

TO RECEIVE TESTIMONY ON THE JOINT STRIKE FIGHTER

THURSDAY, MARCH 11, 2010

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

The committee met, pursuant to the notice at 11:11 a.m., in room SR-228, Russell Senate Office Building, Senator Carl Levin (chairman) presiding.

Committee members present: Senators Levin, Lieberman, Nelson, McCaskill, McCain, Chambliss, Thune, LeMieux, and Collins.

Committee staff members present: Richard D. DeBobes, staff director; and Leah Brewer, nominations and hearings clerk.

Majority staff members present: Creighton Greene, professional staff member; Gerald J. Leeling, counsel, and Peter K. Levine, general counsel.

Minority staff members present: Joseph W. Bowab, Republican staff director; Pablo E. Carrillo, minority investigative counsel; David M. Morriss, minority counsel; and Christopher J. Paul, professional staff member.

Staff assistants present: Paul Hubbard, Christine G. Lang, Brian F. Sebold, and Breon N. Wells.

Committee Members assistants present: James Tuttle, assistant to Senator Byrd; Christopher Griffin, assistant to Senator Lieberman; Joel Spangenberg, assistant to Senator Akaka; Madeline Otto, assistant to Senator Bill Nelson; Patrick Hayes, assistant to Senator Bayh; Gordon Peterson, assistant to Senator Webb; Tressa Guenov, assistant to Senator McCaskill; Roosevelt Barfield, assistant to Senator Burris; Clyde Taylor IV, assistant to Senator Chambliss; Jason Van Beek, assistant to Senator Thune; Brian Walsh, assistant to Senator LeMieux; and Rob Epplin and Molly Wilkerson, assistants to Senator Collins.

OPENING STATEMENT OF SENATOR CARL LEVIN, CHAIRMAN

Chairman LEVIN. The committee will come to order for a hearing on the F-35. I want to just check with you, Secretary Carter, as to what your—apparently it's your desire that you go through your entire opening statement and I just want to clarify as to about how long is your opening statement?

Dr. CARTER. Mr. Chairman, I'm at your disposal. If I did give the entire statement, it would take about 10 or 12 minutes. The only reason I mention that is because of the size of the program and all the different pieces, but I'm at your disposal.

Chairman LEVIN. I understand. If you can just keep that down to 10 minutes, no more, it would be welcome.

We're now going to shift to the second hearing of the morning, the F-35 Joint Strike Fighter Program. First, I want to thank Senator McCain, for suggesting that we have a hearing on the Joint Strike Fighter Program promptly, for keeping a focus on this program so that we can get on top of what the department found in various independent reviews of the JSF Program, what actions the department has taken to ameliorate problems that it found with the program, and what is the best judgment available as to how effective these actions will be in preventing problems with the program, including cost overruns and delays.

We have with us today Dr. Ashton Carter, Under Secretary of Defense for Acquisition, Technology and Logistics; Christine Fox, Director of the Office of Cost Assessment and Program Evaluation; Michael Gilmore, Director, Operational Test and Evaluation; General Clyde Moore, the Second of the Air Force Acting Program Executive Officer for the Joint Strike Fighter Program; and Michael Sullivan, Director, Acquisition and Sourcing Management Team of the U.S. Government Accountability Office.

So first, let me extend our welcome to our witnesses. We thank each of you for coming before this committee today.

We had a closed briefing for the committee on the Joint Strike Fighter Program in December of 2009 where Secretary Carter and Director Fox briefed the committee. We discussed the Joint Strike Fighter Program, the potential scope of the problems facing the Department and some of the options the Department had for dealing with these problems.

While both Senator McCain and I would have preferred to have an open hearing at that time, we agreed to hold a closed briefing mainly because of the sensitive nature of some of the contractor data that was discussed.

The Joint—excuse me. The F-35 Joint Strike Fighter Program is currently the largest acquisition program within the Defense Department's portfolio with an expected acquisition cost before the recent announced cost growth of nearly \$300 billion.

Any perturbation of the cost, schedule, or performance of a program that intends to buy more than 2,400 aircraft for Air Force, Navy, and Marines will have significant implications for the rest of the Department of Defense's Acquisition Programs and for the Department of Defense budget as a whole.

I would also note that this committee's strong effort on acquisition reform which became law on May 22 of last year, including those changes to the acquisition procedures required by implementation of the Weapons Systems Acquisition Reform Act, will not be judged positively unless we can demonstrate some success with the largest of the Department of Defense's acquisition programs.

Merely to say that the F-35 Program started before we enacted acquisition reform is not going to be an acceptable answer if there continue to be major disruptions and cost overruns in the program. Delays in producing the F-35 developmental aircraft have caused an estimated 13-month slip in the program for completing the testing.

We have heard estimates that the delay in initial operating capability in the Air Force could slip by as much as two years. That delay has both cost implications for the F-35 Program itself and cost implications for the Services as they try to manage their current force structure of legacy aircraft.

We know that Secretary Gates announced that he's asking that Lockheed Martin and the rest of the F-35 contractor team share in paying for cost growth in the program. We want to hear more about the situation and whether this might be a way of ensuring that contractor teams will be more cautious before bidding low on future acquisition programs with the hope that they'll be more than—they'll be more than able to make it up at the government's expense later on down the road in that program.

It's not enough merely to say that the JSF Program will live within its means by shifting production funding to pay for the increased development costs because delayed deliveries of aircraft and/or buying fewer aircraft will have a seriously negative impact on unit procurement costs as well as a significant effect on our ability to support the current force structure.

For instance, the Department of The Navy is already facing a potential shortfall that last year could have totaled some 250 strike fighter aircraft in the middle of the next decade. A shortfall that's large enough that if it were realized could cause us to tie up aircraft carriers at the pier for lack of aircraft to send with them.

Two years ago the Air Force testified that they could be facing shortfalls even larger than the Navy's in the 2024 timeframe with a fighter shortage of as many as 800 aircraft. Secretary Gates specifically mentioned last year that the Quadrennial Defense Review (QDR) was going to evaluate fighter requirements so that could have caused those deficits to change somewhat.

However, the QDR did not change the force structure requirements and even if the department were to decide that requirements should be changed, that is unlikely to erase those kinds of deficits. We need to understand what some of the options are that the department may be evaluating to deal with those problems.

Another particularly troubling matter was revealed in some of the documentation from the various independent reviews of the JSF Program. One observation from the Independent Manufacturing Review Team, the IMRT, Report on the JSF Program said the following: "Affordability is no longer embraced as a core pillar."

Well, that surely raises great concerns not only about the potential for a Nunn-McCurdy breach now, but for continuing problems for the JSF Program. This committee has been a strong supporter of the JSF Program from the beginning. However, people should not conclude that we're going to be willing to continue that strong support without regard to increased costs coming from poor program management or from a lack of focus on affordability. We cannot sacrifice other important acquisitions in the Department of Defense Investment Portfolio to pay for this capability.

Those are a few issues that this committee will be hearing more about today and now I call on Senator McCain.

STATEMENT OF SENATOR JOHN MCCAIN

Senator MCCAIN. Thank you, Mr. Chairman. I would ask that my full statement be included in the record and I want to thank the witnesses. I'll try to be brief.

I've been a strong supporter of this aircraft and this weapon system, but I'm deeply concerned about the cost overruns and the problems that have been associated with the Joint Strike Fighter.

Could I just remind you that just last August, after meeting with the program's prime contractor in Texas, Secretary Gates said that, "his impression is that most of the high risk elements associated with JSF's developmental program are largely behind us," and he went on to say that, "there was a good deal of confidence on the part of leadership here that the manufacturing process, that the supply chain, that the issues associated with all of these have been addressed or are being addressed." That was certainly not the impression that we got in the closed meeting, it was not a hearing, the closed meeting that we had just in December.

Press reports are saying that the program would need at least \$15 billion more in funding through fiscal year 2015, that the aircraft test and production would slip by at least two years, that there will be a JSF Program would most certainly suffer a Nunn-McCurdy cost breach. I mean, the media reports, I say, Mr. Chairman, have been very stark whereas this committee, although our staff has been briefed from time to time, has certainly not been notified.

Now, according to Secretary Carter's statement that—and it's on Page 5, and it's a comprehensive statement, but it should have been probably the opening paragraph, I would say, Secretary Carter, this means that the average price of a JSF aircraft as estimated by the JET, the overall cost of the program averaged over all the years of production divided by the number of aircraft would be more than 50 percent higher in inflation-adjusted dollars than it was projected to be back in 2001 when the program began and then you go on to say, "I expect that Air Force Secretary Donley will formally notify Congress of JSF's Nunn-McCurdy breach within days."

Well, I have to tell you, the witnesses, that we have not been kept up to speed as much as we should have been. It's been very clear from media reports that there are serious problems, but the most important thing is so much of this was predicted.

It is so much, Mr. Chairman, in keeping with the cost overruns that we've had with literally every major weapons system lately in the last 10 years of cost overruns and behind schedule and the impact that that has on the existing legacy aircraft, the ability to replace them, the strain. All of those have been based on certain assumptions that clearly are not—we are not aware of.

So it's a bit frustrating to hear the Secretary of Defense as short a time ago as last August to tell us that everything's okay when we're being reading in media reports that they are not. And so I would respectfully ask, Secretary Carter, that you would begin your statement by saying how much over cost is this program going to be and what will be the delay so the American people will know.

The taxpayers are a little tired of this and I can't say that I blame them and so I thank you, Mr. Chairman, for holding this hearing, and I welcome the witnesses.

[The prepared statement of Senator McCain follows:]

[COMMITTEE INSERT]

Chairman LEVIN. Thank you, again, Senator McCain, for your focus on this. It reflects really the concerns, I think, of every member, surely most members of this committee and the concerns which we've talked about in our opening comments, I hope, will be addressed in the early part of your statement, Secretary Carter, so we can just kind of summarize it and then perhaps expand, if you would, as to how do you—how are you going to deal with these questions and how do we get to where we're at.

Secretary Carter.

STATEMENT OF HON. ASHTON B. CARTER, UNDER SECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY, AND LOGISTICS

Dr. CARTER. Thank you, Mr. Chairman, Senator. I will give a very abbreviated now version of the statement, but let me just kind of cut to the case to follow up on what Senator McCain said.

When we met in December, I described to you that there was before the leadership of the department two estimates of where the program was going, one provided by the Program Office and the contractor, another one provided independently by Ms. Fox's office, the so called JET Estimate, that there was a wide discrepancy between those two and that we were trying to understand why it is we had one picture on the one hand and one picture on the other hand.

We came to the view and Secretary Gates came to the view that the JET Estimate, this one, was credible, was carefully done, and should be the basis for our budgeting and program planning going forward and that's the gist of the report I'm going to give you today and it underlies the disappointing news that there will be a critical Nunn-McCurdy breach in this, our largest program.

If there's any kind of silver lining to this story, it is only this, that as between this story which was optimistic and the story that I painted last time of the JET Estimate, we have, by addressing why it is that—what's the reason for this difference, why you guys say this and you guys say that, understood better what it is that is driving poor performance in the program and we have found some steps, managerial steps that we can take, some have been described by Secretary Gates, to do better.

Senator McCain mentioned one, which is steps taken to compress the development program that was stretching and costing us more money and taking more time than it ought to have. Those investments, as I think you, Mr. Chairman noted, are investments that we don't think the taxpayer ought to assume solely and so we have asked the contractors to share in those investments required to get us back on schedule.

And so by beginning a process of aggressive management of this program, we're trying to get to a point where the full consequences of the JET Estimate, which as I repeat, are very credible. That's

a world that I believe is a realistic estimate of where this program is going.

I'd like to do better and I'd like to challenge the contractors to do better, more jets, faster, cheaper, and in the statement I'll describe the managerial steps we're trying to do to take in the development phase, in the ramp up to full production, in full production itself, and in sustainment which, though it's many years in the future, is worth planning for now to try to do better.

Chairman LEVIN. Mr. Chairman, could I ask again if you could provide us now with a cost overrun, the amount of cost overrun and the months of delay you estimate now?

Dr. CARTER. Yes, absolutely. The measure of delay that I've focused on because it's a good measure of the technical performance of the program is the slip in the time to completion of developmental testing.

That is the number I'm sure you've heard which originally when I first talked to you, we were projecting a 30-month slip. Now, as a result of these remedial steps that the Secretary directed a 13-month slip in the completion of SDD.

As regards costs, I think I'm going to ask Ms. Fox, since she does those estimates, and I assume you're asking principally about the calculation that drives the Nunn-McCurdy breach which is the unit cost that is the total cost of the total program as we now project it going forward divided by the total number of airplanes.

Then secondarily, not to make it too more complicated than it has to be, in every year of ramp-up, that is, as we negotiate as we are now the LRIP 4 contract, Low Rate Initial Production 4 contract, there will be a certain number of aircraft and a price. LRIP 5 next year with the fiscal year 2011 funding that we are asking you for this year.

And in those early years, as the ramp goes up, the order numbers are smaller. The line is immature and so the unit costs there are different and obviously higher earlier in the program. So we have both the costs in the early ramp years and integrated over the entire program.

Since she is the keeper of those estimates, let me ask Ms. Fox to address that, if I may.

Ms. FOX. Certainly. Senator, the Milestone B 2001 estimated unit cost average procurement unit—

Senator MCCAIN. Ms. Fox, could I just ask what was the original estimate of the cost of the program and the estimate now? Could we just start with that?

Ms. FOX. Yes, sir.

Senator MCCAIN. Thank you.

Ms. FOX. I'm sorry. I was trying to do that, sir. It was 50 million per copy in 2002 dollars per unit.

Senator MCCAIN. 50 million?

Ms. FOX. 50 million in 2002 baseline year dollars. That was the Milestone B 2001 estimate. The current program estimate, based on JET II numbers, will be somewhere between \$80 and \$95 million in constant year 2002 baseline dollars. We are refining that estimate now. The \$80 million at the bottom—

Senator MCCAIN. This will be the overall. The Air Force is asking for \$205 million for one aircraft in the Supplemental Budget Request?

Ms. FOX. Sir, I'm sorry, I can't address that.

Senator MCCAIN. All right. Go ahead, I'm sorry.

Dr. CARTER. I think I may be able to explain that. That is—

Chairman LEVIN. Is that unit costs for the 2,400?

Dr. CARTER. That's unit cost but it's again at this early ramp.

Chairman LEVIN. Is that the unit cost at a particular ramp or is that the overall unit cost for the entire production?

Dr. CARTER. I think the number Senator McCain was pointing to was the unit cost in that particular lot which would have been the LRIP 3 lot. I'm sorry, but—

Chairman LEVIN. Is that what you were asking for?

Senator MCCAIN. Yes, thank you.

Chairman LEVIN. Is LRIP 3 the same number of planes?

Dr. CARTER. No, the ramp goes up with every—I'm sorry, no. LRIP 3 is 30.

Chairman LEVIN. Is that changed from the 2002 estimate, the number in that segment? Is it still—was it 30 and 30 now or has that number changed?

Dr. CARTER. Absolutely the ramp moved even before today.

Chairman LEVIN. I'm not talking about that. I'm talking about the number of planes in that particular segment. In other words, are you dividing by the same number of planes?

Dr. CARTER. She is, yes.

Ms. FOX. For the average unit cost, we're dividing by 2,443 planes and that has been that since 2002.

Chairman LEVIN. Okay.

Ms. FOX. The LRIP numbers, I believe, have changed, and I'm sorry I don't have those.

Senator MCCAIN. I take it because—and I'm sorry, Mr. Chairman, but I think maybe this could be helpful. I take it that the reason why that the aircraft is now \$205 million in the Supplemental Request is because you're looking at the overall costs which means that the cost of the aircraft will decrease in later years as you ramp up production.

So the early cost of these aircraft in the first couple blocks are much, much higher, is that correct?

Dr. CARTER. That's absolutely correct.

Senator MCCAIN. Thank you, Mr. Chairman.

Chairman LEVIN. Do you have a number to compare to the 205 million? What would it have been if those early predictions held?

Dr. CARTER. Not off the top of my head, but I can get you a number, sir.

Chairman LEVIN. Good. Why don't you continue then?

Dr. CARTER. Okay. I'll just go back to the beginning and agree with what was said in both of your—

Senator MCCAIN. I'm sorry if I knocked you off script there.

Dr. CARTER. No, not at all.

Senator MCCAIN. I apologize.

Dr. CARTER. Getting to the heart is what it's about. I just wanted to agree this is the Department's largest acquisition program. It's obviously immensely important to the Department. It's going to be

the backbone of our air combat superiority for a long time. And at the same time, however, this committee and Secretary Gates have emphasized performance in our programs. Not just the necessity to have them, but that they perform.

As I'll describe in more detail, the JSF Program's fallen short on performance over the last several years and this is unacceptable. It's unacceptable to the taxpayer, to the war-fighters of the Air Force, the Navy, the Marines, and all the international partners that are depending on this aircraft.

We described this situation preliminarily in December when we met with you and in his presentation of the President's fiscal year 2011 budget, Secretary Gates described some of the steps he's taken to restructure the program and notably to put it on a more realistic schedule and budget, this one.

These are important steps. I give you more detail about them today, but I'd also like to emphasize that it's taken a couple of years for the JSF Program to fall behind and the Department's going to need to aggressively manage this program years into the future and particularly in these coming critical years as it transitions from development and test into production.

We're going to be looking for the program, as I know this committee will, to show progress against a reasonable set of objectives according to a realistic overall plan and I'll describe the elements of that plan.

The emphasis must be on restoring a key aspect of this airplane. When the JSF Program was first launched over a decade ago and you've spoken this word already, Senator McCain, and that's affordability. You know that we've conducted several reviews. You, your staffs, have those reviews. I won't repeat what they indicated at this time.

Just to rewind the clock a little bit and remind you that the very first JET Estimate was done in October of 2008. At that time it projected essentially the same thing that this one is projecting; namely, that the SDD phase of the program is taking longer and is costing more than was projected. In response to that October 8th JET Estimate, Secretary of Defense Gates added 476 million in fiscal year 2010 to the SDD Program for JSF in order to hopefully begin the process of catching it up.

What we got in October 2009 was JET II, the second JET analysis. It was substantially similar to the one of a year before; namely, it said that the JSF SDD Program continues for a second straight year to take longer than we thought and cost more than we thought.

It was on the basis of this two years of this news in a row that we determined that we should have a department wide in depth review of the program to try to get to the bottom of what was going on and why there was this vast difference between the JET II Estimate and what we were hearing from the Program Office and the contractor at that time.

It was also abundantly clear now back in October and November that if the JET Estimate were true, if we came to believe, as we have come to believe, that it was credible that the JSF Program would be in critical Nunn-McCurdy breach. So that review started

in November. I had the opportunity to meet with you and give you some of the results in December.

Secretary of Defense gave you some of his decisions based on that review and I'd like to briefly recap them in three phases. First, the JSF Development Phase, then the Transition to Full Rate Production, as one comes up the ramp, and then Full Rate Production itself.

Just to repeat, the JET II forecasted, speaking now to the development program, a longer by 30 months and more expensive by \$3 billion over the Future Years Defense Plan (FYDP) development phase than the JPO, the Joint Program Office, was forecasting last summer.

As I indicated, Secretary Gates determined that that JET II Estimate about the development program was credible. He directed several steps to try to partially restore the SDD schedule to what it was supposed to be.

He didn't get all the way there but, first, he directed the procurement of an additional carrier version aircraft to be used for flight testing. If you have more aircraft for flight testing, obviously you can get through all the tests you need to get done faster, so that's just a matter of adding resources to the test program.

Second, to direct—he directed that we take three early production jets that were planned for operational tests and loan them to developmental tests. Again, with the objective of hastening developmental tests.

And third, he directed that we establish, that is, that the Program Office and the contractor, add another software integration line to the program. This was to prevent a situation in which we compressed again the Flight Test Program but then found that the long pole in the tent was the delivery of mission systems software. We didn't want to get into that situation, so we wanted proactively to add to the software integration capability of the contractor so that that wouldn't become a limiting factor in the future and the Secretary of Defense did that.

On that basis the JET Team said now let's look at that program as restructured by Secretary Gates. Let's go through the math again and when they did that same methodology, they found that the slip was 13 months rather than 30 months. So a 13-month slip is better than the 30-month slip but it's not as good as a no slip, but that's as far back as we could get.

Let me just emphasize something I said earlier. It didn't seem reasonable to the Secretary or to any of us that the taxpayer should bear the entire cost of this failure of the program to meet expectations. And so these additions of additional aircraft and software integration capability, it seemed that costs should be shared between us and the contractor and that is the reason why the Secretary decided to withhold 614 million in fee from the Lockheed Martin SDD contract.

The second thing I ought to say on this development phase before getting to the early production is that while it's a constructive result of this JET process that we got 30 months down to 13 months, I just want to emphasize that these are still estimates and reality gets a vote here. However good we are and there are very good in Ms. Fox's shop at estimating, reality gets a vote.

The next two years are going to be critical ones, lots of activity in the Joint Strike Fighter Program. We have delivery of test aircraft at Patuxent River and Edwards, completion of the analysis of hundreds of test flights and commencement of flight training at Eglin just this year.

And if we go on to 2011, that is when we'll have the first STOVL training and sea trials aboard an actual amphibious ship, the STOVL version being the Marine Corps version, completion of land based catapult and Senator McCain will appreciate this better than I can, but catapult and arrested landing testing at Lakehurst and Patuxent River, release of the Block II software to flight test which is a critical software related milestone, completion of static structural testing of all three of the variants, and so forth. So both 2010 and 2011 are event-filled years and as I said reality gets a vote.

The current program plan, current program plan now estimate, as revised, stands up the first training squadron at Eglin in 2011 and delivers production aircraft to the Marine Corps in 2012, Air Force in 2013, and Navy in 2014. Those are the first delivery of aircraft. That is not IOC and I want to address, if I may, Mr. Chairman, IOC simply because there's been so much confusion surrounding what IOC is in the press.

The IOCs are determined by the Services based on both the program's performance and how each of the Services define IOC. Each Service has a somewhat different definition, depending on what capabilities they intend to have at IOC, their operational test and training requirements, and the number of aircraft they require for IOC, and since the restructuring, the Services have specified these definitions.

At this time, based on the revised JET II schedule for the end of developmental and operational tests and their definitions of IOC, the Services are estimating IOCs of 2012 for the Marine Corps and 2016 for the Air Force and Navy.

Let me now speak to the initial production process. The IMRT Report which my office commissioned was mentioned already. That report examined this critical transition from development to full rate production as one goes up the ramp. And just to remind JSF has an unprecedented amount of concurrency, so-called, in the program. That is a period of time in which the development activities are still continuing and testing even as production begins.

What the IMRT, when it reported back, said in essence was that there were a large number of conditions that would have to be met for this program to reach, to achieve the ramp that was then planned and they recommended a somewhat flatter and smoother ramp.

That, together with the slip in SDD, means that we are now, and this is the essence of the CAPE projection for this phase of the program, a later and somewhat lower production ramp and Secretary Gates, accordingly, decided to budget to this revised JET II production ramp and that is why the fiscal year 2011 budget submission forecasts a later slower ramp.

We are, therefore, budgeting to an independent cost estimate. This is consonant with your legislation, the Weapon Systems Acquisition Reform Act, and doing so has three important consequences for this program.

First, it reduces risk because it reduces concurrency. But, second, the earlier aircraft will be more expensive since they are produced in smaller annual lots. And, third, this is, just to say it again, an estimate.

Obviously, we would like the program to perform better than the revised JET II Estimate. That's why we're protecting the option to produce 48 aircraft and not 43 in fiscal year 2011.

This will be determined in negotiations with the contractor which are ongoing. These negotiations include the transitioning of the LRIP contracts for JSF to a fixed price at an earlier date. This is again something this committee in the acquisition reform legislation emphasized.

Obviously, we think the taxpayer would want us to get more and cheaper aircraft in those years than the JET II estimates. So we're going to try to do better in our negotiations with the contractor than the estimate.

Last and finally, and I'll conclude on this point, up we go the ramp and then we're in full rate production. After several years of LRIP, the program will enter full rate production and, as was noted earlier, that's 2,443 American jets and 730 jets for our international partners.

The JSF Program's been approaching the Nunn-McCurdy threshold for several years and, as I mentioned earlier, it was obvious back in November that if the JET Estimate, JET II Estimate, I'm sorry, was accepted, then it would, indeed, breach the Nunn-McCurdy threshold.

Since we do accept and the Secretary accepts the revised JET II Estimate as credible and the basis of our program plan, the Secretary of The Air Force will inform Congress within days of a Nunn-McCurdy breach and we will then begin the process of considering the certification of the Joint Strike Fighter Program.

I guess the only good thing I can say about it at this juncture is that what the process, the thorough process called for in the Nunn-McCurdy legislation, appropriately so, is the very process we began back in November. So we have been acting as though we're in Nunn-McCurdy breach since we realized back in November that that's probably where we're going to end up.

So we have some of the work behind us and some of that work is represented in what I'm able to tell you today. Ms. Fox can describe all the factors that go into the cost growth. There are a number of them in the airframe, in the engines, in the materials, and other things. Many factors go into that cost growth.

Let me just conclude by looking ahead now. Several management measures are going to be critical over the next few years and Secretary Gates has elevated the position of JSF Program Executive Officer to three star rank to reflect this need for experienced and vigorous management.

The JPO, with oversight from the Office of The Secretary of Defense, will need to take a number of critical steps in the next few years and once again I divide them into development, ramp-up, and addressing Nunn-McCurdy.

In regard to the Developmental Test Program, the lead up to IOC, it's important to provide the new test assets and software ca-

pability to the development program as directed by Secretary Gates so that there won't be any further delays.

Second, the contractor must be held to account to meet or exceed a defined set of milestones connected to fee on the development contract. All those events in 2010 and 2011 that I named are now on a schedule and they constitute a set of targets for the program. And the fee, remaining fee on the SDD contract will be tied to the achievement of all of those milestones. Those negotiations are underway.

And finally, the program's going to need to deal promptly with the issues that arise during flight testing. We're going into flight testing and experience shows that issues will surface in flight testing.

With respect to the ramp up to full rate production, the LRIP 4 contract, which covers fiscal year 2011, should provide for pricing that meets or exceeds, meets or exceeds the JET II based plan of 43 aircraft and these negotiations are also underway.

LRIP contracts should transition, as I mentioned earlier, to a fixed price structure, reflecting the need for the contractor to control costs and not simply pass them on to the government.

The Director of Defense Procurement and Acquisition Policy, furthermore, who's with me here today, will be conducting a should cost analysis in preparation for LRIP 5 so that we, too, on the government side will have a view on what the aircraft should cost in LRIP 5 which will be the fiscal year 2012 buy.

In regard to addressing the Nunn-McCurdy cost growth, affordability. Affordability must be aggressively and relentlessly pursued by all three airframe contractors, Lockheed Martin, Northrop Grumman, BAE Systems, and the F-135 engine prime which is Pratt & Whitney. We will be looking at the cost structure of JSF in all its aspects, assembly, part supplies, staffing, overheads and indirect costs, cash flows, contract structures, fees, and life cycle costs.

More fundamentally, the program management contractors in the Department need to surface candidly and openly issues with this program as they arise so that we can deal with them managerially, so that Congress is aware of them and they can be addressed.

I pledge that we will keep this committee fully and promptly informed of this program's progress. We will keep our international partners fully and promptly informed. And as I said, the program will benefit from the fresh eyes and experienced managerial hand of a three star program executive officer.

Military capability of JSF will ensure that this aircraft will be the backbone of U.S. combat air superiority for the next generation and, as I stated earlier, the technological capabilities of the aircraft are sound, but its affordability must be restored.

Thank you.

[The prepared statement of Dr. Carter follows:]

Chairman LEVIN. Thank you, Secretary Carter. Are there any other opening statements from any of the other panelists?

Ms. Fox.

**STATEMENT OF HON. CHRISTINE H. FOX, DIRECTOR OF COST
ASSESSMENT AND PROGRAM EVALUATION, DEPARTMENT
OF DEFENSE**

Ms. FOX. Thank you, Mr. Chairman. Mr. Chairman, Senator McCain, and distinguished members of the Committee, thank you for the opportunity to appear before you to discuss the analytic basis for the restructuring of the JSF Program that Dr. Carter has just described.

The analysis has been led by the Cost Assessment and Program Evaluation Department or CAPE and the study team's lead, Mr. Fred Janicki, is here with me. Today I will—

Chairman LEVIN. Let me interrupt you if I could.

Ms. FOX. Yes sir.

Chairman LEVIN. Give us an idea as to how long your opening statement will be?

Ms. FOX. Less than five minutes, sir.

Chairman LEVIN. Are there any other opening statements?

Ms. FOX. Yes, sir.

Chairman LEVIN. One other opening?

Dr. GILMORE. Less than 5 minutes.

Chairman LEVIN. Less than 5 minutes.

Dr. GILMORE. I can do it in a minute if that's what you want.

Chairman LEVIN. That would be fine. Is that all right?

Unknown Speaker: I just don't know if we have the time.

Chairman LEVIN. Well, if you can boil them down and as I mentioned before, in terms of the Senators who we're going to call on Senators in the same order as they arrived for the first hearing, so everybody's not confused hopefully by the order of recognition.

So, Ms. Fox, please.

Ms. FOX. Let me try to shorten my statement, sir. A couple things about independent cost estimate process that I would like you to know. We built, of course, on the methodologies that the CAPE and former CAIG organization have used for many years but for JSF, I do think it's important for you to know that we went one step further and built a team of experts from the defense tactical aircraft community.

So this review was not done just in CAPE alone but instead we involved multi-governmental government experts drawn from Navy, Air Force, OSD staffs and the members of that team provided technical expertise across the areas of air vehicle and mission systems engineering, test, and cost estimation. So this was quite an expert team that looked at this.

Dr. Carter has gone through the JET I/JET II history, so I won't do that again, but I would like to talk about what the estimate actually means. It is difficult to mathematically calculate the precise competence levels associated with independent cost estimates prepared for major acquisition programs.

Based on the rigor of the methods used in building the estimate, the strong adherence to the collection and use of historical cost information and the review of applied assumptions, we project that it is about equally likely that the JET II Estimate will prove too low or too high for execution of the restructured program as described.

I would also like to comment here on the documentation of the JET II work. Normally, we would document the results of an independent cost estimate, such as JET II, in a written report. In the case of JET II, however, we pulled the results into a summary level briefing as quickly as possible to present to DOD leadership.

This briefing, this same briefing that has been provided to you, immediately prompted Dr. Carter to create a JSF Task Force. From that point forward, these same analysts were deeply engaged in guiding the program restructuring and have not been given the opportunity to write a report.

I believe that this combination of cost estimation as an independent activity and then using it to guide the program restructuring is a direct result of the WSARA legislation and something new for CAPE to have to grapple with. We prefer to document our work in written reports and hope to return to that practice in the future as we add staff and time permitting.

I will not—I was going to briefly summarize the restructuring that Dr. Carter has already gone through, but in the interest of time, let me focus just a minute again on the costs just to be sure that my answer earlier was clear, if I might.

The program restructuring, based on the JET II cost estimate and the production rates estimated by the IMRT, will result in a critical Nunn-McCurdy breach of greater than 50 percent when measured from the original acquisition program baseline established for the program in 2001.

We have been preparing for this breach ever since the JET II results became available in October 2009. Even though that formal declaration has not been made to you, we anticipate it will be made to you within days and the department plans to complete the recertification review of the restructured program by June 2010.

Let me go over some of these numbers again. In 2001, at the time of the Milestone B approval for the program, the JSF average procurement unit cost was projected to be \$50.2 million in constant base year 2002 dollars. This figure was based on a total anticipated U.S. procurement of 2,852 JSF aircraft, including all three variants, Air Force, Navy, Marine Corps.

The number to be procured was revised in August 2002 to 2,443. That number, 2,443, holds to this day. The revision was in response to Navy/Marine Corps TacAir Integration. The latest JSF acquisition program baseline, dated March 2007, projected an average procurement unit cost of \$69.2 million in baseline 2002 dollars.

We currently anticipate that that average procurement unit cost for the restructured program, based on the total still of 2,443 jets, will fall in the range of \$80 to \$95 million base year 2002. We are in the process of determining that number and it will be included in the restructured program in the baseline—sorry—in the Nunn-McCurdy review that has been initiated already.

I will close by just—I would like to focus a minute on the perceptions of the program that result from the restructuring. Make clear to you that the projected delay in completion of the Developmental Flight Test Program in our view in CAPE should not be interpreted as a signal that the JSF Program has insurmountable technical problems. The result of our reviews instead reflect the program's complexity, the risks remaining in its development activities.

I know that this is not the goal. However, development delays such as the ones that JSF is experiencing, have been experienced by other aircraft programs and these programs ultimately produced aircraft that are valuable to the Defense Department.

For example, C-17 experienced significant development problems beginning in the late 1980s and continuing through the '90s. These problems raised questions about cost effectiveness. In response, DOD restructured the program, reduced the aircraft order until the problems were resolved and they were resolved in the mid 1990s.

Similarly, the F-22 Program repeatedly failed to meet key performance, schedule, and cost goals. In response, DOD restructured the development program and reduced production aircraft. Ultimately, the contractor was able to overcome these challenges and produce a capable aircraft.

We are restructuring the JSF Program in a very early stage and we believe that is consistent with the goals of WSARA. The independent cost estimates and the results of the IMRT were taken very seriously and as soon as heard about them acted upon by Secretary Gates. The Department now has a realistic fiscal path and plan for this important tactical aircraft program.

Thank you again for the opportunity.

[The prepared statement of Ms. Fox follows:]

Chairman LEVIN. Thank you very much, Ms. Fox. Let's see. Dr. Gilmore, you wanted to go next.

Dr. GILMORE. I will make it brief.

Chairman LEVIN. Thank you.

STATEMENT OF HON. J. MICHAEL GILMORE, DIRECTOR OF OPERATIONAL TEST AND EVALUATION, DEPARTMENT OF DEFENSE

Dr. GILMORE. Mr. Chairman, Senator McCain, members of the committee, my primary concern has been assuring that we can begin operational testing on whatever schedule was contemplated. Currently, that would be right around January of 2015, completed in a reasonable amount of time.

Currently, we'd anticipate completing it in April 2016, and that that testing can be sufficiently robust to demonstrate that the Air Force, Navy, and Marine Corps are getting aircraft that will provide the combat capability they need.

To do that, we'd need to make sure that we have a robust developmental test program. If we do not have that robust developmental test program, the problems that should have been discovered in developmental testing and fixed in developmental testing will instead be discovered during operational testing which, unfortunately, has been the case in many of our programs when they are much more expensive and time consuming to fix.

And so in that regard, the direction that Secretary Carter has given to provide additional flight test aircraft, provide additional resources and time to develop, deliver and test software effectively and to account realistically in the restructured program for the inevitable discovery of problems during flight test and to provide the additional engineering and other resources needed to maintain an adequate pace of testing are just absolutely key. And the 13-month schedule extension in the restructured program is absolutely key,

in my view, to having that robust developmental test program that will enable us to not discover a bunch of problems at operational testing.

Thank you.

[The prepared statement of Dr. Gilmore follows:]

Chairman LEVIN. Thank you very much.

Mr. Sullivan.

STATEMENT OF MICHAEL SULLIVAN, DIRECTOR OF THE ACQUISITION AND SOURCING MANAGEMENT TEAM, GOVERNMENT ACCOUNTABILITY OFFICE

Mr. SULLIVAN. Thank you. I'll be very brief, as well.

GAO has looked at the restructuring efforts that the department has undertaken and we think they do go a long way to getting at what the problems are.

However, we still believe there's substantial overlap across development, test, and production activities and there's still significant risk on the program. Slowed by late aircraft deliveries, technical problems and low productivity, the flight test program, for example, only completed 10 percent of the sorties that they had planned for in 2009.

The problem that we see with the aircraft now is not necessarily technological in nature and it's not necessarily unknown unknowns, if you will, but it's about manufacturing the aircraft. And they're experiencing—the estimates that they had to the time and the manpower would take to manufacture the aircraft were very optimistic.

I think the JET analysis is finally getting—you know, the actuals that they have in the program now are finally beginning to appear more—I think the cost and schedule estimate is now a lot more reasonable.

I will just throw one metric out. Back when they started EMD in 2001, I think that they were estimating somewhere around a million hours, labor hours to complete the development program and manufacture aircraft and that's well over two million today. So that's one example of what's happened on this program.

Flight test program is still nascent, hasn't really begun and once that begins, there's going to be more design changes. There will probably be more delays as a result of that.

So just to summarize, I think that the JET Team got as realistic as they can get at this time. However, there's still a lot of risks in the manufacturing of development aircraft. We think that—one other thing I think that's important is that the Department did take more aircraft out of the near-term years which we think is a way to mitigate risk. However, they're still going to be purchasing about 300 procurement aircraft before they're done with development tests.

[The prepared statement of Mr. Sullivan follows:]

Chairman LEVIN. Thank you very much, Mr. Sullivan. Let's try an eight minute first round and I'll yield to Senator McCain.

Senator MCCAIN. I thank you, Mr. Chairman and I appreciate it.

Very briefly, Ms. Fox, you give as sort of examples of success the C-17 and the F-22. Both of them had significant cost overruns, but

also you mention that they resulted in decreased production numbers.

So do you anticipate the same thing to happen with the Joint Strike Fighter?

Ms. FOX. Sir, I'm not trying to suggest that we're going to decrease production.

Senator MCCAIN. Well, you suggested that they were successful programs and both of them resulted in less numbers produced and higher unit costs therefore.

Ms. FOX. Yes, sir, absolutely. The only comparison was that the program is not on a technical problem. Those programs looked very troubled in the same stages and they developed capable aircraft in the end game. I'm not—

Senator MCCAIN. They developed capable aircraft, Ms. Fox, but incredibly high costs and far higher than initial estimates which is one of the reasons why we've been engaged as we have. I'm astonished you would use that as some kind of success story because they overcame technical problems but the unit costs almost doubled or more, is that right, Mr. Sullivan?

Mr. SULLIVAN. Well I—

Senator MCCAIN. Of the F-22 and C-17—

Mr. SULLIVAN. Yes.

Senator MCCAIN.—and the delays were enormous.

Ms. FOX. Sir.

Senator MCCAIN. So you know, I don't get it.

Ms. FOX. Sorry, sir. I was not trying to suggest that this is the goal in fact. I tried to say the cost is clearly a tremendous problem and I believe that the costs that we have estimated are as realistic as we can be and are trying to put that forward for everyone to look at.

It's merely that the JSF Program is producing technically capable aircraft.

Senator MCCAIN. But if you follow the example of the F-22 and the C-17, the unit's numbers produced go down and the unit costs continues way up.

Mr. Sullivan, you indicated in your remarks that basically this reduction in official timeline by—to 17 months versus the 30 month delay savings is fraught with risk, is that correct?

Mr. SULLIVAN. Yes. What I think—what the GAO has looked at is that there's still incredible risk in just manufacturing the aircraft and in having a test program that really hasn't started yet.

Senator MCCAIN. So basically what we're doing here to reduce this delay is putting aircraft out into operational mode without having completed the originally planned testing and evaluation, is that correct?

Mr. SULLIVAN. I think the ramp up as they ramp up, as I said, they'll have procured about 300 aircraft, even given the restructuring here, before they've completed developmental flight testing. So to us, that's still significant risk in the program.

This is a mitigated risk, I think, because they added—the other thing they did was they added test assets. So they'll be able to burn down the test points, the tasks, probably a little bit faster but still very risky.

Senator MCCAIN. And could I just again go through this cost thing and I don't—you're asking \$205 million for one strike fighter in the additional budget request, yet we're alleging that the cost will be \$80 to \$90 million per copy.

Isn't it a bit of—a bit elusive to say that when clearly in the first couple of blocks the costs will be very high and the examples that Ms. Fox just stated, we will purchase less than we had originally planned, easily these unit costs could not be at 85 or 90 million, they would be dramatically higher, if precedent holds true here?

Mr. SULLIVAN. I would argue that they really don't know yet because—well, I'll tell you one good indicator of that at this point is that they're still operating under cost plus contracts to procure these aircraft. That means that the contractor's not willing to commit to a unit price at this time.

Senator MCCAIN. I wonder, Secretary Carter, when the contractor is willing to submit a cost unit cost.

Dr. CARTER. It's a good question and a good indicator of how—of the contractor's own estimation of the stability of the line and we're in discussions about that. Not later than LRIP 5 will I require a fixed price.

Senator MCCAIN. And how long will that be?

Dr. CARTER. That will be next year. So you're right. Up until now, the LRIP contracts have been cost plus. I think it's time and good discipline suggests that we transition the LRIP contracts to fixed price.

That puts a burden obviously on the manufacturer to control costs and to be able to know how much it's—these units—what these unit costs are because then if they overrun, it's on their budget, not on our budget, which is the whole point of fixed price contracting at this stage. It's the healthy thing to do.

Senator MCCAIN. I thank the Chairman for allowing me this time.

General Moore, you're confident that the plans that have been described to this committee, that you're going to buy 2,400 and some and that the unit costs will not increase further, and you will have the operational test and evaluation successfully completed while the aircraft are in an operational mode without having to go back and retrofit rather significantly and expensively?

General MOORE. Senator, if I can take on those questions. First of all, for the unit cost. I am confident as the Program Manager that we will be able to do better based on those cost estimates. That's what I've been challenged by the Department and I intend to do so.

Senator MCCAIN. You're confident we will buy this number?

General MOORE. I'm sorry, sir?

Senator MCCAIN. You're confident we will buy this number of aircraft?

General MOORE. I'm confident that we'll be able to continue reducing the costs, as we've projected as we negotiate the future contracts as we're doing right now with LRIP 4.

Senator MCCAIN. You're confident there will be no further delays?

General MOORE. I'm confident that, given the schedule that's been laid out, that we now have reasonable margin to deliver the

full capability of the aircraft within the schedule and within the budget that's been allocated.

Senator MCCAIN. Well, I thank the witnesses and I thank you, Mr. Chairman, for holding this hearing. Obviously we have a lot of monitoring to do and I am very grateful that you would hold this hearing. I think it's been very helpful and I would like to submit follow up questions to the witnesses.

Chairman LEVIN. Thank you. We will keep the record open for your questions and questions of other Senators. Let me begin my questioning with looking backward in time.

What caused these huge errors in these estimates? I mean, these are 60 to 90 percent increases. These breaches are 50 percent plus and that, that of course, triggers Nunn-McCurdy, but there's more than 50. They're somewhere between 60 and 90 percent increases.

I mean, how do we deter this? Who's accountable for that? Whose mistakes and who's paying a price?

Dr. CARTER. If I may, let me do some of the diagnosis first and then the treatment. In the development phase—what's basically been going on for the past couple years is that when it comes time to put the pieces together down in Fort Worth, on occasion they don't quite fit together.

And that's because when they were designed, the match-up wasn't done just right and all of this is perfectly normal and that leads to what I refer to in here as the so called class 2 change traffic, meaning that the pieces, the design of the pieces has to be changed.

You're not changing the capabilities of the aircraft in any way. You're just trying to make the thing fit together. There has been a lot of change traffic on the line. Every time—

Chairman LEVIN. I don't know what that means, change traffic on the line.

Dr. CARTER. I'm sorry, it just means—

Chairman LEVIN. You're changing the design, the requirements?

Dr. CARTER. Changing the design of the pieces so that they fit together and then it takes engineers to do those changes. It takes time to do those changes. Everybody else waits around while those changes are made. So it introduces inefficiency on the line. It may seem mundane, but this is the kind of thing that has driven the slow delivery of aircraft to test and—

Chairman LEVIN. I'm not talking about slow delivery. I'm talking about these huge cost overruns here.

Dr. CARTER. I'm sorry. Then I was going to get to the second part.

Chairman LEVIN. Since March of 2007, it's gone up from 15 to 35 percent. In other words, in 2007 it was about \$70 million a copy in 2002 constant dollars, now it's 80 to 95 million. So it's gone up from \$10 to \$25 million estimate constant dollars in the last three years.

Dr. CARTER. Yes.

Chairman LEVIN. Is that still your—

Dr. CARTER. Yes, yes, that's right.

Chairman LEVIN. Are you satisfied with that?

Dr. CARTER. Well I'm not satisfied with it, but the—I'm sorry. You were asking then the contributory causes to the unit cost growth in the aircraft and there again, there are several of those.

First, and very significantly was the larger than planned development costs for the STOVL version, that's the short take off and vertical landing version. Because that variant, because of the weight growth in that variant. That occurred several years ago, and the longer than forecasted development schedule which I've already described, increase in labor and overhead rates, degradation of airframe commonality—

Chairman LEVIN. Increase in labor and overhead rates, now weren't they foreseeable?

Dr. CARTER. They were not foreseen.

Chairman LEVIN. No, I said were they foreseeable?

Dr. CARTER. Was there a buy-in here? Is this a historic, traditional buy-in that someone bids low, gets a huge contract and then we pay the price down the line? Is that what's going on here?

Dr. CARTER. The—that has certainly been something that's occurred in the past.

Chairman LEVIN. No, in this one?

Dr. CARTER. It may have been the case with this one.

Chairman LEVIN. On this one Secretary Carter.

Dr. CARTER. Well it's a pattern that would match that but I can't speak to that intently.

Chairman LEVIN. Well who's going to determine whether that's true and what action will we take against people who bought it in?

Dr. CARTER. For this program, we're going to aggressively manage from this point forward. For new programs we're going to follow the instructions you gave us in the Weapons Systems Acquisition Reform Act and do independent cost estimating from the very beginning.

So when the program starts out there isn't an opportunity for buy-out, buy-in because Ms. Fox's organization has already done the cost estimate. But we are where we are in the Joint Strike Fighter Program and from where we are now we need to try to wrestle these costs down.

Chairman LEVIN. Now there was great concurrency that you made reference to in this program and that means that there's great risks. And that concurrency I gather has been somewhat reduced by the sloping, reduced by the number of—I believe the other way was that what we're going to have more planes that are going to be tested.

Dr. CARTER. Correct.

Chairman LEVIN. But in any event, let me ask you Dr. Gilmore, is the concerns—is the level of concurrency now have acceptable risk?

Dr. GILMORE. The level of the concurrency I think is still unprecedented in these kinds of programs. We'll have bought—even with the reduction and the production ramp we'll have bought more aircraft here at a given point in time since the beginning of flight testing that we did for example, in the F-16 program where we bought a couple thousand aircraft. So I would demure on judging whether the amount of concurrency—

Chairman LEVIN. Well who's going to give us the judgement if not you?

Dr. GILMORE. I think that's up to the Defense Acquisition Executive and the Secretary. I'm the evaluator of the capability of the aircraft and I know I'm passing the buck but—

Chairman LEVIN. That's okay.

Dr. GILMORE.—I think I have to otherwise I won't be viewed as objective.

Chairman LEVIN. All right. Is the level of concurrency acceptable here Secretary Carter and why?

Dr. CARTER. The level of concurrency is unprecedented. It is reduced as a result of these actions. We are judging that the schedule that we're giving you is realistic, it's not optimistic. But I think Ms. Fox has emphasized this is not the worst case estimate. This is the 50, so called 50 percent estimate on her part.

So I don't want to leave anybody with the wrong impression. The concurrency that remains in the program, though less, is worrying, has to be managed. The theory of the case here, just was and is a perfectly reasonable one in general, was that we have gotten to the point now in modeling and simulation that we should be able to confidently enter production before we have completed testing fully.

That's the theory of the case that's been with the Joint Strike Fighter Program from the very beginning, unprecedented. And we have found that in some respects that aspiration, so far in the program has not always been achieved. That's why we're trying to take some of the aggressiveness out of the program at this point, but it's still aggressive. And as I said earlier, reality will have a vote here and—

Chairman LEVIN. Yeah, but you shorten the development period without—it seems to me that if anything, that increases the concurrency, it doesn't usually decrease it. I mean you knew how much modeling and simulation was going to be going on in this program right from the beginning I assume.

Dr. CARTER. Mmm-hmm.

Chairman LEVIN. Why isn't the shortening of that development period, that 30 months to 13 months, why isn't that an increase in the concurrency level?

Dr. CARTER. The reduction from 30 to 13 months it just means doing exactly the same testing that we were going to do in 30 months in 13 months. That's good.

Chairman LEVIN. So the number of tests—

Dr. CARTER. The number of test points is the same. One progresses through them more rapidly because you have more tester sources.

Chairman LEVIN. I guess Senator Thune is next according to my list.

Senator THUNE. Thank you Mr. Chairman. Secretary Carter, I support the F-35 and the program. I believe it's an extremely important program and that we've got to do everything that we can to prevent or mitigate the so called fighter gap that we have coming at us in the not to distant future.

I'm very concerned about these development delays and potential reductions in the number of aircraft that are planned for the pro-

gram. I'm consistently told by my South Dakota Air National Guard constituents that their F-16's aren't going to last forever. So I want to do everything I can to have the F-35 program reach full rate production with its fully designed combat capability as soon as is reasonably possible.

And I guess the question is, when do you see actually having full strength squadrons of training jets for the various training wings? And when do you realistically foresee this program actually reaching full rate production?

Dr. CARTER. Let's see for—I don't want to speak for the Services who will determine where, how, when, and sort of if they actually field their aircraft. From the program's point of view, for the Air Force we will begin delivering aircraft to the Air Force in 2013. And as I mentioned, the Air Force's current intention based upon the revised schedule is to go to IOC in 2016.

Senator THUNE. Okay.

Dr. CARTER. And that is with the full capability that they always intended which is now the mission systems capability embodied in the Block III software. But that capability and after completion of operational tests and evaluation that's the—that's how their defining IOC in the Air Force.

Senator THUNE. There's been a lot said and will be said about the effect of the JSF on the Air Force. It's sometimes easier to forget though that it—the importance and what it means to the Navy and the Marine Corps as well.

The Joint Strike Fighter represents the future of both the Navy and the Marine Corps strike fighter force. And we know about the significant delays and cost overruns. But there are recent news reports that also indicating an increase in aircraft operating costs once they're finally delivered.

In fact, there was a recent article in Defense News that stated that, and I quote, "each flight hour flown by Navy and Marine Corps versions of the F-35 will cost about \$31,000 in 2029 compared with about \$19,000 per flight hour for the Services, the current F/A-18 Hornets and the Harriers."

Admiral Roughead at a recent surface—Navy association's annual symposium was quoted as saying, and again I quote, "we must ensure that we do not deliver an unaffordable fleet to the next generation of leaders less they burn us in effigy at this dinner 20 years from now." At the same time Lockheed Martin is claiming that support costs for the F-35 will be significantly lower than those for the F-16, F/A-18, and the AV-8B.

Can you set the record straight about what you really expect the operating costs to be compared to current fighters? And will the Department be able to afford those O&M costs in the future?

Dr. CARTER. I can't as I sit here right now because I—you are pointing to, for the sustainment costs the same kind of discrepancy that I was describing for the development costs, namely, that we have. And I know NAVAIR has done an estimate of the total ownership cost of the F-35 and then there is a Contractor and Program Office estimate and what I—these are for the out years. So it seems in the distant future.

But what we do now will determine how much we pay then and we owe it to the taxpayer then to control those costs. And CAPE,

and she may wish to speak to this, we're having the same independent cost estimation done now of the sustainment phase as we're, we've done and are doing for the production phase, the ramp up to production and then development phase.

So I cannot give you an answer now. I hope to give you a credible answer in the future. Those are—that's a lot of money out there to maintain a fleet even as it costs a lot of money to make the fleet in the first place. And we owe it to you to control those costs.

Senator THUNE. Ms. Fox, do you have anything to add to that?

Ms. FOX. Yes sir, I would just like to add that an assessment of O&S will be part of the certification review we'll do for the Nunn-McCurdy. And so we will have as good an estimate as possible for you as soon as we've finished that.

Senator THUNE. Okay, thanks. Over the past several years the trend I've noticed is that these increasing costs of procurement along with an increased timeline in obtaining a lot of these systems. And this isn't a unique phenomenon to the Joint Strike Fighter. It inevitably causes an increase in costs thereby reduces the number of items we can buy. And this year, like any other, we have substantial procurement initiatives including the JSF and a new tanker for example.

And so I guess my question is, and this is the broader, bigger picture. It obviously pertains to the JSF but other procurement programs as well, and that is, what steps is the Department of Defense taking in order to control costs on these systems and increase numbers of units versus the increasing costs and decreasing numbers of the weapons systems that it procures, the Department?

Dr. CARTER. Good question and two answers to it. Because you're, you are rightly speaking about what are we doing in acquisition reform at the back end of programs. You know we have a lot of good practice and that was the principle intent of the WSARA Act, to help us start programs better so they don't get into trouble. And you're saying, we have what we have now, our portfolio of programs, what are we doing to make sure that they deliver. JSF is a perfectly good example. We're past the beginning point now—

Senator THUNE. Right.

Dr. CARTER.—in many ways of JSF. And we are looking very carefully now and very aggressively at the cost structure of our programs, the contract structure as between cost plus and fixed price. I mentioned earlier our overheads and indirects. All the ways that we can squeeze two percent here and three percent there and four percent there, and pretty soon you're talking about a very serious amount of money. So management acuity and relentlessness in the middle part of the programs is very important.

And then finally, there's a form of acquisition reform that Secretary Gates has emphasized also which is the discipline to stop doing things that we have enough of or that aren't working or that are single purpose capabilities. And as you know this year we'll be proposing some programs for—to end some programs and that's always a difficult thing to do.

But every time we can stop buying something we don't need it frees up money for exactly what you say, more money for the things that we do need. More units of a program that is performing well and that we could buy more of.

So acquisition reform's got to go across the whole spectrum, not just at the birthing of programs but right through and into having the discipline to stop doing something when it's time to stop doing something.

Senator THUNE. Well it just seems like this has kind of become a recurring theme and a recurring story. And you know it's unfortunate that you have to—yeah, if you've got programs that are coming in way over budget and that you don't need we shouldn't be funding them.

But that the same time, you hate to not fund programs because other programs are so far over budget and these increasing costs and over runs and delays, it just—it seems like your acquisition process is in desperate need of sort of a new model.

So I guess I wanted to make that observation for the record and raise that question with you. So thank you. Thank you Mr. Chairman.

Chairman LEVIN. Thank you Senator. Senator Lieberman.

Senator LIEBERMAN. Thanks Mr. Chairman. Thanks to the witnesses. I apologize that I had a couple of other meetings that I've been running back and forth from. But I think I've got the drift of the testimony.

Secretary Carter, I wanted to ask you first a question that is probably simple but I think essential which is, what will the \$2.8 billion increase in the JSF programs budget bring total SDD costs to? And what degree of confidence do you now have in that estimate for total SDD costs by the April 2016 completion date you've set?

Dr. CARTER. Senator, I'm going to ask either General—General Moore, okay you have that number, CD?

General MOORE. The total cost in this RO9 will be 50 billion, for the total SDD cost.

Senator LIEBERMAN. The total cost will be 50 billion. And that's by that April 2016 date that we're talking about?

General MOORE. Yes sir.

Senator LIEBERMAN. Okay, thank you.

Dr. CARTER. Just to be clear the CD's talking about the total cost from the beginning of the program back—

Senator LIEBERMAN. Right.

Dr. CARTER.—to all the way to the end of SDD.

Senator LIEBERMAN. Right.

Dr. CARTER. The 2.8 is in addition to the program over the—relative to what was projected over the FYDP, sorry about the technicality—

Senator LIEBERMAN. That's okay.

Dr. CARTER.—but just reconciling—

Senator LIEBERMAN. I understand and I thank you of that clarification.

Second, as you all know very well, alongside the consensus of support there has been for the Joint Strike Fighter here in Congress, there is a subpart that has been much in conflict and that is the question of whether there's an alternative engine built. And it looks like we're going to have that again, that conflict again this time.

I want to make a general statement and ask some questions. Which is, that this conflict and the idea of building an alternate engine and the costs associated with it, it seems to me gets more exacerbated or at least the argument against the alternate engine gets stronger because of the cost increases in the overall program.

Ms. FOX I'm going to quote from the information memorandum that you did on this question a short while ago. "The Department has not funded an alternate engine for the JSF program since 2007 because in the Department's view a second engine is unnecessary and too costly. This position is most recently reflected in the Air Flight 2011 President's Budget Submission which once again does not include funding for the JSF-136 alternate engine.

The Department's position is based in part on updated analyses which continue to show that the business case for a JSF alternate engine is not compelling and that the alternate engine program would require a significant DOD investment of additional resources within the FYDP."

Later on in the report you say CAPE analysis shows that it would require a DOD investment of 2.9 billion over the next years to get the alternate engine in position for competition. Incidentally, as you know, that is set alongside the estimate of your predecessor in 2007 who said that the alternate engine would require another 1.2 billion at that point in development funding before it was ready to compete.

In the three years since then we have spent 1.3 billion on the alternate engine and now you're estimating an additional 2.9 billion in the coming FYDP. So have I got that all right?

Ms. FOX. Yes sir you do. There's a few changes. First of all, in apples to apples assuming competition in 2014—

Senator LIEBERMAN. Right.

Ms. FOX.—when you account for the additional funds Congress has given, we now estimate that it's at a break even point for cost in terms of the long term procurement of a second engine.

But the initial investment that would be required, and now we project with the restructured program, that competition would move to 17. So I'm sorry for the difference in dates. But to account for that, that additional investment in necessary to complete the development costs for the alternate engine but also to fund the component improvement program you would need to maintain the engine's currency.

You would need to perform directed buys of the engine's primary and second sources to prepare for a competition. And you'd have to procure tooling, support equipment and spares. And that's all in the 2.9 billion.

Senator LIEBERMAN. That's all in the 2.9 billion?

Ms. FOX. Yes sir.

Senator LIEBERMAN. When Admiral Roughead was before us a couple of weeks ago, he said he had real space concerns that the—what would be necessary to employ the back up and support for the alternate engine for the Navy and Marine Corps.

Okay, I want to end with a broader question to you Secretary Carter, and maybe it's been touched on. But just to give you a chance to talk more generally.

Obviously you served in the Defense Department before you're back in this position. We have continued to be troubled, hounded, frustrated, infuriated by the fact that the, these systems that we need so much are costing so much more than we expect, hoped, estimated, let alone arrive later.

Forgive this question, but to the best of your ability what the heck is going on? In other words, is this—is this happening because, as some of us think, probably conventionally, simplistically speaking that we ought to be moving along the spectrum much more toward fixed price contracts from cost plus.

Is it happening because the Department and we are accepting estimates, initial estimates of a cost of programs that are simply not realistic? At this point, in this round of your service what's your explanation of what's happening? Because I know you want very much to stop it from happening.

Dr. CARTER. It is pervasive. Secretary Gates says about acquisition reform, there's no silver bullet, I wish there were. It is pervasive. I do believe that—we've always had problems with the acquisition reform system as long as I've been associated with it.

And I think there are two things that are critically important to attend to now. One is, that I—it seems to me that the last decade of double digit year on year growth in the Defense budget, which has been terrific in lots of ways for the Department in terms of being able to buy more capability, enhance our military capabilities, has also engendered and this is human nature, an erosion of discipline.

It's been easy to solve problems with money. And you see that in programs where they slip a little bit, throw a little bit more money, a technological problem, throw a little bit more money in. And we need to be much more vigilant about how we use money to solve our problems.

And that's a—it is a—you know Einstein said it's—his work was 90 percent perspiration and 10 percent inspiration as opposed to an acquisition executive's is 99 percent perspiration and 1 percent inspiration. You just got to keep hammering away at these things and be disciplined and be willing to say as Ms. Fox's organization does, hey wait a minute, this doesn't look right.

The other thing is people. The other thing is people. I don't mean to sound too abstract about it but we, we have to have good people. And in the last 10 or 15 years, and this has been widely reported and documented, the acquisition cadre in both the civilian side and uniform side has been allowed to dwindle away and our workforce is older than it ought to be.

Nothing wrong with that, they're experienced but older people at some point leave the Department and then what do we have. So I'm trying to spend, pay a lot of attention to drawing into service the people we need, the program managers, the cost estimators, the engineers, the systems engineers and so forth that will make the system better. And then there are all the changes to the system itself, including those that were included in the WSARA legislation.

But I guess what I was going to is, you can have the best system in the world and if it's not populated by the right people and you don't have the discipline to recognize surface problems when the arise and try to address them, you can have milestones, landmarks,

this kind of independent estimate, that kind of independent estimate, you're not going to get anywhere. So we're trying to just do the blocking and tackling that delivers value to the taxpayer.

Senator LIEBERMAN. Well I appreciate that answer. I think it was important and candid and the obvious reality in terms of the mentality that you solve every problem, real problem with more money is that with the enormous deficits and long term debt the country is running, we're just coming to a point where the broad—and consensus in support of defense spending is going to begin to break or at least be under real pressure that's going to deny the kind of funding that's been available.

I'm fearful up until now and so the work that you're doing is really critically important. And of course every dollar you save is a dollar that might be spent for instance on additional personnel which I think we still need.

So anyway, my time's up. I thank you very much.

Chairman LEVIN. Thank you Senator Lieberman. Since we claim Edison as a son of Michigan, the perspiration/inspiration comment we claim and believe it was Edison's not Einstein's.

Dr. CARTER. I'm sorry, I'm sure you're right.

Chairman LEVIN. Senator Chambliss.

Senator CHAMBLISS. Thank you Mr. Chairman. Secretary Carter, as I hear you talk about the average age of the workforce in the acquisition department, and I think about

the average age of the United States Senate, we're both headed in that direction I guess.

Chairman LEVIN. That's off the record by the way.

[Laughter.]

Senator CHAMBLISS. We're all dealing with experience Mr. Chairman.

Chairman LEVIN. That's on the record.

[Laughter.]

Senator CHAMBLISS. Mr. Sullivan, your statement relative to the cost of this airplane being unknown is not new. You've testified to that effect over and over particularly last year as we were going through the defense authorization process as well as the appropriation process. And with the ongoing debate over the F-22.

You noted in your written statement that DOD does not have a full comprehensive cost estimate for completing the program. You validated that statement again today and in fact, in April of last year you made a statement on NPR that when all is said and done that the price of the nearly 2,500 F-35s could approach \$140 million for each plane. Do you still stand by that statement?

Mr. SULLIVAN. I frankly right now don't remember having said that. I'm not sure what you're referring to.

Senator CHAMBLISS. Okay.

Mr. SULLIVAN. But at any rate, no I don't think it's—that doesn't sound right.

Senator CHAMBLISS. Okay, would you concur with the JET's estimate that Ms. Fox alluded to relative to the plane in 2001 dollars I believe Ms. Fox you said.

Ms. FOX. 2002 sir.

Senator CHAMBLISS. 2002 dollars would be in the range of \$80 million. Is that a fair statement in your opinion?

Mr. SULLIVAN. Right now I have numbers here that are then years. So I don't—it would be apples to oranges. But the average procurement unit cost that we've calculated is about 112 million.

Senator CHAMBLISS. Okay, well that—

Mr. SULLIVAN. So that would be—

Senator CHAMBLISS. You've answered my question because that was going to be my point. When we talk about today's dollar—

Mr. SULLIVAN. Right.

Senator CHAMBLISS.—we're looking at somewhere \$112 million. And that's an average cost?

Mr. SULLIVAN. Yes.

Senator CHAMBLISS. And that's assuming that the perfect storm occurs and that every timeline is met and the test phase is conducted within the times that we've talked about here.

Finally then Mr. Sullivan let me ask you about this timeline of reducing 30 months of testing down to 13 months. This is a very sophisticated airplane, we know that. You've had experience with other weapons systems at Department of Defense. Do you know of any other weapons system that has been able to reduce its testing time from 30 months down to 13 months?

Mr. SULLIVAN. I think it's—we—just to qualify that a little bit. It's an increase to an existing plan. And the way that they came about that—the pull back was by adding new assets. So actually it's an increase—not increase—it seems relatively optimistic to me though.

I mean I think it will be a challenge for them especially given this aircraft is laden with software. And I think that's going to be one of the long poles in the tent.

Dr. GILMORE. Senator, could I just observe in that regard?

Senator CHAMBLISS. Sure.

Dr. GILMORE. That the total testing program is not going to span in excess of 60 months. The question was, whether we would extend from 53 months, which had been planned as of about a year ago to 80 some months versus expand from 50 some months to over 60 months. 60 months is in line with past experience in these kinds of complex programs. So I hope that clarifies what the duration of the testing program is going to be.

Senator CHAMBLISS. Right, I understand that. Dr. Carter, in your written statement you state that the current IOC dates for the Marine Corps and the F-35 is 2012. The Navy is 2016, the Air Force 2016, is that correct?

Senator CHAMBLISS. Dr. Carter, that's a two year delay for the Navy and a three year delay for the Air Force over what was advertised only a month ago, isn't that right?

Dr. CARTER. If you're referring to testimony given, I'm not quite sure what the baseline is. It certainly is an increase over what you—what I'm saying today is an increase over what you've heard in the past because the Services have taken the revised JET II Estimate as our realistic, the most realistic plan we can give them for when we'll deliver them jets.

And then they have done their separate things with respect to defining IOC. So they have adjusted their IOC dates in accordance with the change in the program. So I'm sure it's different from what has been said before.

Senator CHAMBLISS. Why did it take OSD over a year to validate the Jet Report of October 2008?

Dr. CARTER. There were actually two separate Jet Reports, both of them valid. Now I think the—what happened—

Senator CHAMBLISS. Both of them were basically the same though—

Dr. CARTER. They did but—

Senator CHAMBLISS.—they reached the same conclusion.

Dr. CARTER. Exactly but the—exactly, what made the second one, although it had the similar content more serious Senator, was that it was a year later. So the problems noted in the Fall of 2008 had continued into the fall of 2009. So it was reporting essentially the same dynamic going on on the assembly line but since it came a year later it was saying that this has been going on not just for one year, which is what the Department knew in October 2008, but two years.

And two years is much more serious than one year. So same content but a year later you're still getting the same news you really need to be more worried then you were earlier.

Senator CHAMBLISS. When did you become aware of the 2008 Jet Report?

Dr. CARTER. Shortly after I got into office which was a few months before—it was around the same time that the Deputy Secretary of Defense ordered up a new JET Estimate recognizing that the 2008 estimate was serious. Bill Lynn, the Deputy Secretary of Defense, said we'd better do it again.

It was done again in October by Ms. Fox's, or under her leadership, and it showed what it showed. Which is, whoops, this wasn't just something that—you know it was true in October of 2008, it's October 2009, it's still true. That's why it was more serious this year.

Senator CHAMBLISS. And was that 2008 report pretty widely known throughout the Department of Defense?

Dr. CARTER. It certainly was known to my office. I believe it was. My understanding is it was also briefed to the Congress last year as well. So I think it was pretty widely circulated.

Senator CHAMBLISS. Well my concern is, that during the debate over the F-22 last year two issues were front and center. One being, that the cost of the F-22 got way out of line. The last contract on the F-22, the last lot was \$140 million per copy. Certainly that's \$28 million difference in what Mr. Sullivan estimates that today's dollars is going to be for the purchase of the F-35.

But it's not materially different when you consider that the F-22 has significantly more capability particularly from an air superiority standpoint. I'm curious as to why that wasn't talked about during the debate last year on the F-22. Do you have any recollection of that?

Dr. CARTER. I can't because I wasn't—speak to that I wasn't in office at the time. I do know from the records what transpired after the first JET Estimate, which was that Secretary Gates added, recognizing that there had been this poor performance in the program, added \$476 million to the fiscal year 2010. Said oops, we'd better adjust our budget in fiscal year 2010 to take account of the CAPE estimate.

He did not adjust the entire out year budget as we are doing this year because he only had the first JET Estimate which showed that there was trouble going on for a year. This year, knowing that trouble's gone on for two years he directed that we adjust the budget to reflect the CAPE estimate not only in this year, 2011 but throughout the out years.

So it's a more serious action taken in response to more serious news which is a second JET Estimate that says the same thing that the first one did a year earlier. So he took actions in both years, they were different actions but proportional to the information he had at the time.

Senator CHAMBLISS. Well I've got some additional questions Mr. Chairman I want to submit for the record. But I think it's pretty obvious to all of the panel members how serious this issue is to us. We're committed to this program, it's a great airplane and we've got to have it. And we, Ms. Fox, don't want to go down that trail that Senator McCain talked to you about of reducing the buy. We can't afford to reduce the buy.

[The information referred to follows:]

We just had testimony that there's the—that the reduction in tactical aircraft for NORTHCOM has already caused us to have to call on the Canadians. And if we don't get these costs under control then who knows where we're going to go. But we can't do without this airplane. The assets of this airplane are so superior to any other asset that we have outside the F-22.

And with the Russians now coming out with an airplane that they say is comparable to the F-22, and it didn't even mention the F-35. They assume it's superior to the F-35.

It's imperative that we continue down the track of trying to get these costs under control. And I—I appreciate all of your working as hard as you have and being as frank as you have with respect to this program. So thank you Mr. Chairman.

Chairman LEVIN. Thank you Senator Chambliss. Senator McCaskill.

Senator MCCASKILL. I know that there's been talk about unit cost and I was here for the previous testimony about unit cost Ms. Fox, but I've not heard an estimate for the entire program including MILCON. Can somebody give me that number?

Ms. FOX. Yes ma'am, I'm sorry I don't have that number. We will get back to you I don't believe we have that number with us today.

Senator MCCASKILL. I think we need to know that number. I think it—I'm a little worried that you would come to this hearing without that number to be honest with you. Knowing that this was going to be all about the costs and the problems associated with this program.

I think everybody having a handle on what the overall costs are compared to what they were predicted to be. You know, we're stuck. I'm sure this is going to be a great jet but we better learn from this. We don't want to do this again.

And you know we have the potential if we don't have competition on—in which you know I'm a big fan of the product that Boeing puts in the air. But we've got the tanker coming up and I just—for accountability purposes I think whenever this group of people

assemblies you ought to have a number on what the overall program's going to be.

Let me talk about two things briefly. First is the shortfall. As you might imagine, the home of the F/A-18 in St. Louis, I know what that tactical aircraft means to our Services now. I know that as you talked about more and cheaper Secretary Carter, there is a shortfall.

Now it has been difficult to get a handle on the shortfall but now learning today that initial operational is not going to be until 2016 for the Navy and knowing we have 11 carriers to fill. It's just hard for me to believe that you all are still maintaining that there's only 100 shortfall. And do you have a number that you all are comfortable with having a shortfall?

Dr. CARTER. Let me ask Ms. Fox specifically to address the shortfall issue because she's done a lot of analysis on that. Let me just back up to the point you made. You're absolute right except the point about total ownership cost.

We have to take into account and manage the fielding, your point about MILCON and the other associated total ownership costs of the Joint Strike Fighter, not just the cost to build it. We've been addressing the cost to build it mostly in this hearing.

And to be quite honest and your question reveals this, internally we are going to turn to the total ownership cost. We have a couple estimates of that that differ among themselves and we need to try to reconcile them. Not just so that we have a number, but so that we have a plan for reducing that number because somebody is going to end up owning these things and they ought to have a reasonable cost of ownership.

With respect to the F/A-18 and JSF issue, we've done a lot of analysis on that question. Let me ask Ms. Fox if she would to address that.

Senator MCCASKILL. You know I'm headed towards the ultimate question here. Multi-year we'll save money. We have a big enough shortfall—I know you all have asked for an extension. We need to get to the multi-year. You know you're ending up buying that many jets, you know you are.

I mean this things gotten moved and I just—I'm just hopeful that we can—it would be great if I could go to lunch today with you all saying, yes we think multi-year's the right way to go.

Dr. CARTER. Why don't you speak to the—and then I'm happy to speak to the multi-year issue.

Senator MCCASKILL. Thank you.

Ms. FOX. Yes ma'am, we are concerned about the Strike Fighter shortfall for all the Services as a result of the restructuring. We're in the process of doing an analysis there. The number you quote of 100 is an old number, it doesn't reflect the restructuring we're looking at that right now. Again, I apologize but I don't have a final analysis for you.

Back to the overall costs, we will have an assessment of O&S costs with the Strike Fighter, JSF program in the Nunn-McCurdy certification. You added MILCON, I think that's a very good thing to add but I just wanted to alert you that these are challenging things to estimate this early in the program, but we owe everyone an O&S estimate for sure. And we owe everyone an estimate work-

ing with the Services on the implications of the restructuring on their Strike Fighter inventory.

Senator MCCASKILL. Well since we don't know, we know it's not 100 now, but we don't have a number. Secretary Carter, multi-year?

Dr. CARTER. If I may address the question of multi-year procurement for the F/A-18 arises anew and appropriately because we have made the decisions in the program review, as you know, to procure more F/A-18E/F versions and also the G, Growler electronic attack version in order to recapitalize the expeditionary electronic attack fleet now represented by the Prowlers.

And since we're buying more it's—we have asked the question of the manufacturer, give us a price. We've indicated that the threshold of interest is 10 percent, that's just the threshold of interest. And so we would look for savings in the teens in order to, for that to be an interesting proposition to the Department and for the taxpayer given that it's a multi-year commitment there would have to be savings there. And the Department of the Navy is in discussions with Boeing over that very point.

Senator MCCASKILL. Well I'm glad you're in discussions and you know, I know that 10 is the threshold but with all due respect, I hate to say I told you so. But you know, I kind of knew that 100 wasn't real. If you just look, if you step back with common sense and look at the JSF program, and looking at my friend from GAO here because I know he wants to nod right now. It wasn't going to be on time and it was going to keep getting pushed back. And we've got those 11 carriers.

And frankly, if we save money with a multi-year we ought to save the money if we're going to buy the jets. This notion that we have to get into the teens of savings for multi-year, I don't know what we accomplish if we end up buying them anyway. If it's going to save money to do multi-year and we know we're going to buy them, by all means let's do it.

Let me, on my final question and this is a hard. I need somebody to do an estimate on the problems associated with this program. We're going to have a breach. I need to know whose fault it is.

You know we—we're—this is too big to fail, this program. And we're going to push money across the table, we're going to push back timelines, we're going to push money across the table.

And I need to figure out, I think we all need to figure out whose fault is it? Is it the contractor's fault? How much of the fault is the military? Were they changing things during the process, was there delays that the military is responsible for? Is anybody in charge of figuring out whose fault this was?

And secondarily, if it's the contractor's fault, I know we've withheld one payment. Are there other penalties that you're envisioning that the contractor pays for these mistakes? You know this isn't no harm, no foul.

Somebody needs to be held accountable. And what worries me, is we all sit around and shrug well we can't do anything about it, well we got to spend more. And no one ever is held accountable. I want to know whose going to be held accountable and whose fault it was.

Dr. CARTER. I will address that. First of all whose fault it was, who's accountable for it? I actually think that there is both responsibility on both the government's side and the contractor's side.

It's our job to get the best business deal. It's our job to surface problems. It's our job to tell the truth and not an optimistic story. And that has not always been done in the course of this program. And then it's the contractor's job to perform. So there have been failures on both sides.

I will say that as soon as I got the JET II Estimate I went to the contractor and the leadership of that contractor recognized immediately as I did that this was a—the seriousness of the analysis represented by CAPE, rolled up his sleeves in the same spirit I was. And I have to commend him for that.

It would have been better if we didn't have to find this out in October of 2009. But there was immediate recognition of the importance of the problem and a willingness to acknowledge and get on with solving it. And I wanted to say that because I'm grateful that was the response of the contractor to the JET report.

Senator MCCASKILL. Is it unreasonable—if would indulge one more question and I know Mr. LeMieux you're waiting, and it's lunchtime.

Is it unreasonable for us to ask for someone to give us names? I mean you know, is somebody being demoted? Has someone lost their job? Is there something happening on the contractor side in terms of accountability?

These are multi, multi, multi-million dollar mistakes. And we need every penny of that money right now in terms of the economic strength of this nation. And while our economic strength is sapped it really—our strength is not just military. I'm very proud of our military and the work all of you do. But you know, this really—I mean can't we get some names and whose fault it is?

Dr. CARTER. On the government side Secretary Gates has taken some steps to strengthen the program management and specifically to upgrade the Program Manager on the Joint Strike Fighter to a three star position. And so we—and we'll be continuing to try to strengthen—

Senator MCCASKILL. I don't want to know about who's getting promoted. I want to know about who's getting demoted. That's what I want to know about. I want to know if anybody has been held accountable. And if you all would get back to me with that I would appreciate it. Thank you Secretary Carter. Thank you Mr. Chairman.

Chairman LEVIN. Thank you. Is it not true that General Heinz was relieved of duty as the—

Dr. CARTER. The Program Manager Senator was removed and that is why a three star Program Manager will be appointed in his place.

Chairman LEVIN. If I could just take from Senator LeMieux 10 seconds further on this because I was pressing them for the same question before. And I interrupted Secretary Carter when he gave me the first two reasons for these huge cost overruns.

He listed two and I would following what you're pressing for ask you Secretary Carter for the record, to give us all of the causes that you began to identify, you said there were engineering changes.

You then said there were labor costs that went up. Give us all of the reasons, if you would, for the record as to this 60 to 90 percent increase in the unit cost. Senator LeMieux.

Senator LEMIEUX. Thank you Mr. Chairman. And I want to commend Senator McCaskill on her always vigilant on these cost issues. And we need more of that in this

chamber. I'm new to the United States Senate so you will forgive me for being not an expert on these topics.

My understanding of this project and Mr. Secretary perhaps you can make sure that I have my numbers straight, is that this project started in 1995?

—
Senator LEMIEUX. And we're 38 percent over budget, \$18 billion?

Dr. CARTER. We're more than that on the SDD program if that's—if you're talking about—more than that on the SDD program.

Senator LEMIEUX. Do you know what it is?

Dr. CARTER. I'm going to ask Ms. Fox.

Ms. FOX. I'm sorry sir, I don't have the data back to 1995. The SDD program is at \$50 billion in the current estimate. We added 3 billion, \$2.8 billion to it for this review but I believe it had gone up before. So I'd have to get you a total.

[The information referred to follows:]

Senator LEMIEUX. So it's more. Well if you could submit that for the record. You know we're very excited in Florida about getting this Joint Strike Fighter, getting it to Eglin. You know we're very proud of our military bases in Florida with the world's largest Air Force Base, we look forward to getting them there.

But I think the American people, if they knew about this, would be shocked about how long it's taken to do this plane and get it in the air. We don't yet have one ready to operate as I understand, we just have test planes, is that correct?

Dr. CARTER. There are aircraft flying, they are all test aircraft.

Senator LEMIEUX. Right. And we're hoping to get a plane to the Marines by 2012?

Dr. CARTER. Correct.

Senator LEMIEUX. Is that still—

Dr. CARTER. That is correct.

Senator LEMIEUX. That's still a good target date?

Dr. CARTER. For the Marines, yes sir.

Senator LEMIEUX. So we started this program in 1995 and we're going to get a plane delivered in 2012. It occurs to me that we went to the moon faster than developing this plane. And to be this far over budget, more than 18 billion, more than 38 percent, I appreciate the comments of my colleagues about accountability.

And I think Mr. Chairman that it bespeaks a larger problem with procurement. And I appreciate your comments about using business models but this would not happen in the business world. And if it did, a company would fail if they did this.

So I would you know, commend Mr. Chairman and you may have done this before so if you have, I apologize for not knowing about it, but for us to have a hearing on procurement. To bring in large companies who do, you know buy billions of dollars of goods and

services and bring our friends from the Defense Department in to have them hear what's done in the private sector.

Because I can just tell you my private sector experience, I've had the opportunity and the honor to run a large law firm, nothing comparable, we talked in millions not billions. But when you do procurement there's carrots and there's sticks. And if you're—in these processes the vendor should be held accountable.

And I understand there's mission creep problems too which caused these overruns but you know, defining a goal and setting a specification that stays static and not creeping with that specification. And then when the vendor comes in over, they bear the responsibility unless it's our responsibility. Which we have to work on that side too so.

You know, this is a needed plane. We need to get them as quickly as we can and I'm supportive of the plane. But these types of numbers in this environment, when this country's going broke, this government, when we're \$12.4 trillion in debt. When we're going to add another \$10 trillion in debt this decade, this is not sustainable.

So I know you have a very difficult job and I'm appreciative of your service. But it seems like we've got to do better. It doesn't seem like, we have to do better. So I'm sorry, that's not a question that's more of a comment. But I'm becoming increasingly concerned about this as I watch it.

So give me some hope Secretary Carter about where we are with this program and where we'll be with procurement going forward.

Dr. CARTER. I can give you realism and I think that's what the—we're trying to do with the revised JET II Estimate is be realistic about what we can project to you about the progress of this program.

I think we have to—I have the aspiration, we all ought to have the aspiration to do better than the projection if we possibly can. That will be a matter of discipline. It'll be a matter of negotiation and performance.

But I agree with you, the picture that we painted at the beginning of our testimony today is unacceptable. And it's—we're paying more than we said—we're asking you to pay more than we said you were going to have to pay. That's unacceptable and we need to wrestle this back into some sort of realistic box. So I think the best I can offer you, or what we're trying to offer is realism, not optimism but realism.

Senator LEMIEUX. In going forward, learning the lessons of this plane as well as the F-22 and other procurement, are we going to change the way that we do procurement in the Defense Department?

Dr. CARTER. I think we have to and that is one of the—in fact, we are making a number of changes that were written into law. The Weapons Systems Acquisition Reform Act last year, that prescribed a number of changes to improve the acquisition system. And we—all of those are in process now. Some of them are in my office, some of them are in Ms. Fox's office.

And in a sense what you see today is a reflection of what was written in the legislation that came out of this Committee last year. Namely that we should start doing independent cost estimates and taking them seriously. And that's what we're trying to

do, perhaps belatedly, but that's what we're trying to do here in the Joint Strike Fighter Program.

Senator LEMIEUX. Now Secretary Carter and Ms. Fox, is there something that you have not yet implemented that you need to implement when we get to the next procurement? I mean we don't—I'm sure you don't and I'm know that the Chairman doesn't ever want to be here in the future with another program that's over budget and not on time.

So is everything—do you have all the tools you need? Are all the mechanisms in place? Have we learned enough to know that that's not going to happen again?

Dr. CARTER. I think that the sort of bureaucratic structure is there to do better. But all—all the structure, all the boxes don't matter unless you have two other things.

And one is the discipline to surface problems and solve them in a candid manner. Again, we're trying to do that here on the Joint Strike Fighter Program, maybe belatedly, but surface them and solve them.

The other thing, as I mentioned earlier is good people. And that is something that we're still working on that will take years to rebuild the acquisition cadre in the Department so that they have all the engineering skills and the systems engineering skills and the contracting officers, and pricers, and all the things that it takes to replicate what you rightly suggest in the private sector would be a matter of course.

Senator LEMIEUX. I mean do we need to pay these folks more? I mean we'd be a lot more efficient to put together a squad of the best and brightest people in the world working for us. And if it cost us, you know some millions of dollars and we saved billions it'd be good for the taxpayer. When you say rebuild, do we not have the talent we need?

Dr. CARTER. We don't either on the civilian side or on the uniform side I think it's widely recognized. On the civilian side we reduced the numbers about a decade ago without adequate care to preserving key skills and quality. We're trying to rebuild. Something similar happened in the armed services.

What's important there is that a Major or Colonel who has acquisition expertise as something they think they're pretty good at and an aspiration to become a general officer can see a cone that they can go up in the acquisition field.

We're having a lot of experience now with seeing what the market is like for people wanting to come into government work and acquisitions because we have in part because of some initiatives that came out of this Committee we are hiring or in sourcing 20,000 people into the acquisition workforce.

And we can't pay them what they can get outside. And we take too long to hire them and it's a cumbersome system to join the government. But what we have going for us, what you see just again, and again, and again, is that—is the mission, the mission.

They come in and they say, boy now I'm doing something that really matters, contributing to national security. And that's our hook, that's all we have. We can't pay them a lot. It's frustrating to work in the government and all the rest of it. But the mission, that's our hook.

Senator LEMIEUX. Thank you Mr. Chairman.

Chairman LEVIN. Thank you very much Senator LeMieux. We as a Committee, as Secretary Carter said, adopted, led the way to get the major acquisition reform into law last year. And it's hopefully just about fully implemented now.

Ms. Fox is here because of her office more technically was created for exactly this reason to do the same kind of work in the area of cost as Dr. Gilmore's office does in terms of operational tests and evaluations. So these were major changes that took place.

And you're absolutely right, we were not doing business the way businesses would do it. We're trying through that law and hopefully through full implementation of that law as you point out is so essential, to change not just the words on a page that will hopefully make a big difference but the culture in the building.

And that 20,000 figure comes as a startling number to a lot of people. When we talk about adding 20,000 government employees, that has a very negative effect in the minds of some folks. But we know how badly this acquisition core was damaged and was reduced during the previous decade.

And we're going to reverse that. The President's determined to reverse it. Our law reverses it. We put some provisions in that law that will strongly promote the rebuilding of that acquisition capability.

One of the things that is critically important here in terms of keeping costs down is competition. And the whole argument now on the second engine for that Joint Strike Fighter is, are we going to have competition or not and the value of competition is critically important.

Those of us that favor second engine do it not because we have any back home interest, I don't, it's because we believe that without competition we're going to see that same kind of upward curve on that engine if it's going to be sole sourced, which it is, as we see now with JSF.

We're basically at the mercy of a contractor. We all want the plane for the reasons you give. We want that plane but the number hasn't changed in the last two years. Well once you tell a contractor we're buying 2,417 planes, okay now what? Where's the leverage?

I don't know what the leverage is on this contractor myself, I don't see the leverage. You know you testified Dr. Carter that—and by the way, one other thing about competition, we wrote that right into our law that we passed here last year.

Secretary of Defense shall ensure the acquisition strategy for each major defense acquisition program includes measures to ensure competition or the option of competition at both the prime contract level and the subcontract level of such program throughout the life cycle of such program.

Now one of the questions I was going to ask is to what extent we're going to do that at least at the subcontract level. In this case we've done that with some ship building now where the Secretary has decided he's going to sole source two ships.

And the problem with that is, where's the competition going to be with those two ships, with those shipyards? If you don't have

two shipyards, but you only have one, they've got—you're at their mercy again. And that's what my fear is here.

We've got Dr. Carter in his testimony said that we're going to ask Lockheed to share in some of the cost increases. We're going to ask them. Where's the leverage? Where's the leverage Secretary Carter? Where's the leverage?

Dr. CARTER. We don't have to ask about award fees. That was a specific reference to an award fee that is at will to the government. So that was a polite way of saying that the award fee was being withheld.

In general, I'll be very candid for this program. It's in the interests of the performers to have a successful program. Because if otherwise, the international customers and the U.S. Services are going to buy fewer jets.

So the danger of poor performance is that you sell less. And it's obviously in the interests of the performers of the program to sell more jets sooner and therefore to move that ramp over, that I spoke of earlier, and get up that ramp as soon as possible. And that is the—the principle reason why performance of a kind that we seek is also, if we set the circumstances right, in the interests of the performers as well.

Chairman LEVIN. Well that is not historically stop buy-ins in the past and I'm afraid it continues that way. I just worry greatly about where we're going with this program. I'm appreciative of the effort that you are making now to be realistic on these numbers.

We might as well know the facts of this program. You've given them to us the best you can. The facts are painful because you have a 60 to 90 percent increase in the projected cost of the, of each plane at the 2,400 number in constant dollars.

And that is as Senator LeMieux says, is a painful bit of news that the taxpayers are not going to be particularly happy to hear. It's better that we not sugar coat it however. It's better that we let them know, let the country know and that's what this hearing is all about, exactly what kind of problems that we foresee in an honest way and we think you've done that now.

And I understand your answer earlier Ms. Fox, you were attempting to tell us basically what—when you made reference to the earlier planes and they're—the fact that numbers were reduced, you were not holding that up as a role model here.

What you're saying was, that we have produced planes that cost us more than planned, took us longer than planned, but were able to carry out their mission in an effective way. That's what I gather you were pointing to.

But my question is in relation to that. This \$200 million figure for these developmental planes, that is what now—if you estimate in constant dollars a plane will be costing 80 to 95 million, and your first planes are costing two to three times that much, is that about normal for these kind of programs?

Are your first planes generally that much more than your—when you get to full rate production? Do you have any way of measuring that for us?

Ms. FOX. We do have a way of measuring that. I don't have the measurements with me, we can get back to you. But my short answer would be yes, that there are a number of air—I mean 2,443

aircraft overall of this, but we've reduced the ramp very sharply in what we've done with this restructuring so the initial buy is actually much, much smaller.

One of the leverage points we actually have on the contractor is that ramp. They want to push the ramp up, get the unit cost down, and push jets out. We are holding them back based on the analysis we've done, the review of the IMRT, and the desire to keep pressure on this unprecedented concurrency. So it is about right.

But sir if I could add, in my short time in this position, one of the most important things I think about the WSARA legislation is the—

Chairman LEVIN. That's the Acquisition Reform Bill you're referring to?

Ms. FOX. Yes sir, I'm sorry.

Chairman LEVIN. It's all right.

Ms. FOX. The independent cost estimate at the beginning of a program I think is going to prove in the future to be a very critical thing for us all to look at. Because based on historical performance, the JSF program is actually not inconsistent with what's been achieved in the past. And an independent cost estimate at the very beginning would have allowed us to look at this and understand what we were going toward.

Chairman LEVIN. And now is in place?

Ms. FOX. Yes sir.

Chairman LEVIN. I made reference in my opening statement to the Independent Manufacturing Review Team that late last summer said that on the JSF program, "affordability is no longer embraced as a core pillar". That is a totally unacceptable premise for us to proceed on.

Secretary Carter, you today said that you're going to be relentlessly pursuing affordability. Which means, I think, that you've rejected that quote from that Independent Manufacturing Review Team's presentation. Is that correct? Were you familiar with that comment?

Dr. CARTER. Absolutely, and that review was charted by my office. And what they were reporting was, that the program had lost sight of affordability as a key ingredient and I couldn't agree more. And their report and that statement in their report was important input to us as we restructured the program.

Chairman LEVIN. The Independent Manufacturing Review Team identified a series of milestones called Production Integrated Transition Implementation Plan. And I will not try to even pronounce that acronym.

That plan was intended to get the program back on a reasonable schedule. And among the action items were completing program risk management plan, completing a business systems modernization plan, a Pratt & Whitney Milestone Action Plan, and a Pratt & Whitney Risk Management Plan.

Those were I think to be completed or were scheduled to be completed, General I think this question goes to you, by the end of last month. Where are those?

General MOORE. Senator, there are actually 20 action items associate with the IMRT. Some are process related, some are product related, some are government, some are contractor. As far as the

risk management activities, those did occur on schedule. We have a competence of risk management program tracking over 300 technical risks on the program to include engines and aircraft. That has occurred.

Chairman LEVIN. So what I made reference to, those plans were filed?

General MOORE. We had these—

Chairman LEVIN. Prepared on schedule?

General MOORE. Yes sir, we understand all the risks on the program and we're tracking those to closure as well as the other 19 actions on the IMRT.

Chairman LEVIN. Okay, but more specifically, were those plans completed on schedule?

General MOORE. Yes sir, they were completed last month.

Chairman LEVIN. Thank you, Senator LeMieux.

Senator LEMIEUX. Thank you Mr. Chairman and I appreciate the law that was passed and thank you for providing that information to me. I just want to make a couple quick points.

When I talk to people who are on the vendor side and they talk to me sort of off the record, the view that they have is that the Defense Department gets gamed on these bids. That they bid low knowing that there's going to be mission creep. And this is not unfamiliar to other parts of the world. And then they know there's going to be, for lack of a better term change orders, and that's where they can make up the difference.

So when I was speaking with you earlier about how we can control costs, you know making sure that the mission doesn't creep certainly seems to be a big part of this. And when something goes on for 15, 17 years, you're going to have change because the technology's going to change, the demands of the current time are going to change. The longer the project goes the more it seems like it's going to be cost overruns.

So I wanted to speak to you—I want you to address that in a moment if you would about how you keep these project static if you can and without sacrificing safety make sure that we try to end these projects in the future quicker.

And the second thing I wanted to mention is putting pressure on the vendor. And what will be done in the future about making sure that this contracts that we negotiate give you the opportunity to put pressure on the vendor.

You know in the business world, take manufacturing. Suppliers for manufacturers, say in the automobile industry, they're constantly—the prime vendors constantly going back to them and saying you got to make it for less. I mean to the point where they don't think they can make any money.

Constantly beating them up over price. Constantly saying I'm going to go to another company. Constantly putting pressure on them which spurs innovation for that company to find a way, to wring out inefficiencies and get something done as quickly as possible.

You know are there people working for you who have that experience, who are you know, going to the vendor over time and just pressuring the heck out of the vendor to wring out inefficiencies and do things cheaper?

Do you have the flexibility in your contract to make them do things cheaper? And will your contracts going forward give you all of the tools that you need to put you more in a setting as if you were a large company so that we can get the most cost effective product possible?

Dr. CARTER. Senator, you put your finger on just about every major issue of acquisition policy and practice. I'll try to address the three major ones that you pointed to.

The first was the practice, which does occur, of bidding low and that is the—and then you've got yourself a program and then it's—the country depends upon that program and then the cost goes up but we still have the program.

That dynamic is one that the Weapon Systems Acquisition Reform Act was intended to interdict by having us, requiring us to do a realistic cost estimate up front so that we wouldn't be just buying the, so to speak, the cost estimate of the vendor. But we need to keep at that and we know have a mechanism for doing that.

About changing requirements, that's something we also have to be vigilant about so that you don't come in and decide whoops later that wasn't really what you wanted, you want more and it'll cost you more. And that's connected to your point about pressure on the vendor.

In one way at least it's worth noting which is in contract structure. If you—and that is the dynamic between the government and the contractor in a cost plus contract versus a fixed price contract. Both contract types are appropriate in different circumstances.

But if you're in a circumstance where you know pretty much on the government side what you want and you're not going to change that and it's a fairly well defined article, then it's reasonable to ask the vendor to give a fixed price. And then the burden's on them to control their costs.

Senator LEMIEUX. Which is great.

Dr. CARTER. Correct, and we want to do more and more of that. That is unreasonable when we don't know what we want. And sometimes we don't know what we want for a good reason because we're doing a development and exploratory development of a new military capability. It's fine to have that be a cost plus environment.

But elsewhere we're trying to do more of our transactions in a fixed price way for just the reason you say because that requires everybody to get real. We have to get real about what we want and not change it. And the contractor needs to get real about what it costs to deliver it.

Senator LEMIEUX. Can I interrupt you for one second?

Dr. CARTER. Absolutely.

Senator LEMIEUX. When we don't know what we want but we're in the developmental stage, are we making the vendor bear some of that cost? Because you know if I'm a big defense contractor and I know that I have an opportunity to get the F-35 for 20 or 30 years.

I mean this becomes the signature program of this contractor if they win this award. I would think that they, just like any company that's doing R&D, they got to bear some of that expense. And

you have a big prize out there that should give them some incentive to bear some of those costs on their own.

Dr. CARTER. The traditional practice for a development that really requires some invention and therefore whose future unfolding is legitimately uncertain is to audit and reimburse the contractor's costs and add to that a fee. And as I said, that's appropriate in a circumstance when it's not reasonable to expect the vendor to give you a price because you don't know exactly what you want or whether you can even get it.

But when it—we're come to a—as where we're coming in the Joint Strike Fighter Program to the ramp up to production, it is now reasonable to say to the contractor, give me a price for the next lot of jets. You figure it out and then we'll hold you to that price. Because the line is now mature enough that it should be possible to price its performance in advance.

Senator LEMIEUX. I guess the concern—you know there are two points. One is, and then I'll conclude Mr. Chairman, is that that traditional practice of paying them for their development of a product that they're going to then sell to us doesn't seem to make a lot of sense to me looking at it from a private sector perspective.

I understand that sometimes—I don't know why we're buzzing here. I understand that sometimes that might have to be the way it is because it's just too big an expense for them to bear. But I would encourage you in the future, these contractors want this work, to use your power as the purchaser to extract concessions out of them on the front side too to see if they'll help finance some of this research and development.

And on the question of creep and making sure that we don't have scope creep. Are we at a disadvantage on our side in that the vendor stays constant but folks like you and others you know, progress and they'll be a new Secretary so and so and a new Ms. so and so, and a new General so and so and we don't have the constancy on our side? Do we need to think and maybe it has already been done creatively to make sure there's something on our side that gives us continuity as well?

Dr. CARTER. Excellent point, people do change jobs rapidly, more rapidly in government than in industry. And programs take a long time and the commitments need to remain solid over that time. So it's important that people as we come into these jobs respect the commitments that were made by predecessors in the interests of stability in a program unless there's really something wrong or the circumstances have changed.

It gets back to another point you made though that's important which is how long these programs take. And I think that time is the variable that we do not manage enough in our—in general in our programs.

The dynamic is this, if you have a program that runs into trouble the first thing to do is come and get more money for it. But money is, there's only such much money every year so that only goes so far. And then your next step if you can't get more money is to slip the program to the right.

And so these things stretch out to the right. And an 11 year program is 10 percent more expensive than a 10 year program. In general they run at a kind of level of effort, and that's concerning to

me. So not only by the time you get the thing you might not—it might not be what you want or we've forgotten why we bought it in the first place, but it's more expensive then it should be. So managing to the variable of time is an important idea I appreciate you raising it.

Senator LEMIEUX. Well I thank you all and I thank you for your service and your focus on these important issues. Thank you Mr. Chairman.

Chairman LEVIN. Thank you very much Senator LeMieux. Just on that one important point that Senator LeMieux raised about the creep of requirements, those increases. What we did in this bill was to put—we created a Board, a Configurations Board it's called to make sure that if there is a proposed change in a mission or in a requirement that it goes to Board for approval so it just doesn't creep the way Senator LeMieux pointed out.

But we understand it's pretty slow getting those Board's going. I just wanted to remind you that we're—my staff has looked into this and it's not moving as quickly as we would like. And if you want to comment you can but I want to just let you know that's been our concern.

Dr. CARTER. My only comment is that it's an incredibly important idea and if they're not going—I will look into it and get back to you.

Chairman LEVIN. All right, thank you. And then also Ms. Fox you said that now an engine competition that under your business case will achieve a break even point which is important news. But it's also important that we know the assumption that you made relative to the savings of competition. What percent savings did you assume?

Ms. FOX. Sir, let me ask my colleague if we have that number. Perhaps I could ask Mr. Janicki to answer your question since he did the analysis.

Chairman LEVIN. Sure.

Mr. JANICKI. Sir the—

Chairman LEVIN. Can you just tell us who you are?

Mr. JANICKI. I'm Fred Janicki.

Chairman LEVIN. Okay.

Mr. JANICKI. And I led the JET team and I work for Ms. Fox.

Chairman LEVIN. Okay.

Mr. JANICKI. The 2007 study we evaluated that we would need 21 percent to break even. Now for the updated study we did not go in and determine what savings was needed.

Chairman LEVIN. You—

Mr. JANICKI. For the new study, the 2007 study we have not determined that.

Chairman LEVIN. Have not, okay.

Mr. JANICKI. No, no sir.

Ms. FOX. But in the past study we assume the 21 percent sir.

Chairman LEVIN. From what? 21 percent—

Ms. FOX. Percent of savings from competition.

Chairman LEVIN. Over the—

Ms. FOX. For a competition that would start in 2014.

Chairman LEVIN. And over the life of the contract?

Ms. FOX. That's right.

Chairman LEVIN. Are you all set George? We're set, okay. Thank you all. It's been a long hearing, we want to particularly thank our reporter. We don't often do that but it's a little longer than planned so once in a while we remember to say thanks to people who keep us going here. We appreciate your coming to visit us today and there will be questions for the record and we'll stand adjourned.
[Whereupon, at 1:35 p.m., the committee concluded.]