we voting now?

Senator BLUMENTHAL. We are voting at 4:30 p.m., and we also have a meeting of our committee afterward to talk about sequester, which all of you have raised as a very pressing issue. So I am not sure we will have time to come back with apologies to you and to members of the committee.

Senator SESSIONS. Thank you, Mr. Chairman. Really, I will just conclude and say there has never been a program as massive and as international, I think, as the Joint Strike Fighter. Would you agree, General Bogdan?

General BOGDAN. Sir, I would agree that we have built a very big, complex program that is global in scope.

Senator SESSIONS. And we just have to keep it on track. We made a mistake.

Well, let me just ask you this. The curtailment of a number of F-22s resulted in a disproportionately high cost per copy of that aircraft. Did it not? I mean, that is not just a myth.

General BOGDAN. That is an absolute true statement, sir.

Senator SESSIONS. I am not saying every single aircraft we need to buy we have got to reach that number, but we should not be backing off that too much. It is your challenge to keep it on track, and I believe that maybe you are getting there.

And so, Mr. Chairman, I hope that we can keep this program on track. It is just so massive, such an international commitment, that if we let it get away from us, we will regret it, I do believe. Thank you for having this hearing.

Senator BLUMENTHAL. Thank you, Senator Sessions. And I join Senator Sessions in the hope that we can stay on track. I think members of the committee—I cannot speak for all of them—have increasing assurance about both the timing and effectiveness of the program as we go on. I have spent a lot of time talking to people involved, learning about the Strike Fighter, a lot of time at Pratt

& Whitney learning a lot about the engine, which I know has been greatly enhanced as a result of the oversight and scrutiny that you and others have given to it.

I want to thank you for your work, facing great challenges posed by sequester and other obstacles. There is no question that there are difficult days ahead for our modernization objectives as we continue to develop these programs. And I look forward to working with you and the other military leadership.

I have some questions that I would like to submit for the record. You have been very gracious in suggesting that others may as well. So we are going to keep the hearing record open until 5 p.m. on Thursday, April 10, for any additional questions that I or other Senators may wish to submit. And I am going to ask the witnesses to respond for the record as quickly as possible so that we can get full consideration by the Senate Armed Services Committee as we begin the markup.

With that, thank you all very, very much. Thank you all who are attending who serve with you and to everybody under your command.

This hearing is adjourned.

[Whereupon, at 4:37 p.m., the subcommittee adjourned.]