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HEARING

ON

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2014

AND

OVERSIGHT OF PREVIOUSLY AUTHORIZED PROGRAMS

BEFORE THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES
ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES HEARING

ON

FISCAL YEAR 2014 NAVY, MARINE CORPS AND AIR FORCE COMBAT AVIATION PROGRAMS

HEARING HELD
APRIL 17, 2013

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FISCAL YEAR 2014 NAVY, MARINE CORPS AND AIR FORCE COMBAT AVIATION PROGRAMS

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES,
Washington, DC, Wednesday, April 17, 2013.

The subcommittee met, pursuant to call, at 2:24 p.m., in room 2212, Rayburn House Office Building, Hon. Michael R. Turner (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. MICHAEL R. TURNER, A REPRESENTATIVE FROM OHIO, CHAIRMAN, SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

Mr. TURNER. The hearing will come to order. The subcommittee meets today to receive testimony on the Navy, Marine Corps and Air Force budget requests for the combat aircraft programs for fiscal year 2014.

We welcome our distinguished panel of witnesses. We have Mr. Michael Sullivan, Director of Acquisitions and Sourcing in Government Accountability Office.

We have Vice Admiral W.M. Skinner, Principal Military Deputy of the Assistant Secretary of the Navy, Research, Development and Acquisition.

We have Lieutenant General Robert Ron Schmidle, Deputy Commandant of the Marine Corps for Aviation. And we have Rear Admiral Bill Moran, Director of the Air War Division of the U.S. Navy.

We have Lieutenant General Burton Field, Air Force Deputy Chief of Staff, Operations, Plans and Requirements. And Lieutenant General Charles Davis, Military Deputy, Office of the Assistant Secretary of the Air Force for Acquisition.

All of our witnesses today have very short titles. I thank you for your service and look forward to your testimony today.

We have a number of issues to cover today, but my opening remarks will focus on the F–35 [Lightning II Joint Strike Fighter] and Strike Fighter inventories. The F–35, a fifth-generation fighter, is required to achieve the effects necessary to win an integrated anti-access and area-denial environment. So I was encouraged to note that the F–35 program was fully funded in both the research and development and the procurement accounts for fiscal year 2014, as well as the future years defense program. The F–35 did well in testing last year, but with about one-third of flight testing completed, much testing remains to demonstrate and verify its performance.

Going forward, F–35 software development is of particular concern. While software management practices have improved, significant challenges lie ahead as software integration and testing continue to lag behind plans. This is an area that the subcommittee continues to watch to ensure that the final software block of the development phase is completely on schedule.

While the capability of the F–35 is needed for the future, the Air Force, Navy, and Marine Corps cannot ignore the modernization and life-extension upgrades for their legacy fleets of AV–8Bs [Harrier II vertical/short takeoff and landing (V/STOL) ground-attack aircraft], F/A–18s [Hornet fighter jet], A–10s [Thunderbolt II close air support aircraft], F–15s [Eagle fighter jet], and F–16s [Fighting Falcon fighter jet]. These critical upgrades are required to maintain the capability and capacity necessary to execute the national military strategy.

I was encouraged to note that the Navy's Strike Fighter shortfall was reduced from 56 last year to 18 this year as a result of increased F/A–18E/F [Super Hornet fighter jet] procurement and expected lower utilization rates of legacy fighters.

Based on the vague defense strategic planning guidance announced last year, the Air Force, for a second year in a row, is not reporting a projected Strike Fighter shortfall through 2030. These projections are based on our legacy fleets receiving the modifications made during depot availabilities.

Just last week, the Air Force announced that it planned to ground 17 combat squadrons for the rest of the fiscal year because the funds required to operate and maintain these squadrons are no longer available due to sequestration. We don't yet know what the long-term effects sequestration will have on Navy, Marine Corps, and Air Force Strike Fighter modernization to include inventories. If these arbitrary cuts also affect Air Force and Navy's ability to make the necessary capability and life extension modifications, decreased Strike Fighter inventories could result in risks that I am not willing to accept.

Before we begin, I would like to welcome all of our panel members. And I would like to say that as we do have our discussions today, I would appreciate your information and insight as to the effects of sequestration. Now, as I am fond in saying in these hearings, I voted against this mess, and I voted against this mess because I believed it would happen, but one of the ways that we have been, I think, shackled in this is that the Department of Defense had been previously restrained of telling the American public and even this committee and the subcommittees what the effects of sequestration would be.

And so since we had this long term of sequestration without detailed substance to its effects, we have been inhibited in our ability, as the DOD [Department of Defense] has, to advocate for sequestration to be set aside. Just yesterday we had a hearing where the commandant of the Marine Corps indicated that from our traditional military policy objectives of being able to win in two major combat areas, that even the new strategy that the President's articulated of merely one major contingency operation, that the Marine Corps would find it difficult to prevail, and even won.

We need to have that information so we can effectively make the argument that it should be offset. And I think today's hearing, regardless of the question that you are asked, if you could give us some information, insight as to what you foresee sequestration affecting, I would appreciate it.

When we talked to the Navy's and Marine Corps' budget yesterday, they acknowledged that the budget they delivered did not take into consideration sequestration. So the follow-on questions had to address that. I would appreciate today if you would just, on your own, digress into the effects of sequestration as it would affect your answer if it is continued, because we need that information to offset it.

We are going to then begin with our panel members unless my ranking member would like to make a comment, and we could always return back to her statement if she would like. With that, we will begin, then, with—would you like to make a comment or would you like to return to a comment later?

STATEMENT OF HON. LORETTA SANCHEZ, A REPRESENTATIVE FROM CALIFORNIA, RANKING MEMBER, SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

Ms. SANCHEZ. I would like to just keep this short and say that we are very interested in the budget process. And I will submit my opening statement for the record so that we can hear our panel.

[The prepared statement of Ms. Sanchez can be found in the Appendix on page 37.]

Mr. TURNER. Excellent. I appreciate the dedication of my ranking member and her bipartisan spirit also.

All right. Turning to Michael Sullivan, if you would begin.

STATEMENT OF MICHAEL J. SULLIVAN, DIRECTOR OF ACQUISITION AND SOURCING, U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Mr. SULLIVAN. Thank you, Mr. Chairman, Ms. Sanchez, members of the committee. I am pleased to be here today to discuss the status of the F–35 Lightning II Fighter this afternoon. My remarks and the statement that I have put forward is limited to the F–35 and doesn't go into more of the other general tactical air issues.

I have submitted a written statement for the record, and I would like to take a few minutes now to hit the high points of our work on this program regarding where it has been, where it is now, and what may lie ahead.

The F–35 acquisition program began in 2001 with an estimated cost of about $231 billion. And today, 12 years later, the program is estimated to cost about $390 billion. The average cost to buy a single F–35 aircraft since the beginning in 2001 has about doubled from an estimated $69 million in 2001 to $137 million today.

Needless to say, the program had significant risk when it started, and that risk has translated into this cost growth. There are many reasons for that risk, but chief among them are poorly understood requirements at the beginning, and overlapping schedules for testing and buying F–35s.

In the past 2 years, the program appears to have stabilized to some degree. Since 2010, when the program had a Nunn-McCurdy

breach, the Department of Defense and all the Services came in to the program and restructured it and did some very good things, in our opinion, about adding reasonable costs and limiting requirements and adding schedule and some manpower to the program.

So since then, since that restructuring took place, the program has now delivered all 14 developmental aircraft. They have all been delivered to the test program. More test flights are taking place on a daily basis on the program. Procurement aircraft deliveries, while still not meeting original delivery schedules from the original program, have picked up and have closed the schedule gap significantly, so there is a lot more aircraft being delivered today. And there is additional progress being made in one of the very high risk areas, which is software management.

At this point in time, the Government has invested about $28 billion to buy 121 aircraft, and development flight testing is now about a third complete. This overlap between testing and production represents additional cost, in that design changes to the aircraft that come from flight testing must be reworked into the aircraft already produced. So there are retrofit costs. To date, the cost of that rework on the first 58 aircraft that have come off the production line is about $900 million. That adds about $15.5 million to the cost of each of these 58 aircraft. About $830 million more of future rework is planned as a result of concurrent testing and production.

The program still has tremendous challenges ahead, even though it seems to have stabilized in the last couple of years. For example, there are still significant risks with the helmet-mounted display system, the software development to deliver Block 3 capability, which is the full-up integrated warfighting capability for the aircraft, still has a long way to go, and there is continuing overlap between flight test and production.

Most importantly, probably, the future annual funding needs of the program represent the most significant risks moving forward. This program will require about $12 billion on average over the next 15 to 20 years, and that is quite a bit of money for the Congress to have to appropriate.

The imperative now is to demonstrate that the F–35 program can effectively perform against costs and schedule targets in the new baseline and deliver on the promises made. Until then, it will continue to be difficult for the United States and all of our international partners, there are eight international partners, to plan, prioritize and budget for the future, retire aging aircraft, as we will hear more about today, and establish basing plans with a support infrastructure.

Achieving affordability and annual funding requirements and in addition to that, to life-cycle operating and support costs will, in large part, determine how many aircrafts a warfighter can ultimately acquire, sustain, and have available for combat.

That is the end of my statement. Thank you very much. I will take questions when the time comes.

[The prepared statement of Mr. Sullivan can be found in the Appendix on page 39.]

Mr. TURNER. Thank you, Mr. Sullivan. Turning to Admiral Skinner.

STATEMENTS OF VADM W. MARK SKINNER, USN, PRINCIPAL MILITARY DEPUTY TO THE ASSISTANT SECRETARY OF THE NAVY (RESEARCH, DEVELOPMENT, AND ACQUISITION); LTGEN ROBERT E. SCHMIDLE, USMC, DEPUTY COMMANDANT OF THE MARINE CORPS FOR AVIATION; AND RADM BILL MORAN, USN, DIRECTOR OF THE AIR WARFARE DIVISION

Admiral SKINNER. Chairman Turner, Ranking Member Sanchez, distinguished members of the subcommittee, thanks for the opportunity to appear before you today to discuss the Department of the Navy's aviation programs.

Joining me today are Lieutenant General Robert Schmidle, Deputy Commandant for Marine Aviation, and Rear Admiral Bill Moran, Director of Air Warfare for the United States Navy.

On behalf of us all, I thank you and all members for your steadfast support to our soldiers, sailors, airmen, marines, and coastguardsmen who are meeting the Nation's commitments around the world.

With the permission of the subcommittee, I propose to provide a brief statement and submit a separate formal statement for the record.

The Navy Marine Corps team is forward-deployed and forward-engaged, performing missions around the globe. Today naval aviation components are in the skies of Afghanistan protecting troops and Afghan civilians on the ground, providing intelligence, surveillance, and reconnaissance off the coast of Korea, over the Sea of Japan, the Persian Gulf, and the Horn of Africa, and they are providing maritime security along the world's vital sea lanes from which the United States and our trading partner economies can prosper, conducting antipiracy and drug interdiction patrols, and supporting global partnerships to strengthen ties to our allies and friends, all the while standing as a force of deterrence to those who would do harm to our Nation or our Nation's interests. And while our sailors and marines are doing all of this and more, they are also training for their next deployment or the next operation.

In support of the defense strategic guidance, we are developing and recapitalizing to support the President and the Secretary of Defense's strategic priorities to rebalance to the Pacific to ensure we provide the capability and the capacity to maintain an important presence in this region today and for the foreseeable future.

We continue to assess and reshape our naval aviation plan to reflect the priorities of this defense strategy with the reality of fact-of-life, topline reductions consistent with the Budget Control Act of 2011. As such, this year's aviation and strike weapons plan strikes a balance between capacity, capability, affordability, and the maintainability of the industrial base.

To fulfill our Nation's commitments and strategic priorities, the Department of the Navy's 2014 aviation budget request includes funding for research and development and procurement of 165 aircraft, and 3,505 strike weapons.

Selected specific items include continued investment in fifth-generation F–35 Joint Strike Fighter aircraft to provide multimission capability across the full spectrum of conflict; new carrier-based unmanned air system capabilities; the CH–53K [Super Stallion

cargo helicopter] heavy-lift aircraft; and all-weather moving target capability strike weapons, including procurement of EA–18G [Growler] electronic attack aircraft, P8 [Poseidon] multimission maritime aircraft, the MV–22 [Osprey] assault aircraft, tactical Tomahawk cruise missiles, and capability improvements to the F/A–18 Super Hornets, and air-to-air missiles, and modernization of our attack and utility rotary wing aircraft.

We have important work to do to close out your capability gaps and risks. In doing so, however, we are working to deliver the full capability and capacity that our warfighter needs in an affordable manner.

The Secretary of the Navy remains strongly committed to investing in the required aviation and strike weapons programs to support our national priorities, and we have placed that commitment to work over the last year with the delivery of more than 200 tactical rotary wing and unmanned aircraft, but we recognize that it is not possible to simply buy our way to recapitalizing our force.

To achieve our recapitalization goals, we are continually focusing on improving affordability in all naval aviation programs. For example, we are increasing implementation of new cost-reduction initiatives, like competition and early standup of depot maintenance. We are striving to use multiyear procurement strategies, strengthening an acquisition workforce culture to ensure that we provide the best return on investment and be the best possible stewards of the taxpayers' money.

Mr. Chairman, the strength of our naval aviation force is also closely coupled with our naval aviation industrial base. Over and over again, naval aviation has shown to be a critical element of the Nation's global reach, global presence, and when called upon, the tip of the Nation's interdiction force. We recognize that we have been successful in executing our duties, not only because of our sailors and marines, but because of our civilian workforce and the aviation industrial base.

However, one of the key challenges to our future aviation programs, and therefore to elements of that same industrial base, is the increasing cost of development and procurement. To this end, the Department of the Navy is investing in design for affordability, requiring the use of open architecture systems where applicable, employing fixed price contracts to control cost at production, and limiting disruptive changes to contracts.

Ultimately we recognize that as we balance requirements, manage the increasing pressure to our topline, and factor in industrial base considerations, it is ever more important that our naval aviation programs closely align with not only with the priorities outlined in the new defense strategy, but the Government and industry continues to work together to increase efficiencies and improve affordability to support current force and help us build the future force of naval aviation.

Mr. Chairman, thank you once again for the opportunity to appear before your subcommittee today, and me and my colleagues look forward to answering your questions.

[The joint prepared statement of Admiral Skinner, General Schmidle, and Admiral Moran can be found in the Appendix on page 57.]

Mr. TURNER. Great. Thank you. We will turn next to General Davis for his statement. And for those of you who are not speaking about the written statements, you, of course, will be responding to questions. I will close the hearing, also asking if there are any closing remarks, so if as the hearing is proceeding, if there are things that you think of that you would like to add, at the end, you will have an opportunity to provide those for the record.

General Davis.

STATEMENT OF LT GEN CHARLES R. DAVIS, USAF, MILITARY DEPUTY, OFFICE OF THE ASSISTANT SECRETARY OF THE AIR FORCE FOR ACQUISITION; AND LT GEN BURT FIELD, USAF, DEPUTY CHIEF OF STAFF, OPERATIONS, PLANS AND REQUIREMENTS

General DAVIS. Chairman Turner, Ranking Member Sanchez, and members for the subcommittee, thank you for very much for this opportunity. And I stand before you today reminding everybody that our Air Force proudly provides you the ability—your Air Force provides you the ability to surveil and if required, strike any spot on this planet if required at any time, while defending our borders and protecting our allies, and we are very much committed to that mission.

Although as we look in this environment of fiscal uncertainty, our focus remains on our five core missions: air and space superiority; intelligence, surveillance and reconnaissance; rapid global mobility; global strike; command and control. And that is the means by which we deliver global reach, global power, and global vigilance.

In 2012, your Air Force flew global precision tac-aircraft that accomplished over 28,000 sorties and 41,000 hours in support of overseas contingency operations. In support of these operations, our intelligence, surveillance, and reconnaissance airmen provided intelligence that shaped combat plans for 33 named operations, enabling the removal of 700 enemy combatants from the fight, and built awareness for our coalition forces and over 250 troops in contact engagements.

Our special operations personnel executed over 1,600 strike missions and 7,700 specialized mobility missions.

On the home front, Air Force fighters, air refuelers and early warning aircraft have flown almost 64,000 total sorties supporting Operation Noble Eagle since September 11, 2001.

As a testament to the capability of our total force, the National Guard and Air Reserve have flown more than 65 percent of these Operation Noble Eagle sorties, with the Air National Guard currently operating 17 of our 18 airspace control alert sites across the United States.

Our fiscal year 2014 budget attempts to—our request attempts to retain the critical force structure and maintains the Air Force ability to rapidly respond to global demands. It is involved quite intricately from a concerted effort to balance risk, modernization, and force structure reductions with a commitment to readiness and taking care of our people.

There is still a considerable uncertainty in the fiscal year 2014 Air Force topline funding level. The fiscal year 2014 budget will not

reverse the damage done by the fiscal year 2013 sequestration that Chairman Turner alluded to. Recovering and warfighting capability, improving readiness requires at least a reduction in OPSTEMPO [Operations Tempo] or additional resources or a combination of the both.

Now, recently in their posture hearing, our Chief and Secretary did a good job basically going over the very specific impacts of sequestration. I will cover them at the top level, but it is a reminder that reduced flying hours have and will cause harm to units that have had to cease flying operations and may result in severe rapid and long-term unit combat readiness degradations.

Cuts to Air Force modernization programs will, over time, cost more taxpayer dollars to rectify the contract restructures and program inefficiencies, the increase in unit cost and the delay in delivery of capabilities to the warfighter.

In spite of these ongoing budget concerns, however, many of our fighters and weapons do see some enhancements as a result of the fiscal year 2014 budget. These include the A–10, F–15, F–16, F–22 [Raptor fighter jet], and AMRAAM [Advanced Medium-Range Air-to-Air Missile]. For example, we will modernize a portion of our F–16 and F–15 floats with advanced radars, countermeasures and situational awareness. But I have to caution you on how we use the term "modernization" and "investment accounts" in this context. The systems that we are putting on these weapons and weapons systems are, in many ways, just bringing in the capabilities and technologies that have been developed as much as 10 years ago, and in some cases, they have been fielded that long. So we are really just bringing a lot of these airplanes as they currently exist up to the current state of the art of capability to match current threats with very little growth in the ability to handle future demands.

More troubling to me is that roughly half of our modernization budget today has to go to maintain just the current performance levels of our fighter fleet and really adds no new combat capability.

Going forward, I have to worry about what the budgets and the outyear budget numbers will do to our ability to continue to ramp up our production on F–35 and replace some of these aging airplanes. But as we navigate the uncertain way ahead to mitigate risk in critical areas like readiness, force structure modernization, we will continue to work with Congress to develop executable options.

Personally, I worry that unresolved budget issues will threaten our ability to recapitalize our aging fighter and bomber fleets. I think we all need to be mindful of one fact, and that is that one nation that plays very prominently in our defense strategy recently flew two new stealth aircraft within a 22-month period. In robust defense budget times, this took us over 9 years.

Nonetheless, our objectives are to remain as steady as possible today and set a course toward full-spectrum readiness, preserve a highly responsive and scalable force, and overcome force structure modernization challenges in order that we continue to have your Air Force provide the Nation the world's most capable air power now and in the future. And I do look forward to your questions.

[The joint prepared statement of General Davis and General Field can be found in the Appendix on page 102.]

Mr. TURNER. Thank you, General. I appreciate that very, very frank statement of—as we look to this issue in this hearing, we are not merely doing oversight of the status of the expenditure programs. We really are looking what had always been identified as a critical path to both maintain current capabilities and obtain future capabilities to respond to emerging threats and capabilities of adversaries, and the funding, both in sequestration and in reduced budgets, is disruptive of that. And I think your clarity that you are providing us is very important.

And I am going to turn, General Schmidle, to you first. In your written testimony, page 8, there is a discussion of—the words are, the Marine Corps may experience elevated operational risk in 2020 as the predicted shortfalls come to fruition. And you identify that the Marine Corps may experience elevated operational risk in the 2020s if the predicted Strike Fighter shortfall comes to fruition.

Please describe why you believe the Marine Corps faces this elevated operational risk and what the Department of the Navy is doing to mitigate those risks? And also, you know, as I was just saying, this doesn't just fall on the Navy. You are here in front of us as to what we need to be doing and what the Administration needs to be doing. In part, this hearing is to establish that record to show that we are at an operational risk and what needs to be done to ensure that we don't have a shortfall as you described. General.

General SCHMIDLE. So chairman, if I could, the shortfall in the outyears, in the Strike Fighter shortfall is an inventory shortfall. What is happening to us today, though, that is much closer is the shortfall that we have in terms of the numbers of airplanes that we actually have available for training on the flightline today.

So as an example, in the F/A–18 community, we have 257 airplanes in the Marine Corps. One hundred and two of those airplanes are what is called out-of-reporting status, in other words, they don't exist on the flightline. And with the advent of sequestration now, we are not going to be able to induct the numbers of airplanes in the third and fourth quarter through the depot so that we can do the high flight hour inspections so that we can keep the airplanes flying.

And what that is going to translate to is beginning in January of 2014, our nondeployed squadrons will now have as few as six airplanes available for training on the flightline. And what that means, of course, is obvious: The squadrons that are forward and that are going forward are going to have a full complement of airplanes, but the squadrons that are home and training will have fewer jets. And so you are either going to train pilots to a lower standard or you are going to overfly those airplanes, put more hours on them to train people, and then that is going to drive them into the high flight hour inspections again.

Now, this year we have sufficient money to do the high flight hour inspections at 8,000 hours in order to get our F/A–18s, our legacy fleet out to 10,000 hours, but any disruption in that, for instance, if the full effects of sequestration, what that will do is it slows down the throughput through the depot to do those inspections, and that will cause us to have less airplanes on the ramp when we get ready to—as we go forward in terms of trying to train.

So the inventory shortfall that we mentioned in the statement in the outyears is clearly a challenge, but in the near term, we actually have a more near-term challenge, because we are trying to get our legacy F/A–18s through to the JSF, to the Joint Strike Fighter, transition as we go forward.

We have similar problems with the AV–8 Harrier. It is not quite as significant. We are now going to fly that airplane to 2030. We originally had planned on the end of its service life being in 2012. So we are having to—that airframe itself is in pretty good shape, but we are going to have to do modifications to the airplane, avionics modifications in order for the airplane to remain survivable and relevant as we go forward.

Mr. TURNER. Thank you, General.

General Davis, you mentioned in your written testimony that depot delays will require the grounding of some of the affected aircraft and that sequestration cuts to Air Force modernization will impact every one of the Air Force's investment programs, creating inefficiencies, raising unit costs, and delaying delivery of value capabilities to warfighters in the field. You also note that the fiscal year 2014 budget request does not enable full recovery of warfighting capability, capacity and readiness, and that additional resources will be required.

What effects will sequestration have in the current fiscal year in the Air Force inventory, and what additional resources will be needed in fiscal year 2014 to make the fighter fleet whole again?

General DAVIS. Mr. Chairman, I will tell you that we are just beginning to try to figure out the effects of what is going to be imposed on our depots. We already know that we are about 60 aircraft and 30 engine inductions behind in that process. It is a mix across all the airframes, not just the fighters.

Trying to buy that back is going to take more than a year. So those airframes that will be affected will not come back in 2014. I mean, the workforce, the throughput, the capability just doesn't exist, so it will have to come back over time. When we get through this, I would like to just let my partner, General Field, here talk a little bit about how they will attempt to do something with the readiness in the fighter squadrons, but specifically, as we talk about in the sequestration impacts, while we were able to put significant funds against buying radars for F–15 Cs and Es, we had to decrease the quantities that we bought those particular radars at. That is increasing the unit cost. So that means those programs stretch out over at least a couple of years of increase to finish the programs on those two airplanes.

As we look at what happens, we will probably delay the start of the F–16 Combat Avionics Performance Enhancement System, the CAPES program, as we look and see how much money we have to start that and how quickly we can ramp up the replacement of the radars on the F–16s.

One thing that is very troubling is that we know that some portion of our fiscal year 2013 buy of F–35s will be cut. It is 3 to 5 airplanes. We don't know. It will depend on negotiation status, it will depend on a lot of things as it plays out. So that right there starts, you know, at about a third of a squadron's worth of mod-

ernization that will be pushed off at least another year, and we don't know exactly what 2014 will go from there.

So there is a spreading cut across all of our programs in terms of the modernization. And I will let General Field talk about what it takes just to buy back a little bit of that combat capability on the operational squadrons.

General FIELD. Thank you. Based on the fiscal constraints that we are facing in fiscal year 2013, we have just decided to stop flying up to 13 combat Air Force squadrons. These are squadrons that are coded to go out and fight for the Nation's wars or be a presence across the globe as required.

The reason that we ended up in that position is that we prioritized our commitments. We started with the commitments to Afghanistan; we looked at commander requirements, again starting with CENTCOM [U.S. Central Command] and PACOM [U.S. Pacific Command]. We tried to keep fully funded the forces in Korea, and as much as possible in Japan. And then we looked at all the commitments on a short notice to both of those theaters. We also maintained our commitment to support the French as they help the government of Mali in Africa. And then we are looking to maintain our training pipeline for our new and senior air crews. All of those are a big balancing act, and we are trying to prevent an unrecoverable situation in the outyears.

The upshot of that is that we ended up essentially running out of money, and so that is why we had to stop flying those 13 air squadrons. Some of those squadrons are currently deployed, either in Afghanistan or somewhere else around the globe. And they will come back. Four of them come back and they will stop flying as soon as they return home.

The requirement to regain that readiness after a 6-months grounding is a little bit unknown, because we are definitely in uncharted waters. We have never before, in the middle of a fiscal year, stopped flying a third of our combat air forces because of some kind of money issue. So we will have a lot of work to do and catching up to do.

It will take essentially a very dedicated and focused effort to come up with the right training plan to recover that readiness, it will take time and it will take resources. I promise you that we will put the focused effort into the recapitalization of that readiness, but we are going to need some assistance both within the Department of Defense and without on the time and the resources.

Mr. TURNER. Gentlemen, before I go into my last very quick question and hand it over to my ranking member, I just wanted to tell you that all of us on Capitol Hill are very aware of the personal effects that sequestration has. As we are listening to the effects on what are real and necessary capabilities that they are diminished, and we heard that in all the hearings. I have heard from General Wolfenbarger of Materiel Command at Wright-Patterson Air Force Base that frequently that the men and women who are in uniform and the civilian employees are not aware enough of the fact that their Members of Congress understand that they have kids in college, they have house payments to make, they have vacations that are being cancelled as a result of the effects of sequestration. So even as we talk about the programs today, I want you to know.

And please tell those under your command and who you work with, that Congress is very aware of the personal effects.

And I have one real quick question and I will hand it over to my ranking member, and that is, you know, you just told us the real and necessary capabilities of each of the areas of your operations will be affected by sequestration. There, I think, is a misnomer in Congress, and that is there is a belief that sequestration will actually result in savings, but the message I was hearing from each of you today and as evident in your written statements is that especially in the area of acquisitions, as we have decreased funding, we are actually probably going to, on the other side, have increased costs to achieve what are real and necessary modernizations or sustainment of capability.

From your review of sequestration, I am going to ask, you know, all five of our Generals and Admirals today, could you please report, do you believe in what you are currently seeing in the implementation of sequestration if you assess that these reduced funding effects from sequestration will result in higher costs in the future. General.

General DAVIS. Sir, they absolutely will. I mean, you just go back to the depot and the expense of trying to buy back those airplanes that we have to put back on the ramp, the price of that will go up, we will have to lay on additional workforce, additional something to get there. Every one of these items that I mentioned that we are not going to buy for the airplanes this year, whether it is an F–35 or radar for the F–15, when we decrease just one or two out of a lot buy, every unit in that lot goes up; a very inefficient price tag.

So I am sure we could take for the record and get you an answer back if we cut three or four or five or whatever the units are for F–35s coming out, what that will increase the unit lots, each airplane in that unit as we go from there.

And I look at our programs, and we ask our programs to go through multiple restructuring drills as we tried to guess what the 2013 number was going to be and start preparing what the outyear numbers will be, the inefficiencies of the program is not being effectively managed and executed while they are out doing drills. I worry about that, and that is an unaccounted cost we haven't seen yet.

Mr. TURNER. General Field.

General FIELD. Sir, I agree with General Davis. I think it will be increased cost. In addition, in terms of readiness, it will be either increased cost or increased time if we don't increase the cost to get back to the readiness levels that we would like. You have heard from both sides of me, from General Davis, General Schmidle, that the depot is a—in their working depots are going to be a big factor of that.

We think that it is going to take more sorties to regain that readiness because of the 6 months of standing down from flying, and that is all dependent upon aircraft availability. And aircraft availability is dependent on how well the depots produce spare parts and the inspections required for our aircraft. And if that is reduced, then that backlog will just continue to grow.

Mr. TURNER. Thank you. Admiral Moran. And as you are moving to answer, please take General Davis's offer of providing additional record information for the record when you actually get that data as a standing question from our subcommittee that I would like each of you to undertake. Admiral.

Admiral MORAN. Yes, sir. Right. I completely agree with my colleagues from the Air Force. And I would only add that since sequestration spreads itself across multiple lines, in a test and—in the test programs, we are likely to see the effect of that to stretch out tests, which means delivery of capability later, which means you have got to carry your legacy platforms longer. So there is a multiple effect that occurs over time. That is all I have, sir.

Mr. TURNER. Thank you. General Schmidle.

General SCHMIDLE. For the record, just two quick things to pile on real quick. So with regard to the depot, one of the other concerns there, too, is the civilian workforce. Of course, most of the work that is being done, for instance on our airplanes is being done on the second and third shift, and those are the kinds of folks that there is discussion about—you know, about the effect of sequestration on them.

And the other point on the readiness piece, so you don't fall off the cliff in readiness overnight. It is sort of insidious. As the money starts to dry up and you become less and less ready and as we start to climb back out of that again, as General Field said, it is going to take us a while. And we are not quite sure how long, because, again, we have never been in a position where we have effectively gone down to those lower levels of readiness and then had to ramp back up again.

Mr. TURNER. Thank you. Admiral Skinner.

Admiral SKINNER. Mr. Chairman, I think it will certainly add inefficiency into the way we procure our aircraft. You know, the CNO [Chief of Naval Operations] testified yesterday that it is going to cost us $6.1 billion in Navy investment accounts, and certainly that is going to cost us some tails that we will probably have to move towards the end of the production line. My folks got their controls last week. They are going through it now and looking at how they are going to manage their programs, but certainly, this is the third time we have replanned 2013. Just the inefficiency of doing that is going to impact the cost, but I would agree with my colleagues, and that it will certainly increase our costs across the board.

Mr. TURNER. Well, Mr. Sullivan, my fellow Ohioan here, you might be prepared that you are probably going to get a request from our subcommittee to look at JAO [Joint Air Operations] capturing these increased costs from sequestration.

To my ranking member, Ms. Sanchez.

Ms. SANCHEZ. Thank you, Mr. Chairman. Thank you, gentlemen, for your service to our country and for being before us today. I have a lot of questions on the F–35, because Mr. Turner and I have been taking a look pretty heavily at the F–35, but I think I want to start with Global Hawk [RQ–4 high-altitude unmanned surveillance aircraft]. I was pleased to see that the Air Force, General Davis, followed the fiscal year 2014 NDAA [National Defense Authorization Act] that requires continued funding for Global Hawk Block 30 operations, but it is unclear to me how the Air Force intends to follow

the requirements of the fiscal year 2014 defense appropriations bill which directs the Air Force to use some old fiscal year 2012 funding, that is about $300 million or so, to procure three more Global Hawk Block 30 aircraft.

How is the Air Force planning to address this issue? If buying three new aircraft doesn't make sense, is there a way to use it for upgrades or some other piece of Global Hawk operation aircraft? For example, we are told that the Global Hawk doesn't work well in poor weather. Is there some fix or upgrade or something that somebody's working on with respect to that?

General DAVIS. Yes, ma'am. I think our Secretary said in his hearing that this has been a difficult discussion with Congress and he realizes that a lot of the Congress does not agree with the Air Force position that we have no firm requirements for the Global Hawk Block 30 airplanes past the end of the calendar year 2014, and that he fully intends to pursue avenues available to him to try to request to allow the United States Air Force to use that money for much higher priorities than Global Hawk Block 30. And we still have to work through that process and that will probably be a difficult conversation we have yet to go.

So the premise that some of those dollars could be used to improve the capability of the airplane may be true, but I think our Air Force would come back and tell you that we have a few other higher priorities that we need to fix if we have the opportunity of putting that money against such things as bringing combat squadrons back up to combat readiness status or buying back some of the F–35 capability we lost. And we understand that that is going to be at the congressional discretion, but that is kind of our position right now.

Ms. SANCHEZ. Okay. Thank you for that. With respect to the F–35, when we were over with the contractor recently—well, let me begin by just relooking at some of these numbers.

Mr. Sullivan, you said that in the beginning, we thought that the program would cost us $231 billion, but 12 years later it has cost us, or the estimate is $390 billion?

Mr. SULLIVAN. Yes, ma'am.

Ms. SANCHEZ. Okay. So we went from thinking that one airplane more or less would cost us about $69 million and now it is at $137 million on average, because——

Mr. SULLIVAN. That is the average across——

Ms. SANCHEZ. Depending on the lot and how it comes out, et cetera. Okay. So I gather that that is about a $129 billion difference just in 12 years. Am I correct on my math there?

Mr. SULLIVAN. Yes.

Ms. SANCHEZ. Okay. Thank you. So we were over and talking to the contractor and it seems to me—I mean, I understand about fixed costs and variable costs. And their comment to us was that as we cut back on the number of planes that we are asking them to produce in a year or this year or next fiscal year, whatever was projected, that obviously the cost becomes higher per unit on that. So we are really not saving as much as we thought we would or as some in the Congress thought the sequestration thing would do.

And they also felt that as we pulled back because of sequestration and other issues and lowered the amount of aircraft that we

created or have produced, that our allies, who are also on the order block to grab some of that, are also pulling back.

Is that correct from your understanding and how you see the things going on with the F–35?

Who is procuring? Who wants to answer that?

General DAVIS. Well, to answer the first of part of your question, ma'am, we obviously know that there will be a cost increase and it will affect the rest of our budget. We know our European partners, at least the ones that are buying the CTOL [conventional take-off and landing] airplanes, the United States Air Force are very closely watching the moves we make and will be very interested to see what the impacts to their unit cost will be when we negotiate the reduced buys as a result of 2013. And then, if we can recover those buys in 2014 back up to at least to the 19 that the President requests, then we will see how that plays out, but there will be an ongoing effect from 2013 to 2014.

So I do know that that is playing very heavily in their decisions, and they are very much and in a lot of the same situations we are in terms of having challenges with their budgets. So from that aspect, that is my input.

Admiral SKINNER. Congresswoman, I would also say that there is a cost to concurrency. As we dialed back our production requests, it is because there was a certain amount of concurrency that we would have to take the jets that we were buying, and in some future time, we would have to go back and modify those jets and bring them up. So when we start talking about as we dial back our production numbers and the cost per unit goes up, if we buy them later in the buy, then our concurrency costs go down. So we have to look at the entire business case there with regards to balancing the cost of concurrency against the cost of dialing down our production lots and having an increased unit cost. To the——

Ms. SANCHEZ. So are you trying to say that may—I understand the fact that we were going to buy some and we would go back and put in the fixes that we needed, or if we weren't all the way up to developing, but as we went on, we developed actually what we needed, we would come back and fix. So are you saying let's just wait and wait this out till we have the right fixes to everything and then purchase?

Admiral SKINNER. I think what we have seen in the production numbers that are currently in the budget, that is exactly what we are doing. We have dialed back some of our production numbers so that we can take a look and fix some of these issues. We have also, I believe, after—in future contracts with the contractor, we will share the cost of concurrency, so there is an incentive to the contractor to reduce these issues in the jets as soon as possible, but, yes, exactly.

Ms. SANCHEZ. And my understanding is also that these foreign partners that we have, well, they are sort of seeing that same cost line, and they are saying, why don't we wait until the end, because the unit is going to be so much less expensive for us than for now. So it is like, who is going to go first? Is that what you are seeing also from our—we don't have—do we have someone that is working with the international groups? Mr. Sullivan.

Mr. SULLIVAN. Yeah. I just wanted to say that there is—the program, when the original baseline of the program would have had 1,500 F–35s under contract by now.

Ms. SANCHEZ. And how many do we have?

Mr. SULLIVAN. And what we have now is somewhere around a little bit more than 350; 365, I believe. And the reason that that happened was because of the problems that they had in designing the aircraft. They had weight issues early, they had a lot of problems——

Ms. SANCHEZ. Right.

Mr. SULLIVAN. Very slow production.

Ms. SANCHEZ [continuing]. And other things, yes.

Mr. SULLIVAN. So I think my point is that they have—you know, the program has been very slow to deliver on its own. I mean, it was a very tough climb for this program to meet the requirements. Concurrency was part of that as well. So now you have the test program, which is about a third complete, so they still have 66 percent of the test program to go, and those changes will continue to flow into aircraft that we buy. As I said in my statement, there are 58 aircraft that are built now, that have been produced, production aircraft that are being retrofit as we speak. They have projected that there will be another—I think the total cost from retrofit from the test program is going to be somewhere around $1.7 billion, and that is going to play out over the next 3 or 4 years. So right now the program itself is just now beginning to hit——

Ms. SANCHEZ. Its stride.

Mr. SULLIVAN [continuing]. Its stride, and it still actually is below its original schedule for deliveries. I don't think that is, you know, a huge issue for the program now. They are beginning to hit their stride.

On the other side of this, I think, is—and something that the generals and admirals really need to be concerned about is all of the—as the F–35 has been delayed and as the aircraft are slow in getting out, that is more and more cost for extending the life of their legacy aircraft. I think to date, because of delays to the F–35 program, they have had to invest as much as $8 billion in just keeping the existing legacy aircraft——

Ms. SANCHEZ. Right. They have got to have planes to fly.

Mr. SULLIVAN. Yes.

Ms. SANCHEZ. Let me ask you, Mr. Sullivan, since we are on this issue, these cost overruns or these—I don't know how we call them. There is just so much more cost——

Mr. SULLIVAN. Yes.

Ms. SANCHEZ [continuing]. To it. Who—is it because we were just—we just want too much and we were pie in the sky when we made this contract, or were there physics limits to this and we should have known better? I mean, where do we—at whose feet do we lay $129 billion? And I am asking that only because I have a set of generals over here telling, oh, my God, the—you know, basically the sky is falling, because, you know, you are hollowing out what is going to be for the future, and where do we get that that money, we need to get that money, and yet we are $129 billion more than an original $231 billion.

Mr. SULLIVAN. Yes. Well, I think on this program, and others can speak on this as well, but I think the requirements for the F–35, three variants, one that is going to take off from an aircraft carrier, one that has a short takeoff and vertical landing capability, an incredible set of requirements for one program to achieve.

So I would lay most of the cost growth that you see—you know, the development costs under a cost plus contract and development have doubled, and the procurement costs as they learn more about how to really build to these requirements——

Ms. SANCHEZ. Come down.

Mr. SULLIVAN [continuing]. The unit cost for the aircraft is not what they thought it was going to be. The commonality that they were hoping for in these variants was—one of the things that this program was supposed to be able to bring was, you know, maybe 50 percent or more of these three aircrafts would be common, and as they got more and more into the requirements and the technologies that would be needed to achieve these three variants, they found out that that wasn't happening, either. So it was misunderstood requirements would be the genesis of the problems that this program has encountered, I think.

Ms. SANCHEZ. Thank you, Mr. Sullivan. I don't mean to keep going on, on this subject. If the gentlemen there have any last comments to make on this issue of the F–35 and the fact that we have eaten so much money in trying to get there, I would love to have your comments. Otherwise, you know, we are going to continue this. It is not going to be a topic that goes away.

General DAVIS. Ma'am, just to add to——

Ms. SANCHEZ. Yes, General Davis.

General DAVIS. Yes, ma'am, if I could. As was mentioned here, to extend our F–16 fleet with new radars and similar amounts of capability that was not an original program we had in our books, the Combat Avionics Performance Enhancement System for 300-plus F–16s, which is about $480 million just in development.

Ms. SANCHEZ. And that is because you don't have the production planes off the F–35 that you thought you were going to have then?

General DAVIS. It is because we—yes, ma'am. We had to extend the F–16 fleet to fill in that gap based on these issues that were brought up. So there is a complex set of fall-out costs that go well beyond the unit costs to the airplane as we deal with this.

Ms. SANCHEZ. Right. Thank you. I think—thank you very much. And I think we will probably have some follow-up questions on that very issue of how much is this really costing us?

Mr. TURNER. And also they can put those answers in their closing statements.

Mr. Cook.

Mr. COOK. Thank you, Mr. Chair.

A couple of questions. And I am trying to understand the CH–53K "Kilos" [K model] are not in the budget. Is that correct? Or the buy for it? Foreseeable future, is it?

Admiral SKINNER. No, sir. I think the CH–53s are in the budget.

Mr. COOK. They are?

Admiral SKINNER. Yes, sir.

Mr. COOK. Okay. Because they know the "Echo" [E] model is probably very—is 30 years old. Is that correct?

Admiral SKINNER. Yes, sir. We are in a current development program for the CH–53K that will replace the CH–53 Echo. I will let my colleague——

General SCHMIDLE. So the 53 Kilo is currently being built right now. The first model is down in Palm Beach, Florida, but it is going to replace the 53 Kilo. And it is funded and Sikorsky has been developing the test demonstrator for us, and it is going to be able to carry 27,000 pounds 110 miles, and it is going to do for us everything—it is going to carry three times as much as the current 53 Echo that we have in the inventory.

Mr. COOK. Okay. I want to back up a little bit to a comment that you briefed us yesterday on the issue of the Growlers versus the EA–6s [electronic warfare aircraft], the old Prowlers. And I was concerned about, you know, whether there might be a gap there between that. And, of course, I was led to believe that the F–35 would fill the void on that. We wouldn't need at least in the Marine Corps, the EA–6s or the Growlers, the EA–18. And maybe I am getting it wrong.

And so I was a little bit concerned about that, because the EA–6, that is a very, very old platform, it is almost as old as me, but not by much. And it just seems like I want to make sure there is that crossover. Electronic warfare is something that is extremely important to me. And if you can just address that again a little bit.

General SCHMIDLE. So I could. So the plan is still to sundown, or to take out of service, the legacy EA–6Bs by 2019. What the plan is inside the Marine Corps is to leverage the capabilities that we have in F–35 in addition to other capabilities from ground and airborne platforms in a system-of-systems approach to electronic warfare.

And I would offer to you that I would be happy to come and brief you or the committee in a classified setting, and I think I could do a much better job of explaining how we would intend do that.

Mr. COOK. No. I am not worried about that. I am just worried about any delays in the F–35 and whether that gap there, if here we go again, the same thing we were addressing in the avionics and the F–16s because of production in the F–35 might be delayed and delayed and delayed and it is going to affect other programs. Am I wrong in interpreting it as such?

General SCHMIDLE. No. You are absolutely right. And I think that is why you have heard from everybody here at the table that we are concerned about keeping the program on schedule and about, you know, the Harriers. We were going to retire those last year, and now we are going to take them out another 17 years. So it is clearly an issue.

Mr. COOK. Thank you. I yield back.

Mr. TURNER. Mr. McIntyre.

Mr. MCINTYRE. Thank you very much. Thank you, gentlemen, for your service. In the short time I have, I wanted to ask Admiral Moran or Admiral Skinner, it is our understanding the Navy has a requirement for 40 squadrons to fill 10 carrier air wings with 4 squadrons each. Of the squadrons, the Navy has 35 and the Marine Corps provides 3 squadrons with an agreement to supply 5.

The question is: Does the Department of the Navy have enough Strike Fighter squadrons to fill 10 carrier air wings and still meet

the marine commitments, including the overseas rotations and the marine expeditionary unit deployments, or are you several squadrons short of this requirement?

Admiral MORAN. Sir, thank you for the question. I think the agreement that we have with the Marine Corps called TACAIR [Tactical Aviation] Integration, which you correctly termed as five additional squadrons, on any given day, the Marine Corps has a number of squadrons that they can rotate through to support our carrier air wings to fill that void.

We currently have our full allotment of Navy Strike Fighter squadrons to fill out the 10 carrier wings you referred to, and with the help of the Marine Corps to fill out the gaps that we had between 35 and 40, we are able to do that and support our deployed operations. And we are programmed to, inside both the F/A–18E/F program and the F–35C program over time, to complete that 40 squadrons of Strike Fighters per 10 air wings.

Mr. MCINTYRE. All right. The fiscal year 2014 budget request also shows the Navy eliminated 13 Super Hornets that it was supposed to buy this year, however, the tactical aviation shortfall was reduced. Can you clarify for us how you account for the reduction in aircraft and a corresponding reduction in the shortfall? What is the tactical aviation shortfall this year for 2014?

Admiral MORAN. Yes, sir. General Schmidle referred to it earlier. Our Strike Fighter inventory management is largely based on our ability to control how we utilize the aircraft, so it is a primary factor that determines——

Mr. MCINTYRE. Right.

Admiral MORAN [continuing]. Over time. The second part of that is our ability to inspect the airplanes out to a certain life. For legacy platforms, currently we can inspect them out to 9,000 hours. Last time when we reported the number, we were allowed to inspect only out to 8,600 hours. So that additional 400 hours per aircraft across the fleet is a significant bonus for us in terms of driving the number down or managing the number down.

And, finally, Congress was kind enough to add 13 E/Fs in the budget in 2013, which drove the number further down. So while we did lose 13 in DON [Department of Navy] in 2013, Congress was kind enough to add 11 back in, so the net effect was very small.

So when you add all those three things together and you put it through the machine, the Strike Fighter shortfall projected out in 2023 long-term is approaching around 18 airplanes.

Mr. MCINTYRE. All right. Thank you for additional clarification on that.

At the Navy League last week, there were presentations on both the funded flight plan of the Super Hornet and additional advancements being considered. Please tell us about the importance of the modernization program for the Super Hornets in order to take that aircraft out for another 25 years or more. You can talk some about combat avionics.

Admiral MORAN. Yes, sir. Much like what the Air Force described in getting their fleet up to being able to deal with threats today, our flight plan that you referred to does invest significant amount of money in bringing all of our Hornets, Block 2 Hornets, up to AESA [Active Electronically Scanned Array]-capable Hornets.

And then there are several other programs that I would be happy to come back, and in a classified setting to talk to you, to walk you through those investments. They are all in the classified world, but they are very significant, they are fully funded in 2014, and there will keep our Super Hornet fleet very relevant well into the late 2020s and early 2030s.

Mr. MCINTYRE. All right. Thank you. And, General, you mentioned about the Harrier and being extended to 2030, originally to be retired by 2013. What was the year it was first put into full service, the Harriers?

General SCHMIDLE. I am not sure of the first variant. The variant that we are flying right now, the B model, I would have to take that to get the exact year for you.

[The information referred to can be found in the Appendix on page 129.]

General SCHMIDLE. I would be guessing. I would say it is in the late 1980s.

Mr. MCINTYRE. Yeah. I was thinking it was back in the 1980s. Okay.

General SCHMIDLE. Yeah.

Mr. MCINTYRE. Thank you. Thank you, gentlemen. Thank you, Mr. Chairman.

Mr. TURNER. Thank you. Due to our gavel rules, Mr. Garamendi would be next.

Mr. GARAMENDI. Sorry, Mr. Chairman. My questions go to the ISR [Intelligence, Surveillance, and Reconnaissance] systems for both the Navy and the Air Force. It is not at all clear what the overall vision and strategy is for ISR as it relates to everything from satellites to various manned and unmanned systems, and we really need to understand that. So whatever you gentlemen might want to do for the record, or in classified to develop that information would be, I think, very helpful as we try to sort out what to do with some difference of opinion between Congress and at least the Air Force with regard to the Global Hawk and other platforms.

[The information referred to can be found in the Appendix on pages 129–130.]

Mr. GARAMENDI. My question specifically goes to Admiral Skinner and the MC4 [MQ–4C Triton surveillance unmanned aerial vehicle], the Triton system and what you called Point Mugu and I call Camp Malibu. What is the cost of building the program at Camp Malibu?

Admiral SKINNER. Well, sir, we went out—I think in the recent budget we went with an allocation, if I recall, of about $59 million from Military Construction to put in the appropriate modifications to the existing infrastructure at Point Mugu, sir, to host the MQ–4 Tritons at that particular air base.

Mr. GARAMENDI. That was for a hangar?

Admiral SKINNER. Yes, sir.

Mr. GARAMENDI. What about the other infrastructure, communications, housing, et cetera?

Admiral SKINNER. Well, housing is already there, sir. I know that I can probably take the question for the record and get you the exact cost breakdown, but if we intend to base our Tritons at that

particular base, then certainly we would enhance all of that infrastructure in order to accept those airframes.

[The information referred to can be found in the Appendix on page 130.]

Mr. GARAMENDI. There is no communication infrastructure, is there, for this particular point?

Admiral SKINNER. Well, there is a robust communications infrastructure at Point Mugu. They have a large sea range. They have a lot of communications. Whether or not they could be modified quickly to accept the Triton, I would have to take that for the record.

Mr. GARAMENDI. Has the Navy developed a full cost for basing this system at that location?

Admiral SKINNER. To my knowledge, we have, sir, but like I said, I can take it for the record and get it back to you.

[The information referred to can be found in the Appendix on page 130.]

Mr. GARAMENDI. When will it be back?

Admiral SKINNER. Probably within 30 days.

Mr. GARAMENDI. We are going to be doing a national defense authorization within 30 days. That process is already under way.

Admiral SKINNER. We can get it as soon as possible.

Mr. GARAMENDI. It would seem to me you would not proceed without a full cost for the program, would you? Without knowing the full cost, in which case you ought to be able to deliver it tomorrow morning.

Admiral SKINNER. We will go back and get it to you as soon as possible, sir.

Mr. GARAMENDI. I will be waiting. A year ago, you were going to base this at Beale. Why did you decide to change?

Admiral MORAN. I can help with that. Beale was an effort to join with the Air Force in where we train crews and maintainers to operate Global Hawks across the Services. When we got the indication that the Air Force might not be going down that path, the Global Hawk path, we decided to base our BAMS [Broad Area Maritime Surveillance] out of one west coast site and one east coast site. The east coast site is still to be determined. It is either Jacksonville or Mayport, and the west coast site would be Point Mugu, as you say.

Mr. GARAMENDI. And you did that decision with full understanding of the cost of developing Point Mugu as opposed to basing at—and I am unaware that the Air Force is abandoning Beale for the Global Hawk.

Admiral MORAN. I didn't mean to imply they were going to abandoned Beale. It is just the BAMS program along with the Air Force future Global Hawk was where we were going to join together, and it wasn't clear to us when we had to make decisions on where to base and put the infrastructure in that it was in time for delivery of the BAMS platform.

To your earlier question on communications, the concept behind controlling BAMS is that we are going to put the controlling capability to talk to the airframe when it is forward in orbit at a collocated site at Whidbey Island as part of the P–8 BAMS integration. Where you have the manpower expertise that operate P–8s and

P–3s [Orion maritime surveillance aircraft] today, that same expertise will operate the BAMS vehicles when they are forward. The only thing that we are going to be required out of Point Mugu is the launch and recovery element for the aircraft itself. So it is not as robust as I think you might believe. And we can get a much clearer answer to you on the total cost for both sites to enable the BAMS program to get under way on the west coast.

[The information referred to can be found in the Appendix on page 130.]

Mr. GARAMENDI. Please do so.

Mr. Chairman, I am out of time. I have some more questions, but I will take it in the next round.

Mr. TURNER. Thank you.

Mrs. Roby.

Mrs. ROBY. Thank you, Mr. Chairman, and thank you to each of our witnesses that are here today. We certainly appreciate your service to our country, but that of your families as well. So I just want to thank you for that.

General Davis, you mentioned in your written testimony that all three mission areas in the air-to-surface munitions inventory are short of inventory objectives and those missions are standoff, direct attack, and penetrator munitions. Could you provide this subcommittee with a list of those munitions and amounts that could be increased to the budget request, and if authorized and appropriated, could be executed in the fiscal year 2014?

General DAVIS. Yes, ma'am, we certainly can. Let me just kind of give you the broad brush on those. As we face these very challenging times of budget reductions it seems munitions quite often are the flexible accounts we have to go to, to balance the budget accounts.

Our current, just to give you some ideas, we can buy more of our Joint Air to Surface Standoff Missiles. The production lines allow it, at least at a baseline variance. And it would probably be better if we gave you the exact objective quantities in a classified format, just so you know, but we are probably somewhere around 50 percent of that requirement right now. We are using a lot of Hellfire missiles, as you can imagine, in conjunction with the Army. We could certainly increase the quantities on those.

JDAM weapons, the Joint Direct Attack Munitions, were significantly increased in '14 to fill in shortfalls of the numbers we used. But they do have a very large production line to handle all the world's demands, if you will, because a lot of customers buy that.

The one thing that we can increase that is probably of critical nature right now is our AMRAAM missiles. Our subcontractors to Raytheon are in the process of trying to recover the ability to build solid rocket motors for rockets, and we are partnering with a company in Norway as well as bringing up to speed another company in the United States to be able to build those rocket motors at the rates we need to match the guidance sections at Raytheon. So we are probably at the max on our AIM–120 AMRAAM missiles. So we can give you a little bit more detail on that. But there is some capacity in some of the weapons, but not all of them.

Mrs. ROBY. Thank you very much.

Mr. Chairman, I yield back.

Mr. TURNER. Thank you. I am going to go out of order for a minute and jump down to Mr. Garamendi to finish his questioning.

Mr. GARAMENDI. Thank you, Mr. Chairman.

This series of questions goes to the Air Force, similar to the questions that I placed to the Navy. What is your vision and strategy for ISR?

General DAVIS. Sir, let me just mention back to one I know of interest to everybody, obviously it is Global Hawk. I will say this and we can bring the operational context into it. We did not do that without carefully looking at how we cover that mission with the U–2 ["Dragon Lady" reconnaissance aircraft] and other classified platforms, and that would be one we probably need to go into some detail with in another forum, because there are systems out there that can do this in a variety of different ways.

Mr. GARAMENDI. Overall, this whole ISR thing is confused. There have been changes. We have made changes, you have made changes, the Navy has made changes, and it is confused, and it frankly doesn't make much sense. So we need to understand what your vision—Navy, Air Force, and others—what the vision is for the Department of Defense so that we can help make rational decisions about what needs to be done and what money needs to be spent. And until that happens, I remain very, very concerned.

General DAVIS. I do, sir. Let me put a little more context in that. We have pretty much heavily funded ISR for a very permissive environment for a couple of decades, so we are in the process now of trying to look at all the assets with our operational requirements, with our intel [intelligence] requirements, to try to rationalize a program that has operated almost totally uncontested and prepare it for a scenario where it is not going to have that freedom. So you have got to understand that we have a program that has got to do some very significant transitions over next few years in a challenging budget. We owe you those details——

Mr. GARAMENDI. Yes, you do.

General DAVIS. But it is not without the context of how we got into a situation that probably in many ways does not make sense.

Mr. GARAMENDI. I appreciate all of that, and we really do need to have that and it probably has to be in a classified briefing where we can spend time on it.

You did say something, General Davis, that I found curious, and that is you have higher priorities, and then you mentioned the F–35 and one other piece of equipment. When we have that lengthy discussion, I would like to know what the higher priorities are. And we ought to also have a discussion about where these systems are likely to be used—in an environment without contention, or one with contention. For example, Africa. Not much contention there right now. So anyway, we need to have a much deeper discussion.

[The information referred to can be found in the Appendix on page 130.]

Mr. GARAMENDI. With regard to the Navy on this thing, I don't understand why you are developing a new base when, in fact, you have adequate facilities at an existing base where you were going to go. Frankly, your discussion that well, the Air Force decided to change doesn't make any sense when, in fact, if the Air Force decides to change, there would be excess capacity at Beale.

So we need to get into this in great detail, and I would suggest that you not go forward until we have such great detail available to you.

For example, if the Air Force is not going to use the Block 30s at Beale, then there is an excess capacity there in a hangar that is already in place with all of the infrastructure, including all of the communications in place ready to go. I will take a comment.

Admiral SKINNER. Well, we owe you the details, sir. I reviewed my written statement. We put $79 million in MILCON [Military Construction] in the budget for Point Mugu and Andersen Air Force Base out in Guam for putting the Triton out in the Pacific. But we owe you the detail. We have an ISR roadmap that our N26 requirements organization has put together, and we will bring that detail to you very rapidly and have that discussion.

Mr. GARAMENDI. I would appreciate it.

Mr. Chairman, thank you for your assistance on this matter. I know it is of concern to you as well as to me. Thank you, and I yield back.

Mr. TURNER. Thank you, Mr. Garamendi.

We will turn to Mr. Veasey.

Mr. VEASEY. Thank you, Mr. Chairman. I wanted to ask a couple questions about the F–35 in particular, basically the capabilities. I know that with various planes and what have you that you can upgrade them by putting different radars on there, but I wanted to know particularly with everything going on in North Korea right now, and we saw the show of force in South Korea by some of the current fighters that we have, and we know everything that has happened in other parts of the world, can you discuss the importance of advanced stealth capability that the F–35 will give us in the future to meet the increase in threats around the world?

And I was curious, is there anything, because I know that some people have said, no, you can upgrade certain jets that we already have in our fleet and make it just as good as the F–35. I just want to hear from you directly, is that the case? Anybody. Any of the officers.

General SCHMIDLE. If I could, to begin with we really do need to take this discussion offline in a classified setting. What I can tell you is that what the F–35 is going to bring is much more than just the one capability you mentioned. It is going to bring a capability to fuse information that is beyond anything that we have today. So that, I think, that would be best served though if we could sit down with you in another forum and walk you through all of those capabilities.

Mr. VEASEY. Okay. I wanted to also talk about the ramping up of the F–35. It appears that the Department has finally stabilized the production rate for the F–35 program and is committed to increasing the ramp rate beginning in 2015. I understand that the unit costs have been coming down year over year. Can you tell the committee what you expect the costs of the F–35A CTOL variant to be when the program reaches full production rate in 2018? General Davis.

General DAVIS. We always have an interesting discussion every time you talk about the unit cost of an airplane, there are so many factors that go it, between fly-away and everything. If you look at

what the last production lot was negotiated for, it was roughly at a flying cost of around $100–105 million for the airframe, and roughly around $15–16 million for a conventional engine. I will tell you once we get to the rate in 2015, that curve continues down, but it depends on the numbers we are able to buy with our budgets that we have between now and then.

So while we hope it will decrease and continue to, I couldn't begin to tell you exactly what the 18 number would be. I am sure we can get that for the record and give you the projections that the program office has for you.

[The information referred to can be found in the Appendix on page 131.]

Mr. VEASEY. One last question I wanted to ask Admiral Moran about the additional capabilities that the F–35 could bring to the fleet and its program and the importance to the Navy's tactical aviation recapitalization effort.

Admiral MORAN. Yes. As our Chief testified to yesterday, the F–35 is a key component of the future air wing mix that we are planning on. And much like what you just heard from the other gentlemen here, to really fully appreciate what that capability is and how it blends in with our other assets in the carrier wing, we would have to come back and talk to you in a classified setting. We would be happy to do that.

[The information referred to can be found in the Appendix on page 131.]

Mr. VEASEY. And one more question, if the chairman wouldn't mind. I know that one of the things that the military is looking to do is to be able to respond more quickly to situations like what happened in Benghazi. What sort of role would this particular plane be able to play in that sort of a situation and being able to respond to things like that in the future?

General SCHMIDLE. Sir, I think one of the things that we talk about when we talk about crisis response just with my colleagues to the left of right of me here with the Navy and Marine Corps team is having that capability afloat, if you will, and the variants of the F–35 that we are buying, including the B variant that the Marine Corps is buying, will be on amphibious shipping and it will be in floating in addition to the AF–35s that will be on carriers. So I think what it is going to bring to the Nation is a lot more flexibility in terms of our ability as a Nation to respond to those kinds of crises.

Admiral SKINNER. Sir, if you recall, we had an F–15 pilot shot down in Libya and we had assets, because of this very team we are talking about, we had assets on top of him very, very quickly and had him extracted from country very, very quickly, because we had those types of assets in amphibious shipping close into the country. And that would be the same thing with additional capability that the B could bring to the fight.

Mr. VEASEY. Thank you.

Mr. TURNER. Thank you.

General Field, I know General Schmidle has done a great job of balancing that line between what we can talk about and what we can't talk about, but yet, we are in this situation where we have to paint the picture of how dire things are and that the military

that we have now and that we have been able to conduct operations with will not be the military that we have at the end of sequestration and the significant budget cuts if we allow them to all go into place.

So capturing and articulating that unacceptable level of risk is difficult, because the word "risk," you know, we are Americans. We rise above risk. So when you say something is at risk, we say well, we always succeed. What is risk?

But the reality is, is that there are significant threats out there. There are people who are developing significant capabilities that will make the whole dynamics of what General Davis was saying about we can go anywhere, deliver a force anywhere and have a full capability, that this is not just at risk, but may be a new paradigm where we are not capable of having the force that we had before.

So in your statement, you described a decreased fighter force structure of 1,900 total fighter aircraft as an increased risk to carry out the national military strategy. That is a reduction from a 2,000 fighter aircraft inventory of just 2 years ago. Could you please give us an understanding of what does that risk mean? I know with General Schmidle saying there are capabilities we have to talk about offline, but this risk has to be articulated in a manner where it can be dealt with by Congress and the Air Force.

What does that mean, increased risk, and what does Congress need to do about it? General.

General FIELD. Yes, sir. This is another bit of a classified situation, so we can come back and talk to you about that, but here is how I would lay it out in this forum.

Our current inventory of just fighter aircraft, if that is what we are going to talk about, is barely able to meet the requirements in a couple of the scenarios that we were planning against where requirement and demand equal one another. And when you have a situation where today, our readiness forces are, as we measure them today, about 50 percent, what we would call totally ready, that presents in a situation, in my opinion, of great risk.

When you talk about sequestration and now you take nine of those fighter squadrons and you sit them on the ground, like General Schmidle said, this is not something that happens overnight. That readiness level and the proficiency of those air crew will decay over time. But within about a month and a half to 2 months, they will be out of currency in several specific events, and within about 3 to 4 to 5 months, we are going to have to do something very significant in terms of getting them back up to speed, especially in terms of this high-end threat that you alluded to.

And that threat is not just confined to some of the bigger nation-states on the globe. Those guys produce very effective systems, and they sell them to other countries. So in the Middle East, for example, there are several countries that provide a significant threat to airborne assets. We can address that threat in several ways. You can address it through systems and technology and you can address it through tactics, techniques, and procedures. And you, we, all of us at this table, will address it across that whole spectrum.

And whatever we have in our kit bag is what we will fight that scenario with, and we will try to do it where we minimize the cost

to our forces and maximize the destruction to the enemies, and that is what we have trained to do for, on this table, our entire professional career.

Now, at the end of the day, readiness is about a couple things. It is about ready to do what, and, again, like you said, at what risk? So if we were at a risk level that was pretty high before, and now we ground or stop flying nine fighter squadrons and four bomber squadrons, that is obviously going to increase the risk depending on when those forces were called upon to do something.

So readiness is a balancing act that we all have to pay attention to and it is readiness now to do something and then we have to pay attention to what kind of readiness to do what will we need to be at in 2020.

We have talked a little bit about how many F–35s should have been on the ramp right now, and how many new tankers should have been on the ramp right now, and I know that we owe Congresswoman Sanchez a little look at that ancillary cost of keeping legacy aircraft afloat that we hadn't planned on. And if we continue down that road and focus on readiness only for today, then we will be, 10 years from now, we will be with the same equipment, 10 years older, in a lesser readiness level than we are now. So we are going to have to take some risk, between now and 10 years from now, in terms of how much ready for today's fight versus how much ready for tomorrow's fight.

Mr. TURNER. Thank you. I know that this is a difficult thing to discuss in an open format, but when you have the Commandant of the Marine Corps yesterday saying that with the President's direction to take our military strategy from two major contingency operations down to one, and that with sequestration he gave us what was going to be required to undertake one and be successful and that sequestration took us below that level, I think people don't necessarily understand that when you go from two major contingency operations to one, that means if we are occupied, others, not just the United States being at risk, but others could have mischief threatening our other allies. And certainly as we look to your diminished capacity, we look to the issue of who else besides us are at risk, and what does that mean for the world that those who might do harm to others are not as deterred knowing that our force structure is not what it has been.

And that we have to articulate clearly, and I looked for each of you to help us find a way to say this that is not classified so we can convince those who don't hear what you tell us in classified formats the message so that we can set this aside and get our budgets reformed.

Ranking Member Loretta Sanchez.

Ms. SANCHEZ. Thank you, Mr. Chairman. And these are difficult decisions that we are trying to make here and we appreciate getting the information from you so we can make better decisions, because that is really the role of Congress, is to try to figure out what we can.

My fear is that we invest our moneys in these F–35s—look, we need the F–35. We all know that. It is not going away. Mr. Veasey, don't worry about that. He represents Dallas and Fort Worth over there, you can probably tell. And we went to your place to take a

look at them. And it is not because of that reason that we are asking the questions. We are asking the questions because we are trying to figure out how do we get this all done?

My fear is we buy a bunch of planes and what we have seen in some countries and we always, amongst ourselves, always are talking about these countries who buy planes but they don't have the pilots trained or they don't have the maintenance capabilities or operational capabilities to even know how to fly them. So we don't want to end up with a bunch of planes and also have our people untrained to be able, as you said, to not be able to fly these things. So how do we do this? It is a very difficult thing to take a look at.

I also want to talk about the F–22 right now, because I am looking at the budget and what I see is, F–22, okay, we have, what, about 180 or so of these that we made, not we, but great people on the line, obviously, and it costs about $370 million apiece. The Air Force is requesting $919.5 million for upgrades to the 187 F–22 aircraft we already have in service. That is about $5 million an aircraft. And the funding in this range more or less continues in the budget through fiscal year 2018.

So can you tell me, $5 million, on average, $5 million worth of upgrades on a plane that we spent $320 million on and continuing forward for the next 4 or 5 years, what are we doing? What are we buying? Given the pressures that we have, what is that doing? And is it really $900 million every year for the next 4 or 5 years in order to—what are you doing with that, $5 million a plane for the next 4 or 5 years.

General FIELD. Ma'am, I can talk to some of the capabilities of the F–22. In 2007, I went to Marietta, Georgia, and I picked one up from the factory, signed my name on the piece of paper, and the flyaway cost of that airplane was $91 million. So, again, this whole how things cost out and how much it costs per flying hour is, in my opinion, a very arcane and constrained science.

Ms. SANCHEZ. If you were in a business, General, if we were in a business and I had my fixed costs, and that includes R&D [research and development], and my variable costs, and at the end of the whole thing I got to one large number and I divided it by the number of widgets I made, you know, yours might have cost me $70 million or what have you, but if my first one costs me $300 million or $800 million, if I am a business person, we are always talking about how we are Americans and business is the business of America, if I am a business person, I am not in business if I sell each of those planes at $90 million apiece.

Do you see what I am saying? So it might have cost you, that particular one, less. But now we are going to go back and we are putting $5 million, on average, maybe it is just a few, maybe it is the whole thing, maybe every year there is something new to put on it, what is in this $900 million number every year?

General FIELD. So what it does is it enables us to operate in those contested environments within those threat systems that are being built around the world and proliferated around the world, whether those are new mobile surface-to-air missile systems, whether those are new radars that link together to make an entire system more capable.

What the F–22 does, because in terms of its speed and stealth and its fusion capability, it allows us to change the nature of that battle space and pick out areas that are vulnerable that would not be vulnerable to aircraft that don't have that kind of capability on there.

So what the upgrades over the next 5 years do is it improves the radar ground mapping of the aircraft so that it can find targets better on the ground; it improves the data link capability on it; and it puts some of our advanced weapons like the AIM–120D [advanced medium-range air-to-air missile] and the AIM–9X [Sidewinder short-range air-to-air missile] into the aircraft.

All of those are necessary to operate in that very tough, very high-threat environment. And right now those F–22s, combined with our legacy aircraft, whether they are Air Force, Navy, or Marine, help provide a synergistic effect to how effective all of those aircraft are, and we have proven that time and again in exercises both within the United States and outside the United States.

So that is the value that we have. And it is expensive, but I think that we are going to, if something bad were to happen around the world, that is the kind of capability we are going to need to initially operate in that environment, to change that battle space so that the rest of our legacy aircraft have a better chance of survival and being effective in that combat arena.

Ms. SANCHEZ. Thank you for that. Again, I would go back to this whole hollowing out of, are we really going to have the skill set? And when I look at that, Mr. Chairman, I not only see it from, will our airmen be able to fly these souped-up things we soup up every year, but will we even be graduating people who can enter the Air Force Academy, for example, if we are not investing in our schools. Because there is always a tradeoff, domestic spending versus having the weapons in storage for when we need them. It is a very difficult thing for us to do.

Thank you, Mr. Chairman. I appreciate you having called this hearing.

Mr. TURNER. Thank you, Ms. Sanchez. I appreciate your partnership in working on all those important issues.

Gentleman, as I am promised you, we will conclude with you providing any closing thoughts that you have. You don't need to feel compelled. But I always want to have the opportunity in case there is something that has preceded your testimony that you thought you would like to add to the record.

Mr. Sullivan, I will begin with you.

Mr. SULLIVAN. I have nothing to add, Chairman.

Mr. TURNER. Admiral Skinner.

Admiral SKINNER. Nothing to add, sir.

Mr. TURNER. General Schmidle.

General SCHMIDLE. I do have something to add.

Mr. TURNER. Very good.

General SCHMIDLE. Just a couple of things. The first thing, Mr. Chairman, your discussion before about how we can talk about this in an unclassified environment, back to what the Commandant said yesterday at the hearing, I think the issue he was getting at, and you articulated, is "capacity." That is a simple word, but that really just defines what we are talking about. We have capabilities,

but it is the capacity that we have that is affected by some of the things we have been talking about.

And if I could, the last thing, we the Marine Corps actually have two F–35 squadrons stood up right now. One of them is in Florida. It has 11 airplanes and 17 pilots. It actually has 13 airplanes. We borrowed two from the Brits which we are flying. We have two British pilots in this squadron. And we have an operational squadron, that is our training squadron, we have an operational squadron in Yuma, Arizona, that has 4 airplanes and 7 pilots and 166 maintainers. And we actually have marines out there turning wrenches on this airplane right now today without any contract maintenance and they are flying airplanes out there. By the end of this year, they will have 16 airplanes in Arizona by September of this year. We are going to declare the initial operating capability of that squadron in 2015, and then we are going to deploy it to Japan in 2017. So that is kind of our plan right now.

Mr. TURNER. Thank you. That was a very excellent point. Admiral Moran.

Admiral MORAN. Nothing to add.

Mr. TURNER. General Field.

General FIELD. Yes, sir. Chairman Turner, Ranking Member Sanchez, distinguished members of the subcommittee, thank you for allowing us to appear before you and discuss these very important topics today. General Davis and I know that we owe some of you some homework and we will get that back to you as soon as possible, either in terms of a document or probably in a couple of cases a briefing, that we need to come back and have a more enriched discussion in a classified environment.

I would like to emphasize the troubling effects of sequester that we have on our current and future readiness. For the first time in my memory, Air Force combat forces are not flying due to the lack of funding in the middle of a fiscal year. While we are protecting the current fight, those scheduled next to deploy and baseline training, at a large number of bases, combat training operations have come to a complete halt. If you have the opportunity to visit airmen at these bases, you are going to find the silence a bit unnerving. As we speak, their combat capability and effectiveness are eroding.

For example, by canceling our weapons instructor courses, we have created a gap in the production of graduate-level instructors that will have long-term impacts on a generation of warfighters. Those instructors are the heart, the soul, and the brains of our warfighting capabilities. Over the years, phenomenal training programs have been developed and they sustain a United States Air Force that is second to none. But we have just terminated a large portion of those full-spectrum training operations.

The effects of sequestration on weapons systems sustainment and the Flying Hour Program will not disappear on the first of October with the new fiscal year. We are developing a Return to Fly Program for those affected units, but it will take time, additional resources, and a reduced OPSTEMPO to fully recover.

The sooner we begin to fly a full training program, the sooner we will recover, but make no mistake, it will be an uphill battle. The greatest challenge will be to find the balance between minimizing

the impact on readiness and preserving investment dollars for modernization, recapitalization of our fighter and bomber fleets, and the preferred munitions inventories, all the while meeting the requirements our defense strategies demand overseas. As we discussed, this is a delicate and very tough balance.

So we appreciate the support of the subcommittee and the HASC [House Armed Services Committee], and I ask for your continued support to mitigate the effects of sequestration into fiscal year 2014 and beyond. The sooner we can stabilize training, modernization, and munitions funding, the sooner we can ensure that we are on the track to fulfill our Nation's requirements now and in the future.

Thank you very much.

Mr. TURNER. Thank you. Well said.

General Davis.

General DAVIS. Nothing, sir.

Mr. TURNER. With that, I thank each of you for participating and thank you for your dedication.

[Whereupon, at 4:00 p.m., the subcommittee was adjourned.]

A P P E N D I X

APRIL 17, 2013

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

APRIL 17, 2013

Statement of Hon. Loretta Sanchez

Ranking Member, House Subcommittee on Tactical Air and Land Forces

Hearing on

Fiscal Year 2014 Navy, Marine Corps and Air Force Combat Aviation Programs

April 17, 2013

Today's hearing will focus on the Fiscal Year 2014 Navy, Marine Corps, and Air Force requests for aircraft development, modifications, and procurement. This area of investment represents the largest single portion of the DOD's entire procurement funding request. While the combat capability the Navy, Marines, and Air Force bring to our Armed Forces is the best in the world, it comes at a very high cost.

The total Navy request for aircraft procurement and modifications, including the Marine Corps, is $18 billion. To put that figure in context, the Navy request for *shipbuilding* in FY14 is only $14 billion.

For the Marine Corps, which is primarily a force designed for ground combat, the FY14 request for aircraft procurement and modifications is about $3.5 billion. To put that figure in context, the Marine Corps entire budget for buying new *ground equipment* is only $1.3 billion.

And finally, the Air Force request for aircraft procurement and modifications is about $11.4 billion. While less than the Navy and Marine Corps, $11 billion is still more than the entire defense budgets of the Netherlands, Colombia, Poland, Singapore, Greece, and many other countries.

So, in FY14 it is clear that DOD continues to invest significant resources in maintaining the United States' status as the world's premier combat aircraft force. The question before the subcommittee today is whether or not these investments are sustainable given the many other pressures on military service budgets and the DOD budget as a whole.

It is important to remember that while the Navy, Marines, and Air Force are proposing to spend more than $30 billion on new aircraft and modifications to current aircraft, we have:

- 17 squadrons of Air Force fighter aircraft that have no money to fly;
- an entire Aircraft Carrier battle group that did not deploy as planned; and
- most of the U.S. Army has been forced to stop conducting training above the squad level.

At some point, it may be time to question whether or not the U.S. military can afford to have what amounts to three separate "Air Forces"—one for the Navy, one for the Marines, and one for the Air Force itself. For example, could the Nation perhaps get by with only two Air Forces instead of three? With sequester cuts now an unfortunate reality, it may well be time to relook assumptions that haven't been challenged for a decade or more.

I thank the witnesses for their service and look forward to their testimony.

United States Government Accountability Office

GAO

Testimony

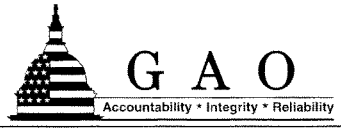
Before the Subcommittee on Tactical Air and Land Forces, Committee on Armed Services, House of Representatives

For Release on Delivery
Expected at 2:00 p.m. EDT
Wednesday, April 17, 2013

F-35 JOINT STRIKE FIGHTER

Program Has Improved in Some Areas, but Affordability Challenges and Other Risks Remain

Statement of Michael J. Sullivan, Director
Acquisition and Sourcing Management



GAO-13-500T

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Highlights

Highlights of GAO-13-500T, a testimony before the Subcommittee on Tactical Air and Land Forces, Committee on Armed Services, House of Representatives

April 17, 2013

F-35 JOINT STRIKE FIGHTER

Program Performance Has Improved in Some Areas, but Affordability Challenges and Other Risks Remain

Why GAO Did This Study

The F-35 Lightning II, the Joint Strike Fighter, is DOD's most costly and ambitious aircraft acquisition. The program is developing and fielding three aircraft variants for the Air Force, Navy, Marine Corps, and eight international partners. The F-35 is critical to long-term recapitalization plans as it is intended to replace hundreds of existing aircraft. This will require a long-term sustained funding commitment. Total U.S. investment is nearing $400 billion to develop and procure 2,457 aircraft through 2037. Fifty-two aircraft have been delivered through 2012. The F-35 program has been extensively restructured over the last 3 years to address prior cost, schedule, and performance problems. DOD approved a new acquisition program baseline in March 2012. GAO's prior reviews of the F-35 made numerous recommendations to improve outcomes, such as increasing test resources and reducing annual procurement quantities.

This testimony is largely based on GAO's recently released report, GAO-13-309. This testimony discusses (1) progress the F-35 program made in 2012, and (2) major risks that program faces going forward. GAO's work included analyses of a wide range of program documents and interviews with defense and contractor officials.

What GAO Recommends

GAO has made prior recommendations to help reduce risk and improve outcomes, which DOD has implemented to varying degrees.

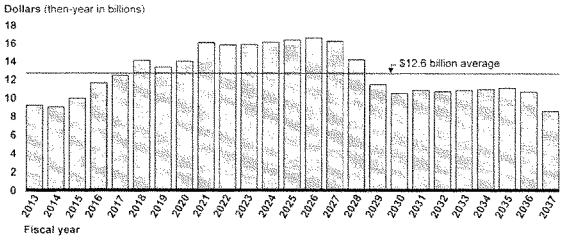
View GAO-13-500T. For more information, contact Michael J. Sullivan at (202) 512-4841 or sullivanm@gao.gov.

What GAO Found

The new F-35 acquisition baseline reflects positive restructuring actions taken by the Department of Defense (DOD) since 2010, including more time and funding for development and deferred procurement of more than 400 aircraft to future years. Overall, the program progressed on several fronts during 2012 to further improve the current outlook. The program achieved 7 of 10 key management objectives and made substantial progress on one other. Two objectives on aircraft deliveries and a corrective management plan were not met. The F-35 development test program substantially met expectations with some revisions to flight test plans and made considerable progress addressing key technical risks. Software management practices and some output measures improved, although deliveries to test continued to lag behind plans. Manufacturing and supply processes also improved—indicators such as factory throughput, labor efficiency, and quality measures were positive. While initial F-35 production overran target costs and delivered aircraft late, the latest data shows labor hours decreasing and deliveries accelerating.

The F-35 program still faces considerable challenges and risks. Ensuring that the F-35 is affordable and can be bought in the quantities and time required by the warfighter will be a paramount concern to the Congress, DOD, and international partners. With more austere budgets looming, F-35 acquisition funding requirements average $12.6 billion annually through 2037 (see below). Once fielded, the projected costs of sustaining the F-35 fleet have been deemed unaffordable by DOD officials; efforts to reduce these costs are underway. Software integration and test will be challenging as many complex tasks remain to enable full warfighting capability. The program is also incurring substantial costs for rework–currently projected at $1.7 billion over 10 years of production–to fix problems discovered during testing. With two-thirds of development testing still to go, additional changes to design and manufacturing are likely. The program continues to incur financial risk from its plan to procure 289 aircraft for $57.8 billion before completing development flight testing.

F-35 Joint Strike Fighter Acquisition Funding Requirements



Source: GAO analysis of DOD data.

Chairman Turner, Ranking Member Sanchez, and Members of the Subcommittee:

Thank you for the opportunity to discuss our work on the F-35 Lightning II, also known as the Joint Strike Fighter (JSF). At a cost approaching $400 billion, the F-35 is the Department of Defense's (DOD) most costly and ambitious acquisition program. The program is developing and fielding three aircraft variants for the Air Force, Navy, and Marine Corps and eight international partners. The F-35 is the linchpin of U.S. and partner plans to replace existing fighters and support future combat operations. In a time of austere federal budgets, DOD continues to project significant long-term sustained funding requirements for the F-35 while, at the same time, pursuing several other expensive systems. Over the past 3 years, DOD has extensively restructured the F-35 program to address poor cost, schedule, and performance outcomes. Most recently, in March 2012, DOD established a new, more realistic, F-35 acquisition program baseline that reflects increased costs, longer schedule times, and deferred procurement of 410 aircraft to the future. Appendix I tracks program baseline changes since the start of system development in 2001.

We have reported annually on F-35 issues since 2005.[1] My testimony today is largely based on the results of our latest review,[2] and addresses (1) the progress the F-35 program made in 2012 and (2) the major risks that the program faces going forward. To conduct our work, we reviewed program status reports and briefings, management objectives, test plans and results, and internal DOD analyses with a focus on accomplishments in calendar year 2012 compared to original plans for that year. We obtained manufacturing data and cumulative outputs from the start of production in 2007 through the end of 2012, and discussed development and production issues and results to date, future expansion plans, and improvement efforts with DOD, F-35 program, and contractor officials. We toured the aircraft manufacturing plant, obtained production and supply performance indicators, identified cumulative and projected engineering changes, and discussed factory improvements and management controls with members of the contractor's work force and DOD plant representatives. We evaluated DOD's restructuring actions and impacts

[1]See related GAO products at the end of this statement.

[2]GAO, *F-35 Joint Strike Fighter: Current Outlook Is Improved, but Long-Term Affordability Is a Major Concern*, GAO-13-309 (Washington, D.C.: Mar. 11, 2013).

on the program, tracked cost and schedule changes from program start to the March 2012 baseline, and determined factors driving the changes. We obtained current projections of acquisition funding needs through 2037 and estimated life cycle sustainment funding requirements. We conducted this work in accordance with generally accepted government auditing standards.

F-35 Program Performance Improved in 2012

The F-35 program made progress in 2012 on several fronts. The program met or substantially met most of its key management and development testing objectives for the year. We also found that the program made progress in addressing key technical risks, as well as improving software management, manufacturing, and supply processes.

Most Management and Development Testing Objectives Were Achieved

The F-35 program met or substantially met most of its key management objectives established for calendar year 2012. The program office annually establishes major management objectives that it wants to achieve in the upcoming year. The F-35 program achieved 7 of its 10 primary objectives in 2012. Those included, among other things, the completion of development testing on early increments of software, the beginning of lab testing for both variations of the helmet mounted display, the beginning of pilot training for two aircraft variants, and the completion of negotiations on the restructured development contract. Although the program did not complete its software block 3[3] critical design review as planned in 2012, it did successfully complete its block 3 preliminary design review in November 2012 and the critical design review in late January 2013. The program did not meet its objectives to (1) deliver 40 production aircraft in 2012 and (2) receive approval from the Defense Contract Management Agency of the contractor's plan for correcting deficiencies in its system for tracking and reporting cost and schedule progress.[4]

[3] Software capabilities are developed, tested, and delivered in three major blocks. Block 3 is to provide the F-35 its full warfighting capability.

[4]This specifically refers to the contractor's Earned Value Management System, which has been found to be deficient. Earned value management is a disciplined process for tracking, controlling, and reporting contract costs and schedule. DOD requires its use by major defense suppliers to facilitate good insight and oversight of the expenditure of government dollars.

The F-35 development flight test program also substantially met 2012 expectations with some revisions to original plans. The program exceeded its planned number of flights by 18 percent, although it fell short of its plan in terms of test points[5] flown by about 3 percent, suggesting that the flights flown were not as productive as expected. Test officials had to make several adjustments to plans during the year due to operating and performance limitations with aircraft and late releases of software to test. As a result, none of the three variants completed all of their planned 2012 baseline points, but the test team was able to add and complete some test points that had been planned for future years. Testing accomplished on each of the aircraft variants in 2012 included:

- Conventional takeoff and landing variant (F-35A)—accomplished high angle of attack testing, initial weapons separation, engine air start, expansion of the airspeed and altitude envelopes, and evaluated flying qualities with internal and external weapons.[6]
- Short takeoff and vertical landing variant (F-35B)—accomplished the first weapons release, engine air start tests, fuel dump operations, flight envelope expansion with weapons loaded, radar signature testing, and tested re-design air inlet doors for vertical lift operations.
- Carrier suitable variant (F-35C)—conducted speed and altitude range verification and flights with external weapons, prepared for simulated carrier landings, and conducted shore-based tests of a redesigned arresting hook.

Progress Made in Addressing Key Technical Risks

In 2012, the F-35 program also made considerable progress in addressing four areas of technical risk that could substantially degrade the F-35's capabilities and mission effectiveness. However, additional work remains to fully address those risks. These risk areas and the actions taken in 2012 are discussed below:

1. Helmet mounted display (HMD)—DOD continued to address technical issues with the HMD system. The original helmet mounted display, integral to mission systems, encountered significant technical

[5]Flight test points are specific, quantifiable objectives in flight plans that are needed to verify aircraft design and performance.

[6]Due primarily to operating restrictions and deficiencies in the air refueling system, the F-35A did not accomplish as many flights as planned and fell short of planned test points by about 15 percent.

deficiencies and did not meet warfighter requirements. The program is pursuing a dual path by developing a second, less capable helmet while working to fix the first helmet design. In 2012, DOD began dedicated ground and flight testing to address these issues. Both variations of the helmet mounted display are being evaluated and program and contractor officials told us that they have increased confidence that the helmet deficiencies will be fixed. DOD may make a decision in 2013 as to which helmet to procure.

2. Autonomic Logistics Information System (ALIS)—ALIS is an important tool to predict and diagnose aircraft maintenance and supply issues. ALIS systems with limited capability are in use at training and testing locations. More capable versions of ALIS are being developed and program and contractor officials believe that the program is on track to fix identified shortcomings and field the fully capable system in 2015. Limited progress was made in 2012 on developing a smaller, transportable version needed to support unit level deployments to operating locations.
3. Arresting hook system—The carrier variant arresting hook system was redesigned after the original hook was found to be deficient, which prevented active carrier trials. The program accomplished risk reduction testing of a redesigned hook point to inform this new design. The preliminary design review was conducted in August 2012 and the critical design review in February 2013. Flight testing of the redesigned system is slated for late 2013.
4. Structural durability—Over time, testing has discovered bulkhead and rib cracks on the aircraft. Structural and durability testing to verify that all three variants can achieve expected life and identify life-limited parts was completed in 2012. The program is testing some redesigned structures and planning other modifications. Officials plan to retrofit and test a production aircraft already built and make changes to the production line for subsequent aircraft. Current projections show the aircraft and modifications remain within weight targets.

Software Management and Output Improved

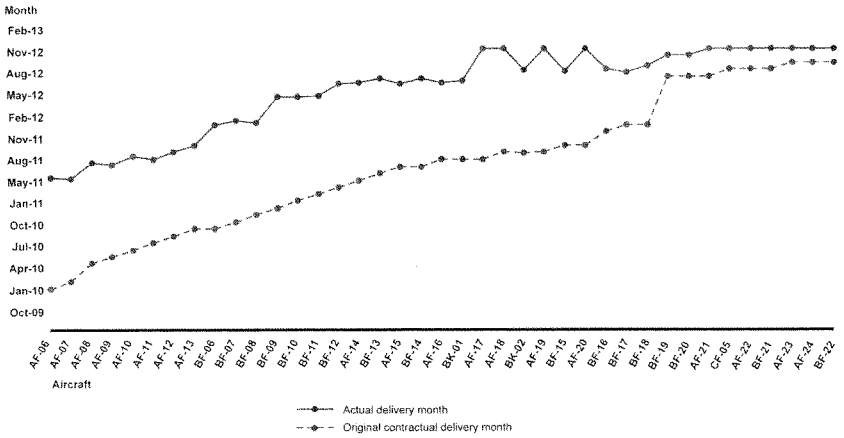
In 2012, the F-35 aircraft contractor and program office took steps to improve the program's software management and output. The program began the process of establishing a second system integration laboratory, adding substantial testing and development capacity. The program also began prioritizing and focusing its resources on incremental software development as opposed to the much riskier concurrent development approach. In addition, the program began implementing improvement initiatives recommended by an independent software review, and

evaluated the possible deferral of some of the aircraft's capabilities to later blocks or moving them outside of the current F-35 program altogether. At the same time, program data regarding software output showed improvement. For example, program officials reported that the time it took to fix software defects decreased from180 days to 55 days, and the time it took to build and release software for testing decreased from 187 hours to 30 hours.

Manufacturing Process Metrics Improved

Key manufacturing metrics and discussions with defense and contracting officials indicate that F-35 manufacturing and supply processes improved during 2012. While initial F-35 production overran target costs and delivered aircraft late, the latest data through the end of 2012 shows labor hours decreasing and deliveries accelerating. The aircraft contractor's work force is gaining important experience and processes are maturing as more aircraft are built. The labor hours needed to complete aircraft at the prime contractor's plant decreased, labor efficiency since the first production aircraft improved, time to manufacture aircraft in the final assembly area declined, factory throughput increased, and the amount of traveled work declined. In addition, program data show that the reliability and predictability of the manufacturing processes increased while at the same time aircraft delivery rates improved considerably. Figure 1 illustrates the improvement in production aircraft delivery time frames by comparing actual delivery dates against the dates specified in the contracts.

Figure 1: F-35 Production Aircraft Deliveries Compared to Contract Dates



Source: GAO analysis of DOD data.

Note: The numbered aircraft are in order of delivery. AF= U.S. Air Force F-35A, BF = U.S. Marine Corps F-35B, CF = U.S. Department of the Navy F-35C, and BK = United Kingdom F-35B.

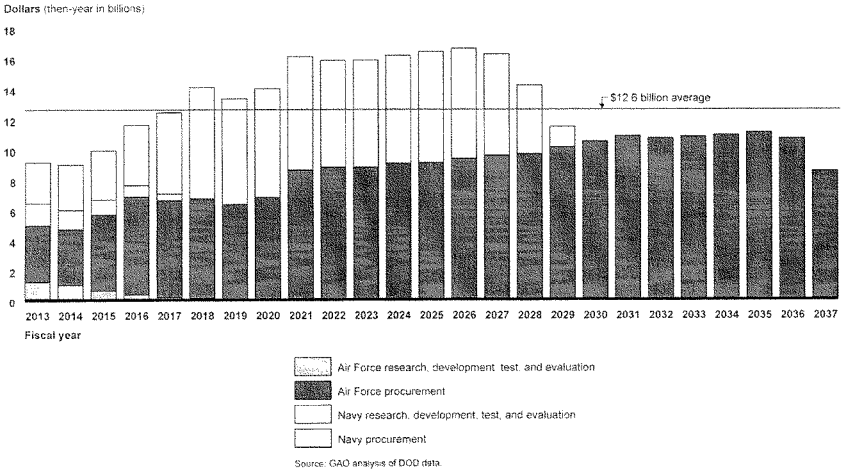
F-35 Program Still Faces Risks

Ensuring that the F-35 is affordable and can be bought in the quantities and time frames required by the warfighter will be of paramount concern to the Congress, U.S. military and international partners. The acquisition funding requirements for the United States alone are currently expected to average $12.6 billion per year through 2037, and the projected costs of operating and sustaining the F-35 fleet, once fielded, have been deemed unaffordable by DOD officials. In addition, the program faces challenges with software development and continues to incur substantial costs for rework to fix deficiencies discovered during testing. As testing continues additional changes to design and manufacturing processes will likely be required, while production rates continue to increase.

Long-Term Affordability Remains a Concern

The March 2012 acquisition program baseline places the F-35 program on firmer footing, but aircraft are expected to cost more and deliveries to warfighters will take longer than previously projected. The new baseline projects the need for a total of $316 billion in development and procurement funding from 2013 through 2037, or an average of $12.6 billion annually over that period (see figure 2). Maintaining this level of sustained funding will be difficult in a period of declining or flat defense budgets and competition with other "big ticket items" such as the KC-46 tanker and a new bomber program. In addition, the funding projections assume the financial benefits of the international partners purchasing at least 697 aircraft. If fewer aircraft are procured in total or in smaller annual quantities—by the international partners or the United States—unit costs will likely rise according to analysis done by the Office of the Secretary of Defense (OSD) Cost Assessment and Program Evaluation (CAPE) office.

Figure 2: F-35 Program Budgeted Development and Procurement Funding Requirements, Fiscal Years 2013-2037



Source: GAO analysis of DOD data.

Note: Development and procurement of the Marine Corps variant is included in the Department of the Navy budget accounts.

In addition to the costs for acquiring aircraft, significant concerns and questions persist regarding the cost to operate and sustain the F-35 fleet over the coming decades. The current sustainment cost projection by CAPE for all U.S. aircraft, based on an estimated 30-year service life, exceeds $1 trillion. Using current program assumptions of aircraft inventory and flight hours, CAPE recently estimated annual operating and support costs of $18.2 billion for all F-35 variants compared to $11.1 billion spent on legacy aircraft in 2010. DOD officials have declared that operating and support costs of this magnitude are unaffordable and the department is actively engaged in evaluating opportunities to reduce those costs, such as basing and infrastructure reductions, competitive sourcing, and reliability improvements.

Because of F-35 delays and uncertainties, the military services have made investments to extend the service lives of legacy F-16 and F-18 aircraft at a cost of $5 billion (in 2013 dollars). The Navy is also buying new F/A-18E/F Super Hornets at a cost of $3.1 billion (in then-year dollars) to bridge the gap in F-35 deliveries and mitigate projected shortfalls in fighter aircraft force requirements. As a result, the services will incur additional future sustainment costs to support these new and extended-life aircraft, and will have a difficult time establishing and implementing retirement schedules for existing fleets.

Software Development Challenges Remain

Over time, F-35 software requirements have grown in size and complexity and the contractor has taken more time and effort than expected to write computer code, integrate it on aircraft and subsystems, conduct lab and flight tests to verify it works, and to correct defects found in testing. Although recent management actions to refocus software development activities and implement improvement initiatives appear to be yielding benefits, software continues to be a very challenging and high-risk undertaking, especially for mission systems.[7] While most of the aircraft's software code has been developed, a substantial amount of integration and test work remain before the program can demonstrate full warfighting capability. About 12 percent of mission systems capabilities have now been validated, up from 4 percent about a year ago. However, progress

[7]Mission systems are critical enablers of F-35's combat effectiveness, employing next generation sensors with fused information from on-board and off-board systems (i.e., electronic warfare, communication navigation identification, electro-optical target system, electro-optical distributed aperture system, radar, and data links).

on mission systems was limited in 2012 by contractor delays in software delivery, limited capability in the software when delivered, and the need to fix problems and retest multiple software versions. Further development and integration of the most complex elements—sensor fusion and helmet mounted display—lie ahead.

F-35 software capabilities are being developed, tested and delivered in three major blocks and two increments—initial and final—within each block. The testing and delivery status of the three blocks is described below:

- Block 1.0, providing initial training capability, was largely completed in 2012, although some final development and testing will continue. Also, the capability delivered did not fully meet expected requirements relating to the helmet, ALIS, and instrument landing capabilities.
- Block 2.0, providing initial warfighting capabilities and limited weapons, fell behind due to integration challenges and the reallocation of resources to fix block 1.0 defects. The initial increment, block 2A, delivered late and was incomplete. Full release of the final increment, block 2B, has been delayed until November 2013 and will not be complete until late 2015.
- Block 3.0 providing full warfighting capability, to include sensor fusion and additional weapons, is the capability required by the Navy and Air Force for declaring their respective initial operational capability dates. Thus far, the program has made little progress on block 3.0 software. The program intends initial block 3.0 to enter flight test in 2013. This is rated as one of the program's highest risks because of its complexity.

Design Changes and Rework Continue to Add Cost and Risk

Although F-35 manufacturing, cost, and schedule metrics have shown improvement, the aircraft contractor continues to make major design and tooling changes and alter manufacturing processes while development testing continues. Engineering design changes from discoveries in manufacturing and testing are declining in number, but are still substantial and higher than expected from a program this far along in production. Further, the critical work to test and verify aircraft design and operational performance is far from complete. Cumulatively, since the start of developmental flight testing, the program has accomplished 34 percent of its planned flights and test points. For development testing as a whole, the program verified 11.3 percent of the development contract specifications through November 2012. As indicated in table 1, DOD continues to incur financial risk from its plan to procure 289 aircraft for $57.8 billion before completing development flight testing.

Table 1: F-35 Procurement Investments and Flight Test Progress

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cumulative procurement (then-year dollars in billions)	$0.8	$3.5	$7.1	$14.3	$21.3	$27.6	$33.8	$40.1	$47.9	$57.8	$69.0
Cumulative aircraft procured	2	14	28	58	90	121	150	179	223	289	365
Percent total flight test points completed	-	<1%	<1%	2%	9%	22%	34%	54%	74%	91%	100%

Source: GAO analysis of DOD data

Notes: Years listed denote fiscal years. Flight test data reflects the percentage of total flight test points completed in time to inform the next year's procurement decision. For example above, the F-35 program accomplished about 22 percent of total planned flight test points through the end of calendar year 2011 that could help inform the fiscal year 2012 procurement decision. The program intends to complete developmental flight test points in 2016 and would be in a position to fully support the 2017 procurement buy.

This highly concurrent approach to procurement and testing increases the risk that the government will incur substantial costs to retrofit (rework) already produced aircraft to fix deficiencies discovered in testing. In fact, the F-35 program office projects rework costs of about $900 million to fix the aircraft procured on the first four annual procurement contracts. Substantial rework costs are also forecasted to continue through the 10th annual contract (fiscal year 2016 procurement), but at decreasing amounts annually and on each aircraft. The program office projects about $827 million more to rework aircraft procured under the next 6 annual contracts.

Concluding Remarks

Restructuring actions place the F-35 program on firmer footing, although aircraft are expected to cost more and deliveries to warfighters will take longer. Going forward, ensuring affordability is of paramount concern as more austere budgets are looming. The program continues to incur financial risk from its plan to procure 289 aircraft for $57.8 billion before completing development flight testing. Meanwhile, the services are making significant investments to extend the life of existing aircraft and to buy new ones to mitigate shortfalls due to F-35 delays. Overall, the F-35 Joint Strike Fighter program is now moving in the right direction after a long, expensive, and arduous learning process. It still has tremendous challenges ahead. The program must fully validate design and operational performance against warfighter requirements, while, at the same time, making the system affordable so that the United States and partners can acquire new capabilities in the quantity needed and can then sustain the force over its life cycle. DOD and the contractor now need to demonstrate that the F-35 program can effectively perform against cost

and schedule targets in the new baseline and deliver on promises. Until then, it will continue to be difficult for the United States and international partners to confidently plan, prioritize, and budget for the future; retire aging aircraft; and establish basing plans with a support infrastructure.

Chairman Turner, Ranking Member Sanchez, and members of the House Armed Services Committee, this completes my prepared statement. I would be pleased to respond to any questions you may have.

GAO Contact and Acknowledgments

For further information on this statement, please contact Michael Sullivan at (202) 512-4841 or sullivanm@gao.gov. Contact points for our Office of Congressional Relations and Public Affairs may be found on the last page of this statement. Individuals making key contributions to this statement are Bruce Fairbairn, Travis Masters, Marvin Bonner, W. Kendal Roberts, Megan Porter, and Erin Stockdale.

Appendix I: Changes in Reported F-35 Program Quantity, Cost, and Deliveries, 2001-2012

	October 2001 (system development start)	December 2003 (approved baseline)	March 2007 (approved baseline)	June 2010 (Nunn-McCurdy)	March 2012 (approved baseline)
Expected quantities					
Development quantities	14	14	15	14	14
Procurement quantities (U.S. only)	2,852	2,443	2,443	2,443	2,443
Total quantities	2,866	2,457	2,458	2,457	2,457
Cost estimates (then-year dollars in billions)					
Development	$34.4	$44.8	$44.8	$51.8	$55.2
Procurement	196.6	199.8	231.7	325.1	335.7
Military construction	2.0	0.2	2.0	5.6	4.8
Total program acquisition	$233.0	$244.8	$278.5	$382.5	$395.7
Unit cost estimates (then-year dollars in millions)					
Program acquisition	$81	$100	$113	$156	$161
Average procurement	69	82	95	133	137
Estimated delivery and production dates					
First production aircraft delivery	2008	2009	2010	2010	2011
Initial operational capability	2010-2012	2012-2013	2012-2015	TBD	TBD
Full-rate production	2012	2013	2013	2016	2019

Source: GAO analysis of DOD data

Note: TBD means to be determined.

Related GAO Products

Defense Acquisitions: Assessments of Selected Weapon Programs. GAO-13-294SP. Washington, D.C.: March 28, 2013.

F-35 Joint Strike Fighter: Current Outlook Is Improved, but Long-Term Affordability Is a Major Concern. GAO-13-309. Washington, D.C.: March 11, 2013.

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Mr. Sullivan currently serves as Director, Acquisition and Sourcing Management, at the U.S. Government Accountability Office. This group has responsibility for examining the effectiveness of DOD's acquisition and procurement practices in meeting its mission performance objectives and requirements. In addition to directing reviews of major weapon system acquisitions such as the Joint Strike Fighter, F-22, Global Hawk, and various other major weapon acquisition programs, Mr. Sullivan has developed and directs a body of work examining how the Department of Defense can apply best practices to the nation's largest and most technically advanced weapon systems acquisition system. This work has spanned a broad range of issues critical to the successful delivery of systems, including technology development; product development; transition to production; software development; program management; requirement-setting; cost estimating; and strategic portfolio management. The findings and recommendations from this work have played a major role in the department's recent acquisition policy revisions. Most recently, he has directed the GAO's annual assessment of major weapon systems programs for the Congress and GAO's work with Congress in establishing acquisition policy reforms. His team also provides the Congress with early warning on technical and management challenges facing these investments.

Mr. Sullivan has been with GAO for 27 years. He received a bachelor's degree in Political Science from Indiana University and a Masters Degree in Public Administration from the School of Public and Environmental Affairs, Indiana University.

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SUBCOMMITTEE

STATEMENT OF

VICE ADMIRAL W. MARK SKINNER
PRINCIPAL MILITARY DEPUTY, ASSISTANT SECRETARY OF THE NAVY
(RESEARCH, DEVELOPMENT AND ACQUISITION)

AND

LIEUTENANT GENERAL ROBERT SCHMIDLE, USMC
DEPUTY COMMANDANT FOR AVIATION

AND

REAR ADMIRAL WILLIAM MORAN, USN
DIRECTOR, AIR WARFARE

BEFORE THE

TACTICAL AIR AND LAND FORCES
SUBCOMMITTEE

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

DEPARTMENT OF THE NAVY'S AVIATION PROCUREMENT PROGRAM

APRIL 17, 2013

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INTRODUCTION

Mr. Chairman, Representative Sanchez, and distinguished members of the Subcommittee, we thank you for the opportunity to appear before you today to discuss the Department of the Navy's (DoN) Aviation programs. Our testimony will provide background and rationale for the Department's Fiscal Year 2014 Budget request for aviation programs aligning to our strategic priorities and budgetary goals.

The United States is a maritime nation with global responsibilities. Our Navy and Marine Corps' persistent presence and multi-mission capability represent U.S. power projection across the global commons. They move at will across the world's oceans, seas and littorals, and they extend the effects of the sea-base deep inland. Naval Aviation provides our nation's leaders with "offshore options." We enable global reach and access, regardless of changing circumstances, and will continue to be the nation's preeminent option for employing deterrence through global presence, sea control, mission flexibility and when necessary, interdiction. We are an agile strike and amphibious power projection force in readiness, and such agility requires that the aviation arm of our naval strike and expeditionary forces remain strong.

There are several central themes to our 2014 Naval Aviation Budget plan: 5th generation fighter/attack capability; persistent multi-role intelligence, surveillance, and reconnaissance; supporting capabilities such as electronic attack, maritime patrol, and vertical lift; robust strike weapons programs; and targeted modernization of the force for relevance and sustainability.

First, we are acquiring F-35 5th generation fighter/attack aircraft while maintaining sufficient legacy aircraft inventory capacity. Our plan will integrate 5th generation technologies into the carrier air-wing and expeditionary forces while maintaining and modernizing the capability of the legacy fleet. F-35 will be a "day-one" capable strike-fighter that is flexible and survivable. The F-35B will replace Marine Corps legacy F/A-18A-D Hornet and AV-8B Harrier and the F-35C will complement the capabilities of the F/A-18E/F Super Hornet. We have maintained our F-35B and F-35C procurement profile achieving the program procurement stability in line with the improvements in program accountability, discipline and transparency. The overall F-35 development program is adequately resourced and has realistic schedule planning factors to complete System Development and Demonstration. Although challenges still remain, the Navy and Marine Corps are fully committed to both the F-35B and F-35C variants as we believe this aircraft is on sound footing towards delivering full Block 3 capabilities.

The F/A-18E/F will continue to receive capability enhancements to sustain its lethality well into the next decade. Future avionics upgrades will enable network-centric operations for situational awareness and transfer of data to command-and-control nodes.

To meet the demand for persistent, multi-role intelligence, surveillance, and reconnaissance (ISR) capability, the Navy and Marine Corps are building a balanced portfolio of manned and unmanned aircraft, leveraging other service capacity where able, but valuing the unique contribution of maritime ISR. Unmanned systems have experienced high growth in the past decade and have proved to be invaluable assets for the joint force commanders. Because of their increasing presence, importance, and integration on the maritime and littoral battlefields, the roadmaps for the unmanned air systems are now included alongside the manned aircraft platforms in the mission categories they serve. The Unmanned Carrier Launched Airborne Surveillance and Strike (UCLASS) air system will provide a persistent aircraft carrier-based reconnaissance and strike capability to support carrier air-wing operations beginning by the end of the decade. MQ-4C Triton will provide persistent land-based maritime surveillance and complement our P-8 Multi-Mission Maritime Aircraft (MMA); MQ-8 Vertical Takeoff and Landing Tactical Unmanned Aerial Vehicle (VTUAV) will provide ISR support to our Littoral Combat Ships (LCS); and smaller unmanned systems as the RQ-21A Small Tactical Unmanned Aircraft System (STUAS) and RQ-7B Marine Corps Tactical UAS (MCTUAS) will provide the shorter duration, line-of-sight reconnaissance capability essential for the unit level.

The Fiscal Year 2014 Budget request enables Naval Aviation to continue recapitalization of our aging fleets of airborne early warning, maritime patrol, electronic attack, and vertical lift platforms.

The Department is recapitalizing our fleet of E-2C airborne early warning aircraft with the E-2D. E-2D integrates a new electronically-scanned radar that provides a two-generation leap in technology with the capability to detect and track emerging air and cruise missile threats in support of Integrated Air and Missile Defense (IAMD). We continue efforts to replace our aged fleet of P-3C maritime patrol aircraft with a modern P-8A equipped with a sensor suite that provides persistent undersea and anti-surface warfare capabilities. Electronic attack capabilities, both carrier-based and expeditionary, continue to mature with plans to field sixteen EA-18G squadrons, while we also continue development of the Next Generation Jammer (NGJ) to replace the legacy ALQ-99 Tactical Jamming System.

The Navy and Marine Corps are participating in Joint Future Vertical Lift efforts to identify leverage points for future rotorcraft investment. Currently, the Department continues to modernize vertical lift capability and capacity with procurement of MH-60R/S, AH-1Z, UH-1Y, CH-53K, MV-22B, and the fleet of Presidential Helicopters (VXX program).

Finally, within our Fiscal Year 2014 Budget request, the Department is continuing investments in the strike weapons programs that enable any deterrence or combat operation to ultimately succeed. Strike weapons investments include the Air Intercept

Missile/AIM-9X Block 2; Small Diameter Bomb II (SDB II); the Joint Standoff Weapon (JSOW C-1); Tactical Tomahawk Cruise Missiles (TACTOM/BLK IV); and the Advanced Anti-Radiation Guided Missile (AARGM). These capabilities ensure our Navy and Marine Corps warfighters can and will dominate in the air, on the world's oceans, seas and littorals, and in any land-combat operation.

TACTICAL AVIATION (TACAIR)

F-35B/F-35C Lightning II:

The Department of the Navy remains firmly committed to both the F-35B Short Take-Off and Vertical Landing (STOVL) variant and the F-35C Carrier Variant (CV) of the Joint Strike Fighter (JSF) program, as they are essential to our immediate and long-range Navy and Marine Corps aviation strategy and the nation's security. F-35 will supplant the DoN's aging TACAIR fleet by replacing the Navy and Marine Corps legacy F/A-18A-D Hornet and the Marine Corps AV-8B Harrier. The incorporation of F-35B and F-35C aircraft into our naval force will provide the dominant, multi-role, fifth-generation capabilities that are essential across the full spectrum of combat operations to deter potential adversaries and enable future naval aviation power projection.

The F-35B STOVL variant combines the multi-role versatility and strike fighter capability of the legacy F/A-18 with the basing flexibility of the AV-8B. The Marine Corps will leverage the F-35B's sophisticated sensor suite and very low observable (VLO) fifth-generation strike fighter capabilities, particularly in the area of data collection and information dissemination, to support the Marine Air Ground Task Force (MAGTF) well beyond the abilities of today's MAGTF expeditionary attack and strike assets. Having these capabilities in one aircraft will provide the joint force commander and the MAGTF commander unprecedented strategic and operational agility. Similarly, the F-35C complements the F/A-18E/F Block II and EA-18G in providing survivable, long-range strike capability and persistence in an access-denied environment. Together, the F-35B and F-35C will provide the Expeditionary Strike Group and Carrier Strike Group commanders a survivable, "day-one" strike capability in a denied access environment with the tactical agility and strategic flexibility to counter a broad spectrum of threats and win in operational scenarios that cannot be addressed by current legacy aircraft.

With the resources applied to the F-35 program at the March 2012 Milestone B recertification and reflected in Fiscal Year 2014 President's Budget request, the overall F-35 development program is adequately resourced with realistic schedule planning factors to complete System Development and Demonstration (SDD). The SDD contract renegotiation has been completed and includes these updated planning factors. Although challenges still remain, this plan has strong support within the Department of the Navy as

we believe it places the development program on sound footing towards delivering full Block 3 capabilities.

DoD established the F-35 program with a planned measure of concurrent development and production that balanced cost, risk, and need for TACAIR modernization. Concurrency, however, is a transient issue in which risks progressively decline through the end of SDD. Over the past year, the F-35 program has worked with Lockheed Martin to implement a concurrency management structure and refine the estimate of concurrency costs based on discrete test and qualification events. As more testing is completed, concurrency risks are progressively reduced as the design is confirmed or issues identified requiring changes are incorporated. Earlier aircraft are open to a greater need for changes, and as succeeding Low-Rate Initial Production (LRIP) lots are built, their cumulative requirements for retrofit modifications decline. Furthermore, beginning with LRIP 5, Lockheed Martin is contractually obligated to share in the costs associated with concurrency.

F-35 sustainment costs remain a concern. The DoN continues to support the F-35 Joint Program Office (JPO) in its disciplined approach to analyzing and reducing sustainment costs. While the JPO and the Services made progress this past year identifying approximately $30 billion (CY12$) in projected life-cycle savings, there is more work to do in this area and the focus remains. The DoN, working in concert with the JPO, will analyze options outside of the Program Executive Office's (PEO) span of control to reduce operating cost such as reviewing basing options and sequencing, unit level manpower/squadron size, and discrete sustainment requirements. Through these combined efforts, the Department believes the PEO can increase convergence on an affordable F-35 sustainment strategy that both meets the required level of Service/Partner performance and lowers the total life cycle cost of the overall program.

The Fiscal Year 2014 President's Budget requests $1.0 billion in Research, Development, Test & Evaluation (RDT&E,N) to continue the F-35 SDD program and $2.9 billion in Aircraft Procurement, Navy (APN) for ten F-35 aircraft (six F-35B and four F-35C) with associated aircraft hardware, modification requirements, and spares. The request includes funding for Block 4 for systems engineering and planning to achieve follow on capabilities for emerging and evolving threats. Maintaining procurement rate, and an eventual optimum production ramp rate, is critical towards achieving F-35 affordability goals and preventing excessive expenditures on aircraft with limited service-life and decreasing operational relevance.

The DoN is aware of the many challenges that remain on the F-35 program, but the program is improving and showing accountability, discipline, and transparency. The F-35 is an essential future Navy/Marine Corps Aviation capability and the Department is fully committed to the F-35B and F-35C variants of this program. The DoN continues to closely monitor all F-35 development, production, and sustainment to ensure that this

capability is obtained at the lowest cost, at the earliest date possible, to meet our national security obligations.

F/A-18 Overview

The F/A-18 Hornets have consistently met readiness and operational commitments. There are 24 Navy Super Hornet squadrons with 506 F/A-18E/Fs; deliveries and squadron transitions will continue through 2016. There are 11 Navy and 11 Marine Corps F/A-18 A-D squadrons with 621 legacy A-D Hornets. While the F/A-18A-Ds transition to the F/A-18E/F and F-35, the current inventory of F/A-18A-Ds will comprise more than half of the DoN's strike fighter inventory well into 2013. Super Hornets and legacy Hornets have conducted more than 189,000 combat missions since September 11, 2001. Over the last twelve years of combat operations, deployed ashore and aboard our aircraft carriers at sea, Department of the Navy F/A-18s have provided vital over watch and direct support to our troops in combat, on the ground, and in multiple theaters of operation, brought significant precision ordnance and laser-guided munitions to the fight, and have employed thousands of rounds of twenty-millimeter ammunition supporting forces during strafing runs.

Both the legacy Hornet and the Super Hornet were procured with an objective of 20 years' time in service. The average legacy Hornet has exceeded that goal (73 percent of legacy aircraft exceed 20 years of age) and the Super Hornet is already at almost 30 percent of its expected 20 year life. Based on current trends we anticipate that most aircraft will substantially exceed 20 years in service.

F/A-18 A/B/C/D (Legacy) Hornet

The Fiscal Year 2014 President's Budget requests $59.5 million in APN is for the continuation of a Service Life Extension Program (SLEP) and system upgrades and obsolescence programs for the inventory of 621 legacy F/A-18 Hornets. Funds requested will procure and install SLEP kits required to extend the service life of select candidate F/A-18A-D aircraft to 10,000 flight hours. The High Flight Hour (HFH) inspections and SLEP modifications can extend the F/A-18A-D service life beyond 8,000 flight hours. Continued investment in Program Related Engineering (PRE) and Program Related Logistics (PRL) funds within the Operations and Maintenance, Navy accounts is critical for sustaining the combat relevancy of the DoN's legacy platforms through the TACAIR transition.

The F/A-18 A-D was designed for, and has achieved, a service life of 6,000 flight hours. These aircraft have performed as expected through their design life and now service life management of this aircraft is intended to extend this platform well beyond its designed 6,000 flight hours. Naval Aviation has been successful in achieving 8,000 flight hours per aircraft and is pursuing a strategy to go as far as 10,000 flight hours on select aircraft.

Ongoing service life management initiatives continue to demonstrate excellent return on investment (ROI) against the effort to close the Strike Fighter shortfall gap.

Flying aircraft outside their design life is not without risk and comes with less predictability and more variability. In order to mitigate this risk, engineering analysis will continue to ensure our ability to address these discoveries, lesson burden on the operating forces, and ensure needed aircraft availability. Fleet Readiness Centers have the capacity to execute the required number of HFH inspections and SLEP modifications.

In order to maintain warfighting relevancy in a changing threat environment, we will continue to procure and install advanced systems such as Joint Helmet-Mounted Cueing Systems (JHMCS), Multi-Function Information Distribution System (MIDS), APG-73 radar enhancements, Advanced Targeting FLIR (ATFLIR) upgrades, and LITENING for the Marine Corps on selected F/A-18A-D aircraft.

The continued outstanding efforts of the Navy/Marine Corps team will further define necessary actions required to manage aging F/A-18 A-D aircraft, address discovery of potentially greater than expected fatigue and corrosion, and ensure required availability of aircraft until Joint Strike Fighter Fleet Introduction.

F/A-18 E/F Super Hornet

The Fiscal Year 2014 President's Budget requests $206.5 million in APN for tasks common to F/A-18E/F and EA-18G production; $491.9 million in APN to implement aircraft commonality programs to maintain capabilities and improve reliability/structural safety of the Super Hornet fleet; and $21.9 million RDT&E,N to support the F/A-18E/F Service Life Assessment Program (SLAP).

The F/A-18E/F significantly improves the survivability and strike capability of the carrier air-wing. The Super Hornet provides increased combat radius and endurance, and a twenty-five percent increase in weapons payload over legacy Hornets. The production program continues to deliver on-cost and on-schedule.

There are no F/A-18E/F aircraft programmed in Fiscal Year 2014; only the 21 EA-18Gs. Fiscal Year 2013 is the final planned procurement year to complete the Program of Record (POR) of 552 F/A-18E/F aircraft. The Congressional add of 11 F/A-18E/F in 2013 changes the total number of aircraft to 563 which will be incorporated into the POR with the next budget submission. A Multi-Year Procurement contract for 124 F/A-18E/F Super Hornets and EA-18G Growlers (Fiscal Years 2010 through 2013) was signed on September 24, 2010. In December 2010, the Secretary of Defense added 41 F/A-18 E/F aircraft to the Fiscal Year 2012 President's Budget request in Fiscal Years 2012 through 2014.

All Lot 30 (Fiscal Year 2006) and beyond F/A-18E/Fs and EA-18Gs have the APG-79 Active Electronically Scanned Array (AESA) Radar system installed in production, and a retrofit program exists to modify 133 Lot 26-29 Block II aircraft with the AESA Radar. More than 300 APG-79 AESA Radars have been produced to date. The Navy plans to equip all 415 Block II Super Hornets with AESA Radars, providing the Super Hornet a significant increase in detection range, lethality and survivability over the legacy Hornets. Successfully deployed since 2007, AESA Radar equipped squadrons are highly valued by fleet commanders because of their ability to share tactical battle space management data with the non-AESA radar tactical aircraft in the carrier battle group. The F/A-18E/F and EA-18G with the APG-79 are force multipliers.

Production Engineering Support (PES) and Integrated Logistics Support (ILS) funded efforts common to both F/A-18E/F and EA-18G aircraft are included in the F/A-18E/F budget lines independent of whether F/A-18E/F aircraft are being procured. These two support cost elements are not proportional to the number of aircraft being procured and are not duplicative to the funding in PES and ILS of the EA-18G budget.

The $491.9 million in APN implements commonality efforts to maintain capabilities and improve reliability/structural safety of the Super Hornet fleet. The Super Hornet uses an incremental development/commonality approach to incorporate new technologies and capabilities, to include: Digital Communication System (DCS) Radio, Multi-Functional Information Distribution System (MIDS), Joint Tactical Radio System (JTRS), Joint Helmet Mounted Cueing System (JHMCS), ATFLIR with shared real-time video, Accurate Navigation (ANAV), Digital Memory Device (DMD), Distributing Targeting System (DTS), Infrared Search and Track (IRST) and continued advancement of the APG-79 AESA Radar.

The $21.9 million RDT&E,N request supports the F/A-18E/F SLAP requirement. Currently, the F/A-18 E/F fleet has flown approximately 30 percent of the available 6,000 total flight hours. The remaining service-life will not be adequate to meet operational commitments through 2035. In 2008, the Navy commenced a three phased F/A-18E/F SLAP to analyze actual usage versus structural test data and identify the feasibility of extending F/A-18E/F service life from 6,000 to 9,000 flight hours via a follow-on SLEP. The F/A-18E/F SLAP will identify the necessary inspections and modifications required to achieve 9,000 flight hours and increase total and arrested landings, and catapults beyond currently defined life limits and is currently assessed as low risk. The SLMP philosophy has been applied to the F/A-18E/F fleet at an earlier point in its lifecycle than the F/A-18A-D. This will optimize Fatigue Life Expended, flight hours, and total landings aligning aircraft service life with fleet requirements.

TACAIR Inventory Management

The Navy and Marine Corps continue to carefully monitor strike fighter inventory requirements and projected availability. The Fiscal Year 2013 President's Budget shortfall of 56 was assessed as manageable. The Strike Fighter Shortfall (SFS) is currently predicted to peak at 18 in 2023. The shortfall continues to fall primarily as a result of decreased F/A-18E/F utilization rates and flight extensions for F/A-18A-D aircraft after successful completion of the High Flight Hour (HFH) inspections and repair. The shortfall is based on the following assumptions: The DoN will maintain its current tactical fixed wing force structure; utilization rates will not increase; the delivery rate of F-35B/C does not slip further to the right; and SLEP efforts on legacy Hornets will allow most of them to fly past 8,000 flight hours to an extended authorization of 9,000 hours after completing the HFH inspections with a subset of those aircraft attaining 10,000 flight hours with SLEP modifications.

While the SFS continues to fall within the executable levels throughout the DoN, the Marine Corps may experience elevated operational risk in the 2020's if the predicted shortfall comes to fruition. Over the past two Presidential Budgets, the Marine Corps TACAIR transition completion has extended from 2023 to 2030.

The Marine Corps has been driven to evaluate inventory availability amongst its Harrier and Hornet fleet in the later years and adjust its transition priorities and timing. The last active Marine F/A-18 squadron is currently scheduled to transition in 2026, and the current F/A-18 reserve squadron does not receive its F-35's until the year 2030. Additional pressures are felt with an increase of F/A-18A-D aircraft reaching 8,000 flight hours and requiring extensive depot time to inspect, repair, and extend service-life. The Harriers were expected to complete their transitions in 2022 in the Fiscal Year 2011 President's Budget, and then 2026 in Fiscal Year 2012 President's Budget. The Harriers are now planned to remain in service until 2030 due to reduced F-35 ramp rates and the fact that they have more flight hour life remaining than the Hornets.

As legacy F/A-18 squadrons are reduced, the service shortfall number must be considered in proportion to the primary mission aircraft inventory requirement. Due to a lower number of F/A-18 squadrons in the 2023 to 2026 timeframe, the shortfall number associated with the Marine Corps will have a more significant impact on their few remaining F/A-18 operational squadrons.

Additionally, the AV-8B is operating with an 18 aircraft shortfall. One AV-8B squadron will be retired at the end of Fiscal Year 2013 to meet USMC manpower reductions, allowing the remaining squadrons to operate with a two aircraft shortfall. In Fiscal Year 2014, the Navy will transition two additional squadrons from F/A-18C to F/A-18E and then redistribute those F/A-18C aircraft amongst the DoN requirements.

The DoN continues to meticulously manage the fatigue life and flight hours of our tactical aircraft. Since 2004, we have provided fleet users guidance and actions to optimize aircraft utilization rates while maximizing training and operational opportunities. The Inventory Forecasting Tool (IFT) projects the combined effects of transition plans, attrition, and pipeline requirements on the total strike fighter aircraft inventory. The IFT is updated in conjunction with budget submittals to provide forecasts of the strike fighter inventory compared to the requirements. The tool utilizes these critical variables to project future inventories - F/A-18E/F and F-35B/C deliveries, force structure, aircraft usage rates, structural life limits, depot turnaround time, Fatigue Life Expenditure (FLE), arrested and field landings, and catapult launches.

Airborne Electronic Attack (AEA) / EA-6B Prowler

The Fiscal Year 2014 President's Budget request includes $19.7 million in RDT&E,N for Electronic Warfare (EW) Counter Response; $10.1 million RDT&E,N for MAGTF EW, $48.5 million in APN for common Airborne Electronic Attack (AEA) systems; $18.6 million in APN for all EA-6B series aircraft; and $14.4 million APN for MAGTF EW.

Currently, 57 EA-6Bs in the Navy and Marine Corps support 51 operational aircraft in 10 active squadrons, one reserve squadron, and two test squadrons. This includes 24 Navy and Marine Corps Improved Capability (ICAP) II aircraft and 27 ICAP III aircraft. Following the final Navy EA-6B transition to EA-18G in 2015, all remaining ICAP III EA-6Bs will transfer to and be operated by the Marine Corps, or be in pipeline for final disposition. Final retirement of the EA-6B from the Department's inventory will be in 2019.

Marine aviation is on a path towards a distributed AEA system of systems that is a critical element in achieving the MAGTF EW vision: a composite of manned and unmanned surface, air, and space assets, on a fully collaborative network providing the MAGTF commander control of the electromagnetic spectrum when and where desired. In development are the ALQ-231 Intrepid Tiger II communications jammer, UAS EW payloads, a Software Reprogrammable Payload and an EW Services Architecture to facilitate collaborative networked Electronic Warfare Battle Management.

The Intrepid Tiger II is currently carried on the AV-8B in U.S. Central Command's (CENTCOM) Area of responsibility (AOR) and the 15th Marine Expeditionary Unit (MEU). Intrepid Tiger II and similar electronic warfare capabilities will eventually be fielded on unmanned, fixed-wing, and rotary-wing platforms to provide direct AEA support to the MAGTF. Intrepid Tiger II development and procurement is in response to Marine Corps requirements for increased precision EW capability and capacity across the MAGTF and provides EW capability directly to tactical commanders without reliance upon the limited availability of the low density/high demand EA-6B Prowler.

Airborne Electronic Attack (AEA) / EA-18G Growler

The Fiscal Year 2014 President's Budget request is $2.0 billion in APN for procurement of 21 EA-18G aircraft; $11.1 million in RDT&E,N for integration of Jamming Techniques Optimization improvements and evolutionary software development; and $257.7 million RDT&E,N for Next Generation Jammer (NGJ).

The first EA-18G squadron deployed in an expeditionary role in November 2010 to Iraq and subsequently redeployed on short notice to Italy in March 2011, in support of Operation NEW DAWN (OND) and Operation UNIFIED PROTECTOR (OUP). Since the initial deployment, Growlers have flown more than 2,300 combat missions. The EA-18G received accolades from both CENTCOM and Supreme Headquarters Allied Powers Europe for its enabling combat capability contributions to the battlespace.

In 2009, the Navy began transition from EA-6Bs to EA-18Gs. The first carrier-based EA-18G squadron deployed in May 2011. All three active component Navy expeditionary squadrons and four of the 10 carrier based squadrons have completed transition to the EA-18G. The 10 carrier based EA-18G squadrons will fulfill USN requirements for airborne electronic attack; six expeditionary EA-18G squadrons will fill the joint, high-intensity AEA capability required by the Joint Forces Commander previously fulfilled by the USN and USMC EA-6B. The Navy will be divested of EA-6Bs by 2015; the Marine Corps by 2019. The program of record is for 135 EA-18G aircraft, of which 114 have been procured to date. The final procurement of EA-18Gs is planned for 2014. The EA-18G fleet has flown approximately six percent of the 7,500 total flight hours per aircraft and are meeting all operational commitments.

The NGJ is new electronic warfare technology that replaces the 40-year old ALQ-99 system. It is designed to provide modified escort power in support of joint and coalition air, land, and sea tactical strike missions. NGJ is critical to the Navy's vision for the future of airborne electronic attack strike warfare. Funding is vital to maintain schedule, allowing the program to transition to the technology development phase and ensure timely start of the EA-18G long lead integration activities.

E-2D Advanced Hawkeye (AHE)

The Fiscal Year 2014 President's Budget requests $152.0 million in RDT&E,N for continuation of System Development and Demonstration and added capabilities to include In-Flight Refueling, Tactical Targeting Network Technology, Secret Internet Protocol Router Chat, and the Advanced Mid-Term Interoperability Improvement Program, and $1,264 million in APN for five Full Rate Production (FRP) Lot 2 aircraft and advance procurement (AP) for Fiscal Year 2015 FRP Lot 3 aircraft and EOQ funding for the proposed Multi-Year Procurement for Fiscal Years 2016, 2017, and 2018.

The E-2D AHE is the Navy's carrier-based Airborne Early Warning and Battle Management Command and Control system. The E-2D AHE provides Theater Air and Missile Defense and is capable of synthesizing information from multiple onboard and off-board sensors, making complex tactical decisions and then disseminating actionable information to Joint Forces in a distributed, open-architecture environment.

Utilizing the newly developed AN/APY-9 Mechanical Electronic Scan Array radar and the Cooperative Engagement Capability system, the E-2D AHE works in concert with surface combatants equipped with the Aegis combat system to detect, track and defeat air and cruise missile threats at extended range and provide Battle Group Commanders required reaction time.

The E-2D AHE program is in Full Rate Production. On March 1, 2013, the Acquisition Decision Memorandum was signed and the Secretary of Defense certification for the Fiscal Year 2014-2018 Multi-Year Procurement was sent to Congress. Initial Operational Capability (IOC) is on track for first quarter Fiscal Year 2015.

AV-8B Harrier

The Fiscal Year 2014 President's Budget requests $41.6 million in APN funds to continue the incorporation of Obsolescence Replacement/Readiness Management Plan systems; electrical and structural changes; upgrades to air-to-air weapon system employment and integration components; inventory sustainment and upgrade efforts to offset obsolescence and attrition; LITENING Pod upgrades; and AV-8B F402-RR-408 engine safety and operational changes.

The Fiscal Year 2014 President's Budget requests $35.8 million in RDTE,N funds to continue Design, Development, Integration and Test of various platform improvements such as: Engine Life Management Program (ELMP), Escape Systems, Joint Mission Planning System (JMPS), and Block upgrades to various mission systems, communications systems, navigation equipment, weapons carriage and countermeasures, and the Obsolescence Replacement (OR)/Readiness Management Plan (RMP).

The AV-8B continues to be deployed heavily in support of operational contingencies. Each MEU deploys with embarked AV-8Bs. The AV-8B, equipped with precision weapons, LITENING targeting pods with a video downlink to ROVER ground stations, and beyond visual range air-to-air radar missiles, has continued to be a proven, invaluable asset for the MAGTF and joint commander across the spectrum of operations. By the end of 2013, the AV-8B will receive the H6.1 Operational Flight Program enabling full integration of the Generation 4 LITENING Targeting pod. Based on current F-35B transition plans, the Harrier out-of-service date has been extended from 2022 to 2030. As a result, the AV-8B program must focus on sustainment efforts to mitigate significant

legacy inventory shortfalls, maintain airframe sustainment, and address reliability and obsolescence issues of avionics and subsystems. Additionally, this aircraft must be funded to maintain combat relevance to include tactical datalink and sensor improvements in order provide continued operation in support of operational contingencies and transition qualified aircrew to the F-35. The current digital aided Close Air Support (CAS) technology installed on the AV-8B is obsolete.

Operation ODYSSEY DAWN confirmed the expeditionary advantages of STOVL capabilities by placing the Harrier as the closest fixed-wing asset to Libya. Such dynamic support slashed transit times to the battlefield by two-thirds and kept close air support aircraft on station without strategic tanking assets. Operation ENDURING FREEDOM has confirmed the sortie generation capability and multi-role nature of the AV-8B Harrier. Capability upgrades, obsolescence mitigation, and readiness initiatives must be funded to ensure the AV-8B remains relevant, healthy and sustained through 2030.

ASSAULT SUPPORT AIRCRAFT

MV-22

The Fiscal Year 2014 President's Budget requests $ 43.1 million in RDT&E, N for continued product improvements and $1.49 billion in APN for procurement and delivery of 18 MV-22s (Lot 18). Fiscal Year 2014 will be the second year of the follow-on V-22 multi-year procurement (MYP) contract covering Fiscal Years 2013-2017. The funds requested in the Fiscal Year 2014 President's Budget request fully fund Lot 18, procure long lead items for Lot 19 and provide the balance of required Economic Order Quantity funding for the MYP. The Marine Corps continues to field and transition aircraft on time. The APN request includes $160.8 million to support the ongoing Operations and Safety Improvement Programs (OSIP), including Correction of Deficiencies and Readiness.

The follow-on MYP, which begins in Fiscal Year 2013, will procure at least 91 MV-22s over five years and includes significant savings of approximately $1 billion when compared to single year procurements. The stability of the MYP supports the Marine Corps' need to retire old aircraft and field new and better capabilities. This stability also benefits the supplier base and facilitates cost reductions on the part of both the prime contractor and sub-tier suppliers.

Through introduction of the Osprey tilt-rotor capability into combat, the service has gained valuable insight with respect to readiness and operating costs. These improvements continue to have a clear effect on increasing aircraft availability and decreasing flight hour costs. At the close of Fiscal Year 2012, the mission capability rate of the MV-22 increased eight percent over Fiscal Year 2011 and the cost per flight hour

decreased six percent in the same period. To keep these improvements on track, a readiness OSIP was introduced into the Fiscal Year 2012 President's Budget. This OSIP provides a stable source of crucial modification funding as the Ospreys continue to improve readiness and reduce operating cost.

CH-53K Heavy Lift Replacement Program

The Fiscal Year 2014 President's Budget requests $503.2 million RDT&E,N to continue Engineering and Manufacturing Development (EMD) of the CH-53K. Since completing its Critical Design Review in July 2010, the CH-53K program commenced system capability and manufacturing process demonstration, and started fabrication of the first five test aircraft (one ground test aircraft, four flight test aircraft). During Fiscal Year 2014, the program will assemble and check-out the first of these test articles needed to support developmental test activities and flight test of the CH-53K.

The new-build CH-53K will fulfill land and sea based heavy-lift requirements not resident in any of today's platforms, and contribute directly to the increased agility, lethality, and presence of joint task forces and MAGTFs. The CH-53K will transport 27,000 pounds of external cargo out to a range of 110 nautical miles, nearly tripling the CH-53E's lift capability under similar environmental conditions, while fitting into the same shipboard footprint. The CH-53K will also provide unparalleled lift capability under high altitude, and hot weather conditions, greatly expanding the commander's operational reach.

Maintainability and reliability enhancements of the CH-53K will improve aircraft availability and operational effectiveness over the current CH-53E with improved cost effectiveness. Additionally, survivability and force protection enhancements will dramatically increase protection for both aircrew and passengers, thereby broadening the depth and breadth of heavy lift operational support to the joint task force and MAGTF commander. Expeditionary heavy-lift capabilities will continue to be critical to successful land- and sea-based operations in future anti-access, area-denial environments, enabling sea-basing and the joint operating concepts of force application and focused logistics.

The CH-53E aircraft currently in service continue to meet unprecedented operational demand but are approaching 30 years of service and growing ever more challenging to maintain. To keep the "Echo" viable until the "Kilo" enters service, the Fiscal Year 2014 President's Budget requests $67.7 million APN for both near and mid-term enhancements. These modifications include Condition Based Maintenance software upgrades, T-64 Engine Reliability Improvement Program kits, Critical Survivability Upgrade, Smart Multifunctional Color Display and sustainment efforts such as Kapton wiring replacement and improved Engine Nacelles.

ATTACK AND UTILITY AIRCRAFT

UH-1Y // AH-1Z

The Fiscal Year 2014 President's Budget requests $47.1 million in RDT&E, N for continued product improvements and $821.0 million in APN for 25 H-1 Upgrade aircraft: 15 UH-1Y and 10 AH-1Z aircraft. The program is a key modernization effort designed to resolve existing safety deficiencies, enhance operational effectiveness, and extend the service-life of both aircraft. The 85 percent commonality between the UH-1Y and AH-1Z will significantly reduce lifecycle costs and the logistical footprint, while increasing the maintainability and deployability of both aircraft. The program will provide the Marine Corps with 349 H-1 aircraft through a combination of new production and a limited quantity of remanufacturing.

The H-1 Upgrades Program is replacing the Marine Corps' UH-1N and AH-1W helicopters with state-of-the-art UH-1Y "Yankee" and AH-1Z "Zulu" aircraft. The new aircraft are fielded with integrated glass cockpits, world-class sensors, and advanced helmet-mounted sight and display systems. The future growth plan includes a digitally-aided, close air support system designed to tie these airframes, their sensors, and their weapons systems together with ground combat forces and capable DoD aircraft. Low-cost weapons such as the Advanced Precision Kill Weapon System II (APKWS II) will increase lethality while reducing collateral damage.

The UH-1Y aircraft achieved IOC in August 2008 and FRP in September 2008. The "Yankee Forward" procurement strategy prioritized UH-1Y production in order to replace the under-powered UH-1N fleet as quickly as possible. The AH-1Z completed its operational evaluation (OT-II3C) in June 2010, and received approval for FRP in November 2010. The AH-1Z achieved IOC in February 2011. As of March 30, 2013, 104 aircraft (74 UH-1Ys and 30 AH-1Zs) have been delivered to the Fleet Marine Force; an additional 77 aircraft are on contract and in production. Lots 1- 6 aircraft deliveries are complete. The last two aircraft from Lot 7 (the first two AH-1Z Build New (ZBN) aircraft) will deliver in Fiscal Year 2014. Lot 8 deliveries are progressing on or ahead of schedule. All aircraft deliveries since Lot 3 have been completed ahead of the contracted schedule date by an average of 33 days.

In December 2011, to address existing attack helicopter shortfalls, the Marine Corps decided to pursue an all AH-1Z Build New (ZBN) procurement strategy and leave AH-1W airframes in the inventory rather than removing them from service to begin the remanufacture process. The transition to an all ZBN airframe strategy began with Lot 10 (Fiscal Year 2013) as reflected in the current USMC program of record. The previous mix of 131 remanufactured AH-1Z and 58 ZBN aircraft has been revised to delivery of 37 remanufactured AH-1Z and 152 ZBN aircraft. The total aircraft procurement numbers remain the same at 160 UH-1Ys and 189 AH-1Zs for a total of 349 aircraft.

EXECUTIVE SUPPORT AIRCRAFT

VH-3D/VH-60N Executive Helicopter Series

The VH-3D and VH-60N are safely performing the Executive Lift mission worldwide. As these aircraft continue to provide seamless vertical lift for the President and Vice President of the United States, the Department is working closely with HMX-1 and industry to sustain these aircraft until a Presidential Replacement platform is fielded. The Fiscal Year 2014 President's Budget requests an investment of $85.7 million to continue programs that will ensure the in-service Presidential fleet remains a safe and reliable platform. Ongoing efforts include the Cockpit Upgrade Program for the VH-60N, Communications Suite Upgrade, Structural Enhancement Program and the Obsolescence Management Program. The VH-3D Cockpit Upgrade Program, a Fiscal Year 2012 new start program, will provide a common cockpit with the VH-60N and address a number of obsolescence issues. Continued investments in the in-service fleet will ensure continued safe and reliable execution of the Executive Lift mission. These technology updates for legacy platforms will be directly leveraged for the benefit of the ensuing replacement program (VXX).

VXX Presidential Helicopter Replacement Aircraft

The Fiscal Year 2014 President's Budget request includes $94.2 million for continuing efforts on VXX, the follow-on program for Presidential helicopters.

Significant progress has been made in the past year and the program requirements and acquisition strategy have now been approved. The acquisition approach includes full and open competition for integration of mature subsystems into an air vehicle that is currently in production. This strategy will enable the program to proceed directly into the EMD phase. Contractor proposals are expected this summer for the EMD effort, along with priced options for production. The milestone B review and subsequent contract award are planned to occur during Fiscal Year 2014. The first of the planned inventory of 21 aircraft could begin fielding as early as 2020.

FIXED WING AIRCRAFT

KC-130J

The Fiscal Year 2014 President's Budget requests $166.7 million for procurement of one KC-130J's included in the first year of the MYP request and continued product improvements of $47.6 million. Targeted improvements include air-to-air refueling hose reel reliability, aircraft survivability through advanced electronic countermeasure

modernization, and obsolescence upgrades to the Harvest HAWK ISR/Weapon Mission Kit.

Fielded throughout our active force, the USMC declared IOC for the KC-130J transition in 2005; bringing increased capability, performance and survivability with lower operating and sustainment costs to the MAGTF. Continuously forward deployed in support of Operations IRAQI FREEDOM and ENDURING FREEDOM (OIF/OEF) since 2005, the KC-130J continues to deliver Marines, fuel and cargo whenever and wherever needed. In 2012 the KC-130J remained in high demand, providing tactical air-to-air refueling, assault support, close air support and Multi-sensor Imagery Reconnaissance (MIR) in support of OEF, Special Purpose MAGTF Afghanistan, and deployed MEUs.

Continuously deployed in support of OEF since fielding in 2010, the bolt-on/bolt-off Harvest HAWK ISR/Weapon Mission Kit for the KC-130J continues to provide the extended MIR and CAS required by Marine forces in Afghanistan. Three mission kits have been fielded to date, with three more kits on contract to deliver in Fiscal Year 2014. Funding included in the Fiscal Year 2014 Budget request will be used to maintain operational relevance of this mission system through Hellfire P4 compatibility and the addition of a full motion video transmit and receive capability.

The USMC has procured 48 KC-130Js, 31 aircraft short of the 79 aircraft program of record. The three aircraft included in the FY 2013 budget will complete the Active Component (AC) requirement of 51 aircraft. The Marine Corps will use the AC backup aircraft to accelerate the Reserve Component (RC) transition from the legacy KC-130T aircraft to the more capable, more efficient, KC-130J beginning in Fiscal Year 2015. Aircraft requested in the Fiscal Year 2014 President's Budget request will further accelerate the RC transition. Delays in procurement would force the Marine Corps to sustain the KC-130T aircraft longer than planned at an increased cost.

P-8A Poseidon

The Fiscal Year 2014 President's Budget requests $317 million in RDT&E, N for integrated development and associated testing and $3.503 billion for procurement of 16 FRP P-8A Poseidon aircraft which are scheduled to begin delivery in May 2016. APN funding supports Advanced Procurement (AP) for the subsequent FRP procurement lot. The P-8A Poseidon recapitalizes the maritime Patrol Anti-submarine Warfare (ASW), Anti-Surface Warfare (ASUW) and armed ISR capability currently resident in the P-3C Orion. The P-8A combines the proven reliability of the commercial 737 airframe and avionics that enables integration of modern sensors and robust communications. The program is on track for IOC in late 2013 when the first squadron will have completed transition and is ready to deploy. The P-8A program is meeting all cost, schedule and performance parameters in accordance with the approved Acquisition Program Baseline.

In August 2010, the P-8A program obtained Milestone C approval, authorizing the Navy to proceed with procurement of LRIP Lots 1, 2, and 3 for six aircraft in Fiscal Year 2010, seven aircraft in Fiscal Year 2011, and eleven aircraft in Fiscal Year 2012. The Navy has awarded contracts for all LRIP aircraft. All six LRIP Lot 1 aircraft have been delivered to Patrol Squadron 30 at Naval Air Station, Jacksonville, FL, and LRIP Lot 2 deliveries are now commencing. The first Fleet squadron (VP-16) has completed P-3C to P-8A transition training, and the second squadron transition (VP-5) is underway and on-track. Patrol Squadron 16 continues preparations for the first operational P-8A deployment in December 2013. The P-8A SDD effort has completed Initial Operational Test and Evaluation (IOT&E), delivered software updates to address previously identified deficiencies, and initiated testing of these software updates in preparation for a first quarter Fiscal Year 2014 Follow-On Test and Evaluation (FOT&E) period. Results of Operational Testing (OT) are being analyzed in preparation for release of the Beyond LRIP report and subsequent FRP decision review. The production configuration has been shown to be mature and stable throughout the Integrated Test and IOT&E phases. The program has completed proposal evaluations and expects to complete contract negotiations in time to award the fourth production lot in June 2013. As fleet deliveries of the Increment 1 configuration accelerate, integration and testing of P-8A Increment 2 capability upgrades continue. In particular, Phase I of Increment 2 Multi-Static Active Coherent ASW capability is on-track for flight testing in Fiscal Year 2014. Fiscal Year 2013 began prototyping and development of the more extensive P-8A Increment 3 upgrades, which expand the P-8A evolutionary acquisition strategy to deliver the next level of required P-8A capability.

P-3C Orion

In Fiscal Year 2014, $37.4 million is requested for P-3C airframe and mission systems sustainment. Over two-thirds ($26.7 million) is for wing modifications to support the Chief of Naval Operation (CNO) "P-3 Fleet Response Plan", as well as supporting EP-3E requirements, which are executed within the P-3 Airframe Sustainment Program. The legacy P-3C fleet continues to provide ASW, ASUW, and ISR support for Joint and Naval operations worldwide. The P-3C is being sustained to maintain warfighting capability and capacity until completion of P-8A transition in Fiscal Year 2018.

The P-3C aircraft is well beyond the original planned fatigue life of 7,500 hours for critical components, with an average airframe usage of over 18,000 hours. Since February 2005, 174 aircraft grounding bulletins have impacted 131 P-3 aircraft. In December 2007, the Navy's ongoing RDT&E funded P-3 Fatigue Life Management Program determined that in addition to existing structural fatigue issues associated with the forward lower wing section (Zones 2-4), the lower aft wing surface (Zone 5) of the P-3 aircraft showed fatigue damage beyond acceptable risk resulting in the grounding of 39 P-3 aircraft. As of February 2013, a total of 88 aircraft have been grounded for Zone 5 fatigue. P-3 groundings due to known material fatigue will continue for the remainder of

the P-3 program, and unknown fatigue issues will continue to present persistent risk until P-8A transition is complete. A return to pre-December 2007 aircraft availability numbers was achieved in December 2010 and 85 P-3C mission aircraft are available today. Preserving funding for Zone 5 and outer wing installations is critical to sustaining the minimum number of P-3Cs until replaced by the P-8A. The Navy will continue to closely manage the service life of the P-3C through transition to the P-8A Poseidon.

EP-3 Aries Replacement/Sustainment

In Fiscal Year 2014, the President's Budget request is $55.9 million in APN for EP-3 Aries Replacement/Sustainment. The APN request supports the procurement and installation of multi-intelligence capabilities and modifications necessary to meet emergent classified requirements. These efforts are necessary to keep the platform viable until the EP-3 capabilities are recapitalized.

The EP-3E Aries is the Navy's premier manned Airborne Intelligence, Surveillance, Reconnaissance, and Targeting (AISR&T) platform. The Joint Airborne SIGINT Common Configuration includes Signals Intelligence (SIGINT) spiral upgrades. These upgrades, in conjunction with Secretary of Defense and the ISR Task Force (ISR TF) surge efforts, are fielding a robust Multi-Intelligence (INT) capability inside the Future Years Defense Program. Multi-INT sensors, robust communication, and data links employed by the flexible and dependable P-3 air vehicle help ensure effective AISR&T support to conventional and non-conventional warfare across the current Range of Military Operations. Operating around the globe, the EP-3E continues to satisfy critical Joint, Combatant Commander, and Service airborne ISR priorities and requirements.

The Navy is in the process of developing the AISR&T Family of Systems construct to recapitalize the EP-3 AISR&T capabilities within existing Program of Record platforms: MQ-4C Triton, VTUAV, P-8A, H-60, and E-2D. The strategy has been further refined to focus on module systems and payloads required for the Navy to conduct AISR&T on a variety of vehicles, providing Combatant Commanders with scalable capability and capacity. The inclusive full-spectrum approach of the Navy's sea and shore-based manned and unmanned platforms aligns with the CNO's priorities.

UNMANNED AERIAL SYSTEMS (UASs)

MQ-4C Triton UAS

The Fiscal Year 2014 President's Budget postpones the MQ-4C Triton (formerly known as BAMS for Broad Area Maritime Surveillance) Low Rate Initial Production (LRIP) until Fiscal Year 2015. The Fiscal Year 2014 President's Budget requests $375.2 million in RDT&E,N to continue Triton SDD; $52.0 million APN for procurement of long-lead

materials for the first lot of LRIP aircraft; and $79.2 million in MILCON to refurbish a maintenance hangar at NAS Point Mugu, CA, as well as a Forward Operating Base and hangar for Pacific operations at Andersen AFB, Guam. Though LRIP is delayed one year, Triton will start establishing five globally-distributed, persistent maritime ISR orbits by providing operational ISR beginning in Fiscal Year 2016. The program is scheduled to perform First Flight this quarter, commencing a rigorous integrated flight test program, to support Milestone C planned for Fiscal Year 2015. The MQ-4C Triton is a key component of the Navy Maritime Patrol Reconnaissance Force. Its persistent sensor dwell, combined with networked sensors, will enable it to effectively meet ISR requirements in support of the Navy Maritime Strategy.

The Navy procured two Air Force (USAF) Global Hawk Block 10 UASs in Fiscal Year 2004 for demonstration purposes and to perform risk reduction activities for the Triton UAS Program. In April 2011, Navy accepted three additional Block 10 aircraft from the USAF to be utilized as spare parts assets. These aircraft, known as BAMS-Demonstrators, have been deployed to CENTCOMs AOR for over four years. These demonstration assets are adequate to cover all Navy needs through the transition to Triton in Fiscal Year 2016.

MQ-8B Vertical Takeoff and Landing Unmanned Aerial Vehicle (VTUAV) and Associated Rapid Deployment Capability (RDC) Efforts

The MQ-8 Fire Scout is an autonomous vertical takeoff and landing tactical UAV (VTUAV) designed to operate from all air-capable ships, carry modular mission payloads, and operate using the Tactical Control System and Line-Of-Sight Tactical Common Data Link. The Fiscal Year 2014 President's Budget requests $48.7 million of RDT&E, N to continue development of an endurance upgrade (MQ-8C), to continue payload and LCS integration with the MQ-8B, and integrate radar on the MQ-8B. The request includes $76.6 million of APN for the production of one Fire Scout MQ-8C aircraft, multiple Ship Control Stations, and initial spares to support the MQ-8C Rapid Deployment Capability. Procurement of ship-based control stations is aligned to both the LCS schedule and the outfitting of other ships to support Special Operations Forces (SOF) missions. Commonality of avionics, software, and payloads between the MQ-8B and MQ-8C has been maximized. The MQ-8B and MQ-8C use the same ship-based control station and other ship ancillary equipment.

Fire Scout was deployed to Afghanistan in April 2011, and has amassed more than 4,300 dedicated ISR flight hours in support of U. S. and coalition forces. Successful deployments aboard USS SIMPSON, USS KLAKRING, USS BRADLEY, and USS SAMUEL B. ROBERTS have supported SOF and Navy operations since 2012. Fire Scout has flown more than 1,500 hours from frigates, performing hundreds of autonomous ship board take-offs and landings. The Fire Scout program will continue to support integration and testing for LCS-based mission modules.

These unforeseen early deployments and high operational temp, combined with previously undiscovered and corrected reliability issues with the MQ-8B, have caused delays in Initial Operational Test and Evaluation (IOT&E). Acquisition planning, which leverages investments in VTUAV rapid deployment capabilities, is in work to ensure Fire Scout will continue to support the LCS mission packages.

Unmanned Combat Air System Carrier Demonstration (UCAS-D)

The Fiscal Year 2014 President's Budget requests $21 million in RDT&E, N to complete the Navy UCAS-D efforts to research a tactical jet-sized, carrier-suitable, low-observable-relevant, unmanned aircraft system. The Fiscal Year 2014 Budget request is to complete the autonomous aerial refueling (AAR) demonstration with surrogate aircraft, the Navy UCAS Capstone artifacts to capture all lessons learned, disposition of test articles, test beds, intellectual properties, and contract close-out efforts. The UCAS-D program will demonstrate UAS carrier operations and autonomous AAR, and mature required technologies to Technology Readiness Level six (TRL-6) in support of potential follow on unmanned acquisition programs. The aviation/ship integration portion of the program is meeting all technical objectives, with surrogate aircraft flights in the vicinity of aircraft carriers completed in 2009 and 2010. Since then, the X-47B has completed envelope expansion testing, land-based carrier control area and catapult testing, and is now completing the land-based approach and trap build-up to conduct carrier qualification testing, to include catapult and arrested landings, in the summer 2013. The latest AAR testing period was completed in January 2012 utilizing a manned surrogate aircraft, and AAR development and testing will continue throughout 2013. The program is constrained by USN CVN schedules and planning. Currently the program is working closely with Navy leadership to reduce risk and align program and CVN operational schedules to best accommodate demonstration objectives.

Unmanned Carrier Launched Airborne Surveillance and Strike (UCLASS) System

The Fiscal Year 2014 President's Budget requests $146.7 million in RDT&E, N for UCLASS System efforts. The UCLASS system will enhance carrier capability and versatility for the Joint Forces commander through integration of a persistent and mission flexible unmanned aircraft into the Carrier Air Wing no later than Fiscal Year 2020. The Joint Requirements Oversight Council issued a memorandum in December of 2013, reconfirming the need for an affordable, adaptable carrier-based ISR platform with precision strike capability. The UCLASS system will provide persistent ISR with precision strike capabilities for missions ranging from permissive counter-terrorism operations, to missions in low-end contested environments. The UCLASS system will also provide enabling capabilities for high-end denied operations from the carrier strike group. It will be sustainable onboard an aircraft carrier, as well as ashore, and will be designed to minimize the logistics footprint of the current carrier air wing. The UCLASS system will have the ability to pass command and control information along with sensor

data to other aircraft, naval vessels, and ground forces. Sensor data will be transmitted, in either raw or processed forms, at appropriate classification levels, to exploitation nodes afloat and ashore. Interfaces will be provided with existing ship and land-based command and control systems, including ISR tasking, as well as processing, exploitation, and dissemination systems. The UCLASS system will achieve these capabilities through the use of a carrier-suitable, semi-autonomous, unmanned Air Segment, a Control System and Connectivity Segment, and a Carrier Segment.

Tactical Control Station (TCS)

The Fiscal Year 2014 President's Budget requests $8.4 million in RDT&E, N for the Tactical Control Station (TCS). TCS provides a standards compliant, open architecture, with scalable command and control capabilities for the VTUAV system. In Fiscal Year 2014, TCS will continue to transition to the Linux operating system software to a technology refreshed control station, enhance the VTUAV Ocean Surveillance Initiative for ships Automatic Identification System and sensor track generation, and develop an interface to an ISR Process Exploit Dissemination (PED) system. The Linux operating system conversion overcomes hardware obsolescence issues with the Solaris based control stations and provides lower cost software updates using DoD common application software. In addition, the TCS Linux upgrade will enhance collaboration with the Navy's future UAS common control station.

Cargo Unmanned Aerial System (CUAS)

The Fiscal Year 2014 President's Budget is requesting funding for continued CUAS deployment in Fiscal Year 2014. CUAS operations started in November 2011, and have delivered over three million pounds of cargo in 1,300 flight hours to date. The CUAS is meeting rapid development capability goals and is also supporting the development of UAS concept of operations (CONOPS).

The purpose of the Cargo UAS capability is to develop CONOPS to "get trucks off the roads" in combat zones, minimizing the improvised explosive device threat to logistics convoys. The CUAS provides a low risk, persistent, 24-hour capability for dispersed forces on the battlefield. This capability mitigates the requirement for manned ground vehicles to resupply forces in remote locations. The CUAS also augments manned aviation assault support assets and airdrop methods when the weather, terrain, and enemy pose an unsuitable level of risk. CONOPS expansion in 2012 included autonomous cargo delivery to a way point and cargo retrograde from spokes back to the main base.

RQ-21A Small Tactical Unmanned Aircraft System (STUAS)

The Fiscal Year 2014 President's Budget requests $16.1 million in RDT&E, N ($5.0 million USN, $11.1 million USMC) and $66.6 million in PMC for five RQ-21A systems

which include 25 air vehicles that will address Marine Corps ISR capability shortfalls currently supported by service contracts. This Group 3 UAS will provide persistent ship and land-based ISR support for tactical-level maneuver decisions and unit level force defense and force protection missions. Milestone B and contract award occurred in July 2010. Milestone C and LRIP decisions are scheduled for the third quarter of Fiscal Year 2013. RQ-21A will enter into IOT&E no later than the fourth quarter of Fiscal Year 2014.

RQ-7B Marine Corps Tactical UAS (MCTUAS)

The Fiscal Year 2014 President's Budget requests $0.7 million in RDT&E, N to continue development efforts and government engineering support and $26.4 million in APN to support the continuation of congressionally mandated Tactical Control Data Link (TCDL) retrofits for RQ-7B Shadow units. USMC Shadow squadrons have seen continuous service in Iraq and Afghanistan since 2007. The Marine Corps received its 13th RQ-7B Shadow system in first quarter Fiscal Year 2012, completing baseline fielding for four squadrons. The USMC Shadow systems are identical to Army Shadow systems, bringing interoperability and commonality between Army and Marine Corps unmanned aircraft units operating side-by-side in Afghanistan. An 18-month initiative to weaponize two USMC RQ-7B systems with a laser-guided projectile was started in the first quarter of Fiscal Year 2012.

STRIKE WEAPONS PROGRAMS

Tactical Tomahawk BLK IV Cruise Missile Program

The Fiscal Year 2014 President's Budget requests $312.5 million in Weapons Procurement, Navy (WPN) for procurement of an additional 196 BLK IV weapons and associated support, $26.1 million in OPN for the Tactical Tomahawk Weapon Control System (TTWCS), and $4.5 million in RDT&E for capability updates of the weapon system. WPN resources will be for the continued procurement of this versatile, combat-proven, deep-strike weapon system in order to meet surface and subsurface ship-fill load-outs and combat requirements. OPN resources will address the resolution of TTWCS obsolescence and interoperability mandates. RDT&E will be used to initiate engineering efforts for Image Navigation (INAV), which provides an upgrade to reduce mission planning time-lines and reduce reliance upon GPS navigation.

Tomahawk Theater Mission Planning Center (TMPC)

TMPC is the mission planning segment of the Tomahawk Weapon System. Under the umbrella of TMPC, the Tomahawk Command and Control System (TC2S) develops and

distributes strike missions for the Tomahawk Missile; provides for precision strike planning, execution, coordination, control and reporting; and enables Maritime Component Commanders the capability to plan and/or modify conventional Tomahawk Land-Attack Missile missions. TC2S optimizes all aspects of the Tomahawk missile technology to successfully engage a target. TC2S is a Mission Assurance Category 1 system vital to operational readiness and mission effectiveness of deployed and contingency forces for content and timeliness. The Fiscal Year 2014 President's Budget requests $7.9M in RDT&E and $45.5M OPN for continued TMPC system upgrades and support. These planned upgrades support integration, modernization and interoperability efforts necessary to keep pace with changes, retain capability and exploit capabilities of the Tomahawk missile and external organizations to include providing an alternate GPS denied navigation system (ImageNav), rewrite/update of Tomahawk Planning System's unsupported legacy software code, and technology refreshes to reduce vulnerability to cyber attacks. These resources are critical for the support of over 180 TC2S operational sites: Cruise Missile Support Activities, Tomahawk Strike and Mission Planning Cells (5^{th}, 6^{th}, 7^{th} Fleet), Carrier Strike Groups, Command and Control Nodes, Surface and Subsurface Firing Units and Labs/Training Classrooms.

Sidewinder Air-Intercept Missile (AIM-9X)

The Fiscal Year 2014 President's Budget requests $39.2 million in RDT&E and $117.2 million in WPN for this joint DoN and USAF program. RDT&E will be applied toward AIM-9X/BLK II developmental/operational tests and requirements definition for Joint Staff directed Insensitive Munitions requirements, as well as initial AIM-9X/Block III development activities. WPN will be for production of a combined 225 All-Up-Rounds and Captive Air Training Missiles and missile-related hardware. The AIM-9X/BLK II Sidewinder missile is the newest in the Sidewinder family and is the only short-range infrared air-to-air missile integrated on USN/USMC/USAF strike-fighter aircraft. This fifth-generation weapon incorporates high off-boresight acquisition capability and increased seeker sensitivity through an imaging infrared focal plane array seeker with advanced guidance processing for improved target acquisition; a data link; and advanced thrust vectoring capability to achieve superior maneuverability and increase the probability of intercept of adversary aircraft.

Advanced Medium-Range Air-to-Air Missile (AMRAAM/AIM-120)

The Fiscal Year 2014 President's Budget requests $2.6 million in RDT&E and $95.4 million in WPN for production of 54 tactical missiles and missile-related hardware. AMRAAM is a joint Navy and Air Force missile that counters existing aircraft and cruise-missile threats. It uses advanced electronic attack capabilities at both high and low altitudes, and can engage from beyond visual range as well as within visual range. AMRAAM provides an air-to-air first look, first shot, first kill capability, while working within a networked environment in support of the Navy's Theater Air and Missile Defense Mission Area. Prior missile production delays due to rocket-motor anomalies

are being addressed. We now anticipate AIM-120D production will recover for both the Air Force and the DoN in the mid-2014 timeframe.

Small Diameter Bomb II (SDB II)

The Fiscal Year 2014 President's Budget requests $46 million in RDT&E for the continued development of this joint DoN and USAF (lead) weapon and bomb-rack program. SDB II provides an adverse weather, day or night standoff capability against mobile, moving, and fixed targets, and enables target prosecution while minimizing collateral damage. SDB II will be integrated into the internal carriage of both the Navy (F-35C) and Marine Corps (F-35B) variants of the Joint Strike Fighter. The Joint Miniature Munitions Bomb Rack Unit (JMM BRU) BRU-61A/A is being developed to meet the operational and environmental integration requirements for internal bay carriage of the SDB II in the F-35B and F-35C. SDB II entered Milestone B in August 2010 and successfully completed its Critical Design Review in January 2011. JMM BRU will enter Technology Development in July 2013.

Joint Standoff Weapon (JSOW)

The Fiscal Year 2014 President's Budget requests $0.4 million in RDT&E for continued JSOW-C-1 test activity and $136.8 million in WPN for production of 328 All-Up Rounds. The JSOW-C-1 variant fills a critical gap by adding maritime moving-target capability to the highly successful baseline JSOW C program. JSOW C-1 targeting is achieved via a data-link and guidance software improvements.

Advanced Anti-Radiation Guided Missile (AARGM)

The Fiscal Year 2014 President's Budget requests $12.2 million of RDT&E for the development of Telemetry and flight termination sections and the Block 1 follow-on development and test program and $111.9 million of WPN for production of 143 All-Up-Rounds and Captive Training Missiles. The AARGM cooperative program with Italy transforms the legacy High-Speed Anti-Radiation Missile (HARM) into an affordable, lethal, and flexible time-sensitive strike weapon system for conducting Destruction of Enemy Air Defense (DEAD) missions. AARGM adds multi-spectral targeting capability and targeting geospecificity to its supersonic fly-out to destroy sophisticated enemy air defenses and expand upon the HARM target set. Initial Operational Capability (IOC) on the F/A-18C/D aircraft was reached in July 2012 and forward deployed to U.S. Pacific Command (PACOM). The program was approved for Full Rate Production (FRP) on August 20, 2012 and the first FRP contract was awarded on September 10, 2012.

Hellfire Weapon System

The Fiscal Year 2014 President's Budget requests $33.9 million in WPN for 363 Hellfire All-Up-Rounds and training assets, to provide maximum operational flexibility to our warfighters. The Hellfire is an Army led program. The DoN continues to support legacy Hellfire weapons as well as procure and support technology enhancements that will provide the warfighter the flexibility to prosecute new and emerging threats. The Hellfire missile continues to be a priority weapon for current military operations as it enables our warfighters to prosecute Military Operations on Urban Terrain (MOUT) and other high valued targets of opportunity.

Advanced Precision Kill Weapon System II (APKWS II)

The Fiscal Year 2014 President's Budget requests $32.722 million in PAN&MC, for procurement of 1,103 APKWS II Precision Guidance Kits. Milestone C was achieved in April 2010. IOT&E was successfully completed in January 2012; declaring IOC in March 2012. The program received a favorable Full Rate Production (FRP) decision in March 2012 and the FRP contract was awarded in July 2012. APKWS II provides an unprecedented precision guidance capability to DoN unguided rocket inventories improving accuracy and minimizing collateral damage. Program production is on schedule to meet the needs of our warfighters in today's theaters of operations.

Joint Air-to-Ground Missile (JAGM)

The FY 2014 President's Budget requests $5.5 million in RDT&E for continued extended Technology Development (TD) of JAGM. JAGM is a Joint Department of the Army/Department of the Navy pre-Major Defense Acquisition Program with the Army designated as the lead service. The Government utilized full and open competition to initiate the TD phase of the JAGM program. In the TD Phase, the two contractors completed a Preliminary Design Review (PDR), wind tunnel and ground testing, and flight testing in support of initial Navy platform integration activities. The originally planned 27-month TD phase is complete, USD(AT&L) provided approval to extend the JAGM TD Phase, and the Joint Chiefs of Staff validated the Department of the Navy's AH-1Z Cobra aircraft as a threshold platform for the JAGM program. The Services recognize that Hellfire capability and inventory issues need to be addressed and the requirement for JAGM remains valid. The extended TD Phase addresses affordability concerns with the JAGM missile, and discussions continue between the DoN, the Army and OSD on the path forward.

Responses to the Specific Questions
From the Tactical Air and Land Forces Subcommittee

Discussion of the validated 1,240 DoN Aircraft Strike-Fighter force structure inventory DoN Requirement and the projected peak inventory shortfall through 2025.

The 1,240 aircraft strike-fighter force is the projected DoN inventory needed to support the anticipated operational demand through the 2024 timeframe. The Navy inventory requirement of 820 aircraft supports 40 active duty Strike Fighter Squadrons composed of 440 aircraft, and two reserve squadrons with 20 aircraft. In order to maintain the operational aircraft, support aircraft are required for aviator training, flight test, attrition reserve and the depot pipeline. This inventory projection is estimated based on historical averages and assumes 100 percent squadron entitlement (no productive ratio reductions), service life of F/A-18E/F aircraft is 9,000 flight hours, and F/A-18A-D aircraft are extended to 9,000 flight hours (with 150 aircraft reaching 10,000 flight hours). This inventory projection does not account for potential future efficiencies gained from TACAIR Integration (TAI). Both services remain committed to TAI.

The Marine Corps TACAIR requirement is 420 aircraft. To meet operational demands, commitments, and force structure requirements the Marine Corps will have 18 active and two reserve squadrons. Integral to our current force structure reductions, our tactical aviation squadrons were restructured to optimize the support they provide to the Marine Air Ground Task Force. The Marines increased their flexibility and responsiveness by increasing the number of 16 aircraft squadrons (from seven to nine) thereby enabling tactical flexibility for simultaneous expeditionary afloat and ashore operations with current and future employment models. A total of 254 aircraft: nine active squadrons of 16 F-35B aircraft, five active squadrons of 10 F-35B aircraft, four active squadrons of 10 F-35C aircraft, two reserve squadrons of 10 F-35B aircraft, two training squadrons of 25 F-35B aircraft, and 10 F-35C aircraft supplementary to USN training squadrons. Additionally, there are six F-35B aircraft for test and evaluation, and 70 (58 F-35B, 12 F-35C) Backup Inventory Aircraft (BAI) and 30 (25 F-35B, 5 F-35C) Attrition Replacement (AR) aircraft. The inventory requirement is based on detailed projected and historical operational analysis, optimization of the Joint Strike Fighter (JSF) multi-mission capabilities, complete legacy TACAIR replacement by the F-35, and expected improvements in reliability, maintainability and survivability.

The DoN TACAIR shortfall is the amount of aircraft by which operational requirement (force structure demand) exceeds the aircraft available for tasking. To keep pace with the issue and provide analytical rigor to decision makers, DoN utilizes the Inventory Forecasting Tool (IFT) to project the combined effects of transition plans, attrition, and pipeline requirements on total strike fighter aircraft inventory. The IFT is updated in conjunction with annual budget submissions to provide a forecast of strike fighter

inventory compared to requirements. The Fiscal Year 2014 President's Budget Strike Fighter Shortfall is predicted to peak at 18 in 2023. The reduction in shortfall, from last year, is a result of a decrease in F/A-18E/F utilization rates and flight extensions for F/A-18A-D aircraft after successful completion of the High Flight Hour (HFH) inspections and repair, and the addition of 11 congressionally added F/A-18E/F aircraft in 2013.

The Strike Fighter Shortfall is projected to fluctuate throughout the next 20 years. To date, the DoN has been able to mitigate its shortfall with the successful execution of its Legacy F/A-18A-D HFH inspection and repair program, and a reduction in utilization rates across the F/A-18A-F fleet. The continued efforts of the Navy/Marine Corps team will further define necessary actions required to manage aging F/A-18 A-D aircraft, address discovery of potentially greater than expected fatigue and corrosion, and ensure required availability of aircraft until JSF Fleet Introduction.

The USN and USMC continue to adjust transition plans as F-35 procurement ramps are flattened. The Marine Corps is taking advantage of higher service life remaining in its AV-8B inventory by delaying the majority of their transitions to the end of the transition plan. This will reduce the demand for F/A-18A-D in the later years. Sustainment and relevancy funding will be imperative to maintain the requisite operational capability of the AV-8B throughout the 2020's.

Discussion of the service life assessment program being conducted to evaluate the feasibility of extending the service life of the F/A-18E/F to 9,000 and 12,000 flight hours and a description of the funding currently contained in the FY 2013-2016 FYDP for such program.

The F/A-18E/Fs have flown approximately 30 percent of the total flight hours available at the 6,000 hour limit and this will not be adequate to meet operational commitments out to 2035. As a result, the three-phased F/A-18E/F Service Life Assessment Program (SLAP) commenced in 2008 will last through 2018. Its goal is to analyze fleet actual usage versus structural test data to identify the feasibility of extending F/A-18E/F service life from 6,000 flight hours to 9,000 flight hours via a follow on Service Life Extension Program (SLEP). The Fiscal Year 2014 President's Budget includes a request for $104.8 million RDT&E (Fiscal Years 2014-2018) to support the F/A-18E/F SLAP requirement. One of the F/A-18E/F SLAP goals is to define the necessary inspections and modifications required to achieve 9,000 flight hours. Current SLAP methods would allow feasibility studies to assess an F/A-18E/F service life to 12,000 flight hours. Other SLAP goals relate to increasing total landings, arrested landings and catapults beyond currently defined life limits. Phase A, which developed methodologies to be used in assessing airframe, flight controls, and subsystems, is complete. Phase B constitutes a majority of the SLAP analysis activities and as analysis is completed will feed into SLEP extension activities.

The F/A-18E/F SLAP is incorporating lessons learned from the F/A-18A-D analysis. The F/A-18E/F SLAP was started sooner in its life cycle than the F/A-18A-D SLAP, and encompasses the entire weapon system vice just the airframe. The F/A-18E/F SLAP also has the advantage of having a third lifetime of test cycles completed on certain test articles providing detailed information on high fatigue areas early in the program. The Service Life Management Program (SLMP) philosophy has also been applied to the F/A-18E/F fleet much sooner in its lifecycle than the F/A-18A-D, which will optimize Fatigue Life Expended (FLE), flight hours and total landings so that they all converge at approximately the same time, which should align aircraft service life with fleet requirements.

Provide an update on the three phases of legacy F/A-18A-D airframe, major subsystems and avionics service-life assessment and extension programs, and a discussion regarding the estimated costs, implementation risks, schedule, and depot capability in executing these programs.

The F/A-18A-D SLAP showed that the airframe can fly to 10,000 hours with significant modifications and inspections to maintain airworthiness. The inspection results to date have matched the previously briefed models. The F/A-18A-D aircraft have been kept operationally relevant through upgrades.

SLEP goals of 10,000 flight hours will likely involve wholesale replacement of aircraft structure (center barrel, inner wings, etc.) as well as repairs and inspections. Squadron commanders manage each aircraft's service life (flight hours, wing root fatigue, landings, cats/traps) to ensure full utilization of available service life. The progress of the SLMP is reviewed periodically at the three-star level via the Naval Aviation Enterprise (NAE) process.

The F/A-18A-D SLEP Fiscal Year 2014 requirement is funded. The SLEP cost estimates have not changed from previous years. The F/A-18A-D SLEP effort has utilized a phased approach since inception. This approach addresses the most critical airframe requirements first to ensure timely fielding of priority inspections and modifications. This approach reduces both airworthiness and cost risks and allows for future program trade space to mitigate potential program-wide delays.

To meet fleet requirements prior to the completion of SLEP Phases A-C the F/A-18A-D airframe required an HFH inspection designed to extend the service life beyond 8, 000 FHs. HFH inspections have been ongoing for four years. The HFH inspection has been and continues to be a necessary effort to keep the aging F/A-18 A-D fleet flying and to meet resourcing requirements as aircraft reach 8,000 hours. The HFH suite continues to be revised as a result of completed SLAP and SLEP analysis. Ninety-six aircraft have completed the HFH inspection requirements and 83 are currently in work. Additional

pressures are being felt with an increasing number of F/A-18A-D aircraft reaching 8,000 flight hours and requiring extensive depot time to inspect, repair, and extend service life.

Furthermore, the Master Aviation Plan has F/A-18A-D operational commitments through 2030. To meet this plan a comprehensive SLEP is required to extend the service life of at least 150 F/A-18A-D to 10,000 flight hours. F/A-18A-D SLEP Phases A and B are complete and SLEP Phase C is now underway. Analysis thus far has identified flight safety critical areas of the airframe that will require inspections and modifications to reach service life goals of 10,000 flight hours. Installation of flight safety critical SLEP modifications began in Fiscal Year 2012 but the final SLEP configuration will not be fully determined until all the non-recurring engineering has been completed in Fiscal Year 2016. Overall, the SLEP Phase C effort is on schedule and is anticipated to complete in Fiscal Year 2016.

The DoN is conducting SLEP inspections/repairs at six locations. The six locations include: NAS Lemoore, Lemoore, CA; NAS North Island, San Diego, CA; NAS Jacksonville, Jacksonville, FL; Boeing, Cecil Field, Jacksonville, FL; MCAS Beaufort, Beaufort, SC; and NAS Oceana, Virginia Beach, VA. While less complex SLEP mods can be done at all sites, major SLEP modifications will be done concurrently during major depot events such as Center Barrel Replacement modifications or during other scheduled maintenance events. These major modifications are planned to be conducted at NAS North Island, San Diego, CA, and NAS Jacksonville, FL, Fleet Readiness Centers.

In order to maintain a tactical advantage, procurement and installation of advanced systems will continue. Joint Helmet-Mounted Cueing Systems (JHMCS), Multi-Function Information Distribution System (MIDS) and LITENING for USMC)) are being installed on selected F/A-18A-D aircraft. The Marine Corps is upgrading 56 Lot 7-9 F/A-18As and 30 Lot 10/11 F/A-18Cs to a Lot 21 avionics capability with digital communications, tactical data link, JHMCS, MIDS and LITENING.

The March 2013 Flight Hour and Inventory Report shows the average flight hours on DoN operational F/A-18 A-D models at 7,208, 6,371, 6,882, and 6,687 respectively.

Discussion on the health of the F/A-18A-F, EA-18G and AV-8B fleets.

F/A-18A-F/EA-18G

The F/A-18A-D has been a highly effective aircraft for the Navy and Marine Corps in OIF/OEF, and will continue as such in future conflicts. The F/A-18A-D aircraft have been kept operationally relevant through upgrades that include: Combined Interrogator Transponder to determine friend or foe, JHMCS, MIDS, Link-16 data-link, advanced

Integrated Defense Electronic Counter Measures, APG-73 radar and digital CAS. The aircraft was originally designed for 6,000 flight hours, and was extended to 8,000 flight hours by analysis. Extensions beyond 8,000 flight hours require inspections and/or repairs/modifications.

Although the F/A-18A-Ds are out of production, the existing inventory of 621 Navy and Marine Corps aircraft will comprise over half of Naval Aviation's TACAIR force structure through 2013. They are scheduled to remain in inventory through 2030. The SLMP continues to monitor and improve the health of the legacy F/A-18A-D fleet through analyses of TACAIR inventories and the management of usage rates at the squadron level. Eighty-two percent of the F/A-18A/D fleet has over 6,000 flight hours and 52 aircraft have flown more than 8,000 flight hours. To meet USN and USMC operational commitments out to 2026 for active squadrons, and through 2030 for USMCR, the DoN will SLEP 150 aircraft to extend their service life to 10,000 flight hours and continue HFH inspections.

The F/A-18E/F began Full Rate Production (FRP) in 2000. Eighty five percent of the total procurement objective has been delivered (482 of 563), which includes an additional 11 F/A-18E aircraft added by Congress in Public Law 113-6. Initial Operational Capability (IOC) was achieved in September 2001. The Fiscal Year 2014 President's Budget supports the 15th year of FRP. This installment includes planned procurement of EA-18G as follow-on to EA-6B (F/A-18E/F and EA-18G share a common Boeing production line).

The F/A-18E/F fleet has flown approximately 30 percent of the total flight hours available at the 6,000 hour limit and this will not be adequate to meet operational commitments out to 2035. As a result, the F/A-18E/F SLAP commenced in 2008 and will continue through 2018 with a goal of achieving 9000 hours.

Twenty-one EA-18G aircraft are planned to be procured in Fiscal Year 2014 to stand-up two additional Navy Expeditionary squadrons bringing the total to 10 carrier based squadrons and six expeditionary squadrons. Airborne Electronic Attack (AEA) Kits are procured via a separate contract. To date, 85 aircraft have been delivered; this represents 74 percent of the Inventory Objective of 135 aircraft. FRP was approved November 2009 and IOC was achieved in September 2009. The 10 carrier-based EA-18G squadrons will fulfill the USN requirements for airborne electronic attack; six expeditionary EA-18G squadrons will fill the joint, high-intensity AEA capability required by the Joint Forces Commander previously fulfilled by the USN and USMC EA-6B. EA-18Gs in-service have flown approximately five percent of the 7,500 total flight hours per aircraft and are meeting all operational commitments. To date, eight squadrons have completed or are in transition including three active component expeditionary squadrons. The first EA-18G squadron deployed in an expeditionary role in November 2010 in support of Operation New Dawn (OND) and redeployed in March 2011 in

support of Operation Odyssey Dawn (OOD)/Operation Unified Protector (OUP) combat operations. The first carrier-based EA-18G squadron deployed on board the USS George H.W. Bush (CVN 77) in May 2011.

Our adversaries' expanded use of the electromagnetic spectrum has increased the Joint requirement for expeditionary AEA, while at the same time increasing the operational necessity for the Carrier Strike Group to maintain its own organic AEA capability. The current jamming pods (ALQ-99) on the EA-18G have reached capability capacity and are growing obsolete from a sustainment point of view. Continued support for the Next Generation Jammer (IOC 2020) program development is required.

AV-8B

The current USMC inventory consists of 134 AV-8B aircraft. This number includes 34 Night Attack and 82 Radar aircraft, 16 TAV-8B trainers, one Day Attack upgrade, and one CNATT maintenance trainer. Of the total inventory, 31 aircraft (23 percent of USMC inventory) were out of reporting for Planned Maintenance Interval (PMI) and special re-work during CY 2012. The inventory decline is the result of combat losses last September at Bastion Airfield, OEF which accounts for the loss of eight AV-8Bs (six destroyed, two damaged) and increases the Ready for Tasking (RFT) gap significantly to a small community that is inventory constrained.

The AV-8B was originally a 6,000-hour airframe. In 2010, PMA-257 transitioned to a Fatigue Life Expended (FLE) model that more accurately measures actual stress history on individual airframe components, enabling the airframe to fly beyond 6,000 hours. Fleet averages for Night Attack, Production Radar, and Remanufactured Radar variants of the Harrier are 29.4 percent, 19.2 percent, and 31.8 percent FLE, respectively. However, the AV-8B is currently experiencing an increasing number of required modification and obsolescence issues. Intangibles that will affect service life are aircraft components that enter obsolescence or reach end of service life before the airframe planned fatigue life expended reaches 100 percent. Reduction in demand signal may also cause proportional reduction in sub venders and supply contractors.

The AV-8B was originally scheduled to stop flying in 2012. Sub-contractors and vendors had divested manufacturing lines of AV-8B material in anticipation of the 2012 sundown. Delays in the procurement of the Joint Strike Fighter coupled with the service life limits of the F/A-18 A-D necessitated the extension of the AV-8B to 2030 to avoid a TACAIR inventory shortfall. The DoN purchased all UK GR-9 aircraft, engines, parts supply, and support equipment in 2011. The GR-9 buy was a supply gap filler allowing NAVSUP immediate access to supply inventory, to develop long term sustainment strategies and give industry time to re-develop parts production lines to support the AV-8B to 2030. The purchase had an immediate impact in reducing supply backorders. GR-9 part

analysis is ongoing and will continue to support the AV-8B supply system over the next decade.

Discussion of current and future capabilities inherent in the F/A-18E/F that do not meet future Combatant Commander operational requirements for strike-fighter aircraft.

The F/A-18E/F is a highly capable aircraft designed to meet and defeat today's threats with growth potential for the future. The F/A-18E/F provides increased combat radius and endurance, greater weapons payload and increased survivability over Legacy F/A-18A-D aircraft. Block II (Lot 26 and up) aircraft, with the APG-79 Active Electronically Scanned Array (AESA) radar system and low observable technology, have extended air-to-air detection range and are capable of performing well in the range of threat environments, up to "anti-access". Block II Super Hornet includes upgraded avionics and sensors, some of which cannot be retrofitted to a Legacy F/A-18A-D aircraft. The Super Hornet will be a complementary platform on the nation's carrier decks with the F-35C into the 2030s and will meet current and projected requirements, with planned investments in the Fiscal Years 2014-2018 and beyond. These investments in F/A-18E/F flight plan increments, to include upgraded avionics, sensors and networks, will ensure relevancy against emerging and future threats.

JSF and F/A-18E/F capabilities are complementary, with an ideal balance of versatility, lethality, survivability, and capacity that will pace the threat and support foreseen Carrier Strike Group mission requirements through 2030. The timely delivery of JSF is critical to our ability to meet operational demands and to maintain the desired mix of strike fighter aircraft on our carrier decks.

Discussion regarding the analysis and probability of when the F-35B and F-35C are scheduled to declare Initial Operational Capability.

The Navy and Marine Corps, in accordance with the Fiscal Year 2013 National Defense Authorization Act (NDAA) Public Law 112-239, will provide updated IOC information on June 1, 2013.

The IOC dates for F-35B and F-35C are being determined by senior leadership. The Navy and Marine Corps require Service specific operational capabilities as defined in the F-35 Operational Requirements Document (ORD) prior to considering declaration of IOC. Achieving these capabilities are event driven and dependent upon the progress of the re-baselined F-35 program.

For the F-35B to achieve IOC, the Marine Corps requires: One squadron of ten F-35B aircraft with Block 2B software release and required spares, ground support equipment, tools, technical publications, and a functional Autonomic Logistic Information System

(ALIS) (including supporting peripherals); one squadron manned with trained/certified personnel capable of conducting autonomous operations; F-35B aircraft with the requisite performance envelope, mission systems, sensors, and weapon clearances; home base supporting infrastructure and facilities ready and capable of supporting and sustaining operations; qualifications/certifications required for deploying on F-35B compatible ships and to austere expeditionary sites; the ability to execute the TACAIR directed mission sets; and Joint Program Office and F-35 contractor procedures, processes, and infrastructure capable of sustaining operations of the IOC squadron. The reduced ramp rate has delayed the completion date of the Marine Corps' transition to the Joint Strike Fighter by over four years. The Marine Corps' IOC is event driven based on the key operational and sustainment capabilities required to support operations.

For the F-35C to achieve IOC, the Navy requires: One squadron of ten F-35C aircraft with Block 3F software release, full stealth and ORD compliant avionics/weapons capabilities (Block 3F) with the capability to execute the F-35C's primary mission sets; functional ALIS (including peripherals) and carrier integration modifications in place to support CVN deployments, airworthiness and flight deck certifications; trained aircrew, maintainers, and support personnel; and SDD/OPEVAL complete and Joint Program Office/F-35 contractor procedures, processes, and infrastructure capable of sustaining operations of the F-35C IOC squadron.

Discussion of the known risks and issues specifically related to the DoN regarding the development, fielding and deployment of the Autonomic Logistics Information System (ALIS) for sustaining the F-35 as it relates to maintenance and logistics operations.

F-35 Autonomic Logistics Global Sustainment (ALGS) is developed concurrently with the aircraft and ALIS is being used to support test, training, and operational squadrons today. As with any new system, there has been a performance learning curve associated with this new logistics support system and it is expected to continue to be functionally refined and improve performance. Currently, the Department is managing all key risk items. An overview of the primary ALIS issues and risks affecting the DoN are:

- ALIS 1.0.3, which is supporting block 1B/2A aircraft, was initially hampered by Certification & Accreditation (C&A) and data quality concerns. PEO(JSF) worked closely with the certification experts to mitigate the issues and have developed workaround solutions.
- ALIS 1.0.3 has limitations in the Prognostic Health Management (PHM) system. It is expected to be addressed in a future release of ALIS.
- ALIS 1.0.3 amended data construct does improve overall data integrity, but challenges remain with Mission Essential Functions List (MEFL). ALIS functionality is dependent upon the provision of accurately structured and populated logistics data (e.g., Air Vehicle Sustainment Data Build, Bill of

Material). At present, the DoN has identified a number of data quality shortcomings that are being addressed by the Original Equipment Manufacturer (OEM) and PEO(JSF) personnel and interim operating procedures have been instituted; permanent resolution of these issues is expected by fourth quarter CY2014.

- The Air Vehicle does not record all the flight data to the Portable Memory Device, which required an enhancement to ALIS 1.0.3 to enable tracking of life and aircraft health data. Manual PHM data entries have been instituted. At this early stage of operational flying, data mapping immaturity has led to a lower assessment of actual mission capability. Manual intervention has been required.

- DoN ALIS Deployment Suitability: PEO(JSF) is currently managing a USMC instituted initiative in regards to the deployment suitability of the existing ALIS baseline hardware design. The current ALIS baseline is too large for the Air Combat Element (ACE) to embark and disembark from an L-Class ship in support of Marine Air Ground Task Force (MAGTF) operations ashore. This initiative will afford squadron personnel the capability to transport ALIS with unit deployments. Deployable ALIS, Standard Operating Unit V2, is currently a unique requirement for the Marine Corps based on their expeditionary nature. The strategy to ensure functional deployability includes a three phase program of effort to develop Deployable ALIS. Phase 2A is complete and Phase 2B is currently on going which will finalize the deployable requirements and begin preliminary design. Phase 3 is targeted to be on contract by July 2013, which will complete a Preliminary Design Review (PDR) by the fourth quarter of Calendar Year 2013 and will have a production standard design ready for Authorization to Operate and Authorization to Connect (ATO/ATC) and delivery of initial capability by mid 2015.

- Successful Integration of Propulsion System Sustainment into ALIS: Currently the Propulsion System is managed by the OEM utilizing an independent contractor sustainment application. This is a recognized interim operating procedure until an integrated solution is introduced with a future ALIS release. The Air System and Propulsion System OEMs are developing software that will integrate their sustainment applications for the JSF within ALIS. Completion of this task is dependent upon the resolution of Air Vehicle and Off-Board system related integration challenges. The prime system integrator and the engine OEM are in the process of defining the remaining actions necessary to successfully integrate propulsion sustainment in ALIS 2.0.1, scheduled for release in fourth quarter of Calendar Year 2014. Achievement of this task is a priority for the Program and carries a high schedule risk.

Provide an update on the V-22 procurement program and contractor performance, and performance of the MV-22 during Operations Iraqi and Enduring Freedom.

The V-22 program continues to perform extremely well in the field and in production. In Fiscal Year 2012, the last year of the first Multi Year Procurement (MYP I) contract, industry delivered 37 V-22Bs - 29 MV(Marine Corps) and eight CV(Air Force) on or ahead of contract schedule. The first three MYP I lots are performing well and cost reduction initiatives are delivering expected results. The program is also on track to award a follow-on MYP contract (Fiscal Years 2013-2017) which will yield significant savings.

The V-22's strong performance in the field continues to be demonstrated on a daily basis. As of March 28, 2013, 190 of 360 aircraft have been fielded to the Marine Corps. The combined MV and CV fleet has accumulated more than 170,000 flight hours. The aircraft has been continuously deployed since 2007, and the MV-22 exhibited the lowest Class A flight mishap rate of any tactical rotorcraft in the Marine Corps over the last 10 years.

MV-22B squadrons supporting Operation Enduring Freedom (OEF) in Afghanistan and the Marine Expeditionary Units (MEU) aboard amphibious warships are seeing mission capable rates in the seventy percent range and are performing every assigned mission.

The effectiveness and survivability of this revolutionary, first-of-type MV-22B Osprey tilt-rotor has been repeatedly demonstrated across the globe. The rescue of a downed F-15E airman during Operation ODYSSEY DAWN was an example of what the Navy and Marine Corps' expeditionary force brings to our nation. As an integral part of that seaborne presence, the MV-22B was able to transit over 130 nautical miles from the USS KEARSARGE to the objective area with unprecedented speed and agility. Twenty minutes from the time he was evading capture in hostile territory, the rescued pilot was safely back on American territory aboard the USS KEARSARGE. Combined with current self deployments from Okinawa to Thailand and Guam in support of bilateral exercises, and a 2,600 nautical mile round trip simulated MEDEVAC mission to a submarine the V-22 is changing the way Commanders operate inside and out of their battle space.

Update on the H-1 procurement program and contractor performance.

The Fiscal Year 2014 President's Budget requests $47.1 million in RDT&E, N for continued product improvements and $821.0 million in APN for 25 H-1 Upgrade aircraft: 15 UH-1Y and 10 AH-1Z aircraft. The program is a key modernization effort designed to resolve existing safety deficiencies, to enhance operational effectiveness, and to extend the service life of both aircraft. The 85 percent commonality between the UH-1Y and AH-1Z will reduce lifecycle costs and logistical footprint significantly, while increasing the maintainability and deployability of both aircraft. The program will provide the

Marine Corps 349 H-1 aircraft through a combination of new production and a limited quantity of remanufacturing.

The H-1 Upgrades Program is replacing the Marine Corps' UH-1N and AH-1W helicopters with state-of-the-art UH-1Y "Venom" and AH-1Z "Viper" aircraft. The new Venom and Viper aircraft are fielded with integrated glass cockpits, world-class sensors, and advanced helmet-mounted sight and display systems. The future growth plan includes a digitally-aided close air support system designed to tie these airframes, their sensors, and their weapons systems together with ground combat forces and capable DoD aircraft. Low-cost weapons such as the Advanced Precision Kill Weapon System II (APKWS II) will increase lethality while reducing collateral damage.

The UH-1Y aircraft achieved IOC in August 2008 and FRP in September 2008. The "Yankee Forward" procurement strategy prioritized UH-1Y production in order to replace the under-powered UH-1N fleet as quickly as possible. The AH-1Z completed its operational evaluation (OT-II3C) in June 2010 and received approval for FRP in November 2010. The AH-1Z achieved IOC in February 2011. As of March 30, 2013, 104 aircraft (74 UH-1Ys and 30 AH-1Zs) have been delivered to the Fleet Marine Force; an additional 77 aircraft are on contract and in production. Lots 1- 6 aircraft deliveries are complete. The last two aircraft from Lot 7 (the first two AH-1Z Build New (ZBN) aircraft) will deliver in Fiscal Year 2014. Lot 8 deliveries are progressing on or ahead of schedule.

In December 2011, to address existing attack helicopter shortfalls, the Marine Corps decided to pursue an all AH-1Z Build New (ZBN) procurement strategy and leave AH-1W airframes in the inventory rather than removing them from service to begin the remanufacture process. The transition to an all ZBN airframe strategy began with Lot 10 (Fiscal Year 2013) as reflected in the current USMC program of record. The previous mix of 131 remanufactured AH-1Z and 58 ZBN aircraft has been revised to delivery of 37 remanufactured AH-1Z and 152 ZBN aircraft. The total aircraft procurement numbers remain the same at 160 UH-1Ys and 189 AH-1Zs for a total of 349 aircraft.

As a result of their commitment to the United States Marine Corps and the H-1 Program, the prime contractor has delivered 104 aircraft; keeping the program on budget and on schedule. On average, the prime contractor delivered the last 84 aircraft 33 days ahead of the contract schedule.

Update on the H-60S and H-60R program and contractor performance.

The Navy Helicopter force structure is based on the CNO-approved Helicopter Master Plan.

The MH-60S and MH-60R are currently in full rate production. The Multi-Year Contract (MY2) with Lockheed Martin (Mission Systems & Common Cockpits) and MY8 with Sikorsky (Airframe) have been approved and will be executed from Fiscal Year 2012 to Fiscal Year 2016. The MY2 results in 19.4 percent cost avoidance while the MY-8 results in 17.7 percent cost avoidance.

MH-60S Carrier Air Wing squadrons began their transition in 2007 and will be complete in 2016. Expeditionary squadrons completed their transition to the MH-60S in 2004.

MH-60S Block II IOC is realigned with Littoral Combat Ship Mine Countermeasures Mission Package (LCS MCM MP) IOC in Fiscal Year 2014. The requirement to tow Q-20 and OASIS systems was removed; non-tow Airborne MCM (AMCM) capabilities will be retained. MH-60S Block III Armed Helicopter reached IOC in June 2007.

The MH-60S is designed to support the Carrier and Expeditionary Strike Groups, LCS in Combat Logistics, Search and Rescue, Vertical Replenishment, SUW, AMCM, Combat Search and Rescue, and Naval Special Warfare mission areas.

MH-60R Carrier Air Wing squadrons began their transition in 2008 and will be complete in 2016. Expeditionary squadrons began their transition in 2012 and will be complete in 2018.

The MH-60R is designed to support Carrier and Expeditionary Strike Groups, Cruisers, Destroyers, and LCS in Anti-Submarine Warfare (ASW) and Surface Warfare (SUW). It enables sea control and provides forward-deployed capabilities to defeat area-denial strategies, allowing joint forces to project and sustain power. MH-60R ASW improvements include upgrades to the Airborne Low Frequency Sonar (ALFS) reliability and APS-153 Automatic Radar Periscope Detection and Discrimination (ARPDD) capability.

MH-60R program of record was reduced from 291 to 280 aircraft. Further reductions will take MY quantities below the contractual minimums, necessitating contract renegotiation.

Small boat threats are driving aircraft SUW lethality and survivability requirements, such as the MH-60S M-197 fixed forward firing gun and MH-60R/S 2.75 inch rocket capability.

An update on the efforts related to the V-22 program concerning the redesign, qualification, manufacturing and fielding of more reliable parts and subsystems and how it relates to planned goals for reducing current operations and maintenance costs.

Component/subsystem redesign is an integral part of the MV-22B Program's plan for improving readiness and reducing operating costs. At the platform level, the MV-22B continues to meet its Key Performance Parameters (KPP) for reliability as set forth in the acquisition documentation, but continue aggressive efforts to improve component performance by analyzing inherent component reliability using the Critical Item Logistics Review (CILR) list. This disciplined, repeatable process has identified key components for improvement. Since July 2009, multiple component improvements have been incorporated and validated via on-aircraft performance with Mean Flight Hour Before Removal (MFHBR) improvements ranging from 50 percent to over 7,000 percent improvement. At the aircraft level, this has translated into a 28 percent improvement in Mission Capable rates from Fiscal Year 2011 to Fiscal Year 2012.

The MV-22B Cost Per Flight Hour (CPFH) Reduction Team has been reducing costs through a four pillared approach targeted at improving Maintenance Practices, Maintenance Planning, Repair Capabilities and Contract Strategies and works closely with the Reliability and Maintainability (R&M) teams to incorporate the improved components noted above. These efforts yielded an 18 percent reduction in MV-22B CPFH from Fiscal Year 2010 to Fiscal Year 2012 which will equate to billions of dollars in cost avoidance over the life cycle of the aircraft.

A summary of all Class A, B and C aviation-related safety issues, including recent mishaps, trends, and analysis occurring within the past year.

Naval Aviation Summary (Navy & Marine Corps) - The table below provides a summary of all Class A, B & C Flight mishaps from Oct 2011 through April 3, 2013. The rates are based on mishaps per 100,000 flight hours.

YEAR	Flight Hours	Class A	Class A Rate	Class B	Class B Rate	Class C	Class C Rate
FY 12	1,198,216	18	1.50	20	1.67	64	5.34
FY 13	565,544	7	1.23	11	1.95	40	7.07

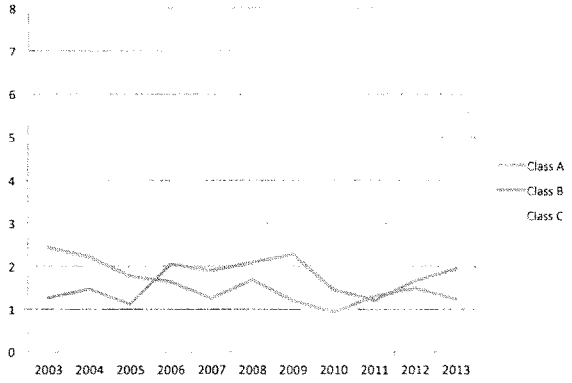
The most recent DON Flight Class A Mishaps includes:

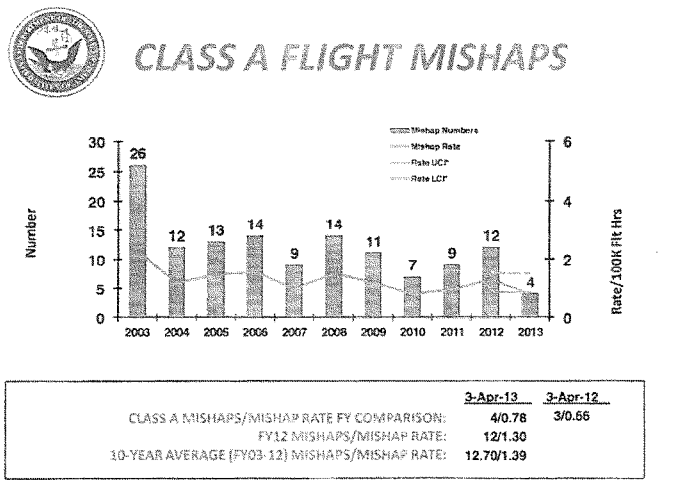
- 11 Mar 2013: (Grant County, WA) EA-6B crashed during a scheduled low-level flight. 3 fatalities.
- 20 Feb 2013: (Thailand) During confined area landing, CH-46E sustained a hard landing and subsequent fire. No fatalities.
- 23 Jan 2013: (NAS Lemoore, CA) F/A-18E sustained an in-flight left engine fire. Aircraft recovered safely. No injuries.
- 09 Jan 2013: (Twenty Nine Palms, CA) CH-46E sustained damage to rotor system during confined area landing. Aircraft destroyed. No fatalities.
- 13 Dec 2012: (Deployed) MQ-8B Fire Scout crashed during recovery to ship. (UAS)
- 12 Dec 2012: (NAS North Island) MH-60R sustained hard landing. No fatalities.
- 11 Oct 2012: (Luzon, PI) CH-46E destroyed in hard landing, roll-over and fire. No serious injuries.

Recent DON Flight Related Mishaps (FRM) or Aviation Ground Mishaps (AGM) not included in above table or below Navy and Marine Corps charts:

- 27 Feb 2013: (Cherry Point OPAREA) Airborne Low Frequency Sonar Transducer Assembly departed MH-60R during ASW training flight. (FRM)
- 24 Jan 2013: (Off the Coast of Andros Island, Bahamas) Airborne Low Frequency Sonar Transducer Assembly departed MH-60R during in-flight operational check. (FRM)
- 06 Nov 2012: (MCAS Miramar, CA) F/A-18E in-flight physiological episode resulted in permanent total disability. (FRM).

DON Historical Mishap Rate Trend per 100K Flight Hours per Mishap Class (A.O. April 3, 2013)

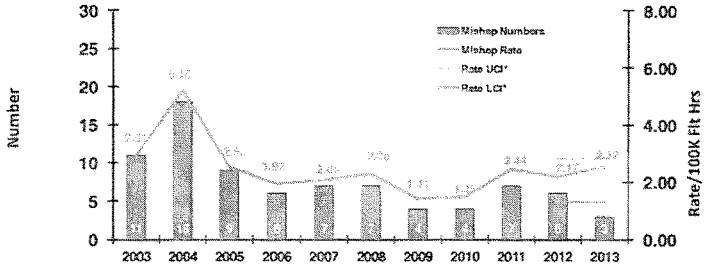




	3-Apr-13	3-Apr-12
CLASS A MISHAPS/MISHAP RATE FY COMPARISON:	4/0.78	3/0.66
FY12 MISHAPS/MISHAP RATE:	12/1.30	
10-YEAR AVERAGE (FY03-12) MISHAPS/MISHAP RATE:	12.70/1.39	

Class A Flight Mishap Historical Data for U.S. Navy

CLASS A FLIGHT MISHAPS



	3-Apr-13	3-Apr-12
CLASS A FM/FM RATE FY COMPARISON:	3/2.52	2/1.42
FY12 MISHAPS/MISHAP RATE:	6/2.17	
10-YEAR AVERAGE (FY03-12) MISHAPS/MISHAP RATE:	7.90/2.43	

Class A Flight Mishap Historical Data for U.S. Marine Corps

VICE ADMIRAL W. MARK SKINNER
PRINCIPAL MILITARY DEPUTY

Vice Adm. Skinner is currently serving as the Principal Military Deputy to the Assistant Secretary of the Navy (Research, Development, and Acquisition). He assumed his duties August 9, 2010.

Skinner was born in Houston, and graduated from the United States Naval Academy in June 1977.

As a flag officer, he was the program executive officer for Tactical Aircraft Programs and commanded Naval Air Warfare Center, Weapons Division, and served as assistant commander, Test and Evaluation, Naval Air Systems Command.

Skinner held both operational and shore commands to include commanding officer Patrol Squadron FORTY SEVEN; chief Test Pilot and commanding officer of Naval Force Aircraft Test Squadron, and program manager for a Chief of Naval Operations Special Project.

Skinner is a graduate of the Navy Test Pilot School and served in Force Warfare Aircraft Test Directorate, where he was recognized as Directorate Test Pilot of the Year in 1986. Additionally, he received a degree in Financial Management from the Naval Post Graduate School, where he graduated as a Conrad Scholar and was awarded the Department of the Navy award for excellence in financial management, and the Rear Admiral Thomas R McClellan award for excellence in administrative sciences.

His awards include Legion of Merit (3 awards), Meritorious Service Medal (4 awards), Navy and Marine Corps Commendation Medal (2 awards), Navy and Marine Corps Achievement Medal, and other unit deployment citations and ribbons.

Lieutenant General Robert E. Schmidle, Jr.

Deputy Commandant for Aviation

Lieutenant General Robert E. Schmidle, Jr., USMC, serves as the Deputy Commandant for Aviation. As the Deputy Commandant for Aviation, he sets policy and facilitates the manning, training and equipping of Marine Aviation units.

His command assignments include: Commanding General of First Marine Aircraft Wing, Commanding Officer of Special Purpose Marine Air-Ground Task Force (Experimental), and Commanding Officer of Marine Fighter/Attack Squadrons 251 and 115.

Previous operational assignments include multiple tours flying the F-4 and F/A-18 aircraft as well as serving as the operations officer and air officer of an Infantry Battalion, First Battalion 9th Marines.

Additionally, Lieutenant General Schmidle has served in the following key staff assignments: Deputy Commander for U.S. Cyber Command, Assistant Deputy Commandant of the Marine Corps for Programs and Resources (Programs), Deputy Chief of Staff for Integrated Product Team 1 for the 2006 Quadrennial Defense Review and USMC lead for the 2010 Quadrennial Defense Review, Deputy Director for Resources and Acquisition in the Joint Staff J-8, Director of the USMC Expeditionary Force Development Center and the Military Secretary for the 32nd and 33rd Commandants of the Marine Corps.

Lieutenant General Schmidle is a native of Newtown, Connecticut and graduated from Drew University with a Bachelor of Arts degree in History. He also holds a Master of Arts in Philosophy from American University and is currently working on his doctorate at Georgetown University He is a distinguished graduate and prior faculty member of the Marine Corps Command and Staff College as well as a distinguished graduate of the Marine Corps War College. Additionally, he has been published on a range of topics from military history to social psychology and philosophy.

REAR ADMIRAL WILLIAM F. "BILL" MORAN
DIRECTOR, AIR WARFARE (OPNAV N98)

Rear Adm. Moran was born and raised in the state of New York. He is a graduate of Valley Central High School and holds a Bachelor of Science degree from the United States Naval Academy (1981) and a master's degree from the National War College (2006).

Moran is a P-3 pilot with operational tours spanning both coasts including Patrol Squadron 44, Brunswick, Maine; Patrol Squadron 45, Jacksonville, Fla.; command of Patrol Squadron 46, Whidbey Island, Wash.; and command of Patrol and Reconnaissance Wing 2, Hawaii. He has deployed to Sigonella, Sicily; Rota, Spain; Lajes Azores; Keflavik, Iceland; Misawa, Japan; Diego Garcia; Masirah, Oman; Bahrain; and, numerous detachments around the world. His other operational tours include flag lieutenant and Battle Group tactical watch officer for Commander, Carrier Group Six, Mayport, Fla., aboard USS *Forrestal* (CVA 59). Moran has served extensively as an instructor pilot in multiple operational tours, and two tours with Patrol Squadron 30, the Fleet Replacement Squadron.

Moran's shore assignments include: Patrol Wing 11, Jacksonville, Fla., as safety officer and assistant maintenance officer; the Bureau of Naval Personnel, Washington, D.C., as assistant Washington placement officer and assistant flag officer detailer; deputy executive assistant and executive assistant to Commander, U.S. Pacific Command, Camp Smith, Hawaii, from July 2000 to July 2003; deputy director, Navy staff from July 2006 until June 2007; and as executive assistant to the Chief of Naval Operations from June 2007 until August 2008. Upon selection to flag rank, Moran assumed duties as commander, Patrol and Reconnaissance Group in August 2008.

Moran served as deputy director, and currently serves as director, Air Warfare (OPNAV N98) on the staff of the Chief of Naval Operations (CNO). In this capacity, Moran is responsible for the development, programming, and budgeting of all Naval aviation warfighting requirements.

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HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES
U.S. HOUSE OF REPRESENTATIVES

DEPARTMENT OF THE AIR FORCE

PRESENTATION TO THE
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES
U.S. HOUSE OF REPRESENTATIVES

SUBJECT: Fiscal Year 2014 Department of Defense Combat Aviation Programs

COMBINED STATEMENT OF: Lieutenant General Burton M. Field
Deputy Chief of Staff for Operations,
Plans and Requirements

Lieutenant General Charles R. Davis
Military Deputy, Office of the Assistant
Secretary of the Air Force for Acquisition

April 17, 2013

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HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES
U.S. HOUSE OF REPRESENTATIVES

I. Introduction

Chairman Turner, Ranking Member Sanchez and distinguished members of the subcommittee, thank you for the opportunity to provide you with an update on Air Force tactical aviation programs. Today our Air Force is engaged globally, supporting the Combatant Commanders requirements and executing our National Strategy.

In this environment of fiscal uncertainty our focus remains on our five core missions of Air and Space Superiority, Intelligence, Surveillance, and Reconnaissance, Rapid Global Mobility, Global Strike, and Command and Control by which we deliver Global Reach, Global Power and Global Vigilance. It is more important than ever to balance near-term readiness with modernization efforts for the mid and long-term. Today's discussion is focused on Air and Space Superiority and Global Strike but covers all five core missions.

Our force structure meets most Combatant Commander requirements, but the current fiscal environment will necessitate that we stand down 13 fighter and bomber squadrons in Fiscal Year 2013. Multiple investment programs will be negatively impacted resulting in unit cost increases, terminations and schedule delays. There is still considerable uncertainty in the Fiscal Year 2014 Air Force topline funding level. The Fiscal Year 2014 budget request will not reverse the damage done by the Fiscal Year 2013 Sequestration. Recovering in warfighting capability and improving readiness requires a reduction in operations tempo and additional resources.

As we work together through these difficult times, our objectives are: to remain as ready as possible today, set a course toward full-spectrum readiness, preserve a highly responsive and scalable force, and overcome force structure and modernization challenges to provide the nation with the world's most capable combat Air Force now and in the future.

II. Current Environment and Operations Update

Today, the Air Force flies and fights in air, space, and cyberspace--globally and reliably--as a valued member of our Joint and Coalition teams. Over 28,000 Airmen are deployed across the globe, including over 22,000 in the U.S. Central Command Area of Responsibility, with another 138,000 "committed in place" to defend the homeland, command and control our nuclear forces, operate remotely piloted aircraft, and support other Combatant Commander requirements. The

Air Force is an active partner in Department of Defense planning that will shift our emphasis from today's wars to a broader range of challenges and opportunities. The Department of Defense is currently reassessing the strategic guidance issued last year, but we anticipate continued emphasis on and planning for a rebalance to the Asia Pacific region. Our challenge is to provide Soldiers, Sailors, Airmen, and Marines who deploy in support of our global commitments with an Air Force that is capable, agile, flexible, ready, and technologically advanced.

In 2012, Air Force global precision attack aircraft flew over 28,000 sorties and 41,000 hours in support of Overseas Contingency Operations. In support of these operations, our Intelligence, Surveillance and Reconnaissance Airmen provided intelligence that shaped combat plans for 33 named operations, enabled the removal of 700 enemy combatants from the fight and built awareness for coalition forces in over 250 "troops-in-contact" engagements. Air Force Special Operations personnel executed over 1,600 strike missions and 7,700 specialized mobility missions. On the home front, Air Force fighter, air refueling, and early warning aircraft have flown almost 64,000 total sorties supporting Operation NOBLE EAGLE since September 11, 2001. As a testament to the capability of our Total Force, the Air National Guard and Air Force Reserve have flown more than 65 percent of these Operation NOBLE EAGLE sorties with the Air National Guard currently operating 17 of 18 Aerospace Control Alert sites across the United States.

Aviation is not without risk. In Fiscal Year 2012, there were 20 Class A aviation mishaps, including ten destroyed aircraft and nine fatalities. This was an increase from the Fiscal Year 2011 numbers of 15 Class A, eight aircraft destroyed, and two fatalities respectively. Analysis of these events found trends similar to previous years, with the top two mishap factors being compliance and decision making errors.

There were 24 Class B aviation mishaps in Fiscal Year 2012, significantly down from 53 in Fiscal Year 2011. Similarly, Class C mishaps dropped to 443 from 482 the year prior. Additionally,

Fiscal Year 2012 Unmanned Aerial System mishaps decreased across the board in Class A, B and C mishaps from Fiscal Year 2011. Class A mishaps dropped from 15 to 13, Class B mishaps from eight to four and Class C from 18 to 17.

As we undergo further updates to Defense Strategy, we must carefully balance our force between the active and reserve components. To get a better understanding of our Total Force mixture, we launched the Total Force Task Force, a team led by general officers from the Active Duty, Guard and Reserve components. The Total Force Task Force is conducting a comprehensive review of Total Force requirements and will develop strategic options to ensure that the Air Force correctly balances the strengths of each component to sustain the capabilities required in the years ahead. The team is scheduled to present their findings by October 1, 2013.

Additionally, The National Commission on the Structure of the Air Force, which is required by the Fiscal Year 2013 National Defense Authorization Act, will undertake a comprehensive study of the structure of the Air Force to determine whether, and how, the structure should be modified to best fulfill current and anticipated mission requirements in a manner consistent with available resources. The panel is scheduled to complete their report not later than February 1, 2014.

The Fiscal Year 2014 budget request retains critical force structure and maintains the Air Force's ability to rapidly respond to global mission demands. It evolved from a concerted effort to balance risk, modernization and force structure reductions with a commitment to readiness and taking care of our people.

However, sequestration forced the Air Force to implement immediate actions to mitigate a Fiscal Year 2013 topline reduction. A major impact of sequestration will be a marked decrease in readiness at the beginning of Fiscal Year 2014. Reductions in flying hours will cause unit stand downs, which will result in severe, rapid, and long-term unit combat readiness degradation. Within 60 days of a stand down, affected units will be unable to meet emergent or operations plans requirements. Depot delays will require the grounding of some of the affected aircraft. The deferments will result in idled production shops, a degradation of workforce proficiency and productivity, and corresponding future volatility and operational costs. Additionally, sequestration cuts to Air Force modernization will impact every one of our investment programs.

These program disruptions will, over time, cost more taxpayer dollars to rectify contract restructures and program inefficiencies, raise unit costs, and delay delivery of validated capabilities to warfighters in the field. The impact to modernization programs reduces our Air Force's competitive advantage and decreases the probability of mission success in contested environments. The Fiscal Year 2014 budget request does not enable full recovery of warfighting capability, capacity and readiness; additional resources will be required.

III. Force Structure and Modernization

Fighters

Air Force fighter force structure is dependent on both fighter aircraft and rated manning. Two years ago, the Air Force determined through extensive analysis that a force structure of 1,200 primary mission aircraft and 2,000 total aircraft was required to execute the National Military Strategy with increased operational risk. Last year, due to new strategic guidance and fiscal constraints, the Air Force rebalanced our force structure across core functions. Analysis showed the Air Force could decrease fighter force structure by approximately 100 aircraft with higher risk, resulting in the current fighter requirement of 1,100 primary mission aircraft and 1,900 total aircraft.

The Air Force's fighter fleet is over 20 years old on average—the oldest in our history. Without service life extensions and capability upgrades, it will not be possible to manage risk. The Air Force is pursuing programs that will modernize and extend the service life of our remaining fleet. The F-35 is a key component in preserving future force structure and mitigating risk. Any further delay in the F-35 program will create a serious shortfall (mid and far-term) in fighter capabilities and force structure. The Air Force is very concerned with recent budget reductions and continues to monitor how these cuts will affect risk. It is absolutely critical that 4th Generation sustainment and modernization efforts continue as programmed, the F-22 continues to modernize, and the F-35 matures and begins full rate production.

In the Fiscal Year 2013 budget, the Air Force accepted risk in our Combat Air Forces by retiring or reclassifying aircraft from seven squadrons: five A-10 squadrons, one F-16 squadron, and one training/support coded F-15 Aggressor squadron. After reductions, we retained sufficient

combat-coded fighter squadrons to maintain the capabilities and capacity required to meet the requirements of new strategic guidance at increased risk while providing a bridge to the Fifth Generation F-35.

Manning these aircraft is a challenge we are aggressively working. Air Force mission success is dependent on fighter force structure manning. The Air Force is currently 200 fighter pilots short of the total manning requirement. Our projections indicate this deficit growing to approximately 900 by 2022, excluding any additional negative impact on flying training driven by sequestration. The shortfall evolved from force structure reductions that cut active duty fighter squadrons to a number that cannot sustain billet requirements. As a result, the Air Force is currently unable to produce and absorb the required number of fighter pilots across the total force. The Air Force is prioritizing available manpower at significant risk to institutional requirements. Projected impacts include reductions in air-operations expertise during the development of war plans and a limited ability to train and maintain combat readiness. Recent programming and policy actions raised production and absorption capacity by Fiscal Year 2028; however, even with these changes, the Air Force will only be able to sustain a fighter pilot inventory capable of meeting 82 percent of our overall requirement for fighter pilot expertise.

A-10

The A-10 provides our Joint Force Commanders responsive, lethal, precise, and persistent firepower for close air support and combat search and rescue. It has been a steady, stellar performer in all recent conflicts. Notably, the A-10's very high operations tempo and advanced age present substantial sustainment challenges. Most notably, the wings on the aging aircraft must be replaced in order to keep the fleet flying through 2035 and beyond.

Beginning in Fiscal Year 2013, the Air Force will retire 61 of the oldest A-10s. This will leave a fleet of 283 A-10s through 2035. The Fiscal Year 2014 budget request reflects our commitment to fund A-10 modernization, sustainment, and life extension programs. Installation of the Helmet Mounted Cueing System, now underway, will provide increased situational awareness to the pilot. Operational Flight Program upgrades will provide the A-10 with new combat capabilities to employ a variety of smart weapons, improve situational awareness, and enhance target identification and designation capability. Production and installation of the new

replacement wings are moving ahead at full-rate production levels. Other critical updates include an upgrade to the A-10's transponder, allowing for secure, military-only identify friend or foe modes, and an improved engine turbine and aircraft monitoring system used to identify and monitor structural fatigues and stresses. Emphasis on the continued health and upgrade of the A-10 will ensure the aircraft continues to excel in the close air support role for the next two decades.

F-16

Our primary multi-role aircraft, the F-16 comprises 50 percent of the current fighter fleet. The Fiscal Year 2014 budget request invests approximately $1.32 billion across the Future Years Defense Program (FYDP) for F-16 modernization, life extension, and continued sustainment to meet critical warfighter needs to 2025 and beyond. The majority of the efforts to accomplish this across the FYDP will focus on the Legacy Service Life Extension Program (SLEP) and Combat Avionics Programmed Extension Suites (CAPES) modernization program for 300 aircraft. We believe we will have to SLEP and modernize more.

Legacy SLEP will extend airframe structural service life by approximately 25 percent from the current 8,000 hours to 10,000+ hours, adding about six to eight years. The Fiscal Year 2014 budget request adds $18 million to continue design and development of structural modification kits for the Block 40-52 fleet to be responsive to the Air Force's total fighter requirement. Additionally, the Falcon Structural Augmentation Roadmap (STAR) program, which replaces known life-limited structural components and maintains the original design airframe life of 8,000 actual flight hours, has been re-phased to complete in Fiscal Year 2014.

The Fiscal Year 2014 budget request adds $44 million in development, with a total of $489 million in development and procurement funding laid in across the FYDP for F-16 CAPES. This will allow for the development of capabilities for Active Electronically Scanned Array (AESA) radar, a new center cockpit display unit, data link enhancements and an improved electronic warfare defensive suite. These avionics upgrades must be done to keep the F-16 Block 40-52s relevant in a contested environment until replaced by the F-35 Joint Strike Fighter.

F-15 C/D

The Fiscal Year 2014 budget request invests approximately $1.9 billion across the FYDP on modernization and sustainment programs for the F-15C/D fleet. We project the F-15C/D fleet will remain viable until at least 2035, with potential for an airframe service life extension following full-scale fatigue testing. This test is underway and will conclude in 2014. The Air Force manages the fleet through scheduled field and depot inspections under an individual aircraft tracking program.

We continue to modernize our F-15C/D fleet with AESA radars, a more capable aircraft mission computer, and a new electronic warfare self-protection suite, the Eagle Passive/Active Warning Survivability System (EPAWSS). We expect these efforts to enable 175 F-15C/D aircraft to operate safely and effectively through at least 2035 as determined by the full-scale fatigue test.

F-15E

The Fiscal Year 2014 budget request invests approximately $2.5 billion across the FYDP for F-15E modernization and sustainment programs. This includes integrating the latest precision weapons to hit targets accurately and reduce collateral damage, and adding a helmet mounted cueing system for all front seat cockpits that will reduce the F-15E's time to engage a target. Finally, we are adding a state-of-the-art AESA radar system that advances capabilities to identify and engage targets, a more capable aircraft mission computer, and a new self-protection electronic warfare system (EPAWSS). The Air Force expects the F-15E to be an integral part of the Nation's force through at least 2035. A full-scale fatigue test, due to be complete in 2015, will provide data regarding the feasibility of a service life extension.

Fifth Generation Fighters

Vital elements of our nation's defense and deterrent capability are fifth generation fighters like the F-22A and F-35. These advanced, state-of-the-art aircraft are absolutely essential to maintain our current global superiority that permit air, sea, and ground forces freedom of action. Each aircraft possess exclusive, complimentary and indispensable capabilities that provide synergistic effects across the spectrum of conflict. As future adversaries modernize, our legacy fourth generation aircraft will have limited capability to operate in an anti-access and area denial environment. Our Air Force must continue to invest in fifth generation weapon systems, and

begin looking even further into the future, to ensure continued dominance of American Airpower.

F-22

The F-22 Raptor is the only fielded U.S. fighter capable of operating in anti-access and area denial environments. F-22 attributes of stealth, super cruise, integrated avionics and sensors combine to deliver the Raptor's unique operational capability. F-22 modernization is required to counter advancing threats that specifically target F-22 capabilities. Accordingly, F-22 modernization is consistent with Department of Defense Strategic Guidance to "invest as required to ensure [the] ability to operate effectively in [anti-access and area denial] environments". Focused on maintaining operational superiority against the evolving threat, the Fiscal Year 2014 budget request for F-22 modernization investment includes $459.6 million in RDT&E in addition to $460.3 million in procurement in Fiscal Year 2014. Increment 3.1 is fielding now and is scheduled to be complete in Fiscal Year 2017, delivering advanced air-ground capabilities including Synthetic Aperture Radar (SAR) ground mapping, threat geolocation, and Small Diameter Bomb (SDB) carriage. Increments 3.2A/B remain on track for fielding in 2014/2018 respectively, and will deliver advanced electronic protection and combat identification, AIM-120D and AIM-9X missiles, and significantly-improved ground threat geolocation.

The Air Force Scientific Advisory Board Aviation Oxygen Generation System Study made eight near-term and 14 long-term recommendations for corrective and mitigating actions to prevent hypoxia-like events that led to the fleet stand-down in May-Sept 2011. The Air Force completed all eight near-term actions to include replacement of the emergency oxygen system activation handle; modification of the pilot upper pressure garment and installation of an independent oxygen sensor and helmet-mounted pulse oximeter. Additionally, nine of 14 longer-term recommendations were implemented, with the remaining five expected to be complete by November 2014. Most notably, the retrofit of the Automatic Back-up Oxygen System is on track for completion by 2015. The first 16 Raptors at Elmendorf Air Force Base are expected to be complete by mid-April. The F-22 is operating safely world-wide, and flew over 38,000 hours since return to flight in September 2011. It has been over 12 months since the last unknown-cause hypoxia-like event occurred.

F-35

During Fiscal Year 2014, the Air Force will continue the balanced approach across the global precision attack portfolio by prioritizing investment in fifth-generation aircraft while sustaining legacy platforms as a bridge to the F-35 Joint Strike Fighter.

The multi-role F-35A is the centerpiece of the Air Force's future fighter precision attack capability. In addition to complementing the F-22's world class air superiority capabilities, the F-35A is designed to penetrate air defenses and deliver a wide range of precision munitions. This modern, fifth-generation aircraft brings the added benefit of increased allied interoperability and cost-sharing across Services and eight partner nations. The Fiscal Year 2014 budget request includes $4.5 billion for continued development and procurement of 19 F-35A, conventional take-off and landing (CTOL) aircraft. The program has made significant strides overcoming software development delays and technical issues.

During Calendar Year 2012, the F-35 program team achieved a number of significant milestones, including: Milestone B approval, Low Rate Initial Production Lot 5 contract definitization, Lot 6 undefinitized contract action, an Operational Utility Evaluation, a ready for training declaration; the start of pilot training at Eglin Air Force Base, completion of over 1,100 test flights, first weapon separation test on an F-35A CTOL, and the delivery of 30 production aircraft to the Air Force and Marine Corps. These early production deliveries to our operational test and training fleet allows the Air Force to begin the necessary operational test and validation efforts of the (F-35) this year, while also building our initial cadre of instructors to train our future generations of combat-ready pilots and maintainers.

In Fiscal Year 2013, the Air Force planned to procure 19 F-35A CTOL aircraft. As a result of sequestration, the Air Force will have to reduce the procurement quantity by at least three and potentially as many as five aircraft.

The progress made so far and the steps we take today are crucial in our efforts for declaring F-35 Initial Operational Capability (IOC). After last year's program re-baseline and Milestone B re-certification, the joint services were tasked to provide Congress our updated IOC criteria and

timeline estimates by June 1, 2013. The Air Force fully expects to have our IOC position to you by this suspense.

One last area of F-35 development to address is the Autonomic Logistics Information System, or ALIS. The Air Force understands ALIS is a necessary and integral element of the F-35 weapon system, and as such, is a top program priority. As designed, ALIS will tie F-35 mission planning, operational flight, ops and maintenance training, debrief, tech and flight manuals, prognostic health management, and supply chain management into one seamless information system. Early flight operations at Eglin Air Force Base demonstrated ALIS initial capability to support training, flight, and maintenance efforts. Although there were deficiencies identified and addressed during these early flight operations, and significant challenges remain through development, the Air Force remains cautiously optimistic continued ALIS development will deliver the required F-35 sustainment elements.

Air-to-Surface Weapons

All three mission areas (Stand-Off, Direct Attack, and Penetrator munitions) in the Air-to-Surface munitions inventory are short of inventory objectives. The most critical are stand-off and penetrator weapons. Joint Air-to-Surface Standoff Missile (JASSM) and SDB weapons along with Low Observable platforms are force multipliers in an anti-access andarea denial environment and their shortage could increase friendly force attrition and drive a much higher level of effort enabling the attack of other critical targets. The shortage of penetrator weapons will result in some inability to target adversary critical capabilities and increase risk. Direct attack munitions shortages drive the use of non-preferred munitions that decrease effectiveness and result in increased time and Air Force attrition accomplishing Combatant Commander objectives.

JASSM and JASSM-ER

JASSM and JASSM-ER (Extended Range) are currently the nation's only stealthy, conventional, precision, launch-and-leave, stand-off missile capable of fighter and bomber aircraft employment. It is capable of penetrating next generation enemy air defenses to strike high value, hardened, fixed, or mobile targets.

Currently, JASSM is in Lot 11 production with over 1,000 missiles delivered and JASSM-ER is in Lot 2 production. The Fiscal Year 2014 procurement plans are to buy 182 missiles: 102 JASSMs and 80 JASSM-ERs. Fiscal Year 2014 also funds reliability efforts and the JASSM Weapon System Evaluation Program for flight testing of inventory assets. The Air Force is ramping-up the JASSM production to the most efficient rate (360 per year) by buying 224 missiles in Fiscal Year 2015 and 360 in Fiscal Year 2016 and beyond. While the range of JASSM is more than 200 nautical miles, JASSM-ER's range is over twice that (over 500 nautical miles). JASSM-ER completed Initial Operational Test and Evaluation in January 2013 with 20 successful flight test shots out of 21, a success rate of over 95 percent. The Full Rate Production decision for JASSM-ER is December 2013, with a plan to transition to JASSM-ER only production in Fiscal Year 2017 and beyond at the max production rate of 360 missiles per year.

Air-to-Air Weapons

AIM-120D AMRAAM

The AIM-120 Advanced Medium Range Air-to-Air Missile (AMRAAM) is the Department of Defense's premier beyond-visual-range missile to counter existing and emerging air vehicle threats, operating at high or low altitude with electronic attack capabilities. AMRAAM is a key enabler for gaining air superiority and air dominance providing F-22, F-16, F-15, and F/A-18 aircraft the ability to achieve multiple kills per engagement. The latest evolution of AMRAAM is the AIM-120D, which brings increased range and kinematics, improved high off-boresight targeting, and an enhanced two-way data link for improved accuracy and lethality at range. AIM-120D is an Acquisition Category 1C joint program, with the Air Force as lead service in partnership with the Navy. The AIM-120D Operational Test Readiness Review was successfully completed in May 2012 and the program is currently in dedicated operational testing. Fiscal Year 2014 plans are to complete dedicated operational testing, to include captive carry and free flight, and fielding on F/A-18 E/F and F-15 C/D aircraft. Force procurement for Fiscal Year 2014 is 199 units; along with a purchase of 54 units by the Navy. The program will continue to update the AMRAAM technical data package to ensure a viable, producible design through the expected production life of the AMRAAM program, and to maintain a robust supplier base capable of sustaining production for the life of the program.

Updates Requested by Congress

CV-22

Air Force Special Operations Command (AFSOC) uses the CV-22 Osprey's unique long range, speed, and vertical take-off and landing (VTOL) characteristics to provide special operations warfighters with specialized air mobility. In 2012, CV-22s completed 1,022 Operation ENDURING FREEDOM sorties, hauling over 135,000 pounds of cargo and extracting 299 detainees. In 2013, we will station aircraft at RAF Mildenhall, UK, the CV-22's first overseas squadron.

The current CV-22 fleet stands at 32 aircraft with the final buy scheduled in Fiscal Year 2014 as part of the program's second multi-year procurement. Current funding levels support the procurement of four Fiscal Year 2013 aircraft and the final three aircraft in Fiscal Year 2014. Declaration of full operational capability is scheduled following the delivery of the last CV-22 in Fiscal Year 2016, for a total of 49 operational AFSOC aircraft.

The Joint V-22 Program Office is increasing CV-22's capabilities while executing an aggressive improvement program, which continues to make significant progress. Since Fiscal Year 2010, aircraft availability rates are up over 20 percent. Particular emphasis is being placed on improving CV-22 engine time-on-wing, which has already seen a 62 percent increase since Fiscal Year 2010. These trends have continued in the first half of Fiscal Year 2013. In Fiscal Year 2014, we will start development of an improved engine inlet solution to address sand ingestion problems that severely degrade engine performance and necessitate costly engine removals and repairs due to operating and training in austere desert environments.

Improvements to the CV-22 are being made in block increments and each block includes a number of modification upgrades installed as they become available. Retrofit modifications continue to bring the oldest CV-22s to the most current configuration. Sequestration reductions will delay installation of Block 20/C improvements on fielded aircraft. Future modifications and improvements to the CV-22 will make the aircraft even more reliable, productive, and cost-effective; thus ensuring the AFSOC's long range VTOL capability is available and will provide specialized air mobility wherever and whenever required.

Combat Rescue Helicopter (CRH)

The Air Force is the only Service with a dedicated force that is organized, trained, and equipped to execute Personnel Recovery. Advanced helicopter capabilities, high-end tactically trained aircrews, and Battlefield Airmen who are trained in advanced battlefield trauma medicine allow these forces to provide lifesaving measures at the point of injury, anywhere in the world. These highly trained Airmen support Air Force, Joint, Coalition and Special Operations Forces in a wide variety of mission areas. In addition to overseas contingency deployments, these Airmen also serve as first responders during disaster relief and humanitarian assistance operations, making them some of the most highly stressed career fields in the U.S. military. Since 2001, our combat rescue forces saved over 7,000 lives, and in 2012 alone, they flew 4,500 missions saving 1,128 Coalition, Joint and partner nation lives in some of the harshest environments in the world.

The Air Force will continue to modify existing HH-60G helicopters to keep them viable until we can fully recapitalize the fleet with the CRH. This effort includes an operational loss replacement program that returns the HH-60G fleet to numbers capable of meeting our operational requirements. The operational loss replacement program is only a temporary bridge to allow us to meet operational demands until the entire fleet is recapitalized through CRH.

The CRH will conduct day and night marginal weather combat search and rescue in order to recover downed aircrew and isolated personnel in hostile environments. The program replaces the legacy fleet of aging HH-60G Pave Hawks. CRH is in source selection for 112 in-production helicopters and training systems configured by the original equipment manufacturer to meet the warfighter requirement. Our Fiscal Year 2014 budget supports contract award.

Command and Control (C2)

Command and Control, as a core function, is fundamental for all Air Force Core Functions. The C2 vision is to provide sufficiently robust, scalable, flexible, and rapidly deployable C2 capabilities, enabling commanders to fully exploit air, space, and cyberspace capabilities. Underpinning the proper employment of Airpower is the Air Operations Center (AOC) -- the senior element of the Theater Air Control System which serves as the focal point for planning, directing, and assessing air, space, and cyberspace operations to meet Joint Force Air Component Commander operational objectives and guidance.

The C2 emphasis in the Fiscal Year 2013 budget complies with the Department of Defense's budget reduction goals while maintaining an adequate C2 capability. The Fiscal Year 2014 budget request supports the AOC, E-8C Joint Surveillance Target Attack Radar System (JSTARS), E-3 Airborne Early Warning and Control System (AWACS), and Three-Dimensional Expeditionary Long Range Radar (3DELRR) programs.

Investments in JSTARS will sustain the fleet pending decisions from the Airborne Synthetic Aperture Radar (SAR)/ Moving Target Indicator (MTI)/JSTARS Mission Area Analysis of Alternatives (AoA), while the E-3 AWACS will continue the Block 40/45 upgrades with the 3DELRR program pressing towards source selection for a new ground based sensor.

Air Operations Center (AOC)

The AOC provides operational-level C2 of air, space, and cyberspace operations. The AOC coordinates closely with superior and subordinate C2 nodes, as well as the headquarters of other functional and service component commands to integrate the numerous aspects of air, space, and cyberspace operations and accomplish its mission. To effectively integrate the Theater Air Control System (TACS) elements, the AOC develops and establishes theater-wide C2 guidance of regular and irregular warfare, providing overarching direction to all the TACS elements. The baseline AOC Weapons System (Increment 10.1) requires modernization to enable collaboration, improve information accuracy, and provide enhanced system security against known and projected cyber threats. The sustainment of AOC Weapon System 10.1, and the continued development and successful fielding of AOC Weapon System 10.2 is critical to maintain joint interoperability and provide operational-level C2 to assigned and apportioned forces.

E-8C JSTARS

The E-8C JSTARS is the world's premier airborne Command, Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) platform for air-to-ground Battle Management operations. It provides long-endurance, all-weather, surveillance and targeting of moving and stationary targets via GMTI and SAR technology.

The Air Force completed the Airborne SAR/MTI JSTARS Mission Area AoA in 2011, which concluded that the optimum choice for the future of Air Force MTI was to use a business jet class aircraft with an advanced radar and on-board Battle Management Command and Control (BMC2) suite. The AoA also concluded that upgrading the current E-8C fleet with an Advanced Radar and new BMC2 Suite would be the next best solution, but has significantly high lifecycle costs. In the current fiscal environment, there is a lack of funding for a JSTARS replacement surveillance aircraft. The Air Force continues to fund the operations and support of the JSTARS platform to meet warfighter requirements. Critical near term diminishing manufacturing sources (DMS) issues have been addressed through the Multifunctional Information Distribution System (MIDS) Joint Tactical Radio System (JTRS) and Prime Mission Equipment DMS efforts. It is currently estimated that DMS issues will not cause grounding of any JSTARS platforms until 2025+. These modernization efforts keep JSTARS viable to support the National Military Strategy.

The JSTARS weapons system has been in continuous surge operations since 2004 and this level of tasking is expected to continue as Combatant Commander requirements for ground and maritime moving target surveillance continue to escalate. Current Global Force Management Allocation Plan (GFMAP) taskings and projected E-8C GFMAP allocations for Fiscal Years 2014-2015 will require continued deployment at these rates, limiting E-8C worldwide availability in support of emerging contingency responses.

E-3 AWACS

The 31 aircraft E-3 AWACS fleet is the Department of Defense's premier airborne surveillance and BMC2 weapon system. AWACS is a key airborne element of TACS and delivers combat effects of BMC2, Battlespace Awareness (BA) and Decision Superiority (DS). As a rapidly deployable system, the E-3 is often the first surveillance and BMC2 capability in theater.

The E-3 fleet has struggled to consistently meet Air Combat Command's Mission Capable requirement. Additionally, the depot is seeing increased corrosion in the fuselage and wings leading to expectations for increased aging aircraft issues in the next programmed depot maintenance cycles. System mission capable rates will likely deteriorate further when considering recent reductions to operations and sustainment budgets.

AWACS, with its current modernization programs, is adequate for executing the National Military Strategy. Current modernization efforts focus on upgrading battle management mission systems through the 40/45 upgrade, as well as cockpit avionics to provide the AWACS with the computing and communications architecture to participate in a net-enabled battlespace, and avionics that are free from DMS issues to meet worldwide airspace navigation requirements.

AWACS requires these future efforts to address adversary threats and effectively participate in coalition and joint networked battlespace. Future efforts include BMC2 enhancements and wide-band communications to allow for net centric operations and data exchange with other weapon systems and elements of the enterprise as well as sensor upgrades to detect low/very low radar cross section air target sets and improve operations in an electronic attack environment. Future capability enhancements will depend on the priority and phasing relative to other Department efforts and difficult choices may be required to live within funding constraints.

Three-Dimensional Expeditionary Long Range Radar (3DELRR)

Fundamental to the Air Force's ability to provide unparalleled, expert, and sustained BMC2 is the ground-based Control and Reporting Center (CRC) weapon system, is the replacement of its 1970s-era technology primary sensor that is becoming unsupportable. The mission of the CRC is to provide persistent tactical level BMC2 to joint and combined air, land, and sea power assets in support of the Joint/Combined Forces Air Component Commander's objectives. The 3DELRR is planned to be the principal Air Force long range, ground-based sensor to detect, identify, track, and report aerial targets in support of theater commanders, with the Full Operational Capability for 35 radars scheduled for 2025. Extensive operational analyses have resulted in well-defined requirements based on current and future threats and scenarios. After a $252 million cut to the program in the Fiscal Year 2013 budget, the Air Force identified cost/performance trades to enable the program to move the forward.

IV. Conclusion

The Air Force is still assessing the exact impacts of sequestration on Air Force total obligation authority in Fiscal Year 2014 and beyond. Any further reductions to our Fiscal Year 2014 budget request will drive additional risks to our readiness, force structure, and ability to

modernize an aging aircraft inventory. In addition, the outcome of the strategic choices and management review may drive profound changes across the Department of Defense.

As we navigate the uncertain way ahead, to mitigate risk in critical areas like readiness, force structure and modernization, we will continue to work with Congress to develop executable force shaping options, and ask support for another BRAC round to reduce excess infrastructure as a means to meet sizable budget reduction goals.

Our sister services and allies expect your Air Force to provide critical warfighting and enabling capabilities. We remain focused on delivering Global Power, Reach, and Vigilance through our core missions of Air and Space Superiority, Global Strike, Rapid Global Mobility, Intelligence, Surveillance and Reconnaissance and global Command and Control. We look forward to working closely together as we address the challenges of near-term uncertainty to provide the ability to deliver combat air power for America when and where we are needed.

BIOGRAPHY

UNITED STATES AIR FORCE

LIEUTENANT GENERAL BURTON M. FIELD

Lt. Gen. Burton M. Field is the deputy chief of staff for operations, plans and requirements, Headquarters U.S. Air Force, Washington, D.C. He is responsible to the secretary of the Air Force and the chief of staff for formulating policy supporting air, space, irregular warfare, counterproliferation, homeland security, weather and cyber operations. As the Air Force operations deputy to the Joint Chiefs of Staff, the general determines operational requirements, capabilities and training necessary to support national security objectives and military strategy.

General Field was commissioned in 1979 after graduating from the U.S. Air Force Academy. He has commanded the 421st Fighter Squadron at Hill Air Force Base, Utah; the USAF Weapons School at Nellis AFB, Nev.; the 8th Fighter Wing at Kunsan Air Base, South Korea; and the 1st Fighter Wing at Langley AFB, Va. He has also deployed as Commander, 332nd Air Expeditionary Wing, Balad AB, Iraq. The general served on two major command staffs as well as the Joint Staff. Prior to his current assignment he was the Commander, U.S. Forces Japan, and Commander, 5th Air Force, Yokota Air Base, Japan.

General Field is a command pilot with more than 3,400 flying hours in the F-16 and the F-22A.

EDUCATION

1979 Bachelor of Science degree, U.S. Air Force Academy, Colorado Springs, Colo.
1984 Squadron Officer School, by correspondence
1985 USAF Fighter Weapons Instructor Course, Nellis AFB, Nev.
1986 Master's degree in business administration, Golden Gate University, Calif.
1993 Command and General Staff College, Fort Leavenworth, Kan.
1998 Air War College, Maxwell AFB, Ala.

ASSIGNMENTS

1. July 1979 - July 1980, student, undergraduate pilot training, Williams AFB, Ariz.
2. October 1980 - May 1981, student, F-16 Replacement Training Unit, Hill AFB, Utah
3. May 1981 - December 1983, F-16 squadron pilot and instructor pilot, 430th Tactical Fighter Squadron, Nellis AFB, Nev.
4. January 1984 - December 1984, F-16 instructor pilot, 80th Tactical Fighter Squadron, Kunsan AB, South Korea

5. January 1985 - May 1985, student, USAF Fighter Weapons Instructor Course, Nellis AFB, Nev.
6. May 1985 - May 1987, weapons and tactics officer and F-16 instructor pilot, 430th Tactical Fighter Squadron, Nellis AFB, Nev.
7. May 1987 - July 1990, F-16 instructor pilot, academic instructor and flight commander, USAF Fighter Weapons School, Nellis AFB, Nev.
8 August 1990 - June 1992, advanced medium-range air-to-air missile and F-22 action officer, Tactical Air Command, Langley AFB, Va.
9. June 1992 - June 1993, student, Army Command and General Staff College, Fort Leavenworth, Kan.
10. July 1993 - June 1994, Chief, Standardization and Evaluation, 388th Fighter Wing, Hill AFB, Utah
11. June 1994 - June 1995, operations officer, 34th Fighter Squadron, Hill AFB, Utah
12. June 1995 - July 1997, Commander, 421st Fighter Squadron, Hill AFB, Utah
13. August 1997 - June 1998, student, Air War College, Maxwell AFB, Ala.
14. July 1998 - May 2000, executive officer to Commander, U.S. Air Forces in Europe, Ramstein AB, Germany
15. May 2000 - April 2001, Commandant, USAF Weapons School, Nellis AFB, Nev.
16. May 2001 - May 2002, Commander, 8th Fighter Wing, Kunsan AB, South Korea
17. June 2002 - May 2003, Assistant Deputy Director, Political-Military Affairs for Europe (J5), Joint Staff, the Pentagon, Washington, D.C.
18. June 2003 - June 2005, Deputy Director, Politico-Military Affairs for Western Hemisphere (J5), Joint Staff, the Pentagon, Washington, D.C.
19. June 2005 - May 2007, Commander, 1st Fighter Wing, Langley AFB, Va.
20. July 2007 - July 2008, Commander, 332nd Air Expeditionary Wing, Joint Base Balad, Iraq
21. July 2008 - February 2009, Vice Director for Strategic Plans and Policy, Joint Staff, the Pentagon, Washington, D.C.
22. February 2009 - October 2010, Senior Military Adviser to the U.S. Special Representative for Afghanistan/Pakistan, the Pentagon, Washington, D.C.
23. October 2010 - July 2012, Commander, U.S. Forces Japan, and Commander, 5th Air Force, Pacific Air Forces, Yokota Air Base, Japan
24. July 2012 - present, Deputy Chief of Staff for Operations, Plans and Requirements, Headquarters U.S. Air Force, Washington, D.C.

SUMMARY OF JOINT ASSIGNMENTS
1. June 2002 - May 2003, Assistant Deputy Director, Political-Military Affairs for Europe (J5), Joint Staff, the Pentagon, Washington, D.C., as a colonel
2. June 2003 - June 2005, Deputy Director, Politico-Military Affairs for Western Hemisphere (J5), Joint Staff, the Pentagon, Washington, D.C., as a colonel
3. July 2008 - February 2009, Vice Director for Strategic Plans and Policy, Joint Staff, the Pentagon, Washington, D.C., as a major general
4. February 2009 - October 2010, Senior Military Adviser to the U.S. Special Representative for Afghanistan/Pakistan, the Pentagon, Washington, D.C., as a major general
5. October 2010 - July 2012, Commander, U.S. Forces Japan, and Commander, 5th Air Force, Pacific Air Forces, Yokota Air Base, Japan, as a lieutenant general

FLIGHT INFORMATION
Rating: Command pilot
Flight hours: More than 3,400
Aircraft flown: F-16 and F-22A

MAJOR AWARDS AND DECORATIONS
Distinguished Service Medal
Defense Superior Service Medal
Legion of Merit with oak leaf cluster
Bronze Star Medal
Meritorious Service Medal with three oak leaf clusters
Air Medal with three oak leaf clusters

Aerial Achievement Medal with oak leaf cluster
Air Force Commendation Medal with oak leaf cluster

OTHER ACHIEVEMENTS
2011 Eugene M. Zuckert Award for Outstanding Management Achievements by a Department of the Air Force Manager

EFFECTIVE DATES OF PROMOTION
Second Lieutenant May 30, 1979
First Lieutenant May 30, 1981
Captain May 30, 1983
Major May 1, 1990
Lieutenant Colonel Feb. 1, 1995
Colonel March 1, 2000
Brigadier General June 1, 2005
Major General July 2, 2008
Lieutenant General Oct. 25, 2010

(Current as of November 2012

BIOGRAPHY

UNITED STATES AIR FORCE

LIEUTENANT GENERAL CHARLES R. DAVIS

Lt. Gen. Charles R. Davis is the Military Deputy, Office of the Assistant Secretary of the Air Force for Acquisition, the Pentagon, Washington, D.C. He is responsible for research and development, test, production, and modernization of Air Force programs worth more than $40 billion annually.

General Davis was commissioned in 1979 from the U.S. Air Force Academy as a distinguished graduate with a bachelor's degree in chemistry. His assignments include flying duties in the T-38, F-15, A-7, F-117A and F-16. He has also served on the Air Staff under the Director of Air Force Test and Evaluation. The general led divisions in both the F-16 and F-15 program offices, served as Director of the F-15 and Flight Training System Program Offices, and was the Joint Primary Aircraft Training (T-6A) System Program Director. The general commanded the 410th Flight Test Squadron, F-117A Combined Test Force and 412th Test Wing. He also served as Program Executive Officer for the F-35 Lightning II Program Office.

As the Commander, Air Armament Center, and the Air Force Program Executive Officer for Weapons, Air Force Materiel Command, Eglin AFB, Fla., he oversaw development, acquisition, testing, deployment and sustainment of all air-delivered weapons. He also directed and conducted test and evaluation of U.S. and allied air armament, navigation and guidance systems and command and control systems. Prior to his current position, Gen Davis was the Commander, Electronic Systems Center, Hanscom Air Force Base, Mass. and the Air Force Program Executive Officer for Command, Control, and Communications Infrastructure and Networks. His duties encompassed the acquisition of command and control and combat support information systems for the Air Force comprising more than 12,000 people located at six sites throughout the United States while managing more than $5 billion in programs annually in support of the Air Force and joint and coalition forces.

General Davis is an experimental test pilot with more than 3,400 flying hours in 53 types of aircraft.

EDUCATION

1979 Distinguished graduate, Bachelor of Science degree in chemistry, U.S. Air Force Academy, Colorado Springs, Colo.
1983 Distinguished graduate, Squadron Officer School, Maxwell AFB, Ala.
1984 Marine Corps Command and Staff College, by correspondence
1986 Air Command and Staff College, by correspondence
1988 Distinguished graduate, Experimental Test Pilot Course, U.S. Air Force Test Pilot School, Edwards AFB, Calif.
1991 Master of Science degree in mechanical engineering, California State University, Fresno
1995 Distinguished graduate, Master of Science degree in national resource management, Industrial College

of the Armed Forces, Fort Lesley J. McNair, Washington, D.C.
1997 Program Manager Course, Defense Systems Management College, Fort Belvoir, Va.
2004 United States - Russia Security Program, John F. Kennedy School of Government, Harvard University, Cambridge, Mass.

ASSIGNMENTS
1. July 1979 - August 1980, student, undergraduate pilot training, Williams AFB, Ariz.
2. August 1980 - March 1983, T-38 instructor pilot, flight scheduler, and squadron standardization and evaluation officer, 97th Flying Training Squadron, Williams AFB, Ariz.
3. March 1983 - July 1984, assistant executive officer to the Inspector General, 82nd Flying Training Headquarters, Williams AFB, Ariz.
4. July 1984 - June 1987, F-15 pilot, flight commander, Chief of Scheduling, and weapons and tactics officer, 48th Fighter Interceptor Squadron, Langley AFB, Va.
5. June 1987 - June 1988, student, U.S. Air Force Experimental Test Pilot Course, U.S. Air Force Test Pilot School, Edwards AFB, Calif.
6. June 1988 - February 1989, A-7 and T-38 experimental test pilot, 6512th Test Squadron, Edwards AFB, Calif.
7. February 1989 - May 1991, F-16 experimental test pilot and assistant operations officer, 6516th Test Squadron, Edwards AFB, Calif.
8. May 1991 - May 1992, F-16 experimental test pilot and test systems safety officer, Safety Directorate, Air Force Flight Test Center, Edwards AFB, Calif.
9. May 1992 - March 1994, Chief, Tactical Air to Air Systems Policy and Programs Division, Air Force Test and Evaluation Directorate, Headquarters U.S. Air Force, Washington, D.C.
10. March 1994 - August 1994, executive to the Director, Air Force Test and Evaluation Directorate, Headquarters U.S. Air Force, Washington, D.C.
11. August 1994 - June 1995, student, Industrial College of the Armed Forces, Fort Lesley J. McNair, Washington, D.C.
12. June 1995 - July 1997, Commander, 410th Flight Test Squadron, F-117A Combined Test Force, Air Force Plant 42, Palmdale, Calif.
13. July 1997 - November 1998, Chief, F-16 Combat Air Force Programs, F-16 System Program Office, Aeronautical Systems Center, Wright-Patterson AFB, Ohio
14. November 1998 - July 1999, Director, Development and Acquisition, F-15 SPO, ASC, Wright-Patterson AFB, Ohio
15. July 1999 - April 2001, Director, Flight Training SPO, ASC, Wright-Patterson AFB, Ohio
16. May 2001 - April 2003, Director, F-15 SPO, Warner Robins Air Logistics Center, Robins AFB, Ga.
17. April 2003 - June 2004, Commander, 412th Test Wing, Edwards AFB, Calif.
18. June 2004 - July 2006, Deputy Program Executive Officer, Joint Strike Fighter Program, Arlington, Va.
19. July 2006 - May 2009, Program Executive Officer, F-35 Lightning II Program Office, Arlington, Va.
20. May 2009 - August, 2011, Commander, Air Armament Center, and the Air Force Program Executive Officer for Weapons, Air Force Materiel Command, Eglin AFB, Fla.
21. Sept. 2011 - May 2012, Commander, and Program Executive Officer for Command and Control and Combat Support, Electronic Systems Center, Air Force Materiel Command, Hanscom AFB, Mass.
22. May 2012 - present, Military Deputy, Office of the Assistant Secretary of the Air Force for Acquisition, the Pentagon, Washington, D.C.

SUMMARY OF JOINT ASSIGNMENTS
1. June 2004 - July 2006, Deputy Program Executive Officer, Joint Strike Fighter Program, Arlington, Va., as a colonel and brigadier general
2. July 2006 - May 2009, Program Executive Officer, F-35 Lightning II Program Office, Arlington, Va., as a brigadier general and major general

FLIGHT INFORMATION
Rating: Command pilot
Flight hours: 3,431 hours
Aircraft flown: F-15, F-16, F-117A, A-7, T-38, and 48 other aircraft types

MAJOR AWARDS AND DECORATIONS
Distinguished Service Medal
Defense Superior Service Medal with oak leaf cluster
Legion of Merit with oak leaf cluster

Meritorious Service Medal with three oak leaf clusters
Aerial Achievement Medal with three oak leaf clusters
Air Force Commendation Medal
Air Force Achievement Medal
Combat Readiness Medal

OTHER ACHIEVEMENTS
1980 Distinguished graduate, undergraduate pilot training
1985 Top graduate and top academic student, F-15 Fighter Training Unit

EFFECTIVE DATES OF PROMOTION
Second Lieutenant May 30, 1979
First Lieutenant May 30, 1981
Captain May 30, 1983
Major June 1, 1990
Lieutenant Colonel March 1, 1994
Colonel Sept. 1, 1998
Brigadier General Oct. 1, 2005
Major General Dec. 20, 2007
Lieutenant General Sept. 1, 2011

(Current as of May 2012)

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

APRIL 17, 2013

RESPONSE TO QUESTION SUBMITTED BY MR. MCINTYRE

General SCHMIDLE. In April 1971, the Marine Corps' first operational AV–8A squadron was established in Beaufort, South Carolina. In January 1985, the Marine Corps' first operational AV–8B squadron was commissioned at Marine Corps Air Station Cherry Point, North Carolina. AV–8B Initial Operational Capability, or IOC, was achieved in August 1985. [See page 20.]

RESPONSES TO QUESTIONS SUBMITTED BY MR. GARAMENDI

Mr. SULLIVAN. As of now, the Department has an Intelligence, Surveillance, and Reconnaissance (ISR) roadmap, but no coherent ISR investment strategy. Congress and GAO have pushed for the development of an ISR roadmap and investment strategy for nearly a decade. The National Defense Authorization Act for Fiscal Year 2004 specifically required DOD to develop a roadmap to guide the development and integration of DOD ISR capabilities over a 15-year period and report to Congress on the contents of the roadmap. In addition to other matters, the 2004 legislation required DOD's roadmap to include: (1) fundamental goals, (2) an overview of ISR integration activities, and (3) an investment strategy. In response, DOD issued an ISR Integration Roadmap in May 2005, which it updated in 2007 and again in 2010. GAO's recent review of the 2007 and 2010 roadmaps found that while DOD has made progress, neither roadmap included all the elements specified by Congress or addressed the important issue of how to invest future resources among competing priorities.[1] GAO noted that without a detailed investment strategy, DOD and the military services may not have a common understanding of how activities should be prioritized. Until DOD addresses challenges related to managing funding, integrating ISR capabilities, and minimizing inefficiencies in its ISR enterprise, the department risks investing in lower-priority and even duplicative capabilities while leaving critical capability gaps unfilled. As a result, GAO suggested that the Congress consider establishing additional accountability in legislation, such as conditioning a portion of ISR funding on completion of all congressionally directed management elements, including the development of an integrated ISR investment strategy, to ensure that future versions of the ISR Integration Roadmap meet all of the elements of an integrated ISR roadmap identified in the National Defense Authorization Act for Fiscal Year 2004 as well as the 2008 House of Representatives Committee on Armed Services report. [See page 20.]

Admiral SKINNER and Admiral MORAN. The Navy's ISR Strategy involves advanced sensor development across all domains: Navy's increased capability and capacity should be aimed at having complete visibility into regions of interest and overcoming an adversary's efforts to deny access to critical areas. Advanced technologies are needed to:

- Increase autonomy of sensors, platforms, and data processing to reduce data latency and manpower costs.
- Optimize the mix of autonomous manned and unmanned platforms and sensors to increase capability and capacity to commanders and weapons.
- Develop sensors that:
  - Enhance multi-INT, multi-domain collection capabilities, and improve visibility into contested battlespace;
  - Increase the number of multi-purpose, low-cost, networked, deployable, and expendable assets;
  - Process data locally and disseminate required data smartly.
- Replace larger single-capability satellites by hosting sensor payloads on other types of platforms and identify options for spacebased collections:

[1] GAO, Intelligence, Surveillance, and Reconnaissance: Actions Are Needed to Increase Integration and Efficiencies of DOD's ISR Enterprise, GAO–11–465 (Washington, D.C.: Jun 3, 2011).

- Investigate micro-, mini-, and nano-satellites to provide fine-scale temporal and spatial resolution data via common C2 paths as well as to provide persistence, increase collection fidelity and mitigate capacity issues;
- Improve low-power sensors and battery and fuel cell technology to enhance persistence and endurance;
- Develop and collect strategic signals of interest by improving NTM and tactical collection capabilities in support of emerging threats;
- Pursue satellites technologies with greater on-board processing and direct downlink capabilities to deployed forces and weapon systems to reduce the SATCOM requirement;
- Determine the capability and availability of other agencies' and countries' ISR assets in near real-time to support Navy/maritime collection requirements, and make greater use of international partnerships; achieve net-enabled cognitive interactions between disparate forces to enhance collaborative operations, including allies.

- Develop sensors and networks that use "Spectrum Agility" to work seamlessly across broad areas of the spectrum, increasing survivability and effectiveness; detect and precisely measure and map the EM environment in real-time.
- Meet the growing data demand coming from new SIGINT and oceanbased sensors, as well as higher resolution persistent sensors coming from space-based systems and multi-spectral sensors.

[See page 20.]

General SCHMIDLE. The DOD ISR Roadmap defines the DOD vision/strategy for ISR and was last published on 18 Mar 2010. It is a classified document that outlines how the DOD will satisfy the key strategic ISR goals and objectives embedded within the National Intelligence Strategy (NIS), Defense Intelligence Strategy (DIS), and Guidance for the Development of the Force (GDF). The DOD ISR Roadmap describes all important programs that must be integrated across the DOD in order to achieve efficient investment in new ISR capabilities, enhance the DOD's role in fulfilling Homeland Security responsibilities, and support optimal resource planning and budgeting across the enterprise. The next version of the DOD ISR roadmap is expected within the next 90 days. [See page 20.]

General DAVIS and General FIELD. The Air Force answered this IFR through classified briefings to Congressman Garamendi's office on 8 and 22 May. [See page 20.]

Admiral SKINNER and Admiral MORAN. Point Mugu, CA (Naval Base Ventura County or NBVC) was the original MQ–4C Triton West Coast basing location. It was changed to Beale Air Force Base in President's Budget 2012 to support a Memorandum of Agreement signed between the Chief of Staff of the Air Force and the Chief of Naval Operations who agreed, in principle, to several actions anticipated to bring greater synergy and efficiencies to Q–4 Unmanned Aircraft System operations. Following the United States Air Force decision to divest of RQ–4B Global Hawk Block 30s in President's Budget 2013, and in consideration of Federal Aviation Administration limitations on Unmanned Aircraft System flight operations at Beale Air Force Base, the Navy elected to realize the projected savings and operational advantages of basing the MQ–4C Triton at NBVC.

The cost to build four new facilities for MQ–4C Triton maintenance, training, and operations at Beale AFB would be $121M. The cost to refurbish two facilities and build one new facility at NBVC would be $61.8M. The required housing, communication, and other Navy Unmanned Aircraft System support already exists at NBVC. By basing the MQ–4C Triton UAS at NBVC vice Beale AFB the Navy estimates a cost savings of $100.7M across the FYDP. [See pages 20–22.]

General DAVIS and General FIELD. A reduced high-altitude ISR requirement (in which the U–2 was sufficient) and a reduced budget (the Department could no longer afford further investment in RQ–4 Global Hawk Block 30) drove the retirement decision.

In August of 2011, DOD's Joint Requirements Oversight Council reviewed recent adjustments in military strategy and determined the Department could reduce high-altitude ISR force structure requirement. The Air Force further determined the U–2, which remains viable until at least 2040, was sufficient to meet these reduced requirements. Continued investment in the RQ–4 Block 30 was required to field a comparable capability to the U–2, but was not warranted given a significant reduction in the Department's budget and an alternative system, the U–2, that was still operationally viable at a considerably lower cost over the Future Years Defense Plan.

To meet the Budget Control Act (BCA) requirement for budget savings, the funds obtained from the RQ–4 Block 30 divestiture were not moved into other accounts.

These funds were used to meet part of the required BCA budget reduction. [See page 23.]

RESPONSES TO QUESTIONS SUBMITTED BY MR. VEASEY

General DAVIS and General FIELD. The Air Force is scheduled to answer this IFR in a SAP classified briefing on 23 Jul. Congressman Veasey is planning to attend this briefing along with all members of the HASC Tactical Air and Land Forces Subcommittee which was scheduled by PSM John Sullivan. [See pages 24–25.]

Admiral MORAN. [The information referred to is classified and retained in the committee files.] [See page 25.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

APRIL 17, 2013

QUESTIONS SUBMITTED BY MR. THORNBERRY

Mr. THORNBERRY. It is clear that the world is getting more dangerous, not less. The situation with North Korea makes that very clear. Iran is moving toward a potential nuclear weapon. We know that Russia and China are developing advanced stealth fighters and proliferating advanced surface-to-air missile systems. Can you discuss the importance of the advanced stealth capability that the F–35 will give us and our allies in the future to meet the increasing threats around the world?

Admiral SKINNER and Admiral MORAN. The F–35C provides a 5th generation fighter aircraft to the Navy carrier air wing and brings with it the ability to effectively engage and survive a wide range of threats, both air and surface, in contested airspace. It provides a "day-one" strike capability enabling tactical agility and strategic flexibility required to counter a broad spectrum of threats and win in operational scenarios that cannot be addressed by current legacy aircraft, including operations in an anti-access/area denied environment.

F–35C's 5th generation survivability and lethality is enhanced by very low observable stealth characteristics, fusion of onboard and off-board passive and active sensors, and real-time integration with other F–35Cs and Navy assets, which provide a "first detect/first shot" capability throughout the battlespace. The F–35C will provide a significant additive value when brought to bear with the networked fighting concepts of the U.S. Navy Carrier Strike Group and in a joint/combined warfighting arena.

Mr. THORNBERRY. Can you provide the Subcommittee with an update on the F–35B STOVL variant's progress in the test program and discuss why you and the Commandant believe this aircraft is so critical to the Marine Corps' future?

General SCHMIDLE. In 2011 and 2012, the F–35B test program made significant progress and has demonstrated key capabilities that confirm the aircraft will meet our requirements. As of 17 May 2013, the F–35B has conducted 1,129 test flights for a total of 1,588.1 test flight hours, and has successfully completed initial ship trials, air start testing, and released both precision and air-to-air weapons. The testing of STOVL performance capabilities continues to expand the envelope resulting in our first operational vertical landing in March 2013 at MCAS Yuma, Arizona.

The Marine Corps' transition to the F–35B STOVL is well under way with the establishment of VMFAT–501, the Fleet Replacement Squadron, and VMFA–121, the first tactical squadron. VMFAT–501 currently executes a full training schedule for F–35B transition pilots and maintainers. VMFA–121, which stood up in November 2012, now has 4 F–35Bs and will be fully outfitted with 16 F–35Bs by this fall.

The F–35B supports the rapidly changing nature of expeditionary operations by providing flexible basing options that allow tactical aircraft to improve responsivenes and increase sortie generation rates. The value of STOVL has been demonstrated repeatedly, most recently in combat operations ashore, through the use of forward operating bases (FOBs) in Iraq and Afganistan, as well as during embarked operations throughout Central Command's Area of Responsibility.

Based on the testing completed to date we are confident the Marine Corps' requirement for one tactical aircraft type, capable of multiple missions, providing the MAGTF with flexible expeditionary basing and the superior technology needed to dominate the fight is the F–35B. There are no alternatives to the F–35B that support the full range of crisis response obligations of the United States Marine Corps.

Mr. THORNBERRY. It is clear that the world is getting more dangerous, not less. The situation with North Korea makes that very clear. Iran is moving toward a potential nuclear weapon. We know that Russia and China are developing advanced stealth fighters and proliferating advanced surface-to-air missile systems. Can you discuss the importance of the advanced stealth capability that the F–35 will give us and our allies in the future to meet the increasing threats around the world?

General SCHMIDLE. The F–35's low observable survivability, powerful integrated sensor suite, fused information displays, interoperable joint connectivity, precision weapons suite, and self-protect anti-air weapons, is a total package of capabilities that will revolutionize our Naval Air combat power in all threat and operational environments. The advanced fifth-generation stealth capability allows our aviation elements to operate in threat environments not compatible with fourth-generation air-

craft without extensive and intensive electronic warfare augmentation. By using the F–35 in these high threat environments we reduce exposure, increase survivability, and improve overall mission effectiveness with tailored and precision application.

Mr. THORNBERRY. Can you speak to the additional capability the F–35 will bring to the Fleet and the program's importance to the Navy's Tactical Aviation recapitalization efforts?

Admiral MORAN. The F–35C provides a 5th generation fighter aircraft to the Navy carrier air wing and brings with it the ability to effectively engage and survive a wide range of threats, both air and surface, in contested airspace. It provides a "day-one" strike capability enabling tactical agility and strategic flexibility required to counter a broad spectrum of threats and win in operational scenarios that cannot be addressed by current legacy aircraft, including operations in an anti-access/area denied environment. Key additive capabilities that F–35C will bring include very low observable stealth characteristics and fused active and passive sensors that will enhance the inherent stealth design. These fully integrated capabilities will allow F–35C to retain a 'first detect/first shot' capability throughout the battlespace. F–35C's survivability and lethality will fully integrate with the other Navy Carrier Strike Group assets and provide increased real-time situational awareness to all other networked assets. As such, F–35C offers complementary, additive capability to F/A–18E/F in numerous mission areas. A force equipped with F–35C aircraft enables combatant commanders to attack targets day or night, in all weather, in highly defended areas of joint operations. Target set includes: fixed and mobile land targets; enemy surface units; and air threats (including advanced cruise missiles). F–35C will supplant some of the aging Navy TACAIR inventory by replacing legacy F/A–18C aircraft and early blocks of the F/A–18E/F. F–35C procurement remains a vital element of the Navy's strike-fighter force mix.

Mr. THORNBERRY. Affordable F–35 recapitalization is dependent on capturing economies of scale as quickly as possible by increasing production as quickly as possible. It finally appears that the Department has stabilized the production rate for the F–35 program and is committed to increasing the ramp rate beginning in FY–15. Contrary to the public perception, unit costs have been coming down year-to-year. What do you expect the cost of the F–35A CTOL variant to be when the program reaches full-rate production in FY 18?

General DAVIS. Based on the current production profile, the estimated unit recurring flyaway cost (URF) for the F–35A will be approximately $87 million (TY$) in FY18. The URF cost includes the airframe, electronics, engine and engineering change orders. The estimated flyaway cost is approximately $96 million (TY$) in FY18. The flyaway cost adds in non-recurring and ancillary equipment costs. The F–35A unit cost is subject to change if the U.S. Services or partner nations adjust their procurement profiles.

Mr. THORNBERRY. It is clear that the world is getting more dangerous, not less. The situation with North Korea makes that very clear. Iran is moving toward a potential nuclear weapon. We know that Russia and China are developing advanced stealth fighters and proliferating advanced surface-to-air missile systems. Can you discuss the importance of the advanced stealth capability that the F–35 will give us and our allies in the future to meet the increasing threats around the world?

General DAVIS and General FIELD. Since World War II, the U.S. has relied on its ability to control the skies over the battlefield, protecting our forces and holding any adversary's targets at risk. Our potential adversaries are keenly aware of the importance of air superiority to our nation's way of war. This is why the development and proliferation of weapon systems that contest our asymmetric advantage in the air are increasingly prevalent. For the past 30 years, our fighter fleet remained ahead of this evolving threat, superbly performing all its missions and supporting the joint warfighter in operations such as EL DORADO CANYON, DESERT STORM, ALLIED FORCE, ENDURING FREEDOM and IRAQI FREEDOM. However, even during these conflicts we sometimes faced threat systems that posed a significant threat to our legacy fighter fleet. For example, during the first days of DESERT STORM only our fleet of F–117 stealth fighters was able to safely operate and survive in the highly contested skies over Baghdad.

We believe that air superiority remains an imperative when fighting any adversary and maintaining the ability of our aircraft to penetrate and persist in contested environments is vital to the joint warfighter. As you mention, the threats we may face continue to evolve in technology and complexity. Potential adversaries are acquiring advanced fighters on par with or better than our legacy fleet, developing sophisticated and networked early warning radar surveillance systems, and fielding surface to air missile systems with increasing range and lethality. These capabilities

all work together to create advanced, and extremely dangerous, integrated air defense systems (IADS). These anti-access/area denial environments seriously challenge our ability to gain air superiority and hold targets at risk. We already face this challenge in some parts of the world and as you said, and these threat environments will continue to expand as these systems proliferate.

Our legacy fleet is approaching the limits of capability modernization that permits them to survive and operate in these environments—they simply do not have the advanced stealth capability required to defeat the emerging threats. Only our fifth generation fighter fleet's combination of advanced stealth, precision weapons, unmatched electronic warfare systems, fused multi-spectral battlespace awareness, combat identification systems, maneuverability, and speed has the ability to operate and survive in these advanced threat environments. All these capabilities inherent in the F–35, particularly its advanced stealth properties, ensure the U.S. and our allies have an air superiority advantage, and will enable our combatant commanders to bring the full spectrum of capabilities of the joint force to the fight.

QUESTIONS SUBMITTED BY MR. LOBIONDO

Mr. LOBIONDO. This committee has been concerned with the strength of the Department of the Navy's tactical aviation fleet. Specifically, we have questioned the inventory size and how the Navy planned to manage a strike fighter force structure in the near and long term. The Navy has a requirement for 40 VFA squadrons to fill 10 Carrier Air Wings (CVWs) with 4 squadrons each. Of these squadrons, the Navy has 35 VFA squadrons, and the Marine Corps provides 3 squadrons with an agreement to supply five squadrons. Does the DON have enough Strike Fighter squadrons to fill 10 Carrier Air Wings and still meet all the USMC commitments, including overseas rotations and MEU deployments? Or, are you several squadrons short of the requirement? Does the strike fighter inventory model take into account these missing squadrons? The Fiscal Year 2014 budget request also shows that the Navy eliminated 13 Super Hornets it was supposed to buy this year. However, somehow the tactical aviation shortfall was reduced. How can you account for this reduction in aircraft and a corresponding reduction in the shortfall? What is the tactical aviation shortfall this year?

Admiral SKINNER and Admiral MORAN. The Navy and Marine Corps have sufficient strike fighter capacity. We continue to carefully monitor strike fighter inventory requirements and projected availability and will continue to take management actions to meet all carrier-based and expeditionary TACAIR requirements.

DON utilizes the Inventory Forecasting Tool (IFT) to project the combined effects of transition plans, attrition, and pipeline requirements on total strike fighter aircraft inventory. The IFT is updated in conjunction with annual budget submissions to provide a forecast of strike fighter inventory compared to requirements. This model does take into account the current force structure gap in TACAIR integration.

The shortfall number decreased significantly from last year's estimate due to 3 primary factors: (1) lower utilization rates on Super Hornets, specifically F/A–18Fs, (2) aircraft that successfully completed High Flight Hour (HFH) inspections that were allowed to fly an additional 1000 flight hours instead of the originally planned additional 600 flight hours. These 400 additional flight hours per aircraft extended service life by up to two years, (3) PB–13 includes a Congressional add of 11 F/A–18E/F in FY–13, which settles the POR at 563. The Strike Fighter Shortfall is projected to peak at 18 in 2023.

Mr. LOBIONDO. This committee has questioned the inventory size and how the Navy planned to effectively manage a strike fighter inventory in the near and long term. Last year, the Marine Corp emphasized a service life extension program (SLEP) for 150 F/A–18A–D aircraft, which would help bridge to the F–35B when squadrons become combat operational. This year, briefings indicate a new high flight hour inspection regime for aging legacy aircraft in order to maintain adequate force structure. However, the committee is getting reports that the Government depot-level inspections for tactical aviation are taking far longer than anticipated, and at a greater cost. For instance, there are reports from the Navy that 42% of legacy Hornet—F/A–18A–D models—are "out of reporting." Moreover, inspections that were scheduled to take only 180 days are estimated to be taking at least twice as long. And, the Navy released a Request for Information (RFI) to the industry on capabilities available to support these depot inspections, in part because there is a rapidly building backlog of aircraft awaiting inspection. The costs and schedule analysis have not been provided to the committee on this new policy, so it remains uncertain that it will sufficiently address our concerns about inventory shortfalls. General, can you discuss the new high flight hour inspection and SLEP plan for leg-

acy aircraft? And has there been an analysis on the costs and schedule of this new process? Can you tell the committee what percentage of your fleet is trending "out of reporting"? Can you tell the committee what the actual throughput is for F/A–18A–D aircraft? Under the current plans, will the Marine Corps have enough squadrons to transition to the F–35B? What impact will this have on the aviators and maintainers to make this possible? What is the cost of this new inspection and SLEP plan across the FYDP?

General SCHMIDLE. Q. General, can you discuss the new high flight hour inspection and SLEP plan for legacy aircraft?

A. In order to meet our operational commitments through 2030, the DON plans to extend the life on 150 F/A–18A–D aircraft to 10,000 flight hours by way of the Service Life Extension Program (SLEP). All other F/A–18A–D aircraft will complete a high flight hour (HFH) inspection at the depot prior to reaching the current service life limit of 8000 hours. Once complete, the aircraft will be granted an extension authorization to 9,000 hours with recurring operational level inspections at 200 hour intervals. If done with no other added work such as other regularly scheduled Planned Maintenance Interval (PMI) 1 or 2, Center Barrel Replacement (CBR), or other avionics modifications, it is called a "Stand Alone." To date, the DON has completed 101 HFH inspections and the issues identified were consistent with anticipations. In addition to the HFH inspection, each of these aircraft required engineering analysis and follow-on repairs or parts replacements in order to return them to an operational status.

Q. Has there been an analysis on the costs and schedule of this new process?

A. There has been analysis on the costs and schedule of HFH Inspections. The data is provided below. Ninety-eight HFH inspections have been completed at the Fleet Readiness Centers since 2008 and every year the NAVAIR 4.2 Cost Team evaluates the cost and schedule based on updated information. The results are then compared to the existing FYDP and adjusted requirements are forwarded up through the budgeting process.

The "HFH Stand Alone" turn-around time is averaging approximately one year. The average cost of this inspection is currently $447,186. These are not simple inspections. Aircraft inducted into the depot have required extensive repair and there has not been a case where an aircraft only required the inspection making it difficult in attaining the 180 day turn-around goal. The main contributors are material and engineering dispositions, both of which are being closely monitored and standardized to improve throughput. As more SLEP modifications become available, they will be incorporated into aircraft inducted, alleviating long lead material and reducing turn-around times.

Q. Can you tell the committee what percentage of your fleet is trending "out of reporting"?

A. As of the latest NAVAIR Flight Hour and Inventory Report (May 2013), 115 of 258 USMC F/A–18A–D aircraft are "out of reporting" for various depot level maintenance events. This constitutes ~45% (44.57%) of the USMC F/A–18 fleet. There is an increasing trend in "out of reporting" over the past year: May 2012 (88 of 245, ~36%), Sep 2012 (102 of 249, ~41%).

Q. Can you tell the committee what the actual throughput is for F/A–18A–D aircraft?

A. The throughput for F/A–18A–D HFH aircraft is shown below.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total "Projected" High Flight Hour (HFH) Inductions						54	60	50	55	35	25
Actual Induction Total	17	22	21	43	62	25					
Actual Completion Total	3	13	17	22	32	11					

Average throughput over 6 years (2008–2013) = 51% of A/C inducted (98 completed of 190 aircraft inducted).

Q. Under the current plans, will the Marine Corps have enough squadrons to transition to the F–35B?

A. Assuming the current JSF delivery plan is not reduced or delayed, the USMC will have enough squadrons to complete the TACAIR transition to the F–35. Successful implementation of the USMC TACAIR transition plan will be extremely difficult if the growing out of reporting problem in the USMC F/A–18A–D community is not addressed. More importantly, if the depot maintenance throughput is not significantly improved, the backlog of aircraft at the depot will increase to a point at which it will affect our ability to properly equip forward deploying units during the transition.

Q. What impact will this have on the aviators and maintainers to make this possible?

A. The F/A–18 out of reporting problem is driving USMC squadrons to train and operate at less than the planned mission aircraft authorization (PMAA) of 12 aircraft. Currently the USMC F/A–18 fleet averages 9 aircraft per squadron, not including the FRS. This aircraft deficit poses a unique dilemma to aviators: 1. Fly a smaller number of aircraft at a much higher utilization rate to maintain combat readiness, or 2. Sacrifice combat readiness to maintain planned utilization rates on the available aircraft. The first option will drive aircraft to reach the 8000 hour limit at a greater rate further aggravating the depot backlog and throughput problems. The second sacrifices the combat readiness at a time when USMC TACAIR is experiencing high operational demand.

Bottom line for aviators—projected lack of aircraft on the flightline will cause a downward trend in Marine Corps tactical aviation readiness. More importantly, if depot maintenance throughput is not significantly improved, the backlog of aircraft at the depot will increase to a point at which it will affect forward deployed units.

For the maintainers at the squadron level—the fleet is currently annotating and analyzing the impact of the increase in man-hours incurred by the HFH recurring interval inspections.

Q. What is the cost of this new inspection and SLEP plan across the FYDP?

A. FY13 HFH inspections and SLEP plan are fully funded. The FYDP costs are shown below.

HFH OMN Budget (in $M)

Current Budget FY (PB–14)	13	**14**	**15**	**16**	**17**	**18**
HFH Inspection Budget (OMN)	$26.5	**$19.8**	**$17.0**	**$9.5**	**$14.8**	**$9.9**

SLEP APN–5 Budget ($636.56M FYDP)*

Current Budget FY (PB–14) $M	13	**14**	**15**	**16**	**17**	**18**
SLEP Budget (APN5 within OSIP 11–99)	$54.63	**$59.52**	**$111.64**	**$206.88**	**$106.72**	**$151.80**

*In PB–14, OSIP 11–99 (funding for SLEP/SLMP) was reduced by $697.28M across the FYDP (Issue #20025 -$99.26M & Issue #62294 -$598.00M). This equates to a 52% reduction in funding for combined HFH and SLEP in PB–14.

The average cost of the HFH Stand Alone inspection is currently $447,186 with turnaround times averaging 328 to 403 days depending on the depot site.

Mr. LoBiondo. As you know, the F/A–18E/F Block II Super Hornet will be part of the Navy's aviation backbone for the next 25 years and beyond. Both the Super Hornet and the F–35C will be providing force projection for our carriers. Because of its importance to the long-term health of tactical aviation, the Committee understands that there are efforts under way to support advancements to the current Block II platform. At Navy League last week there were presentations on both the funded "Flight Plan" of the Super Hornet and additional advancements being considered. Can you talk about the importance of a modernization program for the Super Hornets in order to take that aircraft out the next 25 years or more?

Admiral Moran. F/A–18E/Fs will remain critical multimission assets in the air wing of the future and will complement the first-day/first-strike capability of the F–35C. As the bulk of the strike/fighter force, the Super Hornet will continue to execute many of the same mission sets as the F–35C and will be expected to serve as a primary delivery platform for long-range air-to-air and air-to-surface weapons. Continued upgrades to the F/A–18E/F platform are critical. Efforts to modernize the 2025 Carrier Air Wing (CVW) include integration of weapons and capabilities through coordinated management and synchronized requirements development with the flexibility and agility to meet any threat. The CVW leverages networked weapon

system integration and interoperability to find, fix, track, target, engage and assess any threat by utilizing off board cueing, operating across the RF spectrum and with stealth technology to achieve full spectrum dominance to interrupt red effects chains. Future F/A–18E/F improvements such as Multifunctional Information Distribution System (MIDS) upgrades, Multi-System Integration (MSI) refinement, configuration modifications and improved Counter Electronic Attack (CEA) for the Advanced Electronic Scanned Array (AESA) radar, introduction of the long-wave Infra-Red Search and Track (IRST) pod, Advanced Targeting Forward Looking Infra-Red (ATFLIR) pod enhancements and improved weapons integration will allow the Super Hornet to meet the capability requirement of the 2025 CVW.

QUESTIONS SUBMITTED BY MR. TURNER

Mr. TURNER. Mr. Sullivan, your most recent report identifies a number of technical risks the program faces that could substantially degrade the F–35's capabilities and mission effectiveness. Can you please identify the major technical risks the program faces going forward. What is the status of these risks? Specifically, with regard to the Helmet Mounted Display, what risks remain and what actions are being taken in order to reduce these risks?

Mr. SULLIVAN. The key areas of risk we highlighted in our March 2013 report were the Autonomic Logistics Information System (ALIS), the arresting hook system for the carrier variant aircraft, structural durability, the Helmet Mounted Display (HMD), and software integration and testing.[2] While the program still faces a number of challenges going forward, it has taken positive steps to address risk in these areas. For example, limited capability ALIS systems are now being used at training and test locations and the program has made progress in developing the smaller, transportable version needed to support unit level deployments with the expectation that a fully capable system will be fielded in 2015. The program has completed the redesign of its carrier variant arresting hook system, conducted risk reduction testing on the new hook point, and expects to begin flight testing the entire redesigned system in late 2013. The program is also testing redesigned structures and planning for other modifications that are needed to address problems identified during the aircraft's structural and durability testing.

With regard to the HMD, the original design encountered significant technical deficiencies and did not meet warfighter requirements. Those deficiencies included degraded night vision capability, display jitter, and latency (or delay) in transmitting sensor data. Program officials stated that software updates are being made to improve night vision capability, filters are being added to displays to decrease jitter, and data latency is not as severe as originally assumed. Early developmental testing of these updates has shown improvement, according to program officials, but risks remain as additional testing still needs to be done. In addition, the program is pursuing a dual path by developing a second, less capable helmet while working to fix the first helmet design. Both helmets are being evaluated, and while DOD may make a decision as to which helmet to procure later this year, the selected helmet is not expected to be integrated into the baseline aircraft until 2015.

Software integration and testing continue to pose significant risks to the program, although the aircraft contractor and program office have recently taken steps that are likely to improve software management and output. The number of lines of code necessary to achieve full mission capability is now estimated to be to over 24 million. While most of the code has been developed, a substantial amount of integration and test work remain before the program can demonstrate full warfighting capability. The specific software needed to demonstrate that capability including electronic warfare, communication navigation identification, and radar is behind schedule, and the most challenging work still lies ahead.

Mr. TURNER. Mr. Sullivan, for years GAO has been a critic of the JSF program with regard to cost growth and schedule delays, yet your most recent report seems to indicate things are getting better. What changes has the program made in order to set it on a new path? Going forward, what critical challenges remain for the program from a cost and schedule standpoint?

Mr. SULLIVAN. After 12 years and more than $20 billion dollars in development cost growth, the department has fundamentally restructured the F–35 program. In doing so, it has steadily lowered the production ramp-up rate over the past 3 years and cut near term procurement quantities. This means that fewer aircraft are being procured while testing is still ongoing, which lowers the risk and cost of having to

[2] GAO, F–35 Joint Strike Fighter: Current Outlook Is Improved, but Long-Term Affordability Is a Major Concern, GAO- 13–300 (Washington, D.C.: Mar 11, 2013).

retrofit and modify aircraft. The new development flight test schedule is also more realistic and better resourced, using more conservative assumptions about fly rates and test point achievements and providing for more flights and more test assets. In addition, the acting Under Secretary of Defense for Acquisition, Technology, and Logistics has established unit cost affordability targets for each variant of the aircraft that the program is expected to meet by the start of full-rate production in 2019. In the area of software management, the program began the process of establishing a second system integration laboratory, adding substantial testing and development capacity, and prioritizing its resources on incremental software development as opposed to the much riskier concurrent development approach.

Going forward, affordability and concurrency between testing and production will continue to pose significant cost and schedule challenges for the F–35 program. The new acquisition program baseline projects the need for a total of $316 billion in development and procurement funding from 2013 through 2037—which represents an average of more than $12 billion annually. Maintaining this level of sustained funding will be difficult in a period of declining or flat defense budgets and competition with other "big ticket items" such as the KC–46 tanker and a new bomber program. In addition, the program's highly concurrent test and production schedule poses significant risk going forward. With nearly two-thirds of the developmental test program remaining, additional time and money will likely be needed for retrofits and rework of procured aircraft. At the time of our report, the program office projected retrofit and rework costs of $1.7 billion on aircraft procured under the first 10 annual contracts.

Mr. TURNER. Mr. Sullivan, as you know, the JSF acquisition program is expected to require over $300 billion still to complete the acquisition and $1 trillion to operate and sustain the aircraft. How do you view affordability as a challenge for the program?

Mr. SULLIVAN. Affordability poses a challenge because sustaining an annual acquisition funding level of over $12 billion on average from 2013 through 2037, as currently projected, will be difficult in a period of declining or flat defense budgets and given the competition for funding from other "big ticket items" such as the KC–46 tanker and a new bomber program. It should also be noted that the program's current funding projections assume financial benefits from international partners purchasing at least 697 aircraft. If fewer aircraft are procured in total or in smaller annual quantities—by the international partners or the United States—unit costs will likely rise according to analysis done by the Office of the Secretary of Defense, Cost Assessment and Program Evaluation office.

In addition, current F–35 life-cycle cost estimates are considerably higher than the legacy aircraft it will replace; this has major implications for future demands on military operating support budgets and plans for recapitalizing fighter forces. The most recent estimate by the Director of Cost Assessment and Program Evaluation projects total U.S. operating and support costs of over $1 trillion for all three variants based on a 30-year service life and predicted usage and attrition rates. Defense leadership stated in 2011 that sustainment cost estimates of this magnitude were unaffordable and simply unacceptable in this fiscal environment. U.S. military services and international partners have all expressed concerns about long-term affordability. The program has undertaken efforts to address this life-cycle affordability concern, but until DOD can demonstrate that the program can perform against its cost projections, it will continue to be difficult for the U.S. and international partners to accurately set priorities, establish affordable procurement rates, retire aged aircraft, and establish supporting infrastructure.

Mr. TURNER. You mentioned in your written testimony that F–35 sustainment costs remain a concern. What actions are the F–35 Joint Program Office and the Department of the Navy taking to reduce F–35 life-cycle costs?

Admiral SKINNER. The Department of the Navy (DON) continues to support the F–35 program in its disciplined approach to analyzing and reducing sustainment costs. The F–35 program is conducting a sustainment business case analysis to identify cost reduction initiatives. The program recently held an industry day to foster competition for sustainment contracting, specifically targeting supply chain, support equipment, training operations support, and Autonomic Logistics Information System administration. A focused reliability and maintainability program is identifying cost drivers based on actual fleet data. These cost drivers can be targeted for improvements, either by redesign or qualification of a second source. The program also uses contracting standards for suppliers to reduce repair times. As the services fund depot standup, this will also increase the sources for repair, improving quality and repair times.

Importantly, the services and JPO now have a common definition of cost per flight hour. This seemingly simple step will allow the services to investigate the underlying assumptions for cost drivers such as training, mission personnel, engineering support, and assumed annual flight hours.

The DON, working with the F–35 program, will analyze options outside the Program Executive Office's span of control such as reviewing basing option and sequencing, unit level manpower and squadron size, discrete sustainment requirements, and appropriate use of simulation for training. Work is under way for a level of repair analysis to maximize cost effectiveness and fully exploit existing service maintenance infrastructure. Such efforts yielded savings for legacy platforms, such as MV–22 and EA–18G.

Through these combined efforts, the Department of the Navy believes the PEO can converge on an affordable F–35 sustainment strategy that meets the required level of service performance and lowers the total life cycle cost of the program.

Mr. TURNER. The Navy's Broad Area Maritime Surveillance Program had assumed cost savings in production and operations and maintenance because of Global Hawk program shared overhead, training, basing costs, and other operations and sustainment costs. In addition, there is the possibility of a break in the production line, with Global Hawk Block 30 termination, given the current BAMS production schedule. Do you know what these costs will be?

Admiral SKINNER. The United States Air Force decision to terminate the Global Hawk Block 30 Lot 11 production contract in President's Budget 2013 has resulted in a gap on the production line that will cost the Navy MQ–4C Triton program an estimated $27M (Research, Development, Test & Evaluation, Navy). Final cost estimates will not be known until the Navy negotiates the Low Rate Initial Production contract with the Prime Contractor.

Mr. TURNER. Your written testimony notes that the Marine Corps may experience elevated operational risk in the 2020s if the predicted strike fighter shortfall comes to fruition. Please describe why you believe the Marine Corps faces this elevated operational risk and what the Department of the Navy is doing to mitigate those risks.

General SCHMIDLE. As legacy F/A–18 squadrons are reduced, the service shortfall number must be considered in proportion to the primary mission aircraft inventory requirement. Due to a lower number of F/A–18 squadrons in the 2023 to 2026 timeframe, the shortfall number associated with the Marine Corps will have a more significant impact on our remaining F/A–18 operational squadrons. For example, in 2023 the USMC F/A–18 fleet will have three active and one reserve squadron remaining. A shortfall of (11) F/A–18 aircraft would comprise approximately one quarter of the total squadrons or one third of the active component.

The Department of the Navy (DON) continues to manage aircraft service life of each aircraft at the operational level in order to achieve the maximum allowable service life limits prior to its sundown. The continued engineering and Service Life Extension Program (SLEP) kit development over the FYDP will ensure there is sufficient inventory to meet DON requirements through the transition to the F–35.

Mr. TURNER. The total Department of the Navy strike fighter shortfall is 18 aircraft in approximately 2023. Of that amount, what is the Marine Corps strike fighter shortfall?

General SCHMIDLE. The Marine Corps' portion of the Department of the Navy strike fighter shortfall in 2023 is 11 aircraft according to the latest excursion of the Inventory Forecasting Tool (IFT v21 excursion C012).

Mr. TURNER. Your written testimony notes that Marine aviation is on a path toward a distributed Airborne Electronic Attack system of systems including both unmanned and manned assets. Please describe the number and types of unmanned and manned assets that will be part of this system.

General SCHMIDLE. The Marine Corps anticipates a future operating environment comprised of advanced Electromagnetic Spectrum (EMS) Warfare and digital threats. The Marine Corps will address these threats with the Marine Air Ground Task Force Electronic Warfare (MAGTF EW) concept. This approach will leverage all available transmitters and sensors across the MAGTF on both manned and unmanned platforms. A coordination cell comprised of EMS, Cyber, Operations, Intelligence, and Communications subject matter experts (SME) will collectively integrate collections and effects-delivery efforts in real-time. The Marine Corps will no longer depend on a large single-purpose platform, since the low-density, platform-centric approach has proven insufficient for meeting capacity requirements. MAGTF EW systems will be capable of networking with Marine and Joint assets spanning the air, ground, space, and cyber domains.

Any current or future airframe employed in support of MAGTF operations will maintain the ability to host advanced EMS payloads in support of integrated Spectrum and Cyber Operations. The Intrepid Tiger II Electronic Warfare pod, currently deployed to Central Command (CENTCOM) and aboard Marine Expeditionary Units (MEUs), is one such payload example. The types and numbers of these platforms and systems will be based on Service capacity and future mission requirements. These platforms specifically include future Group 4/5 UASs, RQ–21, F–35, KC–130J, AV–8B, F/A–18, AH–1, though any aircraft in the inventory will be capable of serving as a host platform in the distributed capability network. As the future linchpin of Marine Corps Tactical Aviation, the F–35 JSF will contribute by reducing counter-integrated air defense systems (C–IADS) requirements due to its inherent Spectrum survivability, and adding decisive networked attack and exploitation capabilities in EMS regions of significance.

While the Marine Corps is currently achieving combat success with EMS payloads on manned platforms in theater and adding such capability to deployed Marine Expeditionary Units, the application of airborne Spectrum Warfare will increasingly gravitate towards UAS platforms. Marine Corps Aviation is actively exploring options to expand its UAS fleet with larger platforms to provide requisite size, weight, and power to perform a combination of standoff and penetrating Spectrum Attack operations. This approach will enable a deliberate Spectrum Warfare portfolio growth from communications-based targets by incorporating RADAR-based targets, directed-energy (DE) and LASER targets, as well as targets susceptible to low-yield electromagnetic pulse (EMP). Additionally, the Marine Corps is exploring the viability and readiness of advanced (medium-high Technology Readiness Level) Spectrum Attack technologies to augment baseline Intrepid Tiger 2 capability for future incorporation.

Mr. TURNER. Like the Air Force, Naval air forces require inventories of precision air-to-air and air-to-ground munitions. Please describe which inventories and short of requirements and provide the committee a list of those munitions and amounts above the budget request that could be executed in fiscal year 2014.

General SCHMIDLE. The following list of precision air-to-air and air-to-ground Naval munitions have been identified as falling short of their requirement, as defined by the POM–14 Naval Munitions Requirements Process (NMRP) output, and can execute the amounts shown above the budget request that could be executed in fiscal year 2014.

AIM–9X: $135M for an additional 350 missiles.
AARGM: $16.5M for an additional 22 missiles.
JSOW C–1: $28M for an additional 92 weapons.

GP Bombs: $237.8M for the additional components below:
—JDAM tail kits ($72M, QTY 3,000)
—Laser JDAM ($50.4M, QTY 3,500)
—GBU–12 ($12M, QTY 3,000)
—GBU–10 ($3.5M, QTY 700)
—Computer Control Groups ($24M, QTY 2,000)
—BLU–109 Bomb Body ($64M, QTY 2,000)
—FMU–143 fuze ($11.9M, QTY 3,500)

Rockets: $118M for the additional components below:
—M151/MK152 HE Warhead ($18M, QTY 12,917)
—MK 66 MOD 4 Rocket Motor ($24.3M, QTY 41,258)
—WTU–1/B Inert Warhead ($1.1M, QTY 12,881)
—WGU–59/B APKWS II Guidance and Control Section ($74.3M, QTY 2,564)
—LAU–61 G/A Digital Rocket Launcher ($0.28M, QTY 5)

Mr. TURNER. In your statement you note that initial operational capability (IOC) dates have not been determined by leadership but you describe capabilities for IOC such as 10 F–35B aircraft with software block 2B for the Marine Corps, and 10 F–35C aircraft with software block 3F for the Navy. You also mention that you will report those dates by June 1st of this year. Based on the current F–35 development and procurement schedule, can you estimate what year the F–35B and F–35C will be declared IOC?

General SCHMIDLE. IOC dates are capability based, and the services will declare IOC dates in a report to Congress due by 1 June 2013. The current F–35B IOC plan is based on appropriate software, weapon clearances, performance envelope, training, deployability, and sustainment capabilities. The Marine Corps estimates it will declare IOC for the F–35B between July 2015 (objective) and December 2015 (threshold).

Mr. TURNER. Like the Air Force, Naval air forces require inventories of precision air-to-air and air-to-ground munitions. Please describe which inventories and short of requirements and provide the committee a list of those munitions and amounts above the budget request that could be executed in fiscal year 2014.

Admiral MORAN. The following precision air-to-air and air-to-ground Naval munitions have been identified as being short of their inventory requirement. The funding above the PB14 budget request that could be executed in fiscal year 2014 is also provided below.

AIM–9X: $58.1 for an additional 150 missiles.
AARGM: $16.5M for an additional 22 missiles.
JSOW C–1: $28M for an additional 92 weapons.

GP Bombs: $237.8M for the additional components below:
—JDAM tail kits ($72M, QTY 3,000)
—Laser JDAM ($50.4M, QTY 3,500)
—GBU–12 ($12M, QTY 3,000)
—GBU–10 ($3.5M, QTY 700)
—Computer Control Groups ($24M, QTY 2,000)
—BLU–109 Bomb Body ($64M, QTY 2,000)
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Admiral MORAN. In accordance with the FY13 NDAA Conference Report (112–705) on H.R. 4310, the Secretary of the Navy will submit, along with the Secretary of the Air Force, a report to Congress declaring IOC dates for all three variants of the Joint Strike Fighter by June 1, 2013.

Mr. TURNER. You mentioned in your written testimony that depot delays will require the grounding of some of the affected aircraft, and that sequestration cuts to Air Force modernization will impact every one of the Air Force's investment programs, creating inefficiencies, raising unit costs, and delaying delivery of valued capabilities to warfighters in the field. You also note that the Fiscal Year 2014 budget request does not enable full recovery of warfighting capability, capacity and readiness and that additional resources will be required. a. What effects will sequestration have in the current fiscal year on the Air Force fighter inventory? b. What additional resources will be required in fiscal year 2014 to make the fighter fleets whole again?

General DAVIS. a. The Air Force fighter force structure requirement is currently 1,900 TAI (Total Active Inventory), and 1,100 PMAI (Primary Mission Aircraft Inventory, or "combat-coded" fighter aircraft). Because these force structure numbers are minimums set to meet our National Military Strategy at increased aggregate risk, the Air Force is actively managing force structure to offset the effects of sequestration. Although sequestration itself will not affect the tactical fighter inventory in the current fiscal year in terms of PMAI, some fighter units are currently stood down and will likely remain so throughout FY13. Overall, sequestration has created significant readiness shortfalls and reduced our ability to meet future steady-state and surge requirements. Examples of sequestration impacts include postponement of field level maintenance and depot inductions, reductions in depot production and interruption of aircraft modification and modernization efforts. Based on the force structure minimum of 1,900 TAI/1,100 PMAI, the Air Force's ability to meet the National Military Strategy is already at increased risk, and sequestration exacerbates the Air Force's near term readiness impacts and its ability to meet future requirements.

b. It will take 3–6 months and additional funding to bring stood down fighter squadrons back to their pre-sequestration readiness levels, which were sub-optimal. Achieving full mission readiness goals will be a multiyear effort beyond what is achievable in FY14. For FY14, we estimate an additional 10% flying hours above

PB14 levels for the stood down units, or approximately $115M. In addition, to recover the deferred FY13 depot actions for the fighter fleet overall will cost approximately $34M.

Mr. TURNER. You mentioned in your written testimony that all three mission areas in the air-to-surface munitions inventory are short of inventory objectives. Those missions are stand-off, direct attack, and penetrator munitions.

a. Please provide the subcommittee a list of those muntions and amounts that could be increased to the budget request and, if authorized and appropriated, could be executed in fiscal year 2014.

General DAVIS. Joint Air-to-Surface Standoff Missile (JASSM) is a conventional, low observable, cruise missile, with standoff ranges of 200nm (JASSM Baseline) or 500nm (JASSM–ER). The current inventory for JASSM Baseline is approximately 1,060 units and objective inventory is approximately 2,000 units. The Air Force FY14 President's Budget (PB) request is $291.2 million for 103 JASSM Baseline units and 80 JASSM–ER units. The Air Force supports the FY14 PB. In order to reach the FY14 production capacity of 175 JASSM Baseline units, an additional $81.4 million is required. The currently inventory for JASSM–ER is 0 units and objective inventory is approximately 3,000 units. The FY14 PB request for 80 JASSM–ER units is the production capacity.

Hellfire is a direct attack munition used to prosecute time-sensitive targets. It is the only weapon employed on the MQ–1 Predator and the only forward firing weapon on the MQ–9 Reaper. The current inventory is approximately 2,000 units and objective inventory is approximately 5,000 units. The Air Force FY14 PB request is $48.5 million for 413 units. The Air Force supports the FY14 PB. In order to reach the FY14 production capacity of 7,200 across the Army, Navy, Air Force, and FMS procurement, an additional $492.4 million is required.

Small Diameter Bomb Increment II (SDB II) is a standoff miniature munition designed to kill mobile targets in adverse weather conditions. The current inventory is 0 units and objective inventory is approximately 12,000 units. The Air Force FY14 PB request is $42.3 million for 144 units. The Air Force supports the FY14 PB. In order to reach the FY14 production capacity of 173, an additional $4.4 million is required.

Joint Direct Attack Munition (JDAM) is a field-installed guidance kit with global positioning system aided inertial navigation system (GPS/INS) that integrates on 500, 1,000, and 2,000 pound general purpose bombs. JDAM provides an accurate, adverse weather capability, and is integrated with the B–52H, B–2A, B–1B, F–16C/D, F/A–18A+C/D/E/F, F–15E, AV–8B, A–10C, and F–22A aircraft. The current inventory is approximately 96,200 units and objective inventory is approximately 150,000 units. The Air Force FY14 PB request is $188.5 million for 6,965 units (however, note that the FY14 Tail kit quantities in the FY14 budget documents are incorrect and should reflect 4,451 units, not 6,965 units). The Air Force supports the FY14 PB. However, the Air Force also requested $85.5M for an additional 2,879 units in the FY14 Overseas Contingency Operations. If only the FY14 PB is met, an additional $141.5 million is required in order to procure an additional 5,428 units. However, if both the FY14 PB and the FY14 OCO requests are accepted, an additional $66.5 million is required to procure an additional 2,549 units. The FY14 production capacity is 15,000 units across the Navy, Air Force, and FMS procurement.

Mr. TURNER. We understand the inventory objective for the CV–22 fleet is 50 aircraft, but when the last CV–22 is delivered in 2016, the inventory will total 49 aircraft due to a class A mishap of one CV–22 in June of last year. Are there any plans to replace that aircraft to meet the CV–22 inventory objective of 50 aircraft?

General DAVIS. The Air Force is currently exploring all funding options available to replace the CV–22 lost during training in June 2012, before the CV portion of the production line starts closing down in FY14. However, with budget reductions and sequestration, near-term funding will be difficult to find.

Mr. TURNER. We noted that the Combat Rescue Helicopter program is currently in source selection. When is the contract award announcement planned?

General DAVIS. The Air Force continues to press forward with the Combat Rescue Helicopter contract award and we are currently in the 4QFY13/1QFY14 timeframe.

Mr. TURNER. You noted in your written testimony that the majority of the $1.32 billion across the Future Years Defense Program for F–16 modernization will focus on the service life extension program (SLEP) and the combat avionics programmed extension suites (CAPES) for 300 F–16s. You also note that you will have to SLEP and modernize more. Does that mean you're planning to accomplish the SLEP and CAPES modifications on more than 300 Block 40 and 50 F–16s? If so, how many additional F–16s will require the SLEP and CAPES modifications?

General FIELD. The current requirement as defined in the FY14 President's Budget is to SLEP and CAPES 300 F–16 aircraft. While there is no currently approved requirement to accomplish SLEP or CAPES modifications to more than 300, both the SLEP and CAPES programs are scalable up to 635 Block 40–52 F–16 aircraft. Potential certainly exists for the number of aircraft programmed for modification to shift from 300 (up or down) in order to address USAF requirements, but specifics pertaining to any potential shifts are not defined at this time.

Mr. TURNER. In your statement you describe a decreased fighter force structure of 1,900 total fighter aircraft as "an increased risk" to carry out the National Military Strategy, which is a reduction from a 2,000 fighter aircraft inventory 2 years ago. Please describe the increased risks in terms of meeting military objectives. What actions is the Air Force taking to reduce this risk? What actions can the Congress take to reduce this risk?

General FIELD. The decision to reduce force structure was a very difficult one. From the mission risk perspective, a smaller force means that objectives may take longer to achieve; integrated air defense systems (enemy surface-to-air missiles and fighters, etc.) will take longer to defeat, thereby increasing the threat to our aircrews; there will be greater likelihood that the Air Force will not be able to gain and maintain air superiority, but may have to settle for temporary, local air superiority; and greater likelihood that joint/coalition ground (and possibly naval) forces will be at risk of enemy air attack for the first time since the Korean War. Insufficient capacity to support defense strategic guidance will result in more force substitutions at greater risk (particularly for air superiority missions), more difficulty conducting nearly simultaneous surge operations resulting in higher attrition and the potential for failure. Reduced capacity also drives a higher OPTEMPO leading to readiness degradation and reduced availability for enduring overseas operations. Within significant budgetary restrictions, the Air Force is mitigating these risks by modernizing and sustaining legacy fighters, by upgrading and procuring fifth generation aircraft, and by procuring preferred munitions. Congress can help reduce these risks by continuing to support the Air Force's fighter force structure with stable funding; supporting the minimum inventory requirement of 1900 fighter aircraft; allowing continued modernization and sustainment of legacy fighters, procurement of fifth generation aircraft, procurement of preferred munitions, and allowing the Air Force to close excess installations as part of a new Base Realignment and Closure process.

Mr. TURNER. What is the status of the Air Force's air-to-air weapons inventory? Are there shortages in the AIM–120 or AIM–9 inventories? If so, please provide additional amounts that could be executed in fiscal year 2014 to address those shortages.

General FIELD. AIM–120 Advanced Medium-Range Air-to-Air Missile (AMRAAM) is a beyond-visual-range missile used to counter existing and emerging air vehicle threats, operating at high or low altitude and having electronic attack (EA) capabilities). The current inventory is approximately 2,500 units and the objective inventory is approximately 5,000 units. The Air Force FY14 President's Budget (PB) request is $340 million for 181 units, which is the FY14 production capacity.

AIM–9M Sidewinder Air-to-Air Missile is a short to medium-range infrared-guided missile. The current inventory is approximately 3,100 units and the objective inventory is approximately 700 units. This missile is no longer in production, so there was no procurement FY14 PB request in the FY14 PB.

AIM–9X Sidewinder Air-to-Air Missile is a short to medium-range infrared-guided missile, with enhanced detection and tracking capabilities, and increased maneuverability. The current inventory is approximately 1,100 units and the objective inventory is approximately 1,800 units. The Air Force FY14 PB request is $120 million for 225 units. The Air Force supports the FY14 PB. In order to reach the FY14 production capacity of 800 units across the Navy, Air Force, and FMS procurement, an additional $135 million is required for an additional 350 units.

QUESTIONS SUBMITTED BY MR. BARBER

Mr. BARBER. General Davis, thank you for your service to our Nation and your testimony before this committee today. In your testimony today, you mentioned improvements to the A–10 airframe to ensure its combat viability through 2035. I understand the A–10 is a critical close air support platform that the Services have come to rely upon for its effectiveness and precision. Truth be told, it is quite an iconic aircraft, and I'm proud to have A–10s in my district at Davis-Monthan Air Force Base. As the Air Force transitions a number of the A–10 fleet to the Reserve

Component, how is the Air Force ensuring its Reserve fleet of A–10s are kept at the same level of readiness as their Active Duty counterparts?

General DAVIS. Aircraft with existing wings that are considered beyond repair will get new wings, regardless of whether they are Active Component (AC) or Reserve Component (RC). The determination of which aircraft get new wings is based on an inspection of the wings when the aircraft is at the depot. RC aircraft will receive the standard block software upgrades (OFP). All AC and RC A–10s will receive the same OFP upgrades.

Mr. BARBER. General Field, thank you for your service to our Nation and your testimony before this committee today. I would like to begin first by saying I remain committed to solving the fiscal challenges and uncertainties facing our Nation today. I have said time and again that cuts applied in an across-the-board manner by sequestration are nonsensical and harmful to our national defense. While the CR provided the Department some flexibility, I am not satisfied. That being said, I understand the Department must adhere to the law and move forward with securing our national defense regardless. As the Department has begun to identify ways to be more efficient, top military leaders have stated that Building Partner Capacity will remain a critical tool for ensuring global stability. Air Force units in my State, Arizona, contribute significantly to this effort by training foreign pilots, and I am proud of their service and commitment to our global security. Over time, these airmen have developed an indispensable skill critical to the effort of Building Partner Capacity. I'm sure you can agree, as good stewards of U.S. resources, we cannot allow skills and expertise to erode as a result of sequestration. As such, it makes sense to ensure we recycle and maintain the expertise of our airmen as we integrate new technology. General, in this case, I'm talking specifically about the F–35 and Air Force basing decisions for the F–35. General Field, my question to you is this: When making F–35 basing decisions, how much weight will the Air Force place on bases' current missions and the expertise they possess from conducting those missions when determining where to base the F–35? What will drive the Air Force's basing decisions for future missions, specifically the F–35?

General FIELD. The Air Force strategic basing process begins with criteria development, which outlines basing requirements. Mission is one of (normally) four categories of criteria. The mission category is comprised of elements specific to the weapon system being considered for basing. Each element is weighted based on their relative importance to the mission. The mission elements address requirements unique to that weapon system, not necessarily current missions at a particular location, or resident expertise. Regarding the F–35A, criteria for future training basing decisions will be reviewed and updated as necessary, but is not expected to change markedly.

The strategic basing process is requirements-driven. In the case of the F–35A, future basing decisions will be based upon the aircraft delivery schedule and the potential for foreign military sales (FMS) of F–35A aircraft. The Air Force anticipates a future need to identify a long-term FMS location for F–35A training, but that is dependent upon future foreign sales.

QUESTIONS SUBMITTED BY MR. VEASEY

Mr. VEASEY. This question is for all of the flag officers. It is clear that the world is getting more dangerous, not less. The situation with North Korea makes that very clear. Iran is moving toward a potential nuclear weapon. We know that Russia and China are developing advanced stealth fighters and proliferating advanced surface-to-air missile systems. Can you discuss the importance of the advanced stealth capability that the F–35 will give us and our allies in the future to meet the increasing threats around the world.

Mr. SULLIVAN. We have not conducted the work necessary to answer this question.

Mr. VEASEY. This question is for all of the flag officers. It is clear that the world is getting more dangerous, not less. The situation with North Korea makes that very clear. Iran is moving toward a potential nuclear weapon. We know that Russia and China are developing advanced stealth fighters and proliferating advanced surface-to-air missile systems. Can you discuss the importance of the advanced stealth capability that the F–35 will give us and our allies in the future to meet the increasing threats around the world.

Admiral SKINNER and Admiral MORAN.

- F–35C offers the first 5th generation fighter aircraft to the Navy carrier air wing and brings with it the ability to effectively engage and survive a wide

range and threats, both air and surface, in contested airspace. It provides a "day-one" strike capability enabling tactical agility and strategic flexibility required to counter a broad spectrum of threats and win in operational scenarios that cannot be addressed by current legacy aircraft, including operations in an anti-access/area denied environment.

- Key additive capabilities that F–35C will bring include very low observable stealth characteristics and fused active and passive sensors that will enhance the inherent stealth design. These fully integrated capabilities will allow F–35C to retain a 'first detect/first shot' capability throughout the battlespace. F–35C's survivability and lethality will fully integrate with the other Navy Carrier Strike Group assets and provide increased real-time situational awareness to all other networked assets. As such, F–35C offers complementary, additive capability to F/A–18E/F in numerous mission areas.
- A force equipped with F–35C aircraft enables combatant commanders to attack targets day or night, in all weather, in highly defended areas of joint operations. Target set includes: fixed and mobile land targets; enemy surface units; and air threats (including advanced cruise missiles).
- F–35C will supplant some of the aging Navy TACAIR inventory by replacing early blocks of the F/A–18E/F and legacy F/A–18C aircraft. F–35C procurement remains a key element of the Navy's strike-fighter force mix.

Mr. VEASEY. Lieutenant General Schmidle, can you provide the Subcommittee an update on the F–35B STOVL variant's progress in the test program and discuss why you and the Commandant believe this aircraft is so critical to the Marine Corps' future?

General SCHMIDLE. In 2011 and 2012, The F–35B test program made significant progress and has demonstrated key capabilities that confirm the aircraft will meet our requirements. As of 17 May 2013, the F–35B has conducted 1,129 test flights for a total of 1,588.1 test flight hours, and has successfully completed initial ship trials, air start testing, and released both precision and air-to-air weapons. The testing of STOVL performance capabilities continues to expand the envelope resulting in our first operational vertical landing in March 2013 at MCAS Yuma, Arizona.

The Marine Corps' transition to the F–35B STOVL is well under way with the establishment of VMFAT–501, the Fleet Replacement Squadron, and VMFA–121, the first tactical squadron. VMFAT–501 currently executes a full training schedule for F–35B transition pilots and maintainers. VMFA–121, which stood up in November 2012, now has 4 F–35Bs and will be fully outfitted with 16 F–35Bs by this fall.

The F–35B supports the rapidly changing nature of expeditionary operations by providing flexible basing options that allow tactical aircraft to improve responsivenes and increase sortie generation rates. The value of STOVL has been demonstrated repeatedly, most recently in combat operations ashore, through the use of forward operating bases (FOBs) in Iraq and Afganistan, as well as during embarked operations throughout Central Command's Area of Responsibility.

Based on the testing completed to date we are confident the Marine Corps' requirement for one tactical aircraft type, capable of multiple missions, providing the MAGTF with flexible expeditionary basing and the superior technology needed to dominate the fight is the F–35B. There are no alternatives to the F–35B that support the full range of crisis response obligations of the United States Marine Corps.

Mr. VEASEY. This question is for all of the flag officers. It is clear that the world is getting more dangerous, not less. The situation with North Korea makes that very clear. Iran is moving toward a potential nuclear weapon. We know that Russia and China are developing advanced stealth fighters and proliferating advanced surface to air missile systems. Can you discuss the importance of the advanced stealth capability that the F–35 will give us and our allies in the future to meet the increasing threats around the world.

General SCHMIDLE. The F–35's low observable survivability, powerful integrated sensor suite, fused information displays, interoperable joint connectivity, precision weapons suite, and self-protect anti-air weapons, is a total package of capabilities that will revolutionize our Naval Air combat power in all threat and operational environments. The advanced fifth-generation stealth capability allows our aviation elements to operate in threat environments not compatible with fourth-generation aircraft without extensive and intensive electronic warfare augmentation. By using the F–35 in these high threat environments we reduce exposure, increase survivability, and improve overall mission effectiveness with tailored and precision application.

Mr. VEASEY. Rear Admiral Moran, can you speak to the additional capability the F–35 will bring to the fleet and to the program's importance to the Navy's Tactical Aviation recapitalization efforts?

Admiral MORAN. The F–35C provides a 5th generation fighter aircraft to the Navy carrier air wing and brings with it the ability to effectively engage and survive a wide range of threats, both air and surface, in contested airspace. It provides a "day-one" strike capability enabling tactical agility and strategic flexibility required to counter a broad spectrum of threats and win in operational scenarios that cannot be addressed by current legacy aircraft, including operations in an anti-access/area denied environment.

F–35C's 5th generation survivability and lethality is enhanced by very low observable stealth characteristics, fusion of onboard and off-board passive and active sensors, and real-time integration with other F–35Cs and Navy assets, which provide a "first detect/first shot" capability throughout the battlespace. The F–35C will provide a significant additive value when brought to bear with the networked fighting concepts of the U.S. Navy Carrier Strike Group and in a joint/combined warfighting arena.

Mr. VEASEY. Lieutenant General Davis, affordable F–35 recapitalization is dependent on capturing economies scale as quickly as possible by increasing production as quickly as possible. It finally appears that the Department has stabilized the production rate for the F–35 program and is committed to increasing the ramp rate beginning in Fiscal Year 2015. Contrary to the public perception, I understand that unit costs have been coming down year-over-year. In fact, unit costs have come down more than 50% from LRIP 1 through LRIP 5. Furthermore, it has been brought to my attention that the projected unit cost per aircraft for the F–35A CTOL variant in Fiscal Year 2018 is projected to be approximately $75 million in Fiscal Year 2012 dollars ($85 million in then-year dollars) if the current production profile is maintained.

Can you confirm this for the Subcommittee?

General DAVIS. Based on the current production profile, the estimated unit recurring flyaway cost (URF) for the F–35A will be approximately $87 million (TY$) in FY18. The URF cost includes the airframe, electronics, engine and engineering change orders. The estimated flyaway cost is approximately $96 million (TY$) in FY18. The flyaway cost adds in non-recurring and ancillary equipment costs. The F–35A unit cost is subject to change if the U.S. Services or partner nations adjust their procurement profiles.

Mr. VEASEY. This question is for all of the flag officers. It is clear that the world is getting more dangerous, not less. The situation with North Korea makes that very clear. Iran is moving toward a potential nuclear weapon. We know that Russia and China are developing advanced stealth fighters and proliferating advanced surface to air missile systems. Can you discuss the importance of the advanced stealth capability that the F–35 will give us and our allies in the future to meet the increasing threats around the world.

General DAVIS and General FIELD. Since World War II, the U.S. has relied on its ability to control the skies over the battlefield, protecting our forces and holding any adversary's targets at risk. Our potential adversaries are keenly aware of the importance of air superiority to our nation's way of war. This is why the development and proliferation of weapon systems that contest our asymmetric advantage in the air are increasingly prevalent. For the past 30 years, our fighter fleet remained ahead of this evolving threat, superbly performing all its missions and supporting the joint warfighter in operations such as EL DORADO CANYON, DESERT STORM, ALLIED FORCE, ENDURING FREEDOM and IRAQI FREEDOM. However, even during these conflicts we sometimes faced threat systems that posed a significant threat to our legacy fighter fleet. For example, during the first days of DESERT STORM only our fleet of F–117 stealth fighters was able to safely operate and survive in the highly contested skies over Baghdad.

We believe that air superiority remains an imperative when fighting any adversary and maintaining the ability of our aircraft to penetrate and persist in contested environments is vital to the joint warfighter. As you mention, the threats we may face continue to evolve in technology and complexity. Potential adversaries are acquiring advanced fighters on par with or better than our legacy fleet, developing sophisticated and networked early warning radar surveillance systems, and fielding surface to air missile systems with increasing range and lethality. These capabilities all work together to create advanced, and extremely dangerous, integrated air defense systems (IADS). These anti-access/area denial environments seriously challenge our ability to gain air superiority and hold targets at risk. We already face this challenge in some parts of the world and as you said, and these threat environments will continue to expand as these systems proliferate.

Our legacy fleet is approaching the limits of capability modernization that permits them to survive and operate in these environments—they simply do not have the

advanced stealth capability required to defeat the emerging threats. Only our fifth generation fighter fleet's combination of advanced stealth, precision weapons, unmatched electronic warfare systems, fused multi-spectral battlespace awareness, combat identification systems, maneuverability, and speed has the ability to operate and survive in these advanced threat environments. All these capabilities inherent in the F–35, particularly its advanced stealth properties, ensure the U.S. and our allies have an air superiority advantage, and will enable our combatant commanders to bring the full spectrum of capabilities of the joint force to the fight.