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[H.A.S.C. No. 110–128]

HEARING

ON

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2009

AND

OVERSIGHT OF PREVIOUSLY AUTHORIZED PROGRAMS

BEFORE THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

AIR AND LAND FORCES SUBCOMMITTEE

MEETING JOINTLY WITH

SEAPOWER AND EXPEDITIONARY FORCES SUBCOMMITTEE

ON

BUDGET REQUEST ON DEPARTMENTS OF THE NAVY AND AIR FORCE TACTICAL AVIATION PROGRAMS

HEARING HELD
MARCH 11, 2008

U.S. GOVERNMENT PRINTING OFFICE

43–685 WASHINGTON : 2009

For sale by the Superintendent of Documents, U.S. Government Printing Office
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FISCAL YEAR 2009 NATIONAL DEFENSE AUTHORIZATION ACT—BUDGET REQUEST ON DEPARTMENTS OF THE NAVY AND AIR FORCE TACTICAL AVIATION PROGRAMS

HOUSE OF REPRESENTATIVES, COMMITTEE ON ARMED SERVICES, AIR AND LAND FORCES SUBCOMMITTEE, MEETING JOINTLY WITH SEAPOWER AND EXPEDITIONARY FORCES SUBCOMMITTEE, *Washington, DC, Tuesday, March 11, 2008.*

The subcommittees met, pursuant to call, at 10:05 a.m., in room 2118, Rayburn House Office Building, Hon. Neil Abercrombie (chairman of the Air and Land Forces subcommittee) presiding.

OPENING STATEMENT OF HON. NEIL ABERCROMBIE, A REPRESENTATIVE FROM HAWAII, CHAIRMAN, AIR AND LAND FORCES SUBCOMMITTEE

Mr. ABERCROMBIE. Aloha. Good morning, everyone.

Good morning, Mr. Young, Mr. Sullivan. A pleasure to see you here today. I hope you are still smiling, for those who can't see. Appreciate that.

I am going to make an opening statement, which I will submit further for the record, and then ask Mr. Taylor to submit his statement. Then we will get right to the hearing.

This morning we are in a joint hearing of the Air and Land Forces and the Seapower and Expeditionary Forces Subcommittees to receive testimony regarding the Department of the Navy and Air Force Aviation Programs.

There is an awful lot to cover today and we will conduct this hearing in two panels.

Leading the first panel, as I have indicated by the introductions, Secretary John Young, the Under Secretary of Defense for Acquisition, Technology and Logistics. An unenviable post in these days, but one that is crucial and vital and I for one and very appreciative of the work you do, Mr. Young.

You will be discussing issues related to the F–22 force structure and the Joint Strike Fighter (JSF) Program. Followed by Mr. Mike Sullivan from the Government Accountability Office (GAO), whose service to the United States and most particularly to the Armed Services Committee is invaluable.

You are going to give us the GAO views on the risks associated with the current JSF program. Maybe risk is the wrong word there, but some of the challenges that are there, some of the perspectives that we need to take into account in our decision making, including an updated evaluation on the merits of the competitive Joint Strike Fighter engine program.

The second panel will include Navy, Marine Corps and Air Force witnesses to help provide information on the major issues associated with their helicopter fighter and airborne electronic attack programs. The Navy and Air Force aviation includes a large number of programs—I don't know if this is being recorded or sent out or not, but that is one of the reasons why I wanted to go through a little bit in the opening statement of what we are going to take up, because if there is a television audience, they may not be as familiar with the subject matter as everybody in the audience might be, and some of the witnesses.

Navy and Air Force aviation includes a large number of programs, but today we are going to focus on the Joint Strike Fighter, as I indicated, the F–22, tactical aircraft inventory and the CSARX as Air and Land Forces Subcommittee issues.

Since 1997, the Department of Defense (DOD) has requested approximately $1.1 billion for the Joint Strike Fighter alternate engine program, which will be a key element in today's discussion. Congress has added $977 million to this amount for a total of $2.1 billion being authorized and appropriated through this fiscal year. We understand that an additional $1.3 billion would be required through 2013 to complete development of the Joint Strike Fighter alternate engine, which would provide the Department of Defense a competitive choice between the two interchangeable engines for the 2,443 Joint Strike Fighters that the Department now plans to buy.

One reason Congress has supported a competitive alternate engine program for the Joint Strike Fighter is because of the benefits to DOD from the competition between the F–100 and the F–110 engine manufacturers beginning in the earlier eighties. As a result of this competition, the GAO has indicated in the past that the Department of Defense has saved approximately $4 billion in lifecycle costs of 21 percent savings.

Competition, the GAO has noted, has had other benefits, such as improvements in engine performance, reliability and maintainability. Again, it is not just Mr. Sullivan, and you, Mr. Young, that don't know all these things. But I think it is important that we have a foundation for the discussion that may help direct your remarks.

I would like to note that Section 213 of last years authorization bill, that is to say this year's fiscal 2008 National Defense Authorization Act, requires the Secretary of Defense to insure the obligation and expenditure of sufficient annual amounts for the continued development and procurement of two options for the propulsion system for the Joint Strike Fighter.

Despite this provisional law, the Department has not included funding for a competitive Joint Strike Fighter engine in its budget request, and I am hoping, Mr. Young, you will address that issue.

Funding for the F–22 will be another important issue for the subcommittee this year. The budget before us would authorize a final F–22 20-aircraft procurement. Although DOD officials have indicated the anticipated fiscal year 2009 supplemental will include four additional aircraft, neither the advanced procurement funding for additional F–22s in fiscal year 2010 or the F–22 line shutdown cost is included in the budget request before us.

And I expect that you will also address the question of why we are putting replacement planes in the supplemental budget instead of the regular budget that is before us right now. You already know you need it. Why is it going into a supplemental?

The current F–22 program of record is 183 F–22s. The Air Force asserts that it requires a fleet of 381 F–22s to meet its requirements under the national military strategy. In future years, the defense program has presented end of production at 183 F–22 aircraft with the possibility of an additional four more aircraft, as I indicated. The Joint Strike Fighter, the F–35A, is planned to complete the remainder of the future Air Force fighter force structure. The F–35A is now planned to achieve its initial operation capability in 2013. Whether that is possible remains to be discussed and seen.

The 2009 average procurement unit cost of the 20 F–22s is said to be $205 million in the information given to me. The projected cost of the F–35A is $73 million. We are much more certain of the cost of the F–22s, since we have an ongoing production line. I hope to hear from the GAO this morning on the high risk that the F–35 program will not achieve its cost, schedule or performance parameters. I hope that will be addressed.

The F–22 and the F–35 have a similar 12-year development period. If we go back to where the F–22 was 5 years into its development in 1996, about where the F–35 is now in terms of development years, projections were for about 438 aircraft and an average procurement of $104 million in 2008 dollars. Today we are planning for 183 rather than 438, and the unit cost have increased 97 percent. What is the harbinger of the F–35A, we have to explore.

If the cost of the F–35 increases similar to the F–22, costs could increase by a similar amount, if it was just the same, it would be $156 million per aircraft in 2008 dollars and that is without a reduction of the currently projected 2,443 aircraft total procurement. Whether that number sustains itself is, again, something I think we need to address honestly.

So I am asking for your assessment of the competitive engine program, the development and procurement challenges in the Joint Strike Fighter and the way forward for the F–22 production. And then when we get to the second panel, I will go into further discussion.

Before we go further then, I will ask Mr. Taylor if he has a statement that he would like to either submit or state at this time.

STATEMENT OF HON. GENE TAYLOR, A REPRESENTATIVE FROM MISSISSIPPI, CHAIRMAN, SEAPOWER AND EXPEDITIONARY FORCES SUBCOMMITTEE

Mr. TAYLOR. Thank you, Mr. Chairman.

I would like to have a statement that I would like to submit for the record. Additionally, I would hope at some point that Mr. Young could address the situation with the P–3s over in Iraq, what is the Department's plan to either replace them, fix them or find a suitable replacement aircraft for the time being.

Thank you very much, Mr. Chairman.

Mr. ABERCROMBIE. Thank you.

That will be submitted for the record without objection.

Any other members like to make an opening statement?

Mr. Saxton.

STATEMENT OF HON. JIM SAXTON, A REPRESENTATIVE FROM NEW JERSEY, RANKING MEMBER, AIR AND LAND FORCES SUBCOMMITTEE

Mr. SAXTON. Thank you very much, Mr. Chairman.

I would like to begin by welcoming our witnesses, of course, and particularly I would like to thank Secretary Young for joining us today. We have worked on many programs and projects together over the years.

Mr. Chairman, the President's budget request for fiscal year 2009 has left Congress, in my opinion at least, in quite a quandary. Simply put, the dollars available do not provide the level of support necessary to meet Air Force needs. Not only does the budget fail to reflect a decision on whether or not to buy more C–17s and F–22s, it fails to fund congressionally mandated programs, as you pointed out, such as the JSF competitive engine and a minimum required B–52 force structure.

After reviewing the budget request, I can only come to one conclusion. Once again, I will state it again, there is not enough money in the defense top line to meet the nation's requirements. As a result, folks who are with us today testifying are faced with making what I think are impossible choices. I say impossible because they are charged with training and equipping the military forces to support the national military strategy, and yet they are not resourced to do so.

In previous years, the Department has made things work by assuming risks in areas where they could, and they have tried to spread that risk across the Department so that no one capability would suffer too greatly. I believe that we are seeing in this year's budget request that we have stolen all we can from Peter and Paul is issuing foreclosure notices. We are up against the wall.

Folks, we have got to increase the defense top line. We have failed to adequately resource the Department's requirements and the fiscal year 2009 budget request is a clear indication that they are left with impossible choices. This base budget says, first, we need more C–17s, but we can't pay for them. Second, we need more F–22s, but we can't pay for them. Third, we need 76 B–52s, but we can only pay for about 40. We need a competitive engine for the JSF, but we can't pay for it. In fact, we need more money in the JSF program to ensure an adequate test and development strategy, as the chairman just noted, but we can't pay for that either.

The Congress cannot allow this or any Administration to obscure the true strategic risks of their decisions by offering a snapshot of the potential threat taken through a straw. This budget request is an indication that they have done just that in my opinion. Although the budget process is complex, it is based on a very simple framework. You start with an analytically supported and agreed upon threat assessment, then you generate a strategy to deal with that threat. Finally, you allocate resources and you mitigate the risks associated with resource constraints.

This budget request does things in the reverse order, and it simply assumes away the threat in order to balance the equation. I believe we have a responsibility. That responsibility is to adequately

equip the brave men and women that voluntarily serve this nation, and this budget request is a clear indicator that we do not intend to do so, at least not without an unacceptable risk.

With that, Mr. Chairman, I will repeat once again, I think that we need to increase the top line. And thank you for giving me this opportunity to make this statement.

Mr. ABERCROMBIE. Thank you, Mr. Saxton. We are certainly going to explore all of that, I assure you.

Mr. Bartlett, my good friend, do you have an opening statement?

STATEMENT OF HON. ROSCOE G. BARTLETT, A REPRESENTATIVE FROM MARYLAND, RANKING MEMBER, SEAPOWER AND EXPEDITIONARY FORCES SUBCOMMITTEE

Mr. BARTLETT. Yes, sir.

Thank you, Mr. Chairman.

I know we have a number of aviation programs to discuss today and quite a few witnesses and I expect we will examine more closely a few acquisition efforts, so I will keep my remarks brief.

Today the United States airpower is unrivaled. It allows us to hold virtually any fixed surface target, and many moving or buried targets, on the planet at risk. Where we used to require many planes to service a single target, or at least one plane per target, now a single aircraft can perform multiple missions.

Indeed, we are no longer constrained by the physical location of the pilot. With the advent of unmanned aerial vehicles (UAV), which of course cannot replace manned aircraft in all circumstances, we are able to command and control aircraft around the world from air bases in the United States. In fact, it is these very advances which have led me to question, as have Admirals Stansfield Turner and Art Cebrowski, the day of the aircraft carrier may have come and gone.

I do not pose the question to cast doubt on the need for naval aviation. Nor do I question the need to project power in access-denied environments. I have pushed for further examination of this issue primarily because of the vast improvements in combat airpower, unmanned aviation and guided munitions and the vulnerability our carriers face as targets in today's threat environment.

With that said, we should not maintain false confidence in our technological superiority. Other nations such as China and India are fielding modern fighter aircraft, multi-level air defense systems and aerial surveillance systems. At the same time, the United States has to make difficult and expensive choices regarding the recapitalization of our aging aircraft. What is more, these choices are not confined to a single service. The need to replace the Air Force's F–16s and F–15s is arguably no greater than the need to provide new fighters to the Marine Corps and Navy.

While one can certainly point to critical capability gaps within the Air Force, particularly given the recent issues with the F–15s, the Department of the Navy has a projected shortfall of nearly three carrier aircraft wings by 2017, yet we may not be able to simply buy our way out of this predicament. The replacement aircraft, the so-called fifth generation fighters, like the F–22 and the F–35, are very expensive.

On a separate note, related to acquisition of future aviation platforms, I hope our witnesses will comment today about a recommendation from the recent Defense Science Board report on DOD energy strategy, "More Fight, Less Fuel." As I am sure our witnesses know, mobility platforms consume the most energy used by the Department, with jet fuel representing nearly 60 percent of fuel consumed by all of DOD. Consequently, the Defense Science Board's first recommendation was that the Department accelerate efforts to implement energy efficiency key performance parameters, KPPs, for weapons systems, and use the fully burdened cost of fuel to inform all acquisition trades and analyses about their energy consequences.

Some important steps were already taken prior to the release of the Defense Science Board report. In August 2006, the Vice Chairman of the Joint Chiefs of Staff (JCS) issued a memorandum endorsing a Joint Requirements Oversight Council (JROC) decision to establish an energy efficiency KPP. In April 2007, a USDAT&L memorandum established that it is department policy to use the fully burdened cost of fuel for all acquisition trade analyses.

Chief executives from ConocoPhillips and Shell oil companies doubt the ability for world supplies to meet demand by 2015, a very short time period in DOD planning horizons. Oil is over $100 a barrel and Goldman Sachs is among those estimating it could go to $150 or $200 a barrel this year.

That is why I believe it is very important for our witnesses to assess the status, importance and future impact of creating and implementing this recommendation for an energy efficiency KPP and use of the fully burdened cost of fuel. How critical are they in every stage of our planning processes to achieve the Defense Science Board's proposal to reduce the energy intensity of our operational forces to enhance our warfighting capabilities.

I understand the requirements for F–22 and F–35 are already long established. What is the likelihood that an energy efficiency KPP could be added to these programs or any other aviation platforms in the near term?

Finally, as we examine these issues, I would strongly urge the Department to maintain transparency with Congress regarding the true requirements for aviation programs. We need to know the real cost of fulfilling these requirements. We need to know the amount of risk that each year's budget accepts. It does a disservice to the American people if requirements are masked or changed on the basis of what the Department of Defense believes it can afford. Lay out the true requirement and propose a budget that is the President's best attempt to balance many competing needs.

We are at an important crossroads in our nation's history. The world around us is changing rapidly. We must be judicious in our choices as we face what seem to be unlimited requirements with a very limited budget.

I look forward to hearing from our witnesses. Thank you all for being with us today.

Thank you, Mr. Chairman.

Mr. ABERCROMBIE. Thank you, Mr. Bartlett.

I might note in relation to your remarks that the last word I heard this morning is that speculation in oil futures have gone over $109 a barrel today.

I want to thank you both for your statements, as always. They are clearly stated and insightful and provocative.

With that, Mr. Young, would you like to come up and have the four of us go down and sit there and then you question us? How would that work?

Secretary YOUNG. That would be great.

Mr. ABERCROMBIE. Do you have enough—I saw you making notes as fast as you could, there. Do you simply want to agree with everybody and we can close down, or would you like to get started and perhaps make a statement of your own, and then we will go from there.

STATEMENT OF JOHN J. YOUNG JR., UNDER SECRETARY, ACQUISITION, TECHNOLOGY AND LOGISTICS, DEPARTMENT OF DEFENSE

Secretary YOUNG. Mr. Chairman, that would be great, I think.

Chairman Abercrombie, Chairman Taylor, Ranking Member Saxton and Ranking Member Bartlett, and distinguished members of the respective subcommittees, thank you for the opportunity to appear before you today.

I will try to be brief and directly address the issues highlighted by the committee hearing letter.

First, as you know, the Defense Department has analyzed the requirement for F–22 aircraft and determined that the current budgeted inventory of 183 is adequate. It is critical for the Defense Department to move forward to the next generation of supportable and highly capable fighter aircraft, the Joint Strike Fighter.

Frankly, the Defense Department still has work to do on the F–22. A number of concerns were raised during recent operational testing. Further, current Air Force plans do not upgrade 100 early F–22s to the most capable block 35 configuration. Upgrading F–22s that DOD has already purchased should be considered ahead of any other F–22 options.

The Joint Strike Fighter program, with the tremendous help of——

Mr. ABERCROMBIE. Could you repeat—I am sorry. Could you repeat your last statement? I want to make sure I got it correctly.

Secretary YOUNG. Upgrading F–22s that the Department of Defense has already purchased should be considered ahead of any other F–22 options.

The Joint Strike Fighter program, with the tremendous help and support of this committee, has gone reasonably well. Indeed, I was a new member of the Pentagon leadership when the system development and demonstration contract was awarded in 2001. The fiscal year 2009 budget before you requests funds for the 3rd year of low-rate initial production. The Congress has given the Defense Department and the industry a chance to efficiently execute this program. This is in contrast to the fact that the F–22 SDD contract was awarded in 1991 and low-rate production did not begin until 2001.

The SDD program for the F–135 Pratt & Whitney engine has also gone well, leveraging heavily the investment made in the Pratt & Whitney F–119 engine for the F–22. The engine recently experienced a repeat blade failure and we are confident that modest design modifications will correct this issue, which is linked to a rare flight condition, military power in the vertical STOVL mode.

I believe we may need to add modest funds to the Joint Strike Fighter program budget to complete development. One major factor is the loss of $1.1 billion from the JSF SDD program over the last 5 years due to Pentagon budget cuts and Congressional marks. Pentagon and Congressional marks make a real impact on program execution and a well-planned program.

The Department is proceeding with the obligation of funds to develop an alternate engine, consistent with congressional direction. In the past, I have been an advocate of the alternate engine program. In an unconstrained budget environment, the alternate engine provides some potential benefits to the Defense Department. However, I feel the pressure on me as the defense acquisition executive is to deliver appropriate defense capability at the lowest possible cost, carefully using each tax dollar.

The alternate engine program will cost a minimum of $1.6 billion for development and an additional $1.9 billion to establish production. The Defense Department, according to the KEG would need to save 16 to 22 percent on the planned JSF engine procurement in order to have a business case for the development of the alternate engine. The $1.6 billion to develop an alternate engine represents funds that can be used now to buy other needed capability for our warfighters and our Nation.

Furthermore, the F–136 engine is not derived from the F–119 and presents a risk of technical issues and cost growth during development, another risk to the warfighters capability.

Finally, the Defense Department budget has proposed termination of C–17 production. After reviewing these issues in detail through the C–5 re-engining program, I believe this is a well-considered decision. In many ways, it is like the alternate engine decision. Purchase of additional C–17s is not necessary and use of funds for this purpose in a constrained budget environment will result in denying other capabilities to our warfighters.

Again, I appreciate the chance to testify. I am sure I have not been able to address all of the committee's concerns, so I look forward to your questions.

[The prepared statement of Secretary Young can be found in the Appendix on page 57.]

Mr. ABERCROMBIE. Thank you for a very succinct summary. That is one of the best I have heard. Thank you.

Mr. Sullivan.

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

Mr. SULLIVAN. Thank you, Chairman Abercrombie, Chairman Taylor, Ranking Member Saxton, Ranking Member Bartlett. It is a pleasure to be here this morning.

My testimony is going to be more specific to the Joint Strike Fighter. It discusses emerging risks to the overall program and updates information from the analysis we performed last year regarding different cost scenarios for the alternate engine. I will briefly summarize my written statement, which I will submit for the record.

Also, I would like to note that the information on overall program risks is taken from our annual mandated report, which is also being issued today.

First, let me begin with observations on the overall current program cost estimate. In the past year, the Department reported that the Joint Strike Fighter programs procurement cost estimate increased by more than $23 billion due to a 7-year extension to the procurement period, increased estimates of future contract prices and airframe material cost increases.

The program's official development cost estimate remained about the same. However, to maintain that estimate the program made decisions that we believe may have increased overall risks.

In order to replenish $600 million in program reserves that were spent too quickly, the Department has approved a plan that will eliminate two test aircraft, reduce flight tests and accelerate the reduction of the prime contractor's development workforce. Several prominent defense offices found the plan was too risky and we agree with that. Our report issued today recommends revisiting the plan to examine alternatives.

The Department has stated that it believes the plan is manageable, but it will monitor its execution and revise it if necessary in the future.

At this point in the program, we believe its cost estimate lacks reliability. It does not include all applicable costs. For example the alternate engine program is not included. It relies on data from deficient reporting systems, earned value management systems, and it is at variance with other independent cost estimates. The KEG, for example, and DCMA, also has another estimate.

The Department has identified billions of dollars in unfunded requirements and the development schedule continues to degrade. In our report, we recommended a new, full, independent cost estimate be conducted so that Congress will have an accurate understanding of future funding needs.

The Department generally agreed with this recommendation and I believe is in the process of beginning a new independent estimate.

The foremost challenge for the program at this point continues to be affordability. From its outset, its goal was to field an affordable common family of strike aircraft. Since then, unit procurement prices have continued to rise. The program also makes unprecedented demands for funding from the defense budget, averaging about $11 billion each year for the next two decades. This is competing with other critical priorities for the shrinking Federal discretionary dollar. This raises concerns about how many Joint Strike Fighters we will eventually be able to afford.

I would now like to briefly touch on the alternate engine competition. This year, the Department is again proposing cancellation of the Joint Strike Fighter alternate engine program. Under a sole-source scenario, the current estimated remaining lifecycle cost for

the engine program is about $55 billion. The remaining initial investment in the alternate engine program would require an additional $3.5 billion to $4.5 billion over the lifecycle. However, as we reported last year, that investment could return at least that much in savings over the lifecycle of the engine.

Our updated analysis suggests that a savings rate of 9 to 11 percent would recoup that investment and prior experience indicates that it is reasonable to assume savings of at least that much. Last year when we did this, the estimate was, I believe it was 10 to 12 percent. So the savings has actually—the savings needed to recoup has actually gone down.

Finally, the non-financial benefits, such as better performance and reliability, more responsive contractors and industrial based stability, are more likely outcomes in a competitive environment.

Just to conclude, Mr. Chairman, the upshot of our analysis on a Joint Strike Fighter is that the Department is challenged once again with weighing short-term funding needs against potential long-term cost savings on the program. We and others believe that the Department's new plan to cut test resources and flight tests to fund manufacturing cost overruns will add costs in time to the program later.

Likewise, the Joint Strike Fighter engine acquisition strategy poses a critical choice between short-term funding needs and future rewards. The Department can use funds for other costs in the short term with a sole-source strategy, but all indications are the competition would save money in the long run. Such are the difficult choices that will have very long-lasting budget implications.

Mr. Chairman, this concludes my statement. I look forward to questions.

[The prepared statement of Mr. Sullivan can be found in the Appendix on page 129.]

Mr. ABERCROMBIE. Again, Mr. Sullivan, thank you for that succinct and direct response. Really, both of them are excellent in terms of giving us the foundation for questioning.

It has been a while since we have had a hearing. I just want to remind everybody, I like to go in reverse each time, and I think now this time we start at the least senior members, which is not pejorative by way of description, I assure you, and we will work our way back up.

So Mr. Akin, I think that you would be first under that procedure. Is that okay with you?

Mr. AKIN. Mr. Chairman, I didn't realize a bluebird was going to visit me this morning this way, but thank you very much. I appreciate that.

I understand——

Mr. ABERCROMBIE. I have been called a lot of things, but bluebird isn't one of them.

Mr. AKIN. I wasn't saying you were the bluebird. I just appreciate that one flew in the window.

Thank you, Mr. Chairman.

I think that Mr. Sullivan's comment about difficult choices and long-term consequences, boy, that really seems to summarize where all of us are, find ourselves this morning. And I really think that

Mr. Saxton's comments about not enough money in the top line is also a major piece of what we are dealing with.

I guess the concern I had, and this might have been—this is something I imagine you will hear repeatedly this morning, and that is in terms of the difficult choices and long-term consequences, we have seen a number of major, major contracts being awarded overseas. And I guess the concern I have is, what happens to our industrial base?

I guess this has become even more vivid to me because in the last week or two I have had a chance to visit a lot of small machine shops and different people who are not major subcontractors, they are not sub sub, they are like, way, way, down the food chain, but there are these jobs that are all networked throughout our country.

And what you said was you are going to close down the C–17 line. We are not going to be building U.S.-made tankers anymore. I assume if we need more C–17 capability, we will let the Europeans do it. I bet the Chinese, you know, they probably make a good fighter aircraft too.

But I guess there is a certain point where it seems to me that there has to be some consideration of capabilities that we retain inside the country, and I don't know if that is part of your acquisition consideration or not, whether you are very focused on getting the very best, you know, answer to a particular specific contract. But I think that is a trend that a lot of people are paying attention to.

That is a very general question, but one that I think is of grave concern to many of us.

Another one would be, are there C–17s in the unfunded request? Because when I have talked to the people out at the airbase by us in the St. Louis area, they are saying, boy, that C–17 is working for us. We are using it in new ways. And we can use more of them. And it goes back to that old C–5 question, whether we can get the politics of that straightened out.

But I guess my main concern is our industrial base, and if you could comment on that, I would appreciate it.

Mr. ABERCROMBIE. Before you do, as you gather your thoughts, because of the two panels, I am going to try to stay to 5 minutes and try to go rounds, if we can. So if you can keep your answers, again, as succinct as possible in the same tenor as your opening statements, I would be grateful.

Secretary YOUNG. Congressman, we do consider the industrial base, particularly when it comes to critical technologies that are necessary for our nation's defense capabilities. The Director of Defense Research and Engineering (DDR&E) office studies that issue constantly to report on it.

In terms of larger-scope competitions, we conduct those competitions in accordance with the law and the Federal acquisition regulations. And so when bidders—those regulations don't necessarily consider the origin of products. They don't necessarily consider where the factory is. They consider getting good capability, best value capability to the Nation for a price. There are rules that have to be complied with in terms of U.S. content. Bidders always comply with those rules, so they know them. But beyond that, you know, we can't use competitions to structure an industrial base.

Mr. AKIN. I guess I understand that, but the thing that struck me is, I am talking to these people, this is a mom and pop shop that have these different pieces of equipment that they are buying. They own everything. And they are taking their own money and plucking $3 million or $4 million down to buy some great, big, you know, five or six axis, you know, equivalent of a milling machine, and all.

They don't know what contracts they are going to be able to build parts on on that piece of equipment. They are gambling that somehow in the next five or seven years, they will get enough business to cost-justify doing it.

Connected with that is also the technologist who has to run the machine. Now, if those people don't get the contracts, what happens is that industrial base goes away. The guy goes and finds another job. The machine is sent overseas or something. The next time we bid something, our cost is going to go up because we don't have the base. I mean, there is sort of a self-feeding. And that was why that term long-term consequences is of tremendous concern to me.

I understand. I used to be in charge of maintenance of a steel mill. I understood the tradeoffs. But there are some that are a little bit less tangible but still very significant in terms of their implications for our country, and I certainly hope that we build that in somehow into our equation.

How about the C–17? Did you have any—are there some of those in the unfunded request again?

Mr. ABERCROMBIE. Could you answer as briefly as possible?

Secretary YOUNG. Congressman, as part of the Nunn-McCurdy process for C–5, particularly started with the requirements, I think the requirement—we would have to talk on a classified basis—is substantial for the C–17. One could argue it is very conservative. Through the C–5 Nunn-McCurdy decision and the C–17s we have procured, we meet that requirement with some margin and we have the capability to enhance the maintenance of those planes and overachieve that requirement, and I do believe there is no argument, as I said, to buy or issue C–17s for the Defense Department.

Mr. ABERCROMBIE. Thank you.

Chairman Ortiz.

Mr. ORTIZ. Thank you, Mr. Chairman.

Secretary Young, Mr. Sullivan, thank you so much for joining us this morning. We certainly thank you for your service.

Secretary Young, the Navy's original long-standing requirement for training aircraft identified as the 234 jet trainers is the absolute minimum number of aircraft needed to support pilot training. Training requirements have continued to increase, yet the Navy's last budgeted procurement of the T–45 was in 2007 with a total procurement of just 221 aircraft.

Are 221 aircraft enough to support current and future training requirements, especially with the Joint Strike Fighter coming online? And if more T–45s are needed to meet future training requirements, would it be not most cost effective to revive the production line prior to full closing to preserve manufacturing experience, decrease costs and the potential delay of a follow-on jet trainer?

Secretary YOUNG. Obviously, the next panel can probably address that in more detail. From my time in the Navy, I have some experience with this, and that has been one of the stable requirements in the Department, is the number of T–45 jet trainers. In fact, a story I often tell that is of relevance I think to the committee is, in our budget processes, we bought T–45s at low rates and they cost upwards of $30 million a copy. We bought them at high rates, and they cost only about $20 million a copy.

To buy the inventory you talked about, we spent several hundred million dollars, more taxpayer money, to get absolutely no more capability. We need more discipline in rate procurement for our procurements, and that is one aspect of Joint Strike Fighter, is staying the course and trying to efficiently execute that program.

But the Navy has moved increasingly and, I think, smartly, and it has some energy consciousness to doing more ground-based training and simulation-based training. So I am not aware of an additional requirement for aircraft training. I think the Department as a whole, not just the Navy, is doing a very good job of making greater use of those assets that are cost efficient and energy efficient to accomplish training needs.

Mr. ORTIZ. You know, I think it is very, very important, because we are inundated with a bunch of problems. And I would hope that by keeping the production line, not that I am really advocating that we do that, but I think that it is important, if we are going to try to save some money. But if you think that the aircraft that we have now is sufficient, we just hope that we don't come back again and say, you know what, we made a mistake. We have to go and open the production line. And then the cost of this aircraft is not going to be $20 million or $30 million.

I don't want to take too much time. I would like to allow other members to ask questions.

Thank you, Mr. Chairman.

Mr. ABERCROMBIE. Thank you very much.

Dr. Gingrey is next.

Dr. GINGREY. Mr. Chairman, thank you.

I am going to direct my question to the Secretary.

Mr. Secretary, thank you for being here today.

I think you know the situation with the F–22 better than anyone. The base budget for fiscal year 2009 contains no funds, as you said. The lines shut down our advance procurement of the F–22s.

There seems to be a discrepancy between where that will leave us in terms of the size of the F–22 fleet and where the Air Force and most independent experts believe that number should be. That will leave us at 183 and possibly 187, as you indicate in your testimony an additional four F–22s in the supplemental request. But needless to say, the Department has left Congress with some work to do here to reconcile this discrepancy.

Mr. Secretary, in your testimony you indicate that the Department's program requirement for F–22 Raptor is 183. Can you tell us what the Air Force's requirement for Raptors is?

Secretary YOUNG. I think it would be better for the Air Force to——

Dr. GINGREY. Well, let me tell you. I will speak for the Air Force, then. It is 381. And Secretary Wynne and General Moseley indi-

cated to us in previous hearings that it is 381. Hearing materials also indicate the Air Force needs these 381 F–22s to meet the national military strategy, which requires ability to perform two near simultaneous major combat operations and also to perform homeland defense missions, and the quadrennial defense review requirements. An integral part of meeting the national military strategy is to outfit each of the Air Force's 10 air expeditionary forces with one squadron of 24 F–22s.

The Air Force and the Joint Requirement Oversight Council, JROC, believe the force structure needed to accomplish this is 240 assigned aircraft and 141 for testing, training and backup.

Clearly we cannot accomplish this with 187 F–22 Raptors, which translates to about 110 that are operationally available. So I want to ask you again, Mr. Secretary, point blank, are 187 Raptors enough to ensure the Nation can successfully carry out the national military strategy as I have outlined it without taking on substantial risks?

Secretary YOUNG. Congressman, 187 Raptors are adequate to accomplish the national military strategy. There are at least two other studies that look at this.

Let me start with the threat assessment, which suggests after 2025 it is hard to see multiple high-end peers for those high-end threat engagements. A joint air dominance study looks at one military combat operation, not two. That two that you mentioned, the Air Force study, is a driver. The Air Force study is 6 years old. It is also driven by the force structure requirement to equip 10 squadrons, but not necessarily grounded in the intelligence assessment of the threat or the probability that we will simultaneously conduct two military major combat operations.

Dr. GINGREY. Mr. Secretary, with all due respect, that is not supported by any rigorous campaign-based analysis assessing the most stressing scenarios and rapidly growing threats and that at least three independent studies commissioned by DOD recommended procuring significantly more than 220 Raptors, and the Air Force urgently needs to replace approximately, what 500 1970 and 1980 vintage F–15A to D Eagles. Not to mention over the last 10 years multiple independent studies and over 20 Air Force studies have all recommended the Air Force requires far, far more than 187 F–22 Raptors to do the job previously done by 800 F–15A to Ds.

Secretary YOUNG. Well, another factor in this is Joint Strike Fighter. And the analysis behind the DOD joint air dominance study makes clear that you need a certain number of fifth generation fighters for these high-threat military combat—major combat operations. But to change that mix to a higher-cost F–22 at the expense of the lower-cost Joint Strike Fighter, the studies show variation in there does not change our effectiveness or our loss ratios, and we need to get you the classified data——

Dr. GINGREY. But, Mr. Secretary, there is a tremendous gap there——

Mr. ABERCROMBIE [continuing]. Sorry. This is a good discussion, but I think we are going to have to carry it on at another point. Do you want to——

Dr. GINGREY. I have got a few more seconds left, Mr. Chairman.

Mr. ABERCROMBIE. You do now——

Dr. GINGREY. Let me just conclude my remarks by saying that——

Mr. ABERCROMBIE [continuing]. Because you are such a good guy.

Dr. GINGREY [continuing]. I think it is ludicrous to say that upgrading F–22s is more important, the existing fleet, upgrading them, is more important than buying additional planes. I mean, this is the most highly sophisticated tactical fighter that we have ever developed, and I mean, the upgrading of the existing fleet is not more important, in my opinion, than buying more.

And with that, Mr. Chairman, I will yield back. I see the red light has come on.

Mr. ABERCROMBIE. That is a good point.

We will pursue this obviously further in the course of the hearing and perhaps afterward, Mr. Young. The points are well taken in terms of trying to establish where we are going to go in terms of recommendation.

I appreciate, again, trenchant analysis.

Mr. Smith is next.

Mr. SMITH. Thank you, Mr. Chairman.

First of all, let me just say we have more programs to fund than we have money to fund them. And that makes for some very difficult choices, which we understand on this committee quite well. We appreciate the best information possible.

I do want to ask a couple of questions about the recent tanker decision. I know we have other hearings coming up this week that will focus on that directly. But it is just a lot of information that we can't quite get access to at this point, so we are looking to take this opportunity to get some answers.

I think the biggest question I have is on the request for proposal (RFP) for this, because the reason I think everyone was so surprised is originally when the RFP was put out, it seemed to fit, you know, what Boeing was proposing with the 767, a more medium-sized tanker. In fact, I think there was a point at which the Airbus consortium was saying because of the RFP they were probably not going to submit a proposal, arguably because they couldn't meet the RFP that was described.

And then we here on this committee and elsewhere started to feel some lobbying pressure for changes in the RFP and it happened. It got changed in the middle of the game, which is a little bit unusual. And I guess the question I am asking is, you know, why the change? Why did the Air Force all of the sudden go from thinking that the medium-sized tanker—and there are pros and cons in terms of costs and a variety of different items. I would note, you know, connected to my earlier comment about we have so many programs, we can only afford so many—here we went with the higher-cost option. Which, of course, only makes that problem worse.

And so the question I have is, why did the RFP change in the middle and what is, sort of, the argument for the bigger, more expensive tanker as opposed to the medium-sized one that the original RFP had asked for?

Secretary YOUNG. I hope we don't tailor RFPs to products. That is wrong. We tailor RFPs to capabilities. That RFP was tailored to capability. The companies had a chance to respond to the draft

RFP and make comments about things they thought were flawed in it, and the government could adjust or not adjust.

So at the end, both companies accepted the RFP and proposed products against that RFP that they thought would be capable. Both companies did an excellent job, provided high-quality proposals and high-quality products. I think as more information is available, it is going to become clearer to you that the higher-cost product was not selected. Both products did meet the requirements and capabilities and the Department did its very best to evaluate two very high-quality proposals with excellent dialogue with both industry partners, and now we will continue the process of explaining how we made that choice.

Mr. SMITH. Understood. We look forward to it.

I guess on the higher-cost item, it is a higher per-copy cost and it is also higher maintenance once you get it, to operate it. So I guess I am puzzled by you saying it is not the higher-cost choice.

Secretary YOUNG. I think the Air Force will over time talk to you about it, but the proposals we have in hand do not support the suggestion that a higher procurement cost item was offered.

Mr. SMITH. Okay. And did you consider the subsidy issue? Because one of the things that we are really wrestling with here is we are starting a WTO case against Airbus for unfairly subsidizing in competition against U.S. products. Obviously, the case is still in development, but for years it hasn't been terribly debated that Airbus is subsidized. At a minimum, you know, they have a bank out there that they can take risks against that they know will cover them, which is no small item.

So I guess how do we balance within the government here the fact that we on the one hand are complaining about a subsidized competitor, and then on the other hand giving that subsidized competitor a contract, which arguably part of the reason they are able to keep their costs down is because they are being unfairly subsidized?

Secretary YOUNG. Again, the laws and regulations don't let me address really in any way a subsidy issue that will be settled, as you know, in another forum, on a nation-to-nation and international forum.

What we evaluated was products that were proposed. I did have a discussion with the Air Force to try to make sure—and I would do this in any program, it is not just this particular program. We don't want industry to buy into programs, because usually that comes back to haunt us in terms of increase in cost and other factors.

My understanding is that the Air Force has assessed both teams' proposals. Both teams' proposals present accurate assessments of their costs. And both proposals, I will tell you, include profit for both makers. So we believe people proposed their costs plus profit. We evaluated those performance and those cost benefits to the government.

Mr. SMITH. So just so I can clarify, your decision therefore was based in no way on the subsidy issue, whether they are subsidized or not? So in essence, what you are saying is, if that is an issue of public policy, then it is an issue of public policy that Congress will have to address. It was not addressed in your original decision.

And I guess the same can be said on the domestic issue that was raised earlier, I forget—I think one of my colleagues raised that issue—that that too was something that, within your parameters, you are not allowed to assess.

So, again, if that was an issue that was important to this country, it is something that Congress would have to deal with.

Secretary YOUNG. Again, we don't—procurement rules and regulations don't do that. We seek to assess the valid cost of offers from competitors, and that is what we evaluate. What we——

Mr. SMITH [continuing]. And so subsidies don't become a part of that. If we think it will cost them money that they didn't propose, the government assesses a higher cost to that proposal and——

Secretary YOUNG [continuing]. Well, to the extent that you are suggesting subsidies let them lower their costs, I am telling you the government independently assesses their likely costs and we grade proposals on their likely cost, not their subsidized cost.

Mr. SMITH. Understood, but wherever the money comes from, you know—I understand what you are saying, but the subsidy is not something that you consider in that situation, because what difference does it make to you if they—if they can deliver it for that cost, however they get there, then that is okay.

Secretary YOUNG. No. We assess what it is going to cost them, not what they propose it to cost. So if they find a way to eat costs, and I have had other competitions where companies come in and say we will put X-hundred million dollars on the table. We don't generally assess their contribution. We assess what it is really going to cost them to do the work.

And I would point out, too, this is a bigger global policy issue, because we do have defense products that compete in foreign markets very successfully that were clearly developed by the U.S. taxpayer.

Mr. ABERCROMBIE. That is the end of discussion.

Mr. SMITH. My time is up. I apologize.

Mr. ABERCROMBIE. That is all right.

Mr. SMITH. Your first answer to that question didn't seem to jibe with the second answer to that question, but I will try to get greater clarity on that before our hearing later in the week.

Thank you, Mr. Chairman.

Mr. ABERCROMBIE. Thanks, Mr. Smith.

Secretary Young, before I go to the next member, for purposes of the record, could you clarify your role and your mission in the selection process you just discussed?

Secretary YOUNG. Absolutely. Mr. Chairman, I greatly appreciate the chance to do that.

This was a Department of the Air Force source selection process. I am the milestone decision authority for the program, so I approve the milestones that let the program go forward, but I do not have a role in the source selection.

I did, because of the great interest here, ask part of my Acquisition, Technology and Logistics (AT&L) team to observe the source selection process and help the Air Force, because it is so important to the Nation that we successfully conduct these source selections.

So I have information from observing and watching and making sure the process was well executed, but I am not the source selection authority. I did not have an impact on the source selection.

Mr. ABERCROMBIE. But you are familiar with what was required, as the acquisition Under Secretary, right?

Secretary YOUNG. And based on feelings——

Mr. ABERCROMBIE [continuing]. So you can speak with authority on that part of it?

Secretary YOUNG. Based on a feeling that they had well-executed a source selection process, I did approve the milestone B that would let them move forward and award that contract.

Mr. ABERCROMBIE. So, again, for purposes of our record here today, you believe that—regardless of whether the process was good or not, I guess that is going to be in dispute at some point, but from your—is it fair to say, then, that in terms of the specifications, that you were satisfied that both competitors were addressing the specifications as you outlined under your authority? Is that correct?

Secretary YOUNG. Both competitors addressed the specifications the Air Force issued that have been approved by the JROC. And in granting the milestone, I agreed that they were valid specifications.

Mr. ABERCROMBIE. Okay. Fine. Thank you very much.

I think next will be Mr. Miller.

Mr. MILLER. Thank you, Mr. Chairman.

Question to the chairman, I just want to make sure, my colleague from Washington state kind of ran over. That won't go against my time, will it, sir, Mr. Chairman?

Mr. SMITH. I apologize.

Mr. MILLER. I know the answer anyway.

And I understand we are going to have a briefing, part of this committee, tomorrow, on tanker.

I do want to comment on my colleague from Missouri, who has since left the room. Both competitors in the tanker program were American companies——

Mr. ABERCROMBIE. Time is up. [Laughter.]

Mr. MILLER. The question I have for you, Mr. Secretary, regarding the Joint Strike Fighter, yesterday there was a defense news article where Israel announced that they possibly intend to switch its procurement plan from the F–35A to the F–35B short takeoff, the short take off and vertical landing (STOVL) version, designed for the Marine Corps.

Israel plans to purchase up to 100 of these fighters. What would the impact be to the Marine Corps estimated initial operation capability date of 2012 if in fact Israel changed its procurement plans and went with a STOVL version?

Secretary YOUNG. I don't think it would be any impact. The Marine initial operational capability (IOC) is very quick. It is based on an initial procurement of the first airplanes. My belief is that any procurement by other nations, including Israel, would be a little further down the line. It might have an impact further down the line on the rate at which the Marine Corps build inventory, but not on the IOC.

Mr. MILLER. Would the additional hundred aircraft added to the 35B line delay delivery of the 35A?

Secretary YOUNG. No, sir. I don't believe that.

Mr. MILLER. I have a question, and this may be a little bit out of line, but there is a concern within the civil engineering support agency regarding heat problems with concrete on runways at basing airfields and outlying airfields. What is the Air Force doing in regards to making sure that the airbases that these airplanes are going to be at will have the appropriate—the Portland Cement apparently, the heat that is generated by the engines creates a problem whereby the runways degrade very quickly.

Can you speak to that?

Secretary YOUNG. I can't. I would rather give you a better answer for the record. I do think that you are correct that the STOVL will put some additional loads on the runway materials, and we will get you a better answer for the record.

Mr. MILLER. Thank you.

I yield back.

Mr. ABERCROMBIE. Are you going to provide an answer later on that? Is that okay?

Mr. Larsen.

Mr. LARSEN. Thank you, Mr. Chairman.

Mr. ABERCROMBIE. Mr. Miller didn't take all his time, so you have extra.

Mr. LARSEN. Yes, I am assuming I get Mr. Miller's time in addition to mine.

Mr. ABERCROMBIE. Another Washington state guy.

Mr. LARSEN. Thank you, Mr. Chairman.

I want to return to the tanker issue, Secretary Young.

Mr. ABERCROMBIE. Okay. Now your time is up.

Mr. LARSEN. So I will be as quick as I can.

And this is less about contractors and more about impact on trade policy. You may not have an answer to it, but I think we need to—I think committee members and House members need to understand this, because the implications of the decisions for U.S. trade policy is important. The U.S. Government has determined that E.U. subsidies to Airbus are a clear violation of the WTO rules and that now is before the WTO. So this is a free trade argument against the tanker decision.

The President himself has said that European nations should end subsidies to Airbus and instructed at the time U.S. Trade Representative (USTR) Bob Zoellick to "pursue all options" to end these subsidies. And one estimate, according to Trade Case, puts the European subsidy for the A330 and 340 programs at $5 billion. This is for one of the platforms that the Air Force itself selected.

So while this WTO case is pending now, another branch of the same Administration would send a conflicting message by offering to the European Union a $35 billion reward for the same planes that we say they have illegally subsidized, a 700 percent return on investment for European taxpayers.

So I am wondering if the U.S. case—if the U.S. wins this case pending before the WTO, would our government seek retaliatory actions if doing so would increase the cost of the tanker that our Air Force needs, because they have selected the Airbus tanker?

And so the Air Force decision, whether or not you had anything to do with it, I just want to be sure you understand where I am coming from, puts this Administration, our Administration in a potential bind: live with the tanker decision or exercise its rights and obligations to enforce trade rules.

It seems to me the Administration is right now on a collision course with itself on this issue. Not as much as Congress having to redefine this decision, but the Administration has to define and redefine the decision it has made. So where one agency, the USTR, at the direction of the President, is arguing that these subsidies are illegal, the Air Force now is buying these subsidized aircraft.

Do you know if the U.S. Air Force agrees with the President's view that these subsidies are illegal?

Secretary YOUNG. I think I would ask the Air Force, but again, that is a different forum and a different set of issues about domestic trade. This was a product proposed to the Defense Department and evaluated under a fair and consistent set of ground rules.

Mr. LARSEN. I understand, but the policy implications go beyond the decision that the Air Force makes. The policy decision could interfere with our ability, the U.S. government's ability, the pursue trade remedies under the trade rules that we ourselves support.

I just want to make that point, and I understand where you have to come from on that and where you are coming from on that. But can you assure the committee that the Airbus' proposed cost for development of the A330 and the KC–30 has in no way benefitted from the very subsidies that the U.S. Government is currently suing the European Union over at the WTO?

Secretary YOUNG. I sought to have that discussion with the Air Force to a level of detail. I believe the Air Force technical team has looked very carefully. They have cost insight into both proposers. And they believe that both proposers proposed their legitimate cost and profit and that no one decided to take losses or use corporate capital to deliver a product to the Air Force.

Mr. ABERCROMBIE. Would you yield a moment?

Mr. LARSEN. Yes, for a moment. I have a few more questions, Mr. Chairman.

Mr. ABERCROMBIE. For purposes of clarification, under the acquisition part of your title, in answering Mr. Larsen I want to make sure that it is clear for the record, do you take into account, or did you take into account possible cost variations? Surely the Air Force was aware, or you must have been aware, that there is this dispute that Mr. Larsen has outlined. Did you take that into account in making the decision as to whether or not if there was an adverse ruling it would change the cost figures?

Secretary YOUNG. Because the proposal evaluation teams did not have a way to assess that probability or the impact or other things, I do not believe it was evaluated in the proposal process, that there might be tariffs and penalties through that——

Mr. ABERCROMBIE [continuing]. I am afraid that might turn out to be a real flaw.

Thank you.

Mr. LARSEN. Mr. Chairman.

Secretary YOUNG. Probably at some risk to myself, I would add one comment, and I—the members will hear this, but there is a cost difference between both proposals, so there——

Mr. ABERCROMBIE. I won't carry it further. That is more of a reason to take into account whether an adverse ruling would play into it.

Mr. Larsen's time.

Mr. LARSEN. Mr. Chairman, if I may, I will just finish up here, seeing the red light is on.

Mr. ABERCROMBIE. That is all right. You can take another minute.

Mr. LARSEN. Thanks.

In 2002, the Air Force publicly discussed its significant criticism of the KC–30 tanker, stating in a release that the KC–30 increase in size does not bring with it the commensurate increase in available air refueling offload. And the Air Force went on to say that "the aircraft would demand a greater infrastructure investment and dramatically limit the aircraft's ability to operate effectively in a worldwide deployment."

In the six years since that statement, the KC–30 hasn't gotten any smaller and the availability of longer strength in runways around the world certainly hasn't grown. So at what point in the process did the KC–30 significant liabilities as a tanker become assets?

Secretary YOUNG. Those are questions I think the Air Force can ask. They were considered in the——

Mr. LARSEN. Or can answer.

Secretary YOUNG. Can answer. Sorry.

Mr. LARSEN. Thank you, Mr. Chairman.

Mr. ABERCROMBIE. You bet.

Is the answer clear on the question of whether it was taken into account?

Mr. LARSEN. The subsidies?

Mr. ABERCROMBIE. Yes.

Mr. LARSEN. Yes. It is clear that I don't have an answer and it is clear that we will need to talk to the Air Force more specifically about it. That is what I understood the secretary to say, and I am satisfied that we will be talking to the Air Force later today and tomorrow about that. I appreciate that.

Mr. ABERCROMBIE. Again, for purposes of the record, Mr. Young, I just want to make sure. I am not talking sides in this. I want to make sure I have the correct information.

Am I correct that you answered that to the best of your knowledge the decision did not take into account the possible cost changes should there be an adverse ruling on the question of subsidy?

Secretary YOUNG. That is correct. The proposals were evaluated based on what we thought their probable costs would be.

And one thing I would like to ask the——

Mr. ABERCROMBIE. Absent that adjudication.

Secretary YOUNG. Right. I appreciate your help, Mr. Chairman. I have asked that question. I didn't get it in advance of the hearing. If I could, I would submit for the record.

Mr. ABERCROMBIE. Sure.

Secretary YOUNG. I do not know whether tariffs or other penalties imposed through that trade process would be allowable charges on a contract, so it may not be a cost that can be allowably attached.

Mr. ABERCROMBIE. Maybe you can look into it and get back.

Secretary YOUNG. We will get you that answer, sir.

Mr. ABERCROMBIE. I did say to the best of your knowledge. I am not trying to put you on the spot so much as I am trying to get an answer, because it affects what we do here.

Mr. LARSEN. Mr. Chairman.

Secretary YOUNG. It is not clear to me that fines and other such penalties are allowable charges on a DOD contract. We will get you that answer for the record.

Mr. ABERCROMBIE. Okay.

Mr. LARSEN. Mr. Chairman, I appreciate that and appreciate getting the answer for the record.

I would just say, if it is not allowable under the contract, then why do we have trade rules and why are we bringing cases to the WTO? We can't even enforce the trade rules that we have, and that is why this is—if we can't get these penalties——

Mr. ABERCROMBIE. I understand.

Mr. LARSEN. Thank you.

Secretary YOUNG. I think the answer to that question is, the penalties will be paid by a company if the U.S. Government is successful, but they just can't be charged to U.S. Government contracts.

Mr. ABERCROMBIE. Well, we will find out.

Thank you.

Mr. Bartlett is next.

Mr. BARTLETT. Thank you very much.

Mr. Young, I mentioned the Defense Science Board's recommendation that you use the fully burdened cost of fuel in your programs. Does a fully burdened cost of fuel include the cost for extra personnel and equipment, like the helicopters that fly overhead to protect the convoys in delivering fuel to Iraq and Afghanistan?

Secretary YOUNG. Yes, Congressman. There was a Program Analysis and Evaluation (PA&E) study that sought to assess the delivered cost of fuel. And as you rightly said, some circumstances that would include helicopter delivery. It is more costly. And so we are seeking, I believe, to apply the burden of cost of fuel on a situation-appropriate basis, if you will, to the extent we can.

Mr. BARTLETT. I understand that that can be as much as $300 a gallon for diesel in the high mobility multi-purpose wheeled vehicle (HMMWV) on the ground?

Secretary YOUNG. That was not the conclusion of our program analysis and evaluation office. I have heard numbers like that. They concluded a smaller number. But there is a significant premium when you have to delivery fuel by helicopter to far forward deployed ground forces.

Mr. BARTLETT. As our chairman mentioned, oil this morning was $109 a barrel. Our country uses 22 million barrels a day. That is 1/4 of all the oil used in the whole world is used in our country. DOD uses—our government uses less than 2 percent of that; DOD most of what the government uses.

If there is only one barrel of oil left in our country with your priorities, you would have that barrel of oil. In spite of that, the military is the most responsible entity in our country in addressing energy. Thank you very much for your foresight.

Fifty-two years ago, the 8th day of this month, M. King Huppert predicted that the United States would reach its maximum oil production in 1970. Right on schedule, that happened. In 1979, he predicted that we would be reaching—the world would be reaching its maximum oil production, about now.

Fifty-one years ago, the 14th day of this May, Admiral Hyman Rickover gave a speech which may very well be the most insightful speech given last century to a group of physicians in St. Paul, Minnesota. In his speech, he mentioned that we were then 100 years into the age of oil. He had no idea how long the age of oil would last, but he said the length of time it lasted was important in only one regard, and that was that the longer it lasted, the more time we would have to plan for a transition to non-fossil fuel energy sources.

I just came recently from a political retreat. We had seven breakout sessions. One of them was on neighborhoods. None of them was on energy.

Can you help me understand the denial and the silence on energy when oil is $109 a barrel?

Secretary YOUNG. Well, Congressman, there are probably several things to say. I will try to be quick and consistent with the chairman's request.

One, I appreciate you noting the Department's efforts. We stood up a task force, great collaboration amongst the services and Office of the Secretary of Defense (OSD) on what we are already doing in terms of geothermal, wind, solar, and what could be done.

Secretary England recently had a deputy advisory working group with all the Unders and the Vice Chiefs and asked that task force to look again at what things the Department could do so we could consider that as part of program of memorandum (POM 10). So I believe the Department will keep trying to honor your request that we be good stewards of energy.

Within that, you have been a leader in focusing the attention of the enterprise on this issue. The price of oil will focus us further on it, because I forget what the number is, but it is something, roughly $1 billion plus, of impact to the DOD budget correlated with a dollar plus increase, $10 increase, in a barrel of oil.

And so it is consuming department resources and putting pressure on the program. So the prices you all highlight this morning are going to redouble the Department's attention on energy. The Secretary has already asked us to do that.

Mr. BARTLETT. Thank you, Mr. Chairman.

Mr. ABERCROMBIE. Mr. Sestak is next.

I can't call you Admiral Sestak while you are for Senator Clinton, you know. [Laughter.]

Mr. SESTAK. I don't know what to say, Mr. Chairman.

Mr. Secretary, I had a question. For a while there, there was going to be a B–52 standoff jammer. Some people called it the EB–52. And I guess now it is kind of called the B–52 core component jammer. But this was to be an instrumental part of making sure

against the fifth generation that even F–22s could survive. What happened to it, if it was so key, as the EA–6Bs are now disappearing?

Secretary YOUNG. I think, as you are probably aware, the Department budget proposal change came forward to terminate that effort for costs. The Department is revisiting that effort in light of——

Mr. SESTAK. So it is a capability that we need?

Secretary YOUNG [continuing]. Development efforts in the world. And I would encourage—I know the committee had sought to hear from the Program Analysis and Evaluation Office, and you should do that. I think in considering, again, options for investment, they would put improving our electronic attack capability near the top of the list versus options like buying more tactical aircraft or other things.

Mr. SESTAK. So it is a capability we need?

Secretary YOUNG. It is a capability we need.

Mr. SESTAK. And a capability we need for those most demanding scenarios, potentially Western Pacific.

Secretary YOUNG. Absolutely. Including the fifth generation fighters.

Mr. SESTAK. But it is not in the budget. And the——

Secretary YOUNG. Portions of it are, as you know, through the——

Mr. SESTAK [continuing]. Would you say it is kind of on life support right now in the budget?

Secretary YOUNG. Well, not the EA–18G program, but the other capabilities——

Mr. SESTAK. Yes, but the G, the Growler, is not an expeditionary aircraft, like the EA–6B. And the ace of radar on the F–22 doesn't even come close to the capability that we are talking about. I know there are other things there, but the core—would you agree that right now this was a core component that was needed for the most demanding of scenarios, this standoff jammer, but right now, as the A–6Bs go away, that is really on life support and it is the missing gap that needs to be addressed?

Secretary YOUNG. Well, there was an analysis of alternatives (AOA) that said we needed a standoff jammer, and I think the Department is constantly doing what you would expect, and that is looking at——

Mr. SESTAK. Just a simple question. Is it needed for that scenario?

Secretary YOUNG. The Department is going to review that analysis and see——

Mr. SESTAK. But you are not sure if it is needed?

Secretary YOUNG. I would not say today we absolutely have to go put that right back in the budget.

Mr. SESTAK. Got it.

Secretary YOUNG. We need additional electronic attack capability.

Mr. SESTAK. All right. In that area? Standoff jammer? It is somewhere.

Secretary YOUNG. To enable the concept of operations with tactical fighters.

Mr. SESTAK. The second question I had is, I have always been struck by the questions that my colleague from Georgia had mentioned, about the F–22 and the need for such a high-end aircraft. To some degree, the Navy has always prided itself on being forward deployed, always ready to be the first to go.

To some degree, you see the Air Force with the argument it needs this really compelling aircraft, the F–22, as it goes against the most demanding fifth generation, you know, from the Russian T–50's or the Chinese, even the J–12s that are coming.

Why not the Navy? Strategically, how have we built—if this is so needed for that first in, why not the Navy? The reverse is, why does the Air Force have it and not the Navy? Or does the Air Force need it if the Navy doesn't?

Secretary YOUNG. I think, as you know, this answer is—the Navy can best address it. From my personal opinion, this goes back to things like the A–12. And I believe it is critical for the Navy to move forward with Joint Strike Fighter. Joint Strike Fighter does put that fifth generation aircraft capability in the hands of the Navy.

Mr. SESTAK. So you don't need any of the F–20's? Do you get my point? Strategically, it just seems as though we built—we have two air forces. One is supposed to be the first in. And the Navy air force tries to—you know, goes long range and is the first in. But we haven't given the Navy the capability you say the other service needs. It just seems to be a very large missing strategic——

Secretary YOUNG [continuing]. If we get Joint Strike Fighter in the hands of the Navy and Marine Corps, they do now have that capability.

Mr. SESTAK. To go in first?

Secretary YOUNG. Right.

Mr. SESTAK. So then why did we need the F–22?

Secretary YOUNG. I believe they are very comparable airplanes, and we would have to have a classified session to say it. People distinguish the two airplanes, and there are some distinguishing features like the widely publicized super cruise. But the truth is, they are both highly capable fifth generation fighters with fewer distinguishing features than people offer.

Mr. SESTAK. The operations and maintenance funding for the Air Force per—I am done.

Mr. ABERCROMBIE. I am sorry. We are out of time. Thank you. You can submit the question.

Mr. Saxton is next.

Mr. SAXTON. Secretary Young, Mr. Sullivan, you heard me say in my opening statement that it seems to me that the amount of resources that you have to spend just simply go across the breadth of the needs that we have for various programs, including C–17 and F–22 and B–52 and JSF, et cetera.

I would like to ask a question specifically on strategic airlift. When our program consisted of—our future program, our contemplated program, consisted of 180 C–17s combined with a fleet of modernized, I will say, C–5s, it was the Department of Defense's position that the requirement of this level of capability, reading from your words, actually, Mr. Young, was adequate to meet our needs within the realm of risk.

I always disagreed with that, as many other people who are involved in strategic lift arena did. Then the requirement for this level of capacity was reexamined during the Nunn-McCurdy review of the C–5 reliability and enhancement re-engining program and the analysis of—or the Nunn-McCurdy breech I guess forced a decision, my words, that we would not re-engine the 59 C–5As, leaving them modernized only partially with the new aeronautic equipment.

Now the Department, in your testimony, Mr. Young, believes that 189 C–17s plus 52 re-engined C–5Bs and Cs and 59 C–5As, not re-engined, give us the capability to do strategic lift.

Let me just ask Mr. Sullivan, have you looked at this, Mr. Sullivan? What do you think of this?

Mr. SULLIVAN. Sir, we are in the process right now—in fact, I believe it is work that has been requested by your subcommittee, to look at exactly what you are putting on the table now. So I don't have any information at this point that would be helpful in this hearing, but we are planning to brief the committee sometime in the next six weeks or so on our findings that we find when we go out there.

Mr. SAXTON. Does it seem reasonable to you that if you take a fleet of airplanes and take away a modernization program from 25 percent of it, more than 25 percent of it, that it would result in the same capability as the assumption was under a complete modernized set of almost 200 fully modernized airplanes?

Mr. SULLIVAN. As I said, I don't have enough information to be intelligent about that now, but I think it does indicate the affordability issues that the Under Secretary is dealing with

Mr. SAXTON. Well, I agree, and I guess that is the point that I am continuing to try to make.

Secretary YOUNG. Could I offer a comment, sir?

Mr. SAXTON. Sure.

Secretary YOUNG. One important piece of that that we should bring you is the scenarios that drive the requirement, and those scenarios and that requirement is not what the Department needs every day. In fact, the Department needs substantially less than that every day. And that is why I think the Air Force has made a very good decision to move the C–5As into the Guard and Reserve, maintain them at lower capability levels. And then if we found ourselves in one of these major combat operations, surge that force, maintain it better, spare it and draw on it to meet the requirement. But on a daily basis, we don't need this requirement.

Mr. SAXTON. I couldn't agree more, on a daily basis. But when we go to war, we go to war.

You further justify this assumption by stating that the KC–45 tanker could be used for lift, and I guess I raise my eyebrows pretty high at that thought, because when we go to war, when we do need all our assets—when we go to war, presumably we are going to use all our tankers for tanker missions. And so I don't quite see where that gives us additional capacity to enhance the strategic airlift fleet that we have when we surge.

Secretary YOUNG. Well, I think——

Mr. SAXTON. Unless we are buying more tankers than we need.

Secretary YOUNG. The strategic airlift fleet in terms of numbers of pails and ton miles of requirement is driven by oversized and outsized cargo. And as you rightly say, any tanker does not contribute to the oversize and outsize cargo capability.

Mr. SAXTON. Okay. I appreciate your problems, by the way. Thank you.

Mr. ABERCROMBIE. Mr. McIntyre.

Mr. MCINTYRE. Thank you, Mr. Chairman.

Thank you, gentlemen.

Mr. Secretary, in our committee's February 27 letter inviting you to testify today, you were asked to articulate your views of the required tactical Air Force structure compared to the programmed tactical Air Force structure, and whether you believed the programmed force structure meets the requirements for the national military strategy.

However, from what I can tell this request is missing from your statement. Could you tell us why it is missing?

And second, would you answer the question that we requested you testify about?

Secretary YOUNG. With regard to the tactical Air Force sufficiency?

Mr. MCINTYRE. Yes, sir, compared to the programmed tactical Air Force structure.

Secretary YOUNG. I believe the Department has submitted a budget that provides an appropriate aircraft tactical Air Force structure. Changes have been made. As you probably are aware, the Navy has bought some additional F–18E/F for a near-term need, to make sure they have adequate tactical aircraft. But on the whole, it is a very capable force that has been proposed. In fact, some of the studies referenced today have determined that the DOD program or record force, with F–22s, Joint Strike Fighters and the other aircraft, is one of the most capable options before us in terms of analysis of different options, like more F–22s.

Mr. MCINTYRE. So your comments would just rely on what the budget proposal has been? Is there any other comment you want to make about it regarding your role in it?

Secretary YOUNG. Other than what I—you know, it is critical to stay the course with this process, particular on programs like Joint Strike Fighter, because they do bring important fifth generation capability to the Navy and Marine Corps, as well as addressing the age of the Air Force's fleet.

As you know, JSF is critical to the replacement of F–16s and a very large force in the Air Force.

Mr. MCINTYRE. And the JSF is going to have capabilities also to help replace the A–10 Warthogs or Thunderbolt 2s?

Secretary YOUNG. I would probably like to defer to the Air Force. My understanding, subject to their correction, is that the Air Force intends to maintain the A–10 force for a period of time. The aircraft has structural life and it fills a niche capability for the Air Force that is important to them.

Mr. MCINTYRE. All right. Are you able to comment on that Mr. Sullivan, or not? About the A–10's? If not, I will defer to the next panel on that question.

Okay. Thank you.

Also, some of the F–22s, there is a squadron that has already been deployed to an Air National Guard unit. Is that correct?

Secretary YOUNG. I am sorry, sir?

Mr. MCINTYRE. There is a squadron of F–22s that have already been deployed to an Air National Guard unit. Are you aware of that?

Secretary YOUNG. I would have to let the Air Force address that. I am not sure.

Mr. MCINTYRE. All right. Thank you.

Thank you, Mr. Chairman.

Mr. ABERCROMBIE. Mr. Wilson.

Mr. WILSON. Thank you both for being here and thank you for dealing with issues that are absolutely extraordinary.

The different types of aircraft, the engines, trade policy, concrete, you really deal with very interesting issues, and I want to thank the chairman for the way this meeting is being conducted because it is really bringing out a lot of very interesting issues and I am very grateful.

I represent the Marine Corps air station at Buford, a joint base, and so we are very proud of the squadrons we have there.

Mr. Secretary, I am concerned, and I share the concern of my colleague from the far north of Wilmington, North Carolina, Congressman McIntyre, and that is that I have two charts. One is from the—a reflection of Navy shortfalls. And that possibly by the year 2017 there would be shortfall of 175 in terms of Strike Fighters.

The other is even more stark, and that is from the—with the Air Force, reflecting a shortfall of 625 in 2020. With an overlay, we are obviously dealing with a shortfall of around 750 fighters, which could be short in the year 2020.

Again, I would like to ask what in your view is the ability of America to contend with the future forecast threats that we have around the world? How can we meet this challenge in the future?

Secretary YOUNG. I think the Department constantly, and we will do so as part of the POM 10 process, is assessing the scenarios that are most likely and least likely because some of the least likely scenarios are very dangerous. You have to have the capability against both scenarios.

But we also have shortfalls in capability for the most likely scenarios. Some of those capabilities are in what the Department describes as Phase 0 and Phase 1 operations, the ability to engage nations and help them help themselves, training and other things.

So I think as rightly has been said today, within a budget environment, we are trying to make a set of balanced choices. We believe many of the analyses within the Department say we actually have an excess of strike capability.

We are continuing to modernize our fighter aircraft and our strike capability, but I will tell you that a lot of the models of the most likely scenarios say we have excesses. Some of the analysis you have seen is strictly how many squadrons, how many airplanes per squadron or wing or unit. And you assume you fill those gaps.

But the Nation can't make decisions, I think, strictly on that basis. We need to make decisions based on capabilities that need to be bought with the budget resources Congress provides.

Mr. WILSON. Thank you very much.

Mr. ABERCROMBIE. Thank you.

Mr. Taylor.

Secretary YOUNG. Mr. Chairman?

Mr. ABERCROMBIE. Yes?

Secretary YOUNG. Could I—because of the importance and interest with Congressman Larsen here, I would—in the electronic age, we have been able to get an answer, and my answer from the Department is that WTO rulings cannot be passed along to the Air Force or the Department of Defense as a cost on a contract with the Department of Defense.

So if there is a ruling and a penalty, it can't be passed along to us as a cost.

Mr. ABERCROMBIE. I am not sure what that means, though, when you say it can't be passed along as a cost.

Secretary YOUNG. Well, it means the company——

Mr. ABERCROMBIE. Oh, the company can't pass it along as a cost.

Secretary YOUNG. They will have to pay it. They will have to pay whatever is assessed as a fine or tariff——

Mr. ABERCROMBIE. I see.

Secretary YOUNG [continuing]. But it cannot be charged back to the United States government on a contract.

Mr. ABERCROMBIE. I see. Thank you.

Secretary YOUNG. So it would not change the cost of the proposal.

Mr. ABERCROMBIE. I got it. Excellent.

Thank you. That is very helpful.

Secretary YOUNG. Sorry to interrupt, Chairman Taylor.

Mr. TAYLOR. No. Thank you, gentlemen, for being here.

It has come to my attention that a number of the B3 aircraft that are being used in the counter-IED mission in Iraq have been grounded for structural problems. My question is, they are obviously important. So what is the plan to replacing those? Does the Navy intend to fix them? Is the Navy looking at alternative aircraft?

In the few times I have stepped aboard a P–3, I was amazed by what appeared to be a large amount of space that really does nothing. It was obviously built for a different era.

And so my question would be, in your analysis of alternatives, what other aircrafts have you looked at? For example, have you looked at the C20 Gulfstream? Have you looked at a C–12 to perform that mission? And how quickly can you get something in theater to take the place of the P–3?

Secretary YOUNG. You may be aware, Mr. Chairman, that a lot of work was done on that a few years ago. We had a competition and a source selection, and we are in the process of developing the multi-mission maritime aircraft, MMA. There were at least two—I don't remember the endgame, but I think at least one of the aircraft you mentioned was a competitor at one stage and dropped out.

At the end, it was two companies, and the winning proposal was from Boeing. It is a 737-derived aircraft. It is about halfway or better—the next panel could answer your question—in the development. The Navy is looking at whether we can accelerate MMA procurement, which is always dangerous, accelerating a development

program, but because of the very issue you have raised, if we could accelerate MMA procurement, that could help.

We will still have to do things to address the very issue you have also raised, and that will probably involve service life extension or other mods to some of the P–3s we have because of the capability they are providing.

Mr. TAYLOR. Secretary Young, I hate to sound like the cynic I am, but I am not so sure you answered my question as far as the specific need to address the counter-IED mission that the P–3s were performing in Iraq that apparently is either being done on a limited basis or not being done at all. And rather than us having to come back again for what would be the fifth chapter—first the body armor, then the up-armored HMMWVs, then the jammers, then the MRAPs, I would sure hate to think that there is something that we need to be doing as a Nation that is not getting done in Iraq, like this mission.

So what is being done to perform that mission? How much of a mission drop off have we had with the grounding of the P–3s? What is the plan to get us back up to where we were prior to the grounding of the P–3s?

Secretary YOUNG. A piece of this I think I would like to ask to be able to talk to you offline and make sure I understand, because I am worried about classification issues. But I will tell you Secretary Gates is aggressively trying to increase the number of intelligence, surveillance and reconnaissance, or ISR orbits, that are available.

Some of the things that I think you are talking about, how we deal with IEDs, can be assisted by additional ISR orbits from unmanned aircraft. We have brought Joint Stars to bear on this capability, the P–3s. And so I would like to assure you—in fact, there is an urgent effort to buy additional Predators and Global Hawks in the Department and that we find the issues are frequently, in this case, manning the pilots necessary to fly the aircraft and, to some extent, ground stations. But we do have aircraft and ground stations and we need a bigger pipeline of pilots, which the Air Force is working on and can talk to you about.

I think we are attacking the issue. We can redouble our efforts and look at it. To go a lot further starts to want to talk about some classified aspects.

Mr. TAYLOR. Why don't we do this, if you can get with me. As you know, we are not in next week. I became aware of the situation prior to Christmas, so this has drug on for at least 2 months, and it might have been going on for sometime before I even became aware of it.

So if you or someone from your staff could get with me this week, let me know what the mission was prior to the groundings, what percentage of that mission is being completed today and what is the plan to get back to at least where we were prior to the groundings of the P–3.

Secretary YOUNG. I appreciate the chance to——

Mr. TAYLOR. And I appreciate you looking for a long-term solution and trying not to just have a single shot. But in the short term, I would certainly hope that no one is needlessly dying or losing limbs because we are trying to save a couple of bucks.

Secretary YOUNG. Yes, sir.

Mr. TAYLOR. Thank you.

Mr. ABERCROMBIE. Mr. Young, I have a series of questions, too many to ask in the brief time that we have. I will give them to you. And I would like to have answers to them.

But unfortunately, part of the question has to be with regard to Section 213 of the National Defense Authorization Act I mentioned before.

It directed the Department to ensure, and I am quoting, "the obligation and expenditure in each fiscal year of sufficient annual amounts for the continued development and procurement of the two options for the propulsion system of the Joint Strike Fighter.

In your written testimony and then your commentary, you say that the Department "will ensure that in each fiscal year where funds are appropriated, there is obligation and expenditure of sufficient amounts."

Now, do you believe this answer is consistent with the intent of Congress to take the actions necessary to develop and procure the two options for the Joint Strike Fighter?

The reason I am asking the question is, I am not trying to trick you. I am not trying to get in an argument. I am very, very concerned that Congress be obeyed by the executive. I don't want to go into a long dissertation about signing statements and unitary Presidencies and imperial—the progress of the imperial Presidency. Some people seem to think we are electing a king. I don't want to pursue that today.

But I will tell you, I will pursue up to and including contempt if I have to the Defense Authorization Bill being obeyed. I have got my copy of the Constitution in my satchel, which I carry with me, and believe me, I read it. And until somebody takes my place or the place of all the members here in the legislature, when we put a bill through, absent a veto, by God the executive is going to obey it.

And so I don't—I want to know how you interpret your phrase in terms of what the Congress requires? Because you don't have this in your budget material.

Understand, I am not trying to be combative with you. I am defending the principal of congressional authority here. And I am not asking you to comment on whether you think it is a good policy or not.

Secretary YOUNG. Yes, sir.

The Department's reading the law in a literal manner, so we are obligated in expending the fiscal year 2008 funds Congress provided, which does do exactly what you said, make progress toward having a second engine source.

The 2009 budget, as you know, does not have those funds. And it is within the prerogative of the President to make those financial choices about——

Mr. ABERCROMBIE. It is not. It is not her prerogative. He has no prerogative. His prerogative is to obey the law.

There are no funds in there. It is required to have them. Is it the Secretary's position that he will not obey the law?

Secretary YOUNG. It definitely is not the Secretary's position.

Mr. ABERCROMBIE. Then why aren't the funds in there?

Secretary YOUNG. Again, I believe that literal reading says we will obligate and expend. So obviously, if Congress appropriates funds, authorizes and appropriates funds in fiscal year 2009, we will continue to execute the second engine source. It is not as clear, given other constraints on the President in terms of things that had to be bought for the Nation that the law mandates that he budget for that program at the expense of other capabilities.

Mr. ABERCROMBIE. Okay. Then your position is, and the secretary's position, is that so long—that you are going to do this only so long as the Congress appropriates the funds.

Secretary YOUNG. Well, the law requires us to obligate and expend the funds, and we will certainly obey the law.

Mr. ABERCROMBIE. So even though we have ordered you to do it, then you are saying, well, provided you give us the money. Is that fair?

Secretary YOUNG. I think that is the choices that are made this year in the President's budget.

Mr. ABERCROMBIE. Okay. I will take that as——

Secretary YOUNG [continuing]. We will have to revisit.

Mr. ABERCROMBIE. Okay.

This next may be a policy question. In our February 27 letter inviting you here, we asked you to articulate the views required of tactical air force structure compared to the programmed tactical air force structure and whether you believed the programmed force structure meets the requirement of the national military strategy. I don't think—are you going to send us an addendum? I realize that could be a rather theoretical construct, and that might not have been appropriate for your testimony.

Secretary YOUNG. I am not the perfect requirement source. I would, you know, as I commented earlier, I believe that the force structure that is in the President's budget, many in that—we will conduct additional analysis on POM 10. I will offer you a longer answer for the record.

The short answer is indeed we actually in the Department frequently conclude we have significant strike capability and could take risk in these spaces relative to the other needs we have in the Department.

Mr. ABERCROMBIE. That is a good short answer, but if you could elaborate on it in an addendum, I would be appreciative.

Secretary YOUNG. Yes, sir.

Mr. ABERCROMBIE. Did you want to speak, Mr. Sullivan?

Mr. SULLIVAN. Yes. I would like to comment that Mr. Wilson's questions, as well as your own now, that are around all of this F–22, F–35 force structure issues, you know, this may be stating the obvious, I am not sure, but one of the problems I think that the Under Secretary has and the Department of Defense has and I guess the Nation has is that the F–22 is too expensive and the Joint Strike Fighter is struggling through development right now.

One of the problems that I think they have with funding the alternate engine program is because there are other priorities that have cropped up on the Joint Strike Fighter program because they have been struggling with the design of that aircraft.

The management reserves that have been depleted over the past year mostly have been because of inefficiencies in manufacturing.

All of the problems that you get when you have an unstable design going forward.

They really can't afford to fund anything else right now. They are trying to take are of short-term funding risk, and in the long term that may exacerbate more of the problems we have with the tac air force structure, because a Joint Strike Fighter could be looking at further delays in the future. That was a point in our written statement.

Meanwhile, the F–22, the Under Secretary here has affordability to think about. The warfighters have a requirement and a need, but it tends to be unconstrained by budgetary considerations. So when the Department has to begin to prioritize and they have to constrain themselves with what is available in the budget, these are very difficult decisions that are more or less forced on the Department because most of these programs tend to get out of control.

Mr. ABERCROMBIE. That is an excellent summary. And I can see Mr. Young sitting there saying please don't help me anymore.

Mr. Young, do you want to go into—that fits in the context of Mr. Sullivan's testimony, when he spoke about the $600 million spent too quickly. This gets to a question I was going to ask. And also the cost schedule continues to degrade. And that was actually the last question I was going to ask in this series, and I will submit the others to you.

In that context, in consideration of what Mr. Sullivan just said, is that part of the difficulty that you are experiencing in terms of budget?

Secretary YOUNG. I really appreciate the chance to comment. I definitely agree with the latter comment about the unconstrained requirements process, you know, that forces us to work within a budget. And that is my request to the team. I want us to work within a budget, because if I have to take money from some other place, that denies capability in another area to finish something I promised to do for a cost.

We are trying very hard to deliver Joint Strike Fighter within the budget. We have had some challenges. The company has not met schedules in the past. We have made choices and continue to manage. All the Members of this committee are familiar with these issues and programs, and I want to make sure I give you the right impression.

This is a well-managed, well-run program that is working to delivery cutting edge fighter capability. We do believe we will have to put a modest amount of additional funds in the program to finish system development and demonstration (SDD). But we are——

Mr. ABERCROMBIE. But you are deleting two test aircraft.

Secretary YOUNG. Pardon me?

Mr. ABERCROMBIE. You are deleting two test aircraft.

Secretary YOUNG. And there is a—we could have a good discussion about that. You know, there was an original test program that didn't consider all the things we really needed to see. As we have gotten more mature in the program and more mature in the capabilities the aircraft delivers, the program team built a very solid test plan. That test plan said we did not need to buy the two mission systems aircraft because we would offload some of those testing events onto ground test facilities, onto what they call a cat bird,

but it is a flying simulator aircraft of a JSF that has the radar and other systems onboard. And as you know, flight testing on the actual aircraft is very expensive.

I believe these were valid and pragmatic choices by the Joint Strike Fighter to try to manage within their resources, delete these mission systems aircraft, conduct those tests with ground systems or this aircraft simulator and use the other aircraft for what they call flight sciences or the actually flight testing and envelope expansion.

So people criticize it, but the truth is it is a more thoughtful and balanced test program that we believe we can execute.

Mr. ABERCROMBIE. Mr. Sullivan.

Mr. SULLIVAN. I was out to Lockheed Martin this past summer, and at that time I sat down and talked with the Program Executive Officer (PEO), General Davis, and Lockheed Martin officials, and got kind of a top level briefing on what they are doing to try to make this risk reduction program work.

And I would agree that they have worked very hard and have been very diligent, and the plan, you know, they believe they have a very sustainable plan that they can work.

However, having said that, we have been here before. We have seen this movie before. In fact, if you look at the F–22 program, F–22 program kept a lower management reserve than Joint Strike Fighter did, got in trouble with it and started the same sort of things that they are doing on the F–35 today.

So looking—and I would also, I guess, submit that when you look at the director of testing and evaluation, when you look at the Cost Analysis Improvement Group (CAIG) analysis, when you look at analysis from the Defense Contract Management Agency and the systems engineering group within the Pentagon itself, I think most of them disagreed with going forward with this plan because of that risk.

I think everybody in the test community and in systems engineering—it is very fearful when you see test resources beginning to degrade to make up for problems that you are encountering now.

Mr. ABERCROMBIE. You say problems. We are talking about variants here, right? You are talking about the short takeoff and vertical landing variant and the aircraft carrier variant, right?

Mr. SULLIVAN. Right.

Mr. ABERCROMBIE. Well, what about the idea that you stop where you are? Is that variant—I mean, is it—we have got three variants. Maybe this expense has—what if the laws of physics aren't working the way you would like them to? I mean, we have already had two tests where it didn't work. I am told, well, you are going to add covering or something. You know, there are all kinds of engineering activity. But what if it isn't working?

Mr. SULLIVAN. My comment on that is maybe not—I am not an expert on it, but looking at the programmatics on this, like the way that we have, I would say this program is far enough along, these variants, this is a program that is going to create these aircraft and the aircraft will eventually be able to perform, very similar to the F–22 and what it went through.

I think the point that we are trying to make is that the program is looking at some really tough times coming up.

Mr. ABERCROMBIE. Yes.

Mr. SULLIVAN. I mean, you know, when you take two articles out of the test program, when you—when you degrade the test points, when you look at, you know, they talk about build up points and then end points for the test program, they have gone in, in an attempt to make the test program more efficient and get rid of redundancies that they think are not necessary, which they are making judgments on that and they are dealing with risks, but they have got I believe around I am going to say 800 flight tests out of a 5,000 flight test program. I am not sure if I have that right. But they have reduced the test program quite a bit and they have taken two resources out of there.

You know, one of the articles that they have taken out is one of the carrier variants.

Mr. ABERCROMBIE. Yes.

Mr. SULLIVAN. They will have one test article now for carrier variants.

Mr. ABERCROMBIE. I don't want to pursue it further right at the moment, but we are going to—we will do it through staff.

Mr. SULLIVAN. But as I said, we have seen this movie before. That is what everyone is looking at, is there could be much more additional time and cost increase as a result.

Secretary YOUNG. Mr. Chairman, I will try to be concise, but I do want to highlight, there are differences between F–22 and JSF. We have 13 aircraft in the test program. That is a significantly greater number than F–22 had.

One of the early versions of the test plan had as many as 7,000 sorties, but it wasn't well defined. One of the more recent ones had 5,700 sorties. There are 5,500 in the so-called MCRR, mid-course risk reduction program, and then there is a new version of the test plan already in work that adds back 50 sorties.

The team of experts is trying hard to get this right and balanced. The test communities complaints and concerns are about losing test assets, but not necessarily so much about whether we are—I mean, we have to check the box on test points and mission systems and the plan does that.

We also have operational testing and evaluation (OT&E) aircraft that are wired with instrumentation and could be brought into the test program if necessary. But I would echo what he said. There is no doubt in my mind this Nation can build a fighter and build this fighter. We have got to work our way through some problems and not overemphasize the problems.

Mr. ABERCROMBIE. If I accept all of that, and I accept the logic of it, then you should have the competitive engine in there also. They should. I mean, if I accept the logic of what you have just said, following all through those things in order to have the complete program, to make it work, we should not be budget driven. This should be mission driven. I mean mission driven in terms of legislative policy.

Believe me, I came to this with no prejudices, honest, I did not.

Secretary YOUNG. I am well aware of that, sir.

Mr. ABERCROMBIE. And I think everybody can see how I conduct this subcommittee. I am not trying to push something or someone

over something else. I have been convinced of this, and you just made an excellent case to me for having the competitive engine.

And it seems to me the only reason it is not in there is people are worried about the money. And if that is the case, believe me, compared to what you are just talking about, it is chicken feed. And I wouldn't mind arguing that we should put in more money if you want to increase the test capabilities, because I will tell you, my instructions on this, and then I want to get to Mr. Larsen, he has a follow up, has to do with the Presidential helicopter. I will draw you a parallel.

That is a complete mess. It has gotten in—proportions beyond—that is unbelievable to anybody that is trying to look at it in any kind of rational sense. Talk about lousing up testing and all the rest of it. And if it takes more money to do the test properly—now, if your testimony is that the mid-course risk reduction is a sensible thing to do and that is what you are testifying to, then that is okay. I will accept that. But——

Secretary YOUNG. We continue to revisit and we will—we have added back some sorties to that plan.

Mr. ABERCROMBIE. Okay. But, you know, go back to the secretary and tell him, stop fighting. The Congress wants the second engine, and they are backing you up on most everything else, and I think we will probably do it here, too. But let's not get trapped in falling short on what we need to do if we are going to go ahead with it.

Secretary YOUNG. Yes, sir.

Mr. ABERCROMBIE. And so your final point is, is these two variants that you are working on right now, need to go forward?

Secretary YOUNG. On the Joint Strike Fighter?

Mr. ABERCROMBIE. Yes.

Secretary YOUNG. Absolutely, sir. And the progress is very good on these.

There were people that said a year and a half ago, we could not possibly have STOVL ready to fly this calendar year. It will be ready to fly in the—mode this summer. And we have got to address the blade issue that you have rightly raised, but we expect to fly it in the STOVL mode in December.

You know, people—sometimes the glass can be half empty and sometimes glass can be half full. It depends on where you want to be. But on the whole, the program is executing well. It definitely has technical challenges ahead of it, but we are going to go attack those every day.

Mr. ABERCROMBIE. I will tell you, though, one more thing. This is going to effect what happens to the F–22, because I—we just can't, there is not enough money. Now, I want to finance things differently. I will simply mention again. If we don't get a capital budget, then you are going to run into this problem over and over and over and over again. It is going to get worse and worse and worse.

Secretary YOUNG. I would—can I reemphasize, though, when the process of our own budget process, and with all due respect, sir, the Hill process, takes a billion dollars out of a reasonably well-programmed plan that needs that money, it shouldn't be a surprise to all of us that at the back end we need some of that billion dollars back to finish the program.

Mr. ABERCROMBIE. I don't dispute that, but that is why we don't want to get into waste, like that helicopter.

Mr. SULLIVAN. I think that is an excellent point that you are making, about trying to find different ways to finance this. Because really, this program is in a position where really the risk reduction plan they put in place is to avoid additional costs right now. They are really trying to avoid an over-target baseline, and the reason they are doing that is because they will get killed in the funding process and politically if they have to declare that or admit to something like that at this point in the program.

Mr. ABERCROMBIE. I will finish with this, Mr. Young.

You were inches from a clean getaway before your last statement. I agree with you, you might have to go back and add money in in order to make the picture complete. Isn't that essentially what you are saying, that we need to take that into account?

Secretary YOUNG. Yes, sir.

Mr. ABERCROMBIE. Good. Then take into account that you need that money for the competitive engine. Go back and add it in.

See, I am a reasonable guy.

Secretary YOUNG. I definitely have that message, Mr. Chairman, but I think I had that message before I got here, sir.

Mr. ABERCROMBIE. Okay. Thank you.

Mr. Larsen, and then we will go to the second panel.

Do we want to take a break? Is there a vote right now? We may have to vote.

So Mr. Larsen, and then we will go to the second panel and try to get started as quick as we can because apparently there is a vote coming up, or a series of votes.

Mr. Larsen.

Mr. LARSEN. Thank you, Mr. Chairman. And just to be quick, here, I just want to say I appreciate Secretary Young getting back so expeditiously with an answer.

It still begs a couple of things, a couple of questions. First off is that someone will carry those costs, so it is still incumbent upon the Congress to determine who that is going to be and the impacts of that.

The second, I don't want your answer to deflect from the bigger issue I am trying to raise, and that is that we do have a trade case at WTO. We say these subsidies are illegal, and the Air Force is buying an airplane built with subsidies that the President himself says are illegal. This could blow up the very argument that we use at the WTO.

That is not an issue for AT&L to deal with, not an issue for USAF to deal with. But it certainly kicks it upstairs, over and above the SECDEF's head, into the White House, and it is a problem. It is a serious problem that we now face as a result of this Air Force decision.

So it may not be your problem to resolve, and I appreciate that, but the problem has got to get resolved. It could undermine us at the WTO, not just on this case but on future cases, and that is a big dang deal for this Congress to deal with.

Mr. ABERCROMBIE. Thank you.

We have some more questions, if I could submit them to you and perhaps Mr. Sullivan as well, I would be appreciative if you could

get back to us as fast as you can. It will help us to make our recommendations, and I assure you we will read them. You won't be going through the motions. We pay close attention to what you say and for good reason. We respect both of you and are very, very appreciative of your participation and the manner in which it is conducted. We trust both of you.

Secretary YOUNG. Thank you, sir.

Mr. ABERCROMBIE. You are dismissed.

Here is the deal. We think there is going to be a vote call, probably a procedural vote. So while we reserve our right to criticize everybody who appears in front of us for their bureaucratic byzantine methodology of dealing with life, of course the Congress conducts itself similarly.

We apparently have an utterly meaningless vote, which will cause us all to rush over to the floor. So probably the—let me see if it is going to be just one vote. So maybe it makes more sense for us to run over there right now and cast that vote and come right back.

They haven't called the vote. Let's get started.

The second panel is going to focus on a couple of issues, a range of aviation programs in the Navy and Air Force. Two issues of particular interest to our subcommittee is the Air Force inventory shortfalls and the Combat Search and Rescue Helicopter (CSAR–X).

Air Force leadership is indicating previous testimony of the high operational tempo of the past 17 months in the Balkans and Southwest Asia has taken its toll on the service life of the aircraft. And that might indicate a shortfall in desired tactical aircraft inventory. And if the production of the F–35 is delayed or procurement numbers are fewer than the 80 per year that was envisioned, the gap could come sooner and become larger.

And the search and rescue program has been delayed because of disputes over the contract award and two protests that were sustained by the GAO. So the search and rescue program is 2 years behind schedule and once again is in source selection. And this was Air Force's No. 2 acquisition priority after the airborne tanker program, which is maybe also going to get stalled again.

So the rescue helicopters intended to replace the Air Force fleet of 101 aging HH60G rescue helicopters. So we hope to explore that.

And I will ask Mr. Taylor if he had any remarks in this particular stage of the panel?

We will go ahead, he doesn't have any.

Welcome to everyone.

Rather than go through lengthy introductions, because of the time period to get started, why don't I start with you, Mr. Balderson.

You are a Deputy Assistant Secretary of the Navy for Naval Air Programs, and maybe it is best we start with you and go down the line.

Mr. BALDERSON. Thank you, Mr. Chairman.

Mr. ABERCROMBIE. I appreciate all of you coming here and give you my fond aloha.

STATEMENT OF WILLIAM M. BALDERSON, DEPUTY ASSISTANT SECRETARY OF THE NAVY, AIR PRORGAMS, DEPARTMENT OF DEFENSE

Mr. BALDERSON. Thank you, Mr. Chairman and distinguished Members of the subcommittees.

I appreciate the opportunity to appear before you today to discuss Navy and Marine Corps aviation programs.

I do have a written statement that I will respectfully submit for the record.

Out of respect for the committee's time, I will limit my opening remarks to——

Mr. ABERCROMBIE. Without objection. Sorry.

Mr. BALDERSON. Out of respect for the committee's time, I will limit my opening remarks to just the two following points.

First, the Department of the Navy's acquisition team continues to work aggressively to identify efficiencies in the development, testing and procurement of the products and services we provide to the fleet. The fiscal year 2009 budget request reflects considerable effort in identifying affordable solutions for the Department's aviation programs and we are striving to address the Navy Marine Corps warfighting needs in the most cost effective way possible.

Second, the fiscal year 2009 President's budget request is a balance between sustaining our fleet of legacy aircraft while also recapitalizing with newer, more capable and more reliable aircraft. Our proposed plan procures 206 aircraft and continues development of the F–35, the E2D, the P–8A, the CH–53K and a number of other critical recapitalization programs.

Mr. Chairman, I will conclude by thanking these subcommittees for your outstanding support. The great efforts of our men and women in theater today and tomorrow will reflect a return on your investment in them and in the systems they take to the fight.

Once again, thank you, and I look forward to your questions.

[The joint prepared statement of Mr. Balderson and Admiral Myers can be found in the Appendix on page 71.]

Mr. ABERCROMBIE. Thank you very much.

Admiral Myers.

STATEMENT OF REAR ADM. ALLEN G. MYERS, DIRECTOR, AIR WARFARE, U.S. NAVY

Admiral MYERS. Mr. Chairman, distinguished members of the subcommittee, thank you for this opportunity to appear before you to discuss the Department of Navy's fiscal year 2009 aviation programs.

I am delighted to share this time with my colleagues from the Department of Navy, the Marine Corps and the Air Force to convey the critical needs of naval aviation in our armed forces.

The Navy has been fully engaged in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) for the last six and a half years and we are prepared to continue that same level of operational tempo as long as it is required.

The remarkable performance of our sailors and marines could not have been possible without this committee's tireless devotion and significant contributions not only to our Navy but our Nation as a whole. For that, we are truly grateful.

Naval aviation continues to play a major role in providing tailored effects in support of support of operations OEF and OIF, as well as our broader global war on terror. The ability of naval aviation to shape strategic, operational and tactical environments is reflected by the substantive return on your investment in our people, our combat readiness and our refined spectrum of critical warfighting capabilities.

Also, these investments in surveillance, command and control and persistent strike, among others, ensures that our tactical aircraft can operate effectively from aircraft carriers that exploit the vast maneuver space provided by the sea.

These Navy aviation programs comprise both platforms and weapons, directly underpin our Navy strategic plan and directly support our new maritime strategy. The fiscal year 2009 President's budget maintains the trends of balancing conventional and irregular warfare aviation capabilities, reduces excess capacity and achieves technological superiority through cost wise investments and recapitalization, sustainment and modernization programs.

The adjustments reflected in the budget maintain sufficient capacity to meet global needs and warfighting requirements. It manages the overlap with joint capabilities and preserves our warfighting relevance through 2024.

Fiscal year 2009 through fiscal year 2013 department's fiscal year budget request procures 1,094 aircraft and concentrates on resourcing capabilities that generate critical maritime and joint effects. Today the Navy aviation stands ready with the agility, the flexibility and the confidence to support your Navy and to do what no other navy in the world can do: execute a maritime strategy that is second to none.

An example of our agility and flexibility this past year was never more evident than when our FA–18 Hornets increased projected power to shore in Operation Enduring Freedom when our Air Force F–15s were grounded. We are out and about doing the essential missions of the nation. But as Admiral Roughead said 2 weeks ago in his first posture hearing, our operations come at a cost.

Fiscal realities and operational strain on our aircraft contribute to the moderate risks that we assume. The recent P–3 groundings are but one example of the operational strain. The new multi-mission maritime aircraft will recapitalize on the aging P–3s and our maritime patrol anti-submarine warfare capabilities. The current FA–18 Hornets are needed to mitigate the 2017 strike fighter shortfall.

The 2009 budget and its associated force structure plans will meet our current challenges with a moderate degree of risk.

Thank you again for the opportunity to appear before you today and thank you for your support for our naval aviation, our fleet which defends our great Nation today and tomorrow.

[The joint prepared statement of Admiral Myers, and Mr. Balderson can be found in the Appendix on page 71.]

Mr. ABERCROMBIE. Thank you.

General Trautman.

STATEMENT OF LT. GEN. GEORGE J. TRAUTMAN, III, DEPUTY COMMANDANT FOR AVIATION, U.S. MARINE CORPS

General TRAUTMAN. Chairman Abercrombie, Chairman Taylor, Ranking Member Bartlett and distinguished members of the subcommittees, it is a privilege for me to appear before you today to discuss the 2009 budget submission as it relates to Marine Corps aviation.

The Marine Corps is operating at its highest operational tempo in decades. We are flying our aircraft hard, deploying our marines often and doing our best to take care of families who are growing tired under the strain of the operational pace we are required to maintain.

However, the magnificent men and women who serve our Corps continue to meet every challenge that comes their way. As we speak, the aviation combat element of the 24th Marine Expeditionary Unit is preparing to deploy with a force of 3,400 marines headed to Afghanistan.

When combined with forces already in Iraq, and those that are rotated through the Pacific, this year will see us reach a new peak with 68 percent of our squadrons either deployed or preparing to deploy.

The many accomplishments of Marine aviation over the past year are a direct reflection of the extraordinary dedication to duty and tireless pursuit of mission accomplishment that is the hallmark of your Corps of Marines. I know that I speak for each of them when I thank you today for your equally tireless and dedicated support to those who must serve in harms' way.

Each and every day, your marines are working hard to maximize the investments you have made in our aviation platforms and systems. As just one of the most recent examples, the MV–22 made its combat debut in Iraq over 5 months ago and the squadron has now flown over 3,000 hours, carried over 14,000 passengers and moved more than a million pounds of cargo while maintaining mission readiness rates that have exceeded our expectations.

The ability of the Osprey to fly farther and faster and to move more marines and equipment around the Al Anbar battle space without refueling than any other platform in history has provided our warriors a significantly increased combat capability that is most appreciated by us all.

My respect for the accomplishments of the men and women who comprise Marine aviation past and present is only exceeded by my confidence that with your continued support we are properly poised to meet our future challenges.

I would like to take this opportunity to extend, for the record, a job well done to all the brave warriors defending this great Nation both at home and abroad. No finer fighting force has ever been assembled, equipped and trained.

Thank you for this opportunity to speak with you today, and I look forward to answering any questions that you may have.

Thank you.

[The prepared statement of General Trautman can be found in the Appendix on page 98.]

Mr. ABERCROMBIE. Thank you, General.

General Hoffman.

STATEMENT OF LT. GEN. DONALD HOFFMAN, MILITARY DEPUTY, OFFICE OF THE ASSISTANT SECRETARY OF THE AIR FORCE FOR ACQUISITION, U.S. AIR FORCE

General HOFFMAN. Mr. Chairman and members, I appreciate being here today.

I would first like to say on behalf of Ms. Payton, who you originally requested to be here, she sends her regrets. The last week or two have been pretty busy for her and she has two other committee engagements today as well.

I would only like to make one comment, and that has to do with what was discussed in the first panel there, and that is on WTO.

There are suits in the WTO and there are countersuits in the WTO, so the acquisition strategy required both vendors to clearly state in their proposals that no matter what the outcome of the WTO decision, that neither one of them—neither one of them—would pass on a claim to the government and to the taxpayer.

I look forward to your questions.

[The joint prepared statement of General Hoffman and General Darnell can be found in the Appendix on page 113.]

Mr. ABERCROMBIE. Thank you very much.

And General Darnell.

STATEMENT OF LT. GEN. DANIEL J. DARNELL, DEPUTY CHIEF OF STAFF, AIR, SPACE AND INFORMATION OPERATIONS, PLANS AND REQUIREMENTS, U.S. AIR FORCE

General DARNELL. Chairman Abercrombie, Chairman Taylor, Ranking Member Bartlett, thank you for the opportunity to speak here today.

Your Air Force is actively engaged around the world and we greatly appreciate your continued support of our nation's airspace and cyberspace forces.

The United States Air Force has been engaged in continuous combat operations for over 17 years. Your Air Force is the most battle tested in our history and every day your airmen find innovative ways to accomplish their mission more effectively and more efficiently.

Your airmen are dedicated to the defense of this Nation and have committed themselves to go to the ends of the earth, to the most dangerous or austere locations, in our nation's hour of need or in the world's moment of despair.

If tonight, tomorrow or 20 years from now America calls, we will go. And we will provide strategic deterrence, global vigilance, global reach and global power.

America faces a dangerous and uncertain future because our enemies do not sit idly by. Instead, adversaries both declared and potential continue to develop and field new and better means to threaten our nation, our interests and stability around the world. At the same time, the average age of our air and space craft continue to rise and our ability to overcome future threats diminish.

The United States of America depends on airspace and cyberspace power to an extent which is unprecedented in history. Your Air Force is already engaged today to secure the tomorrow, but we cannot rest on the laurels of our current dominance.

Our Nation must invest today to ensure dominance of today's airspace and cyberspace.

Once again, I appreciate the opportunity to speak with you today and I look forward to answering your questions.

[The joint prepared statement of General Darnell and General Hoffman can be found in the Appendix on page 113.]

Mr. ABERCROMBIE. Thank you very much.

Mr. Bartlett, Mr. Taylor and I decided to defer to you out of respect for your insight and your perspective.

Mr. BARTLETT. Thank you very much, Mr. Chairman. I appreciate you mentioning the requirements for search and rescue.

Indeed, the Navy has three requirements—I am sorry, four requirements, actually, for helicopters, that the 60 is really challenged to meet. One of those is search and rescue. It does not hold enough fuel. It cannot go far enough or stay there long enough for really effective search and rescue.

The second is medical evacuation. Again, the amount of fuel and its dwell time is limited. And in addition to that, it just isn't big enough to provide a meaningful airborne emergency room.

A third mission is the mine countermeasures mission, and as you know the towing characteristics of the 60 limit its effectiveness there.

And a fourth mission, which we usually don't talk about, but I think it may be the most important of the missions, and that is the mission package change off on the LCS. The whole concept of the LCS I had thought at the beginning was that it could change from one mission package to another at sea.

Now without a medium lift helicopter, we just can't do that, and the LCS is going to have to leave the fight and steam to port and change mission packages, and then return to the fight, and it may be absent the fight for a week if it takes three days to steam to port and a day to change the mission package.

Admiral Myers, I wanted to follow up something said by the Chief of Naval Operations (CNO) at last Thursday's hearing. You and I have discussed the importance of the Navy's helicopter force structure and the need for a robust medium lift helicopter in the fleet. You were kind enough to brief members of this committee in October, shortly after you took command of N88, of the Navy's vertical lift programs.

In that closed briefing, several of us expressed our strong concern with the Navy's ability to meet current and future requirements with the current mix of helicopters. And the four missions I just mentioned were really critical there.

I recommended for some time the Navy should invest in a robust heavy-medium lift helicopter that will provide significantly greater capability than the 860 alone at far lost cost than the super heavy MH–53 variants, which are several years off, as you know.

Last week, CNO Roughead told our committee that Fleet Forces Command is currently conducting a study to determine whether the Navy has a need for a medium lift helicopter to meet current and emerging requirements.

I want to first applaud you and Admiral Roughead for the way it appears you have dealt with the committee's concerns on this matter. It is to your credit that the Navy is examining this often

overlooked but critical part of its force structure, that is helicopters.

Could you tell us when the results of this study will be made available to the committee? To the extent you can, please elaborate on the nature and scope of the study and any other specifics you can provide. Can you assure the committee that this is a broad, across-the-enterprise analysis? Is the Navy conducting the study in-house, or is it being done under outside contract?

Admiral MYERS. Mr. Bartlett, first of all, let me thank you for your continued interest in the Navy's helicopter programs.

If you don't mind, sir, can I start from the beginning of your first question and work my way down to Admiral Roughead's testimony.

Mr. BARTLETT. Yes, sir. Thank you.

Admiral MYERS. That would be terrific.

First of all, the search and rescue requirement, it satisfies what the Navy needs, and that is 170 miles is the distance that the Navy requires for search and rescue helicopters. And as we have discussed, and I know you already know, Representative Bartlett, the 860 fits on our cruisers and our destroyers and our LCS platforms.

Mr. BARTLETT. Admiral, if I can interrupt for just a moment, it is my understanding that in preliminary tests, the 60 has failed two of these mission requirements. Is that not correct?

Admiral MYERS. No, sir, that is not entirely correct. I think the two areas you are referring to are the ferrings and the ferring orienter, which was part of my discussion to this panel last October and also the electrodes on the Oasis towing device. Those were two areas that we were having difficulties, and that is what I reported to the committee.

Since then, the contractor, Concurrent Technology Corporation, or Sea Stars, has worked with the Navy and has ironed out essentially all the ferring and ferring orienter difficulties. They have redesigned it on the 860 so that it is towing adequately right now. As a matter of fact, it starts operational tests later this month.

And in terms of the electrodes with the aft corrosion we were seeing between 2 and 8 hours, and we were trying to get that to about 20 hours, we are still working with the company, EDO, and have about another year before that goes into an operational test.

So we think that we are progressing well in both of the areas of difficulty that I talked about last October.

Sir, does that answer your question on those two specific items? And then I can go on to the other items.

Mr. BARTLETT. Yes, thank you. Go on.

Admiral MYERS. I mentioned that 170 miles is adequate for the Navy's use for search and rescue and that also that same platform serves as a Medivac to move an individual off the ship if the ship is not in port, out at sea. We think that it is sized big enough. It is as big as we need and as big as our requirements dictate. And it also fits and can be hangared in our cruisers, destroyers and our littoral combat ships. And we think that that is very important.

Sir, you mentioned mine countermeasure missions. There are five airborne mine counter-missions that the SH–60 Sierra will take on, and the first one, which is I mentioned a minute ago, begins operational tests later this month, is the ASQ–20. And we have had—we are at about the right towing limit and it has suc-

ceeded in going through the development tests, so it meets the parameters, we think, that is required to go into operational tests.

The mission package change on the LCS, you said that you were surprised that they could not be done at sea. That is scheduled to be done in port. The con op is for the combatant commander and the component commander to have the flexibility with missions and mission packages that he can arrange them in the theatre how and where required.

We are going to purchase 55 LCSs and of those 55 LCSs, we are going to have a mix of mission packages, 24 mission modules for mine countermeasure, 16 for anti-submarine warfare (ASW) and 16 for ASUW. So the mission packages can be moved from one LCS to another, but that is required to be done in port.

We don't think it is a viable con op to do that at sea. When you say leave the fight, we think during a fight is not the appropriate time to be trying to change a mission package, that we would want to be postured going into the—zero and then the more advanced stages of any kind of tension in a designated theatre.

So what we have given is the theatre commander or the combatant commander and his component commander the full flexibility with a mix of helicopters and mission package to tailor those LCSs for his environment.

Mr. BARTLETT. Mr. Chairman, the decision to neck down to the one platform was made on a business basis before 9/11. We suspect that the Navy is valiantly doing a very good job now of defending the difficult to defend, and there is no argument but what the presence of a medium lift helicopter would greatly increase our capabilities in the four mission areas that I developed.

And I remember very well, sir, when the LCS was first pitched to this committee. It was to be a change off at sea, to be very versatile, so that if the nature of the figure, the change, that you could change the mission packages very quickly at sea.

Now since we do not have a helicopter capability to do that, we somehow are arguing that it is okay to leave the fight and steam to port to change the mission package.

We appreciate very much the fact that you are taking a look at this medium lift helicopter and its desirability in the Navy and we are looking forward to the results of that study.

When will the study results be made available to the committee?

Admiral MYERS. Sir, the study that you are referring to is the Navy heavy lift helo con ops, and that was done—started last summer. Actually, I think it began just before the summer. And we thought that it was going to be completed last fall, in November. When I talked to you in October, to your committee, sir, we anticipated that it was going to be a month or so before that con op was complete.

I am told that it has been delayed because it quite frankly needs some more work, and it will not be available until next fall. That is the timeline that fleet forces command is on, as I am informed.

Mr. ABERCROMBIE. Thank you, Admiral Myers.

Thank you, Mr. Bartlett, for conducting the Sea Power Subcommittee meeting. Now you won't have to go to that.

Mr. Taylor.

Mr. TAYLOR. Gentlemen, I appreciate you sticking around.

I had asked the previous questions about the P–3, Admiral Myers, and I was wondering if perhaps you were the right one to answer that.

I am curious on a number of things. No. 1, what is being done to restore that capability in Iraq right now?

Second question is, as you are looking for the replacement, the 737 just strikes me as a significantly larger airframe and with electronics being downsized significantly since the invention of the P–3, why do you need a significantly larger airframe to do that? And what other options, if any, is the Navy pursuing?

And it kind of goes—no, it very much goes to the point that Mr. Bartlett has been making, that we have the world's finest military. We also have the world's most energy intensive military, which in itself becomes a vulnerability. Is replacing a P–3 with a large frame, like a 737, is that doing anything to reduce our vulnerability to having our fuel cut off?

Admiral MYERS. Sir, let me, if I could, start with a rundown on the P–3 and what we are—sort of the status of where we are, the impact overseas, and then our mitigation efforts, which will include the P8 and why we think that is the most capable platform.

For status on the P–3s, sir, as I know you are aware, last December we issued a grounding notice on 39 P–3 Sea Orions. That represents about 25 percent of our 160 aircraft fleet of P–3s and it was—these aircraft were grounded based on analysis backed up by visual confirmation of cracking in a part of the wing that we had not anticipated up until this point.

So those aircraft made up a percentage of Intelligence, Surveillance, and Reconnaissance (ISR) in Central Command (CENTCOM) with their full mission video capability and, sir, if I could take for record the exact percentage and the mitigation efforts that the combatant commander used, I think that is beyond the classification level of this hearing. But we are prepared to answer that in a separate forum.

The Navy, when we discovered these cracks, set out on a three-prong approach to try to mitigate the impacts. First was a nonmaterial approach, which was to maximize training in simulators and to use our current aircraft down to the final hour before they were put into a depot status or put in line to go to one of our three depots for extended maintenance.

Second, we accelerated our fatigue life management program so that we would make sure that we finish this analysis of this area of the wing so that we would be able to scope out exactly what we thought the recovery process would entail.

The recovery of these 39 aircraft is going to be about 2 years before we get them back to the fleet, some as early as about 18 months from now and some are going to be a little bit later. Just to give you an idea, 10 of those aircraft were overseas deployed, 17 were in depots, and the remainder were back here in some kind of a training status.

The reason it takes longer than some of our previous airframes bulletins or wing cracks is because we did not have the abundance of the material, the planks, that were required for this part of the wing, so we have had to go out and talk to Universal Alloy and Alcoa, to make sure that we get the right extrusion material, and

then take that and have that extrusion material milled. And then once it is milled, then get it to the depot.

So all of that takes time, and we factored that in. And we are also looking very closely at efforts to maximize the depot throughput once the material in the form of plans is received and we can start to put those in the aircraft.

We are also looking at replacing the outer wing boxes and working with Lockheed Martin. So we sort of have a dual-pronged approach, depending on the condition of the wings.

Additionally, for a third way to try to mitigate the risk was to look at ways that we could advance some of the in particular the ASW capability of the P8, the follow-on aircraft, as early as possible. That aircraft was scheduled to IOC in 2013. So we are looking at the possibility of advancing some of the ASW capability as early as 15 months so that we can start to bring those aircraft into the fleet earlier, and then that would also mitigate some of the shortfalls of the P–3s as we get to the 2012 time frame.

We selected the P8 based on the capability that it offered. We needed an aircraft that would travel, that would go a distance and be able to loiter in accordance with our fleet requirement and with major combat ops. So in the competition and the selection, that was the best capability and that is what we are using as an existing derivative of the 737. And we expect to take the—top open up our first squadron in the 2012 time frame, as long as we can accelerate it with about the 15-month forward profile that we hope to execute.

Mr. TAYLOR. A quick follow up, and again, you don't have to get terribly detailed, but I am curious. So the selection criteria was, No.1, the ability to loiter? Or was it volume? Was it—walk me through that determination.

Admiral MYERS. If you don't mind, Chairman Taylor, I am going to ask Mr. Balderson, who is part of the selection criteria team, to expand on that. But what I was addressing is the capability that was required is a big driver as to why that platform. You asked why the size and the capacity, and it is the capability that it offers.

Mr. BALDERSON. Mr. Chairman, Mr. Young alluded to this earlier. There were two competitors. He didn't remember the exact number. There were two competitors for this requirement. Boeing proposed a 737 derivative and Lockheed Martin proposed what they call the Orion 21, which was essentially a next-generation P–3. And in terms of outer mold lines, very similar to the P–3 aircraft.

I will tell you, it was a very, very close competition. Both aircraft were very capable. The evaluation criteria were pretty much the standard criteria, but in the technical area, ability to loiter, range, payload, time on station, and those sorts of things were key factors, as I recall. This goes back almost five years now, to the development contract. And then of course there were the other factors that we normally look at.

Another advantage to the 737, as I recall, in the source selection, although not perhaps a discriminator, was the worldwide support system that the 737 has.

So essentially, two very similar class airplanes competed, very close competition, and the 737 won on a best value competition.

Mr. TAYLOR. Going back to the P–3 wing boxes in Iraq, how soon should I expect an answer on restoring that capability that went down in December?

Admiral MYERS. Sir, we should be able to turn that around in a matter of days.

Mr. TAYLOR. Okay.

Thank you, Mr. Chairman.

Mr. ABERCROMBIE. Obviously, you heard the vote go off. I will try and ask you a couple of questions, if you could just answer briefly, and I will submit some to you. And again, I assure you that your answers will be reviewed closely to help us make a recommendation.

General Darnell, let me ask you, on the search and rescue helicopter, is the HH60G, the modification budget in 2009 and in the projection, is it fully funded to meet the requirements?

General DARNELL. Mr. Chairman, if you are talking about the HH60 and the retrofit system associated with that, yes, it is.

In 2008 we had a congressional add of——

Mr. ABERCROMBIE. My understanding is, it is supposed to last an additional two years now. Is that right?

General DARNELL. Yes, sir. We are putting $99 million in upgrades into the fleet in 2008. The crew has improved data link capability, improved multifunction displays for flying.

Mr. ABERCROMBIE. Do you think you can do it?

General DARNELL. I am sorry?

Mr. ABERCROMBIE. Do you think you can do it?

General DARNELL. Yes, sir.

Mr. ABERCROMBIE. You would fly that helicopter?

General DARNELL. With these improvements, yes, sir, we can.

Mr. ABERCROMBIE. Would you fly it?

General DARNELL. Yes, sir. I would.

Mr. ABERCROMBIE. The life extension programs, I am not quite sure what that means, like for the F–15E and the Golden Eagles. The life extension program, again, are they fully funded for 2009 and the future years?

General DARNELL. Sir, we are partially funded in some areas. Structurally, I think in the F–15 program, that is probably the most important question, and the answer I owe you most. We are going to do a teardown of our aircraft. As you are well aware, we had a recent in-flight break up of an aircraft about 5 months ago. We are going to do a complete teardown of an aircraft and then we are also going to do a——

Mr. ABERCROMBIE. Do you have confidence in it? In this program, in this life extension program?

General DARNELL. Yes, sir.

Mr. ABERCROMBIE. Because I am depending, in the recommendations I make in my subcommittee, I am dependent on what you tell me. I am not going to fly them. I am not going to tear them down. I am not going to have to put people under my jurisdiction in them.

Are you confident you can do this?

General DARNELL. We are confident, Mr. Chairman. We have 177 aircraft that we are going to extend out to 2025. Our confidence, however, will be based somewhat on this structural teardown and fatigue testing that we will be doing in the next 12 months.

Mr. ABERCROMBIE. Okay. Do you understand why I am asking?

General DARNELL. Oh, yes, sir.

Mr. ABERCROMBIE. I don't want to just say, well, we gave them the money, and then it doesn't work.

General DARNELL. Right.

Mr. ABERCROMBIE. If you think that this life extension program can't work, you have to come and tell us.

General DARNELL. We will.

Mr. ABERCROMBIE. In other words, there is not a right and wrong answer in the sense of I am demanding you do something that can't be done.

General DARNELL. Yes, sir.

Mr. ABERCROMBIE. If it can't be done, we need to know. Is that a fair——

General DARNELL. It certainly is, yes, sir.

Mr. ABERCROMBIE. Let me ask you, then, General Trautman, about the Venoms and the Vipers. Now, the Navy's statement includes the procurement objective of 180 Vipers and 100 Venom helicopters, right?

General TRAUTMAN. That is right, sir.

Mr. ABERCROMBIE. Do these quantities have to increase as you evaluate the impact of increasing the end-strength? In other words, if we are able to move the end-strength up in the Marine Corps, does that 180 and that 100 turn out to be right? Do you have confidence in these two helicopters?

General TRAUTMAN. I have a great deal of confidence in these two helicopters. As you know——

Mr. ABERCROMBIE. What about the numbers?

General TRAUTMAN. The numbers are the program of record, 100 and 180, as you described. The commandant grow the force to 202K will increase by two Marine Light Attack Helicopter Squadron (HMLA) and two—well, just two HMLA squadrons for purposes of this discussion.

And so we are assessing how many additional helicopters we may need on the——

Mr. ABERCROMBIE [continuing]. So we might be looking at increasing the expenditures there, right?

General TRAUTMAN. We will probably in the out years have to do that, yes, sir.

Mr. ABERCROMBIE. Mr. Balderson, you folks taking into account this kind of change in the end-strength of the Army and the Marine Corps in terms of equipment needs?

Mr. BALDERSON. Yes, sir. Absolutely. We are working very closely with the Marine Corps in the case of the 202K and of course in the Navy too in terms of emerging requirements.

Mr. ABERCROMBIE. I am asking the question, Mr. Balderson, excuse me, don't think I am being argumentative when I break in. It is because of the time frame and I don't want to hold you after we leave here, after we close this down.

I am concerned with the supplemental budget, that F–22 is the same thing. I don't want to see this stuff appearing in a supplemental budget like it is an emergency we didn't know about. If we are going to increase the end-strength of the Army and the Marine Corps, we need to take into account in the regular budgeting proc-

ess—when I say we, I mean the Congress certainly needs to, and we need to get your recommendations, as to what it will take to do that.

Is that fair?

Mr. BALDERSON. Yes, sir. I would just, from an acquisition standpoint, I would just comment that when we submit a regular budget and a supplemental, we take both into account in our acquisition plans. We would not submit a budget and a supplemental that added up, couldn't be executed by the industrial base.

So with respect to H1 and other programs, we have taken all this into account.

Mr. ABERCROMBIE. I understand that. Believe me. The reason I don't want this kind of stuff to get into the supplementals, you never know when a supplemental is going to come. You never know when it is going to get heard. You never know when it is going to get passed. And you don't know what else is going to get jammed into. That is the reason, at least as far as I am concerned, in making recommendations to Mr. Skelton, to the subcommittee and to the whole committee and on to the appropriators and so on, I don't want to fool around with getting politics into the readiness factor with regard to—especially when it comes to the end-strength build up.

General Trautman, you see what I am driving at?

General TRAUTMAN. Oh, yes, sir, I do. And we have the 2009 budget is——

Mr. ABERCROMBIE. If you guys become dependent on supplemental budgets, you are going to be in huge trouble.

General TRAUTMAN. There is nothing about the supplemental that will impact this particular discussion, Mr. Chairman.

Mr. ABERCROMBIE. Okay.

General TRAUTMAN. It will be a POM 10 deliberation to decide how and when we can go beyond the program of record of 180 and 100.

Mr. ABERCROMBIE. But you understand my concern. There has been a tendency lately to say, well, the supplemental budget will take up this stuff, especially when it comes to procurement and acquisition, and I think it is a terrible strategy, if you will. It is a terrible budgeting strategy. It is going to hurt you.

Admiral Myers, you may have to answer this further on. Your statement says the Navy is working the Air Force on jamming transmitters and has leveraged previous work completed as part of the B–52 standoff jammer, the SOJ program, which has now been cancelled.

Now, do you believe you will be able to fill the gap that the B–52 SOJ program was going to fulfill?

Admiral MYERS. Mr. Chairman, that is a great question. The Navy has remained committed to the Growler program. And as you know, we will retire our expeditionary capability starting in 2010, ending in 2012. First Growlers arrive to the fleet this May and we will have a full operational capability (FOC) and be out of the EA–6 business in the fiscal year 2013 time frame.

In the meantime, we are committed to try to do the follow-on replacement for the ALQ–99 with the next gen jammer, and that process begins this spring with an analysis of alternatives.

Mr. ABERCROMBIE. In other words, you can't tell me whether you can fill the gap, right?

Admiral MYERS. The Navy is going to—the Navy is doing everything it can on our end, yes, sir.

Mr. ABERCROMBIE. I am sure you are. That is all. I mean, it is not a—I am not trying to test anybody. It is not a contest.

The answer is, as I understand you, then, that you are not sure at this point. You are going to do your best. Well, we will follow up. It is too much to answer right now.

Mr. LoBiondo, do you have a question? I think we have about six or seven minutes.

So I will send the rest of my questions on to you, if that is okay.

Admiral MYERS. Yes, sir.

Mr. ABERCROMBIE. Because I don't want to hold you after this. This will be the last question, Frank.

Mr. LOBIONDO. Thank you, Mr. Chairman.

I want to thank the panel for being here. It is very helpful.

I have some very serious concerns about the fighter inventory shortfall in the Air Force in general and in the Air National Guard in particular.

Mr. ABERCROMBIE. Excuse me, Frank. Did you vote already?

Mr. LOBIONDO. Yes, I did.

Mr. ABERCROMBIE. Okay. I will tell you what. I have got about two minutes. I would like to go and vote. Can you close the hearing down——

Mr. LOBIONDO. Sure.

Mr. ABERCROMBIE [continuing]. For me, afterwards——

Mr. LOBIONDO. Sure.

Mr. ABERCROMBIE [continuing]. In the spirit of bipartisan friendship?

Mr. LOBIONDO. I would be honored.

Mr. ABERCROMBIE. Gentlemen, I am very grateful to you. Please don't think I am trying to short you. I think by the time this comes back and we go all over it again, I am not making good use of your time, and I would rather send the questions on, okay? And I am very appreciative.

Thanks, Frank.

Mr. LOBIONDO [presiding]. Thank you, Mr. Chairman.

A little bit unusual situation, but we will take it. I appreciate the chairman's indulgence to just get into a couple of questions.

I understand that the Air Force is attempting to fill the gap with the so-called Golden Eagles or the F–15C and D models with the service life extension program. A couple of questions surrounding this. Is the Golden Eagle fully funded in the 2008 budget?

General DARNELL. Mr. LoBiondo, it is partially funded. But our intent over at the Palm is to have it fully funded and to take 177 airplanes to 2025.

Mr. LOBIONDO. What roles will the Golden Eagles fill with the Air Force? What are your plans there?

General DARNELL. It will continue to provide air superiority. The assumption is, with those 177, that we have our program of record by 1,763 F–35 and the assumption was also made we would have 381 F–22s.

Mr. LOBIONDO. Will they be a part of the Air National Guard for the Air Sovereignty Alert Mission?

General DARNELL. That is the plan, yes, sir.

Mr. LOBIONDO. That is the plan?

General DARNELL. Yes, sir.

Mr. LOBIONDO. Do we have any idea how the Golden Eagles are going to be allocated for the various Air Sovereignty Alert Missions?

General DARNELL. Are you talking about by location?

Mr. LOBIONDO. By location.

General DARNELL. Sir, we may. I don't have any insight into that. I can get back to you on that.

Mr. LOBIONDO. I have a particular concern, representing the 177th, with our strategic location and with what is happening with our F–16s and the ability to be able to continue that mission.

One last question. Do you feel the various service life extension programs of the fourth generation fighters will be sufficient to bridge the gap between the F–22 and the F–35?

General DARNELL. Sir, our current plans carry the F–16 out into 2024 and the F–15E beyond 2030. That is the plan. We have confidence that we can make that work efficiently and effectively.

Mr. LOBIONDO. Because that is where some questions come in of how the Air Force is figuring versus the reality of what we are doing today.

If you could get back to me, I would appreciate that very much.

I thank you for being here.

This hearing is now adjourned.

[Whereupon, at 12:47 p.m., the subcommittees were adjourned.]

A P P E N D I X

March 11, 2008

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MARCH 11, 2008

FOR OFFICIAL USE ONLY
UNTIL RELEASED BY THE
HOUSE COMMITTEE
ON ARMED SERVICES

TESTIMONY OF

JOHN J. YOUNG

UNDER SECRETARY OF DEFENSE

(ACQUISITION, TECHNOLOGY & LOGISTICS)

BEFORE THE UNITED STATES HOUSE

COMMITTEE ON ARMED SERVICES

AIR AND LAND FORCES SUBCOMMITTEE

AND

SEAPOWER AND EXPEDITIONARY FORCES SUBCOMMITTEE

March 11, 2008

FOR OFFICIAL USE ONLY
UNTIL RELEASED BY THE
HOUSE COMMITTEE
ON ARMED SERVICES

Mr. Chairmen and distinguished members of the Subcommittees, thank you for the opportunity to appear before you today to discuss the F-22-A Raptor, F-35 Lightning II Joint Strike Fighter (JSF), and C-17 programs. My testimony today will provide background and rationale for the Department's fiscal year 2009 budget request. Specifically, I will address the F-22A program of record, the status of the F-35 program, the F135 and F136 engine development programs, and the C-17 program of record, as requested in your letter of February 27, 2008.

Vision

In addition to these important programs, I would also like to summarize my vision for Acquisition, Technology and Logistics, which is to drive the capability to defeat any adversary on any battlefield. I have focused my approach into four strategic thrust areas, each of which has a guiding principle, desired outcomes, and specific initiatives with metrics or steps against which we can measure progress. These four strategic thrust areas are:

- Define Effective and Affordable Tools for the Joint Warfighter
- Responsibly Spend Every Single Tax Dollar
- Take Care of Our People
- DoD Transformation Priorities

In identifying both the problems we face, and the solutions we are seeking, I am committed to transparency throughout the acquisition process. It is my belief

that we need to be clear, concise, and open with regard to what the Department of Defense is seeking and the work it is completing. It is our responsibility as stewards of tax dollars to ensure complete openness, fairness, and objectivity in the acquisition process. I intend that we will be accountable to ensure the success of these initiatives.

I have charged the acquisition team to create an inspired, high-performing organization where:

- We expect each person must make a difference;
- We seek out new ideas and new ways of doing business;
- We constantly question requirements and how we meet them;
- We recognize that we are part of a larger neighborhood of stakeholders interested in successful outcomes at reasonable costs.

We live in an increasingly complex world. Our missions vary widely, so we need strategic resilience and depth; and must ensure our Nation has response options today and for the future with the appropriate capacity and capability to prevail at home and abroad.

I would like to highlight some specific initiatives that capture these philosophies and are fundamental to transforming the acquisition process and

workforce. They are:

1) Program Manager Empowerment and Accountability

Program managers play a critical role in developing and fielding weapon systems. I have put in place a comprehensive strategy to address improving the performance of program managers. Key to this are program manager tenure agreements for ACAT I and II program. My expectation is that tenure agreements should correspond to a major milestone and last approximately 4 years. Another fundamental piece I have established is Program Management Agreements—a contract between the program manager and the acquisition and requirements/resource officials—to ensure a common basis for understanding and accountability; that plans are fully resourced and realistically achievable; and that effective transparent communication takes place throughout the acquisition process.

2) Configuration Steering Boards (CSBs)

I have directed the Military Departments to establish CSBs. My intent is to provide the program manager a forum for socializing changes that improve affordability and executability. Boards will be in place for every current and future ACAT I program and will review all requirement changes and any significant technical configuration changes which potentially could result in cost and schedule changes. Boards are empowered to reject any changes and are expected to only

approve those where the change is deemed critical, funds are identified, and schedule impacts are truly mitigated. I require every acquisition team member to fully engage the Planning, Programming, Budgeting, and Execution (PPBE) process thus creating an avenue for program managers to ensure they are funded to execute their responsibilities or alternately descope their programs to match reduced budget levels.

3) Defense Support Teams (DSTs)

To address the challenge of acquisition execution and assist both industry and DoD program managers, I have expanded the use of these teams who are made up of outside world-class technical experts to address our toughest program technical issues. I expect the teams to resolve emergent problems and help the Department successfully execute tough programs before problems develop.

4) Prototyping and Competition

I have issued policy requiring competitive, technically mature prototyping. My intent is to rectify problems of inadequate technology maturity and lack of understanding of the critical program development path. Prototyping employed at any level—component, subsystem, system—whatever provides the best value to the taxpayer.

5) *AT&L Notes*

I am writing weekly notes to the acquisition workforce. These notes share lessons learned and provide leadership guidance on expected procedures, processes and behaviors within the acquisition workforce. These notes provide a powerful training tool directly from me.

F-22A Program of Record

The Department's position is that 183 F-22A aircraft is the best trade-off between cost and capability. The F-22A is the most advanced tactical aircraft in the world today. The planned modernization program and continued integration of additional air to ground weapons and strike capability guarantee that the F-22A will provide the warfighters transformational power projection, air dominance, and denied access capabilities for the foreseeable future. The unmatched combination of speed, stealth, sensors, and maneuverability make it optimally suited for high-end, high-threat scenarios. The tremendous capability of the F-22A is a critical element in the Department's overall tactical aircraft force structure requirements, as it replaces our legacy F-15 fleet.

The Department's programmed requirement for 183 F-22A aircraft will be complete with the procurement of the 20 aircraft in FY 2009 President's Budget. The Department acknowledges that it would be prudent to keep continued production options available for the next administration. Four additional aircraft,

to be requested in the FY 2009 supplemental, will provide production line flexibility. In that context, the Air Force and Department are assessing the timing and costs related to both line shutdown and continued production activities.

F-35 Program

The F-35 will provide the foundation for the Department's tactical air force structure. The F-35 is an advanced 5th generation fighter that will replace legacy F-16 and A-10 aircraft for the Air Force, F/A-18 and AV-8 aircraft for the Navy and Marine Corps, as well as replacing numerous legacy aircraft for the eight international partners participating in the F-35 program. The F-35 will be more affordable, handle more missions, and provide commonality for our Services and coalition partners. The Department believes that the current program of record of 183 F-22A aircraft will provide an appropriate capability, while enabling procurement of F-35 aircraft in sufficient numbers to ensure affordability, capability, and commonality.

The F-35 program is in the seventh year of a planned 12-year System Development and Demonstration (SDD) phase. All three variants have completed Critical Design Review and are in various stages of production. The first flight for the Conventional Take-Off and Landing (CTOL) variant aircraft occurred in December 2006. AA-1 is a non-production representative test aircraft that has completed over 30 test flights, providing risk reduction and design and

manufacturing process confirmation benefits. The Cooperative Avionics Test Bed (CATB) is flying with initial communication, navigation, and interrogation (CNI) suites. Over the next few months the program will continue to integrate additional CNI capabilities, as well as the radar, sensors, and electronic warfare units that will enable key risk reduction testing prior to actually flying in an F-35. All of the mission systems sensors, as well as the helmet mounted display, are currently flying on other test platforms. The program is approximately 50% complete on their software development, and all three variants are meeting their Key Performance Parameter requirements.

In October 2007, I approved a Mid-Course Risk Reduction (MCRR) plan that restored program risk and reserve funding through test plan optimizations and engineering personnel reductions. Specifically, MCRR aimed to exploit the investment in integrated labs, flying test beds, and modeling and simulation, allowing a reduction in the number of development flight test aircraft required to achieve the SDD objectives from 15 to 13. Additionally, the contractor's development-oriented engineering teams are being reduced as the program transitions into the production phase. The Director, Operational Test and Evaluation (DOT&E) recommended not approving MCRR due to the risks associated with a reduction in test assets. The Department assessed the risks as

manageable since LRIP aircraft could be used if test validation and verification efficiencies were not realized.

Manufacturing of the test aircraft is taking longer than planned due to late-to-need design plans and parts; however, quality is unmatched for a development program at this stage. The initial Short Take-Off and Vertical Landing (STOVL) aircraft (BF-1) is projected to fly this summer. BF-1 is the first production representative aircraft. The first production representative CTOL and Carrier Variant (CV) aircraft's first flights are planned for late in 2009. Seventeen test aircraft are in production with AA-1 flying and BF-1 in ground operations. Last year, I approved release of the funding for the first two Low Rate Initial Production (LRIP) CTOL aircraft. Later this month, I will convene the Defense Acquisition Board (DAB) to review the LRIP 2 award for six CTOL and six STOVL aircraft. The decision on the STOVL aircraft will be delayed until after BF-1 first flight.

The F-35 program faces challenges and issues that are not surprising given the complexity and size of the program. Generally, I am pleased with the program's progress but also realistic that many more challenges lie ahead. Lockheed Martin received their lowest award fee to date in the most recent period. They need to improve their cost and schedule performance, and to recognize that they must be ready to forgo a certain level of remaining fee to offset cost pressures. The F-35 is important to the U. S. Services, as well as our coalition partners, and I

am committed to ensuring that we develop a successful program that meets the warfighters' requirements.

F135 Engine Development

The Pratt and Whitney (P&W) F135 engine development program is aligned with the F-35 air vehicle development. The F135 is the primary engine for the program and began SDD in 2002. Ten F135 ground test engines and three CTOL and three STOVL flight test engines are in developmental testing and have accumulated over 9,000 test hours.

In August 2007, an F135 engine experienced a hardware failure during test stand operations with the STOVL lift fan engaged. Root cause analysis determined that high cycle fatigue caused the 3rd stage Low Pressure Turbine (LPT) blade failure. Test engines were instrumented to assist in verifying the analysis and assist in determining solutions. On February 4, 2008, a similar failure occurred during test stand operations with the STOVL lift fan engaged. Instrumentation and data supported the analysis of high cycle fatigue in the 3rd stage. Additionally, the occurrence confirmed that it was a STOVL powered lift problem experience at high thrust settings and almost exactly the same vibration regime. The engine was cleared for conventional operations and AA-1 flew a few days later. The exact root cause appears likely to be a combination of factors related to the design of the blades, the material composition of the blade dampers, and the symmetry of the 3rd

stage fixed vanes. New blade, blade dampers, and vane hardware are being retrofitted on the test engines and they will begin testing with additional instrumentation in April.

The engine failure will delay BF-1 first flight by 30-60 days. The original plan for BF-1 was to fly in the "conventional" mode for several months and gradually phase in STOVL operations and that will not change. Specific STOVL operations will be delayed approximately 3-4 months and are planned to begin on BF-1 in the December/January timeframe. The schedule delays will not adversely affect the program. The F-135 hardware failure is not unique to a developmental engine program. Many programs experience early test problems that force them to alter the design. That is exactly what happened in this case. The F135 program is progressing well and I expect that to continue.

F136 Engine Development and Alternate Engine Strategy

The General Electric/Rolls Royce (GE/RR) F136 engine lags the F135 program by approximately 3-4 years. There are two pre-SDD F136 engines in testing that have accumulated approximately 600 hours. The first F136 SDD engine will begin testing in December 2008. The Department's Cost Analysis Improvement Group (CAIG) completed an analysis of the F-35 propulsion system as directed in section 211 of the John Warner National Defense Authorization Act for Fiscal Year 2007. The CAIG determined that there were no life cycle costs

benefits due to competition, in fact, a competitive program would likely cost slightly more. The CAIG also estimated that procurement savings in excess of 21% would be required to recoup the up front investment in a competitive engine program, a savings they deemed unlikely. The CAIG did identify non-quantified benefits to competition. The Department has continually acknowledged the many intangible benefits of competition. The Department did not direct the CAIG to update their analysis. There have been no significant changes to the program that would have resulted in any changes to their findings.

The Department will comply with section 213 of the John Warner National Defense Authorization Act for FY 2008. We will ensure that in each fiscal year where funds are appropriated there is obligation and expenditure of sufficient amounts for continued development and procurement of two options for the JSF propulsion system. However, the Department continues to believe that the investment required to develop an alternate engine is more appropriately proposed for other Department priorities. In the 2006 Quadrennial Defense Review, the Department laid out a future strategic vision to meet the new and broader array of threats to the Nation. It requires the Department to carefully consider capabilities versus cost and, if necessary, divert resources from lower priority programs in order to be able to afford the new capabilities required.

Engine technology development, design and manufacturing process improvements continue to provide increased reliability, maintainability and safety. The F/A-18E/F and F-22A are recent examples of aircraft programs that successfully operate with a single engine provider.

Considering Department priorities, budget realities, and improved engine technology, the Department concluded that the risk associated with a single engine source is acceptable and, while it would be nice to have a second engine, it is not necessary and not affordable.

C-17 Production

Based on the 2005 Mobility Capability Study and Quadrennial Defense Review, the Department concluded that 180 C-17s, combined with the fleet of 112 modernized C-5s, provided sufficient strategic airlift capacity to support the defense strategy with acceptable risk. The requirement for this level of capacity was recently reexamined during our Nunn-McCurdy review of the C-5 Reliability Enhancement and Re-engining Program (RERP). Our analysis supported the conclusion that the programmed fleet of 189 C-17s, plus 52 re-engined C-5 B/Cs and 59 C-5As, also provides sufficient airlift capacity. The Department is now again repeating the Mobility Capability Requirements Study, to assess whether adjustments in the defense strategy may have altered the Department's airlift needs. It is not clear that substantial changes have occurred in DoD's need for

oversized and outsized cargo capacity demand for strategic airlifters, and the Department believes that the C-17 production line should not be kept open. Other general cargo capacity demand adjustments can be substantially addressed by the recent selection of a capable KC-45 tanker by the Air Force.

I again thank the two Subcommittees for their time in allowing me to present the Department's positions on these important programs as well as my vision for acquisition, technology and logistics.

NOT FOR PUBLICATION UNTIL RELEASED BY
THE SENATE ARMED SERVICES COMMITTEE
AIR AND LAND FORCES AND SEAPOWER AND
EXPEDITIONARY FORCES SUBCOMMITTEES

STATEMENT OF

MR. WILLIAM M. BALDERSON
DEPUTY ASSISTANT SECRETARY OF THE NAVY
(AIR PROGRAMS)

AND

RADM ALLEN G. MYERS, USN
DIRECTOR, AIR WARFARE

BEFORE THE

AIR AND LAND FORCES

AND

SEAPOWER AND EXPEDITIONARY FORCES

SUBCOMMITTEES

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

FISCAL YEAR 2009 NAVY/MARINE CORPS TACAIR PROGRAMS

MARCH 11, 2008

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AIR AND LAND FORCES AND SEAPOWER AND
EXPEDITIONARY FORCES SUBCOMMITTEES

Mr. Chairmen and distinguished members of your Subcommittees, thank you for providing us with this opportunity to appear before you to discuss the Department of the Navy's Fiscal Year 2009 tactical aviation programs.

AVIATION PROGRAMS SUMMARY/OVERVIEW:

The Fiscal Year 2009 President's Budget request implements a recapitalization strategy to obtain new capabilities - and initiatives to reduce operating costs while sustaining legacy fleet aircraft that are performing magnificently in current operations. We continue to work with industry in seeking ways to reduce costs via multi-year procurement (MYP) contracting strategies on the F/A-18 E/F airframe, H-60S/R, and the V-22; and we will implement a 'prototype' strategy on the Joint Air-to-Ground Missile (JAGM) to ensure high technology readiness and reduced risk prior to entering System Development and Demonstration (SDD). The Fiscal Year 2009 Budget plan ensures that the Navy and Marine Corps maintain a joint force able to meet the spectrum of threats. Our proposal continues the development of the F-35, the E-2D Advanced Hawkeye, EA-18G, the VH-71 Presidential Helicopter Replacement Aircraft, the CH-53K Heavy Lift Replacement aircraft, Unmanned Aviation, and new strike weapons capabilities. In total, Navy/Marine Corps aviation will procure 134 additional tactical and fixed-wing aircraft, 69 rotary-wing aircraft and three VTUAV's for a total of 206 aircraft.

I. TACTICAL AIRCRAFT/TACTICAL AIRCRAFT SYSTEMS

F-35 Joint Strike Fighter (JSF)

The Fiscal Year 2009 Budget requests $1.5 billion RDT&E,N for continuation of F-35 System Development and Demonstration (SDD) and $1.98 billion APN for the Low Rate Initial Production lot three (LRIP 3) for eight Short Takeoff and Vertical Landing (STOVL) aircraft and the long lead requirements for 14 STOVL and four CV aircraft as part of LRIP 4.

A 5th generation aircraft, the F-35 will enhance precision strike capability with unprecedented stealth, range, sensor fusion, improved radar performance, combat identification and electronic attack capabilities compared to legacy platforms. The F-35 carrier variant (CV) complements the F/A-18E/F Block II and EA-18G in providing long-range strike capability and much improved persistence over the battlefield. The STOVL combines the multi-role versatility of the legacy F/A-18 and the basing flexibility of the AV-8B. The commonality designed into the F-35 program will minimize acquisition and operating costs of Navy and Marine Corps tactical aircraft, and allow enhanced interoperability with our sister Service and Allies.

Impressive technical progress continues across the development program. The SDD jets are taking longer to build than anticipated but setting new standards for quality, and manufacturing efficiencies improve with each jet. In flight testing, the initial Conventional

Takeoff and Landing (CTOL) aircraft (AA-1) continues to demonstrate superb performance and reduce program risk, with 31 sorties flown through mid-February 2008. In addition, the flying avionics test bed has flown 91 hours and has accomplished significant risk reduction on the avionics systems. The first STOVL variant (BF-1) roll-out occurred on-time in December 2007 and STOVL First Flight is currently projected for 4th quarter FY 2008. Manufacture and assembly of all remaining flight test aircraft is well underway. LRIP 1 contract for two Conventional Take Off and Landing (CTOL) aircraft awarded in 2007, as was the LRIP II Long Lead contract for six CTOL's and six STOVL's. STOVL first flight is a key event for award later this year of STOVL Fiscal Year 2008 LRIP 2 Full Funding and LRIP 3 Long Lead Funding. The CV Air System Critical Design Review was successfully completed June 2007 and CV first flight is scheduled for 2009. The STOVL and CV variants are projected to meet their respective Key Performance Parameters.

The F135 engine development has completed 9000+ test hours on 12 engines through mid-February 2008. F135 engine test failures in August and February occurred in nearly identical operating modes. Both Pratt and Whitney and the F-35 Program Office understand the causes of these failures and are actively developing a mitigation plan to minimize the schedule impacts to the program.

The DON supports the omission of continued funding for the alternate engine (F136) in the President's Budget request. The DON maintains there are higher priority needs in the

budget and that the risks associated with a single engine supplier continue to be manageable. The three Fiscal Year 2007 Congressionally-directed engine studies have been completed. The conclusions, while supportive of competition in general, reinforced the Department's initial findings that the projected savings from not doing competition outweigh the investment and sustainment costs.

F/A-18 E/F Super Hornet

The Fiscal Year 2009 Budget requests $1.9 billion in APN for 23 F/A-18 E/F Block II aircraft for the final year of the five-year MYP contract (Fiscal Year 2005 to 2009). The F/A-18E/F continues to transition into the fleet, improving the survivability and strike capability of the carrier air wing. The Super Hornet provides a 40 percent increase in combat radius, 50 percent increase in endurance, and 25 percent increase in weapons payload over our older legacy Hornets. Over 410 F/A-18E/Fs will have been procured through Fiscal Year 2008 which is on track to complete procurement of the program of record of 493 aircraft by 2012. The Super Hornet has used a spiral development approach to incorporate new technologies, such as the Joint Helmet Mounted Cueing System, Advanced Targeting Forward Looking Infra-Red (FLIR), Shared Reconnaissance Pod System, and Multifunctional Information Distribution System data link. The Active Electronically Scanned Array (AESA) radar system in our Block II aircraft has completed operational testing and the full rate production decision was approved in June 2007. The first two tactical AESA-equipped F/A-18F squadrons have now received all twelve of their allotted aircraft with full Integrated Logistics Support support. The FA-18E/F Fiscal Year

2009 Budget request also includes $129.3 million to implement commonality, maintain capabilities, and improve reliability and structural safety.

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

The Fiscal Year 2009 Budget requests $321.6 million for the continuation of the systems upgrade programs for the F/A-18 platform. As the F/A-18 program transitions to the F/A-18E/F, the existing inventory of over 648 F/A-18A/B/C/Ds (as of February 2008) will continue to comprise half of the Carrier Strike Group until 2012. Included in this request is the continued procurement of recently fielded systems such as the Joint Helmet Mounted Cueing System, Advanced Targeting FLIR, Multi-Function Information Distribution System, and a Digital Communications System. The Marine Corps continues to upgrade 61 Lot 7-9 F/A-18A models to a Lot 21 F/A-18C avionics aircraft capability with digital communications and a tactical data link. The Marine Corps anticipates programmed upgrades to enhance the current capabilities of the F/A-18C/D with digital communications, tactical data link and tactical reconnaissance systems. This upgrade ensures that our F/A-18s remain viable and relevant in support of Tactical Air Integration and Expeditionary Maneuver Warfare. The Marines expect the F/A-18 to remain in the active inventory until 2023. The Marines are also employing the LITENING targeting pod on the F/A-18A+/C/D aircraft in expeditionary operations, to include Operation Iraqi Freedom (OIF). When combined with data link hardware, the LITENING pod provides real time video to ground forces engaged with the enemy through Remotely Operated Video Enhanced Receiver (ROVER) workstations. Continued analysis of TACAIR

inventories will continue throughout 2007 and beyond to determine the health of the legacy fleet as the F/A-18A-D is transitioned to the F-35.

Airborne Electronic Attack (AEA) / EA-18G

The Fiscal Year 2009 Budget requests $128.9 million in RDT&E,N for continuation of SDD and $1.68 billion in APN for 22 full rate production EA-18G Lot 3 aircraft. The EA-18G continues its development as the Navy's replacement for the EA-6B AEA aircraft. The EA-18G will replace carrier-based Navy EA-6B aircraft by 2012. A total quantity of 27 aircraft will be procured in LRIP. The Navy is using the F/A-18E/F MYP contract to buy the Lot 3 aircraft in Fiscal Year 2009. SDD continues on schedule with the two development aircraft having first flown in 2006 and are currently in developmental test at NAWC, Patuxent River. The program is on track to begin Operational Evaluation in fall 2008, leading to Initial Operating Capability (IOC) in Fiscal year 2009 and Full Operating Capability (FOC) in Fiscal Year 2012.

The Office of Naval Research (ONR) is working to develop adaptable, modular, and open architecture hardware, firmware, and software for a next-generation jamming capability that will be hosted by the EA-18G. In this regard, the Navy is working with the Air Force on jamming transmitters, and has leveraged previous work completed as part of their B-52 Standoff Jammer (SOJ). The Navy and Air Force technology teams continue to meet quarterly to ensure their efforts are coordinated. The Fiscal Year 2009 President's Budget

requests $69.3 million of RDT&E,N under PE 0604270N (EW Development) of which $46.1M is for Next Generation Jammer (NGJ) technology maturation.

Airborne Electronic Attack (AEA) / EA-6B

The EA-6B is in near continuous use in Iraq and Afghanistan today in support of our troops on the ground as DoD's only tactical electronic attack aircraft performing communications jamming and information operation missions. Program priorities are current readiness of EA-6B and ALQ-99 systems, deployment of increased airborne electronic attack capability through products such as ICAP II/III aircraft upgrades, ICAP III kits, and Low Band Transmitters. In an effort to achieve those objectives, the Fiscal Year 2009 Budget requests $33.4 million in APN for procurement of critical Airborne Electronic Attack (AEA) products and continuing EA-6B readiness improvements to increase operational availability and reduce operating cost of this low density high-demand aircraft. The EA-6B upgrades include procuring 22 Low Band Transmitters to provide a new jamming capability and replacement of aging transmitters to be employed on legacy EA-6B and new EA-18G aircraft. The Budget request also provides for operational safety and cost-wise readiness improvement initiatives to ensure availability of the aging EA-6B aircraft.

AV-8B

For the AV-8B, the Fiscal Year 2009 Budget requests $29.9 million RDT&E,N funding to support development of the Engine Life Management Plan, Tactical Moving Map Display, LITENING Pod updates, and aircraft safety and reliability modifications, to include a

Readiness Management Plan. We also request $54.5 million of procurement funding for engine production line transition efforts, Open Systems Core Avionics Requirement (OSCAR) installs, engine sustainment efforts, Day Attack Upgrade/Attrition Recovery efforts, trainer aircraft upgrade efforts, and Litening Pod upgrades.

P-8A Multi-mission Maritime Aircraft (MMA)/P-3C

The future of the Navy's maritime patrol force includes plans for sustainment, modernization, and re-capitalization of the force. Results of the P-3 Service Life Assessment Program (SLAP) revealed the need for an aggressive approach to P-3 airframe sustainment. The accumulation of two decades of heavy demand by the Combatant Commanders, to include Operation Enduring Freedom and Operation Iraqi Freedom, resulted in advanced fatigue. Our Fiscal Year 2009 budget request includes $297.9 million to sustain the P-3C until transition to the P-8A Multi-Mission Maritime aircraft. Over half of this amount ($152.7 million) is for Special Structural Inspections - Kits (SSI-K), which will allow for airframe sustainment to support the CNO's P-3 Fleet Response Plan, as well as supporting EP-3E requirements which are executed within the P-3 SSI-K program. In December 2007, ongoing refinement of the model used to calculate wing stress indicated that the lower wing surface of the P-3 aircraft had fatigue beyond standards for acceptable risk resulting in the grounding of an additional 39 P-3 aircraft. To correct this issue, additional funding is being sought to mitigate operational impacts. In addition to Fiscal Year 2008 requests, Fiscal Year 2009 funding is being separately requested for P-3C wing panels, supporting hardware and installation; acceleration of the Fatigue Life Management

Program (FLMP); and P-8A acceleration. Key elements of the sustainment approach are strict management of requirements and flight hour use, special structural inspections to keep the aircraft safely flying, and increased use of simulators to satisfy training requirements. The Fiscal Year 2009 Budget request also reflects a systems sustainment and modernization budget of $145.2 million to continue to address a multitude of mission essential efforts to replace obsolete components, integrate open architecture technology, and leverage commonality.

To recapitalize these critical aircraft, the Navy is developing the P-8A MMA, a 737 commercial-derivative aircraft. This past year, the program completed both its overall system Critical Design Review and its Design Readiness Review. The Fiscal Year 2009 Budget requests $1,132 million in RDT&E,N for continuation of P-8A SDD efforts. Program objectives for 2009 include executing a contract option for three Stage II test aircraft, and completing the first flight of the initial Stage I test aircraft. Our comprehensive and balanced approach has allowed for re-capitalization of these critical assets.

EP-3 Replacement/Sustainment

The Navy plans to recapitalize its aging EP-3E fleet with a land-based, manned, airborne Intelligence Surveillance Reconnaissance (ISR) platform, called EPX, to meet maritime requirements. The Fiscal Year 2009 Budget requests $74.6 million in RDTE,N funds for this effort to support studies focused on capabilities, documentation, and technology

development. Our plan also requests $55.7 million in RDT&E,N and $72.4 million in APN to address EP-3E SIGINT sensor and communications equipment obsolescence issues that are necessary to keep the EP-3E viable until the replacement platform is fielded, and to develop follow-on capabilities that can be migrated to the EPX. This funding supports Operational Test (OT) and procurement for JMOD Common Configuration (JCC) Spiral 2 data fusion capabilities, and engineering development for JCC Spiral 3 and Recapitalization Capabilities Migration (RCM).

E-2D Advanced Hawkeye (AHE)

The E-2D Advanced Hawkeye is a critical enabler of transformational intelligence, surveillance and reconnaissance that provides robust overland capability against current and future cruise missile-type targets. The Advanced Hawkeye program modernizes the E-2 platform by replacing the current radar and other system components to maintain open ocean capability. The radar for the Advanced Hawkeye will provide enhanced performance overland and in the littoral environment while improving performance against clutter, adding transformational surveillance, and theater air and missile defense capabilities. The Fiscal Year 2009 Budget requests $484.2 million in RDT&E,N for continuation of SDD and $589.1 million in APN-1 for three Low-Rate Initial Production (LRIP) Lot I aircraft. Two SDD aircraft are in Flight Test with the first mission system flight completed in December 2007. An 'Operational Assessment' is scheduled in 4th quarter of FY 2008 to support a Milestone-C decision planned for March 2009.

KC-130J

The Fiscal Year 2009 Budget requests $153.5 million in APN for 2 KC-130J aircraft. To date, the Marine Corps have taken delivery of 29 KC-130J aircraft, with seven more aircraft on contract to be delivered during Fiscal Years 2008 through 2010. The planned procurement of 2 aircraft in Fiscal Year 2009 will bring the total number of KC-130J aircraft to 38. The KC-130J provides major enhancements to the current fleet of KC-130s, extending its range, payload, and refueling capabilities while reducing operating costs. Additionally, we have continued to ensure the tactical capability of our existing KC-130R/T series aircraft by installing night vision kits and upgraded aircraft survivability equipment.

T-6B Joint Primary Air Training System (JPATS)

The Fiscal Year 2009 Budget requests $289.3 million to procure 44 aircraft under an Air Force multi-year procurement contract. The T-6 is the primary flight training aircraft for Navy and Marine Corps pilots, and Naval Flight Officers. It replaces the T-34C. The current requirement is for 315 aircraft, of which 98 aircraft have been procured to date.

Integrated Defensive Electronic Countermeasures (IDECM)

The Fiscal Year 2009 Budget requests $125.6 million in aircraft procurement for the procurement of 73 ALQ-214 on-board Radio Frequency Countermeasure and $24.7 million in Ammunition Procurement for 558 ALE-55 Fiber Optic Towed Decoys, pending a full rate production decision. The IDECM Block 3/ALE-55 Integrated Development Test and

Operational Test (IDT/OT) identified several anomalies which required correction. The corrective actions have been incorporated, the system has been certified for Operational Test, and a Full-Rate Production decision is expected in the first quarter of Fiscal Year 2009.

Digital Radio Frequency Memory (DRFM) Onboard Jammer

The Fiscal Year 2009 Budget requests $31.5 million in RDT&E,N for development of an on-board jammer that will employ state-of-the-art Digital Radio Frequency Memory devices to replace the ALQ-126B Jammer that was last produced in 1991. This effort will measurably improve the survivability of tactical naval aircraft by delaying, denying, and defeating air-to-air and surface-to-air missile system threats operating in the radio frequency spectrum. The lead platform for the DRFM program is the F/A-18C/D, followed by the AV-8B. An Analysis of Alternatives has been initiated to investigate alternative solutions, costs, and schedules. This developmental effort is late-to-need and the capability is required to pace rapidly proliferating threat systems.

Infrared Countermeasures (IRCM)

The Navy has a multi-faceted approach to providing aircrew protection against current and next generation IR guided MANPADs. The Fiscal Year 2009 Budget requests $63.2 million in RDT&E,N for continued development of the TADIRCM Program to provide improved missile warning systems for the MV-22 (lead platform) and smaller USN

helicopters such as H-1 & H-60 (follow-on). The Fiscal Year 2009 budget also requests $25.8 million of APN-5 and $226.0 million of 'APN-5 Supplemental' funding for procurement of the advanced 'Large Aircraft Infrared Counter-Measure System' (LAIRCM) for USMC CH-53E and CH-46E heavy-lift rotary aircraft. The Department of the Navy is also pursuing advanced expendables under the PANMC appropriation, and plans to complete fielding of an upgraded AAR-47B(V)2 Missile Warning System to provide improved probability of detection in clutter environments for those aircraft not getting DIRCM upgrades with additional Fiscal Year 2009 APN-5 Supplemental request.

II. ROTARY-WING AIRCRAFT

VH-71 Presidential Helicopter Replacement Aircraft

The Fiscal Year 2009 Budget requests $1,047.8 million in RDT&E,N for continuation of SDD for the VH-71 program. The VH-71 program is executing an evolutionary acquisition approach through a two-part incremental development to deliver a safe, survivable and capable Presidential Vertical Lift aircraft while providing uninterrupted communications with all required agencies. The goal of Increment 1 is to satisfy an urgent need to provide a replacement Presidential helicopter with capability equivalent to or better than the current inventory of aircraft. Increment 2 will provide enhanced performance and state-of-the-art communications capabilities to satisfy long-term needs. The program is completing Increment 1 integrated test utilizing three government and two contractor test articles. Additionally, the government will

take delivery of five Increment 1 Pilot Production aircraft. Increment 2 development will continue as this phase of the program is restructured, and the program progresses towards a System Functional Review. It is anticipated that a 2nd Quarter Defense Acquisition Board will approve a new VH-71 program baseline significantly reducing program concurrency and schedule risk. The Presidential Helicopter Replacement Program continues to receive executive level oversight and review in an effort to fully evaluate program progress while mitigating risks wherever possible.

V-22

The Fiscal Year 2009 Budget requests $2.2 billion in APN for procurement of 30 MV-22s and continued development of follow-on block upgrades. Fiscal Year Budget request 2009 is the second year of the MYP contract. Our MYP strategy supports a continued cost reduction and affordability trend, provides a stable basis for industry, and best supports the warfighter. The Advance Acquisition Contract funding associated with the second year of the MYP and Fiscal Year 2008 Economic Ordering Quantity and Cost Reduction Investments is planned for award in spring 2008.

The Department of the Navy is developing, testing, evaluating, procuring, and fielding a tilt rotor, Vertical/Short Takeoff and Landing (V/STOL) aircraft for Joint Service application. The V-22 Program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the strike rescue needs of the Navy, and the special operations needs of the Air Force and Special Operations Command. The MV-22 variant

will replace the CH-46E in the Marine Corps. The CV-22 variant provides a new capability and will augment the MC-130 in the Air Force/Special Operations Command inventory for special operations infiltration, extraction, and re-supply missions. The existing MH-53 fleet will be drawn down commensurate with the fielding of the CV-22. V-22 capability is being increased and fielded over time via a block upgrade acquisition strategy. MV-22 Block A provides a "Safe and Operational Test and Training Asset" configuration that is supporting developmental flight test, operational flight test and fleet training. Block B provides for correction of previously identified deficiencies and suitability improvements. Block C provides mission enhancements, primarily in the areas of environmental control systems upgrades and mission systems improvements. CV-22 Block 0/10 is a CV-unique configuration for Special Operations Capabilities to include radar and electronic countermeasures upgrades. CV-22 Block 20 provides an enhanced CV-unique configuration with planned communications and aircraft system performance upgrades. Both Osprey variants continue along their prescribed roadmaps for follow-on developmental and operational test. The CV-22 Program is currently in IOT&E. The MV-22 has successfully completed Operational Evaluation and the first operational deployment is underway.

AH-1Z / UH-1Y

The Fiscal Year 2009 Budget requests $3.8 million in RDT&E,N for continued product improvements and $474.1 million in APN for 20 AH-1Z/UH-1Y aircraft. The H-1 Upgrades Program will replace the Marine Corps' AH-1W and UH-1N helicopters with

state-of-the-art AH-1Z and UH-1Y models. The program is a key modernization effort designed to resolve existing safety deficiencies, enhance operational effectiveness, and extend the service life of both aircraft. Additionally, the commonality gained between the AH-1Z and UH-1Y (84 percent) will significantly reduce life-cycle costs and logistical footprint, while increasing the maintainability and deployability of both aircraft. The program will provide the Marine Corps with 180 AH-1Z helicopters and 100 UH-1Y models through a combination of remanufacturing and new production.

The first lot of low rate production aircraft has been delivered as well as several aircraft from the second lot. The final phase of OPEVAL is ongoing and a full rate production decision is expected later this year. We are developing the capability to newly fabricate some of the AH-1Z aircraft to reduce the number of AH-1W aircraft removed from service for remanufacturing. This will be particularly critical as the annual production rate increases. The optimum mix of remanufactured and newly fabricated aircraft is being evaluated with the results to be reflected in future budget requests.

MH-60R and MH-60S

The Fiscal Year 2009 Budget requests $1185.8 million in APN and $70.3 million in RDT&E,N for continued replacement of the Light Airborne Multi-Purpose System (LAMPS) MK III SH-60B and carrier-based SH-60F helicopters with the new configuration designated as the MH-60R. This program reached full-rate production with the first operational squadron standing up in 2006. The Fiscal Year 2009 Budget also requests $549.7 million in APN and $47.3 million in RDT&E,N funds for the MH-60S, to

continue development of the Organic Airborne Mine Countermeasures (Block II) and the Armed Helo (Block III) missions. The MH-60S is the Navy's primary combat support helicopter designed to support Carrier and Expeditionary Strike Groups. It will replace four legacy platforms with a newly manufactured H-60 airframe. The Army and Navy are executing a platform multi-year contract that includes both the MH-60R and MH-60S, and a second multi-year contract for integration of mission systems into the MH-60R.

CH-53K Heavy Lift Replacement Program

The Fiscal Year 2009 Budget requests $570.5 million RDT&E,N to continue SDD of the CH-53K, which will replace the Marine Corps' current heavy-lift helicopter, the CH-53E "Super Stallion." The CH-53K program is on track to conduct a Preliminary Design Review later this year and the Critical Design Review in late Fiscal Year 2009.

The legacy CH-53E was built for sustained shipboard operations and first flown in 1974, the CH-53E continues to demonstrate its value as an expeditionary heavy-lift platform. This aging but very relevant helicopter is in high demand, making significant contributions to missions in Iraq, Afghanistan, and the Horn of Africa; non-combatant evacuation operations in Lebanon; and disaster relief operations around the world. Expeditionary heavy-lift capabilities will continue to be critical to successful sea-based operations in future anti-access, area-denial environments, enabling sea basing and the joint operating concepts of force application and focused logistics.

As a design evolution of the CH-53E, the new-build CH-53K will fulfill sea-based, heavy-lift requirements not resident in any of today's platforms, and directly contribute to the increased agility, lethality, and persistent presence of Joint Task Forces and Marine Air-Ground Task Forces. The CH-53K will include significant enhancements to extend range and payload performance; expand survivability and force protection capabilities; improve inter-modal cargo handling and turn-around; and meet interoperability requirements while reducing heavy-lift operations and support costs.

The CH-53K will be capable of transporting 27,000 pounds to austere landing sites at distances of 110 nautical miles under challenging environmental conditions. Task Force commanders of 2015 and beyond will then have the option to rapidly insert, to the far sides of the littorals, a force equipped with armored combat vehicles and heavy weapons at a rate equivalent to two up-armored High Mobility Multi-Wheeled Vehicles (HMMWVs) per sortie. To sustain that force, the CH-53K will be the critical air connector to sea-based logistics, transporting up to three independent loads per sortie, with each load tailored to individual receiving units. This efficient, reliable, cost-effective, heavy-lift capability will also address critical challenges in maintainability, reliability, and affordability found in present-day operations.

III. WEAPONS

In an era of continuing global uncertainty and shifting threats, the Department of the Navy is developing and deploying air-to-air and strike weapons to enhance our warfighter's capabilities in an evolving and uncertain security environment. Our Fiscal Year 2009 Budget request for each new weapon or weapon system modification program is directed towards deterring potential aggressors, power-projection, sea-control, or other maritime and expeditionary warfare security objectives. Our budget request would provide resources for weapon systems that directly support troops deployed in the field - as well as weapon systems that will shape our plans to address potential near-peer competitors. The Navy/Marine Corps weapons programs take into account the lessons-learned from on-going combat operations as well as the results of our research, development, and test efforts. The resulting Fiscal Year 2009 weapons budget request provides for a portfolio of affordable weapons programs that is balanced between solutions to address Global War on Terrorism (GWOT) threats and development of new military capabilities.

Direct Attack Moving Target Capability

In response to an urgent requirement identified by the Combatant Commanders in Iraq and Afghanistan, the Department of the Navy approved a Rapid Deployment Capability (RDC) in Fiscal year 2008 to develop a Direct Attack Moving Target Capability known as DAMTC. DAMTC improves our ability to attack and strike moving targets by leveraging off of the highly successful, congressionally-supported procurement of dual-mode systems. The Fiscal Year 2009 Budget requests $35.9 million to transition the RDC to a formal acquisition program,

support a competitive acquisition strategy, and acquire 2,758 additional weapons from potentially multiple sources at reduced costs.

Joint Air-to-Ground Missile (JAGM)

The Department of the Navy, in conjunction with our Army partners, received formal approval from USD(AT&L) to proceed with the development of the Joint Air-to-Ground Missile (JAGM) in January 2008. JAGM will become the next-generation, forward firing precision-guided munition capable of being launched from Navy/Marine Corps fixed-wing, rotary-wing, and unmanned platforms with both GWOT and conventional warfare applications. Under OSD(AT&L) direction, the JAGM program implements a technology development strategy to carry two contractors through Prototyping & Test and the Preliminary Design Review (PDR) phase of the program. Using a rolling down-select strategy, the Navy and Army will determine how far beyond PDR the two contractors should potentially be carried to ensure a high-level of technical maturity and risk reduction before proceeding into a formal System Development and Demonstration (SDD) program. The intent behind this prototyping and technology development strategy is to improve the probability of overall program success and reduce program costs through competition. To support this critical development program, our Fiscal Year 2009 budget requests approval of $62.3 million of RDT&E,N to implement this acquisition strategy.

Hellfire Weapon System

While the Department of the Navy develops JAGM, we are requesting continued support for legacy Hellfire weapons. Hellfire continues to be one of the priority weapons in the Global War on Terrorism and provides our Navy/Marine Corps warfighters the ability to attack targets in the caves of Afghanistan as well as the urban canyons of Baghdad. Our Fiscal Year 2009 Budget request is for $95.4 million for 1,068 weapons with a mix of Thermobaric, blast/ fragmentation, and anti-armor warheads to provide the maximum operational flexibility to our warfighters.

Joint Standoff Weapon (JSOW)

The combat proven JSOW family of joint Navy and Air Force air-to-ground weapons continues on cost and schedule to develop a JSOW-C1 variant. JSOW C-1 adds a 'moving target capability' to the highly successful baseline JSOW-C variant with the addition of a datalink and guidance software improvements. The Fiscal Year 2009 Budget requests $22.5 million for continued JSOW C-1 development and $149.1 million for JSOW-C production totaling 496 All-Up-Rounds to fill our weapons magazines that remain below approved Non-Nuclear Ordnance Requirements. Production of other JSOW variants remains deferred as we continue to work with the Office of the Secretary of Defense and our sister Service to resolve unexploded battlefield ordnance issues that are of a concern to the Department and our Allies.

Tactical Tomahawk BLK IV Cruise Missile

The Tactical Tomahawk budget request supports the continued procurement of this combat proven, deep-attack weapon in order to meet ship-fill loadouts and potential combat

requirements. The BLK IV Tactical Tomahawk missile is in a full-rate production status and the Fiscal Year 2009 Budget request is $281.1 million for an additional 207 BLK IV weapons and associated support.

Harpoon Block III Anti-Ship Cruise Missile

The Department of the Navy is upgrading our air-launched and surface-launched Harpoon cruise missiles to provide the all-weather, anti-surface warfare (ASuW) capability needed to operate with 'improved selectivity' in the cluttered littoral environment. Under the Harpoon BLK III Program, the Navy is upgrading this very capable system to enhance our standoff ASuW operations by integration of: network; two-way data-link; and GPS capability for use under stringent littoral battle-space rules of engagement. The Fiscal Year 2009 Budget requests $68.2 million in RDT&E,N to continue development of this capability.

Small Diameter Bomb (SDB II)

The Department of the Navy is partnering with the Air Force on the development of the Small Diameter Bomb II (SDB II) program. SDB II provides an adverse weather, day or night standoff capability against mobile, moving, and fixed targets - that also allows for target prosecution while minimizing collateral damage. SDB II is of special interest to the Department as it will be integrated into the 'internal carriage' of Navy/Marine Corps variants of the Joint Strike Fighter (JSF). SDB II acquisition consists of a competitive development, risk reduction phase between two industry teams with a down-select at Milestone-B that is estimated to occur

in early Fiscal Year 2010. The FY 2009 Budget requests $19.6 million of RDT&E,N for the continued development of this joint program.

Advanced Anti-Radiation Guided Missile (AARGM)

The AARGM development program transforms the legacy High-Speed Anti-Radiation Missile (HARM) into an affordable, lethal, and flexible time-sensitive strike weapon system. AARGM adds multi-spectral targeting capability with supersonic fly-out to destroy sophisticated enemy air defenses and expand upon the traditional anti-radiation missile target set. The program has completed all design reviews, began its formal test program in Fiscal Year 2007, and is scheduled to be deployed on the F/A-18 Hornet in 2010. The Fiscal Year 2009 Budget requests $16.4 million for the development and test program and $42.7 million for low-rate initial production of tactical and training weapons.

Sidewinder AIM-9X Air-to-Air Missile

The Joint Navy/Air Force (Navy led) Sidewinder missile is the newest variant of the Sidewinder family and is the only short-range infrared Air-to-Air missile integrated on USN/USAF strike-fighter aircraft. This 5th Generation-9X weapon incorporates high off-bore sight acquisition capability and thrust vectoring to achieve superior maneuverability and provides increased sensitivity through an imaging infrared focal plane array seeker and advanced processing. The Fiscal Year 2009 Budget requests $6.7 million for research, development and test efforts, and $57.5 million for production of 205 all-up-rounds and associated hardware.

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

AMRAAM is a Joint Navy/Air Force (Air Force led) advanced, medium range missile that counters existing aircraft and cruise missile threats with advanced electronic attack capabilities operating at high/low altitudes from both beyond visual range and within visual range. AMRAAM provides an Air-to-Air First Look, First Shot, First Kill capability working within a networked environment in support of the Navy's Sea Power-21 Theater Air and Missile Defense Mission Area. The Fiscal Year 2009 Budget requests $8.6 million for research, development, test and evaluation efforts and $146.8M for production of 147 all-up-rounds and associated hardware.

IV. OTHER

Aviation Safety

At present, we are half way through FY 08 and are seeing an increase in our mishap rate. Specifically, nine Class A Flight Mishaps (FM) at a 2.33 per 100K flight hour rate compared to one Class A FM 0.27 per 100K flight hour rate this time last year. We see no trends in causal factors. Analysis shows mishaps have been in multiple communities in both training commands and operational commands and have been distributed across fixed wing and helicopter aircraft (seven fixed wing and two helicopter). Preliminary investigations additionally have indicated a

mix between human factors and material failures along the same lines as historical trend. (Historical causal factor trends are approximately 80% human factors and 20% material failures over the last 10 years.) Human factors continue to dominate the mishap causal factors.

Navy aviation leadership has identified this increase in the current mishaps trend and a personal message addressed to every Navy aviator to energize a "back to basics" operational risk management initiative. Additionally, Navy leadership has released a message to all Naval Air forces commands for everyone to take an active role in reducing the current mishap rate.

A-12 Litigation Status

Each contractor has appealed the May 3, 2007 decision by the U.S. Court of Federal Claims that the government was justified in terminating the A-12 contract. The Appeal is currently in progress at the U.S. Court of Appeals for the Federal Circuit.

SUMMARY

The Fiscal Year 2009 President's Budget request reflects considerable effort in identifying affordable solutions for the Department's aviation programs through a balance between sustaining fielded capabilities, as they are employed in the GWOT and continued forward presence worldwide, and a substantive recapitalization effort that will deliver significantly

better capabilities to the war fighter. The Department's aviation acquisition team continues to work aggressively to identify efficiencies in the development, testing and subsequent procurement of platforms, components, and weapons systems in order to ensure that investments made result in quality products and services provided to the fleet.

In closing, Mr. Chairmen, we thank you for the opportunity to testify before your Subcommittees regarding the Department of the Navy's aviation programs.

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THE HOUSE ARMED SERVICES COMMITTEE
AIR AND LAND FORCES AND SEAPOWER AND
EXPEDITIONARY FORCES SUBCOMMITTEES

STATEMENT OF

LTGEN GEORGE J. TRAUTMAN III
DEPUTY COMMANDANT FOR AVIATION

BEFORE THE

AIR AND LAND FORCES

AND

SEAPOWER AND EXPEDITIONARY FORCES

SUBCOMMITTEES

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

FISCAL YEAR 2009 NAVY / MARINE CORPS AVIATION PROGRAMS

MARCH 11, 2008

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I. Introduction

Chairman Abercrombie, Chairman Taylor, Congressman Saxton, Congressman Bartlett, and Distinguished Members of the Subcommittees, thank you for the opportunity to appear before you to discuss Marine Corps aviation. The significant accomplishments of those who serve our Nation are a direct reflection of the tireless efforts and consistent support of the military by this Committee. Thank you for your dedication and oversight.

Marine Corps aviation continues to add to its rich legacy in the skies over Iraq and in support of operations with our friends and allies around the world. We have been fully engaged for the last six and a half years and we are prepared to continue that same level of operational tempo as long as it is required. We remain ever mindful of the historical precedence the Marine Corps has set through a virulent devotion to operational preparedness, fiscal responsibility and world class care of our Marines, Sailors and their families. This methodology has served us well in the past and will continue to do so in the future.

II. Stress on the Force - Aviation Commitments

These challenging times have highlighted the ever present need to expand, modernize and train our forces to cope with an uncertain future. Within Marine aviation, our sustained contributions to the current fight have necessitated a concerted effort to re-energize our commitment to readiness as the foundation of a flexible and adaptable warfighting force. We seek to maintain capabilities across the full spectrum of conflict in order to ensure our aging platforms and equipment seamlessly evolve into a future force that is characterized by integrated, cooperative, and distributed capabilities and concepts. Our vision portends a network-enabled and digitally interoperable expeditionary Aviation Combat Element (ACE) postured to execute responsive, persistent, lethal and adaptive full-spectrum operations. Within that framework, we have articulated three primary goals that will chart the course of Marine aviation for years to come. First, we expect to sustain our wartime operational tempo while improving current readiness and combat effectiveness through the efficient use of resources. Second, we will execute our planned type/model/series (T/M/S) transition strategies from our legacy platforms to the advanced capabilities associated with next generation platforms - F-35B, MV-22, UH-1Y, AH-1Z, KC-130J, CH-53K and Unmanned Aerial Systems (UAS). Finally, we will improve warfighting integration by developing new transformational concepts of operation (CONOPS) that will significantly enhance the systems that we are acquiring.

The Fiscal Year (FY) 2009 President's Budget request balances sustainment of legacy aircraft that are performing ably in current operations with continued recapitalization of more modern capabilities. The stress on the legacy forces remains considerable as our level of commitment has been sustained at a surge rate for the past several years. Before the current conflict, Marine aviation had a recurring commitment for 21 squadrons deployed with an additional 15 squadrons in training workups preparing to deploy. With the recent addition of the 24th Marine Expeditionary Unit (MEU) deployment to Afghanistan while our squadrons are still engaged in Iraq, our level of commitment is now 47 squadrons, with 68% of Marine aviation currently deployed or preparing to deploy.

Responding to the pressures of sustaining high operational tempo in support of current operations, Marine aviation has sought the means to mitigate the effects of these stressors. To frame this discussion of key aviation programs and efforts, an overview of the common context in which all of Marine aviation operates is in order. First, we must manage risk as we accomplish our mission. With exceptional leadership evident throughout the force, our aviation mishap records in 2006 and 2007 were the second and third lowest in our history. Second, our decision to seek full partnership in the Naval Aviation Enterprise (NAE) has placed us on a path to achieve optimized readiness and sustain the health of our assets into the future. The operational business models, support plans, and cooperative work exchanges resident within the NAE construct will lead to improved readiness and prepare our resources for future growth and transition. Third, the growth of the force to 202,000 Marines is vital to sustaining our current operational tempo while we prepare for any future conflict. This increase in manpower will enable us to train to the full spectrum of military operations while improving the ability of Marine aviation to address the future challenges of an uncertain environment. Our planned growth in personnel will reduce operational risk and recover our ability to respond to the clearly articulated needs of the Combatant Commanders.

The Commandant's plan to increase the size of the Marine Corps to 202,000 will have the net effect of increasing the total manpower strength dedicated to aviation by 15%. In order to relieve strain on the communities hardest hit by the current deployment tempo, we will increase the number of Marine Light Attack Helicopter Squadrons (HMLA) by three, Marine Heavy Helicopter Squadrons (HMH) by three and Marine Unmanned Aerial Vehicle Squadrons (VMU) by one within the active force. Increasing the total number of squadrons in each of these communities will ease excessive strain on the force in the near term and will have the secondary

benefit of balancing the Marine Air Ground Task Force's (MAGTF's) warfighting capability in the long term.

III. Sustainment of Legacy Aircraft and Systems

The Marine Corps' aging fleet of tactical and rotary wing aircraft is the oldest in the Department of Defense. Exacerbating the impact of combat losses and high operational tempo, legacy aircraft production lines are no longer active. Sustaining these legacy aircraft has become increasingly more expensive and time consuming for our maintainers. For each legacy platform, we strive to make prudent investment in systems upgrades as a mitigating bridge to the future capabilities we desperately need. The Marine Corps' Tactical Aviation (TACAIR) platforms, the AV-8B *Harrier*, the F/A-18 A+/C/D *Hornet* and the EA-6B *Prowler*, are rapidly approaching the end of their planned service lives. Many of our assault support platforms, the CH-46 *Sea Knight*, the UH-1N *Huey*, the CH-53D *Sea Stallion* and the KC-130F/R *Hercules*, date back to the Vietnam era yet they continue to deploy at extremely high turnaround rates in order to meet Marine aviation's requirements in support of global commitments. Currently flying between two and five times their programmed utilization rates while in support of operations in Iraq, these aircraft must remain relevant, not only to the irregular fight we're in now, but also to the multitude of contingencies our forces may face in the future.

AV-8B Harrier

The FY 2009 Budget requests $29.9M RDT&E funds to support development of the AV-8 Engine Life Management Plan (ELMP)/Engine Monitoring System, Tactical Moving Map Display, the Readiness Management Plan (RMP), and moving the LITENING targeting pod to the aircraft's centerline station. This effort will increase the ordnance carriage capability of the Harrier to better support combat operations. The FY 2009 Budget also requests $54.5M procurement funding for the Open Systems Core Avionics Requirement (OSCAR), ELMP upgrades, and the RMP, which addresses aircraft obsolescence and deficiency issues associated with sustaining the current AV-8B fleet. Additionally, the LITENING targeting pod will be upgraded to the latest configuration to better support the warfighter. Finally, the AV-8B program is upgrading a day attack aircraft to a night attack configuration as part of the attrition recovery effort to address significant legacy inventory shortfalls until transition to the F-35B.

F/A-18 A+/C/D Hornet

The FY 2009 Budget requests $96.4M (APN-5) for the continuation of the systems upgrade programs for USMC legacy F/A-18 platforms. Included in this request is the continued procurement of successful programs such as Joint Helmet Mounted Cueing System, Multi-Function Information Distribution System, and Digital Communications System. The Marine Corps continues avionics upgrades to Lot 17 F/A-18C aircraft, as well as upgrading other F/A-18 aircraft with digital communications and tactical data link. The ongoing upgrade to the F/A-18C/D with digital communications, tactical data link and tactical reconnaissance systems ensures our F/A-18s remain viable on the battlefield and relevant partners in the Department of the Navy's Tactical Air Integration plans. We are experiencing great success employing the LITENING targeting pod on the F/A-18A+/C/D aircraft in OIF. When combined with data link hardware and the Rover Ground Station, the LITENING pod provides real time video to ground forces engaged with the enemy, adding a new dimension to precision fires and Intelligence, Surveillance, and Reconnaissance (ISR). Our fleet of legacy F/A-18D's is currently flying at three and half times their programmed rate. Given this high utilization rate, our sustainment initiatives are critical to ensuring we have adequate numbers of F/A-18's to meet our requirements until we transition to the F-35B.

EA-6B Prowler

The Marine Corps remains fully committed to the EA-6B as we look to enhance our legacy capabilities and posture to create a future Electronic Warfare (EW) capability comprised of a networked system-of-systems (F-35B, Unmanned Aerial Systems and other relevant air and ground systems). The Prowler continues to maintain an extremely high deployment tempo supporting operations against growing and diverse irregular warfare threats. Ongoing structural improvements and the planned Improved Capabilities III upgrades have extended the aircraft's service life and will deliver increased capability through its Program of Record of 2016. The Prowler has the highest utilization rate of any aircraft in our inventory while operating at an unprecedented five times its peace time utilization when deployed to Iraq. The FY 2009 Budget requests $33.4M for the procurement of ALQ-99 pod upgrades to sustain the capability of this national asset until it is replaced by the constituent components of a networked array of EW systems.

CH-53 Sea Stallion

The CH-53D/E Sea Stallion provides unparalleled combat heavy lift to the Marine Air Ground Task Force (MAGTF). While these aircraft are achieving unprecedented operational milestones, they are reaching the end of their service life (the CH-53D has been operational for over 38 years and CH-53E is approaching 30 years) and will be incapable of supporting the Marine Corps' future warfighting concepts. To keep these platforms viable until the CH-53K is procured, the FY 2009 Budget requests $56.4M targeted at a variety of near-term enhancements including the Force XXI Battle Command Brigade and Below (FBCB2) Blue Force Tracker, ballistic armor kits, T-64 Engine Reliability Improvement Program kits and improvements to engine operation at increased Power Inlet Temperature (T5) operating limits for increased power margin at higher operating altitudes.

CH-46E Sea Knight

The venerable CH-46E continues to perform well and is poised to maintain operational relevancy through its projected retirement in 2018. The FY 2009 Budget requests $34.6M targeted at improvements and enhancements in dynamic components, avionics, and ASE that will sustain the health of the airframe as we progress through the transition to the MV-22. Only the Marine Corps could maintain a fleet of helicopters that will be over 50 years old when they retire and yet still remain relevant and engaged in the protection of the nation. This is a true testament to the men and women of the CH-46 community who work so hard to keep these aircraft in the fight.

AH-1W Cobra/UH-1N Huey

Sustaining and improving our aged utility and attack helicopter fleet is an imperative necessary to support our deployed forces while we continue our efforts to upgrade the UH-1N and AH-1W to the Yankee and Zulu variants, respectively. The FY 2009 Budget requests $6.4M for the AH-1W and $8.9M for the UH-1N. Current upgrade efforts to the legacy AH-1W include 20MM cannon reliability enhancements and completion of the turned exhaust modification. UH-1N funding is requested to procure BRITE Star Block II night vision systems that will forward fit into the UH-1Y. These essential enhancements will ensure that both the UH-1N and the AH-1W are reliable, survivable, and lethal until the transition to the Yankee and Zulu is complete.

VH-3D/VH-60N

The FY 2009 budget requests an investment of $204M that will be used to extend the operational life and improve the capabilities of our legacy Presidential Support Aircraft (VH-3D and VH-60N). The improvements to our executive transport fleet focus on key component upgrades combined with a Service Life Assessment/Extension Program. The key component upgrades for the VH-3D will be the addition of Carsen Blades as part of the Lift Improvement Program and several survivability improvements. VH-60N upgrades will focus on technology insertion in a cockpit upgrade. The investment in both aircraft will include a Service Life Assessment/Extension Program which will ensure continued safe and reliable executive transport until integration of the VH-71 occurs.

Aviation Survivability Equipment (ASE)

In order to provide increased protection for our critical assets we have developed and procured improved ASE for assault support aircraft. We continue to mitigate threats to rotary wing aviation through a combination of tactics, centralized command and upgrades to existing equipment. To prevent current technology lagging behind the threat, increased Science and Technology (S&T) focused on developing the next generation helicopter survivability equipment is required. For FY 2009 the Department of the Navy has requested $38.9M for continued Directed Infrared Countermeasures (DIRCM) RDT&E, and hardware procurement (APN-1/5/6). This state-of-the-art ASE will enable Marine aviation to pace the threat of advanced anti-aircraft systems proliferation. Funds obligated to date have been used for development and first year procurement which will begin delivery of 72 systems in October 2008. The remaining unfunded portion is for an additional 70 systems equating to one year production capacity in 2009. Continued support of this critical need for our fleet of aircraft is greatly appreciated as we ensure our pilots and aircrew have the most current survivability technology available to them.

Aviation Weapons Programs

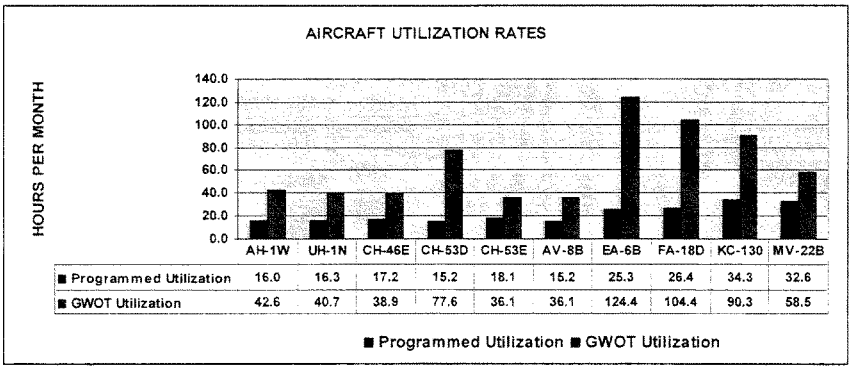
Over the past year Marine aviation flew over 115,000 combat hours, delivered over 2,700 precision-guided munitions, and dropped over 4,000 bombs. The FY 2009 Budget requests funding for precision-guided munitions (PGM) programs that continue to support combat operations.

a. Joint Air to Ground Missile (JAGM). The Marine Corps has expended over 1,500 Hellfire and 1,000 TOW air-to-ground missiles in support of ground forces engaged in combat since 2003. A low collateral damage PGM for moving targets, like JAGM, is critical for Marine aviation as a replacement for our aging stockpiles of TOW, Hellfire and Laser Maverick family of weapons. The FY 2009 budget requests $183.7M.

b. Advanced Precision Kill Weapon System (APKWS). The past year has witnessed the successful test firing of the laser guided 2.75" rocket. This initiative seeks to provide a precision capability to a once unguided rocket fired from attack helicopters. The $6M provided by Congress in FY 2008 ensured continued development of this capability and the FY 2009 Budget request of $13.1M will complete development in anticipation of procurement beginning in 2010.

IV. Resetting the Force

Resetting Marine aviation means getting more capable and reliable aircraft into the operational deployment cycle sooner; not merely repairing and replacing damaged or destroyed aircraft. The operational demands and harsh environments of Iraq, Afghanistan, and the Horn of Africa highlight the limitations of our aging fleet. While deployed, our aircraft are flying at two to five times their designed utilization rates (Figure 1).



	AH-1W	UH-1N	CH-46E	CH-53D	CH-53E	AV-8B	EA-6B	FA-18D	KC-130	MV-22B
Programmed Utilization	16.0	16.3	17.2	15.2	18.1	15.2	25.3	26.4	34.3	32.6
GWOT Utilization	42.6	40.7	38.9	77.6	36.1	36.1	124.4	104.4	90.3	58.5

Figure 1

Maintaining the readiness of our aviation assets, while preparing aircrews for their next combat rotation is, and will continue to be, an enormous effort and constant challenge for our Marines. To maintain sufficient numbers of aircraft in deployed units, our home based squadrons have taken significant reductions in aircraft and parts — resulting in a 30% decrease in the number of non-deployed units that are "deployment capable" over the last five years.

Reset programs have helped us mitigate degradation of our aircraft materiel readiness through aircraft modifications, proactive inspections and additional maintenance actions. The reset funding provided by Congress has been absolutely essential to our ability to maintain and sustain our legacy force during this stressful period. Moreover, it has enabled us to create avenues to build the long term health of Marine aviation and served as a catalyst to establish reliability-centered processes and practices with proactive and forward looking metrics. Continued funding support is critically needed as we are simply running short of aircraft on our flight lines due to age, attrition and wartime losses.

Our Current Readiness (CR) aviation logistics improvement strategy is now a mature pillar within the Naval Aviation Enterprise. We have developed a clear set of readiness improvement goals and implemented business rules that provide top-down performance alignment from the Marine Force (MARFOR) Commanders and the Deputy Commandant for Aviation down to individual squadrons. The Marine Aviation Executive Readiness Board (MAERB), comprised of the four Wing Commanders and Deputy MARFOR Commanders, provides recurring oversight to the process which is enabled by T/M/S teams, each led by a subject matter expert Marine Aircraft Group Commander. The T/M/S teams define their standards and readiness goals and provide focus of effort and alignment to AIRSpeed concepts (the integrated application of theory of constraints, Lean and Six Sigma). This process not only enables efficiencies in the current maintenance and supply environment, but also postures our logistics effort for future success as we neck-down our airframes in concert with the Marine Aviation Plan.

Improved aviation logistics readiness processes and dedicated reset programs have helped us mitigate degradation of aircraft materiel readiness through the wise application of aircraft modifications, proactive inspections and additional maintenance actions. These efforts have successfully bolstered aircraft reliability, sustainability and survivability even in the face of high utilization rates. Nevertheless, additional requirements for depot level maintenance on airframes, engines, weapons and support equipment will continue well beyond the conclusion of current hostilities.

V. Modernizing Marine Aviation

The Marine Aviation Plan provides the way ahead for Marine aviation over the next 10 years as we transition 39 of 69 squadrons from 13 legacy aircraft models to 6 new ones. The plan also incorporates individual program changes and synchronizes support of our end strength growth to 202,000 Marines.

MV-22 Osprey

The transformational tilt-rotor MV-22 is now in Full Rate Production (FRP). The 360 MV-22 aircraft planned for procurement by the Marine Corps will bring revolutionary assault support capability to our forces in harm's way. The MV-22 is replacing the CH-46E aircraft which is over forty years old and has limited lift and mission capabilities to support the MAGTF.

The FY 2009 Budget requests $2.2B in APN for procurement of 30 MV-22s and the continued development of follow-on block upgrades. Like the F-35, the MV-22 has implemented a block improvement strategy. Block "A" aircraft are training aircraft, Block "B" are operational aircraft, and Block "C" aircraft are operational aircraft with mission enhancements that will be procured in FY10 and delivered in FY12.

The current inventory of 57 operational MV-22 aircraft are home based at Marine Corps Air Station New River, North Carolina. Our aviation plan projects the transition of two CH-46 HMM squadrons to VMM squadrons each year by leveraging the 30 aircraft per year requested in the Multi-Year Procurement (MYP) plan submitted in FY 2008. At the current rate of production, the transition to MV-22 will be complete in 2018.

With Initial Operational Capability (IOC) declared last June, the MV-22 program met another important milestone when VMM-263 deployed to Al Asad Air Base, Iraq in October 2007. Supporting our Marines in combat, the MV-22 has performed beyond expectations. Flying at almost twice the designed utilization rates, the squadron has averaged seven out of ten mission ready (70% MR) aircraft per day for the five months of this initial combat deployment. As an example of the Osprey's operational utility, a flight of just two MV-22s can accomplish its assigned missions in half the time it takes four CH-46s to carry out the same tasks. Additionally, the aircraft's operational reach spans the entire range of the area of operations assigned to Multi-National Force – West in Iraq while flying a majority of its mission profile outside the typical assault support threat envelope. The fleet needed an aircraft that could take us farther, faster, and safer – and now thanks to the foresight and support of Congress, it is here.

F-35B Lightening II (Joint Strike Fighter (JSF))

The December 2007 rollout of the first production F-35B Short Take-Off / Vertical Landing (STOVL) aircraft marked the beginning of the transition from production to testing of the technologically superior 5th generation platform that will become the centerpiece of Marine TACAIR. As developmental testing continues, we will see issues resolved and expectations achieved to attain our planned IOC in 2012. The Lightning II will replace our aging F/A-18 and AV-8 legacy fleet with state-of-the-art aircraft that will be fully network enabled and digitally interoperable in support the MAGTF across the full spectrum of combat operations.

F-35B development is on track with the first flight of BF-1 (the JSF STOVL variant) scheduled for the summer of 2008. The FY 2009 budget requests eight aircraft for delivery in FY 2010. These aircraft will support pilot transition training and are essential to preserving our IOC of FY 2012. When the JSF transition is complete in 2024, the F-35B will provide a quantum leap in capability and basing flexibility for our Corps.

KC-130J Hercules

KC-130J Hercules aircraft are continuously deployed in support of Operation Iraqi Freedom providing multi-mission, tactical aerial refueling, and fixed-wing assault support. Its theater logistical support reduces the requirement for resupply via ground, limiting the exposure of our convoys to Improvised Explosive Devices (IEDs) and other surface-borne attacks. The recent introduction of the aerial refuelable MV-22, combined with the retirement of the legacy KC-130F/R aircraft due to fatigue life and parts obsolescence, requires accelerated procurement of the KC-130J.

The Marine Corps is programmed to procure a total of 46 aircraft by the end of FY 2013. To date, 29 new aircraft have been delivered, seven more are on contract and two aircraft are requested in the FY 2009 Budget for a total of 38. This is still 13 aircraft short of our inventory objective of 51 KC-130Js for the Active Force. Ultimately, the Marine Corps will also seek to replace our 28 reserve component KC-130T aircraft with KC-130Js, thus necking down our aerial refueling force to a single T/M/S.

AH-1Z Viper/UH-1Y Venom (H-1 Upgrades)

The H-1 Upgrade Program, comprised of AH-1Z Viper and UH-1Y Venom aircraft, will significantly enhance the tactical capability, operational effectiveness and sustainability of our

attack and utility helicopter fleet. Our Vietnam-era UH-1N's are reaching the end of their useful life, thus rapidly fielding the UH-1Y remains a top priority. The FY 2009 Budget requests $3.8M in RDT&E and $474.1M in APN for 20 AH-1Z/UH-1Y aircraft.

IOC for the UH-1Y will occur in 2008. The first operational deployment of UH-1Y's is anticipated in the spring of 2009. IOC for the AH-1Z is FY 2011. Eleven production aircraft have been delivered to date and Operational Evaluation (OPEVAL) Phase II, which commenced in February 2008, is ongoing. A full rate production decision is expected in late FY 2008.

The current AH-1Z program of record is utilizing a remanufacturing strategy which requires an AH-1W be removed from operational status for a period of two years. To mitigate this shortfall we are adopting a "build new" strategy that will allow the AH-1Ws to remain in operational squadrons while we manufacture AH-1Zs. The intent is to revert back to a remanufacturing strategy once the operational shortfall has been mitigated. The FY 2007 Supplemental provided $50M for Non-Recurring Engineering to pursue build new at a minimum of 50 AH-1Z aircraft.

CH-53K

In operation since 1981, the CH-53E is becoming increasingly expensive to operate. Its replacement, the CH-53K, will more than double existing lift capacity and range, while dramatically improving maintainability, reliability, and survivability, decreasing operating costs and radically improving aircraft efficiency and operational effectiveness. The program passed Milestone B in December 2005 with a subsequent contract awarded to Sikorsky Aircraft Corporation in April 2006. IOC is scheduled for FY 2015. The program is proceeding through the developmental stages and will begin to procure airframes in the FY 2013. The FY 2009 Budget request is $570.5M RDT&E to continue development through the Preliminary Design Review later this year and the Critical Design Review in FY 2009.

Unmanned Aerial Systems (UAS)

The Marine Corps is taking proactive steps to modernize and improve organic UAS capabilities. Our UAS are organized into three echelons, each tailored to the mission and requirements of the supported command. Tier III UAS serve at the Marine Expeditionary Force (MEF) level; Tier II UAS support Regimental Combat Team and Marine Expeditionary Unit operations; and Tier I UAS support battalion and below operations. At the Tier III level, we have

simultaneously transitioned Unmanned Aerial Vehicle Squadrons (VMU) to the RQ-7B Shadow and initiated a reorganization of the squadrons' force structure to better task-organize for mission requirements. The transition to the Shadow provides a temporary Tier III solution as a bridge from Pioneer to our expected Tier III IOC in 2015. As an interim solution, Shadow has been invaluable because it has enabled us to provide MAGTF Commanders with a far more responsive and reliable UAS than its predecessor, Pioneer. We have also begun the stand up of a third active component VMU squadron. The addition of a third VMU squadron is critical to sustaining current operations and will help in decreasing the operational tempo from our current deployment-to-dwell ratio of less than 1:1—to a more sustainable 1:2 ratio. This rapid transition and reorganization, initiated in January 2007, will be complete by the fourth quarter Fiscal Year 2009.

To best support our deployed forces, we have instituted an Intelligence, Surveillance and Reconnaissance (ISR) services contract to provide Scan Eagle systems to fill the Tier II void until future fielding of the Tier II/ Small Tactical UAS (STUAS) which will occur in 2011. At the Tier I level, the Marine Corps is transitioning from the Dragon Eye to the joint Raven-B program, which is also common with the U. S. Army. When fully fielded, our UAS family of systems will be networked through a robust and interoperable command and control system that provides commanders a significantly enhanced warfighting capability.

Aviation Command and Control Family of Systems (AC2FoS)

The Marine Aviation Command and Control System (MACCS) continues to contribute to the success of Marine aviation operations by planning and executing tactical air support while ensuring proper integration of aviation into the MAGTF scheme of maneuver. The future of Aviation Command and Control (AC2) is defined by a Family of Systems (FoS) designed to fuse real and near real-time data from sensors, weapons and C2 systems into a single integrated display. This fused data will be networked and distributed MAGTF-wide, increasing battle space awareness at all levels, from operators to commanders.

The centerpiece of the AC2FoS will be the Common Aviation Command and Control System (CAC2S) which replaces dissimilar legacy C2 equipment with a common, scalable suite. CAC2S will fuse the sensor inputs from expeditionary radars, as well as data from the F-35B and UAS assets, vastly improving full spectrum surveillance and awareness. Our continued focus will ensure emerging systems are fully interoperable and designed to enhance our capabilities, while leveraging these systems to facilitate effective command functionality. Armed with fully

networked systems, the MACCS will improve the ability to affect command, integrate resources, and employ Marine aviation most efficiently in support of MAGTF and Joint Force Commanders in the future.

Marine Aviation Training Systems

Modernizing Marine aviation has necessitated a thorough revitalization of our approach to training across the entire Aviation Combat Element domain. The Aviation Training System (ATS) is the result of a focused effort to develop a fully integrated training continuum that begins at the post-accession aviation officer and enlisted entry level. This new approach to training will greatly enhance operational readiness, improve safety through greater standardization, and significantly reduce the life cycle cost of maintaining and sustaining aircraft. We intend to plan, execute, and manage Marine aviation training to achieve individual and unit combat readiness through standardized training across all aviation core competencies. The three core elements enabling ATS are training device configuration and standardization; a systems approach to training derived curriculum; and standardization and evaluation of flight leadership and operating procedures. We have recently learned a great deal from work we have done with industry in the MV-22 and KC-130J programs about how to best accomplish our training objectives. The way forward includes the continued standup of Marine Aviation Training Systems Squadron (MATSS) sites to be located at each Marine Corps Air Station. All ATS efforts are targeted at providing our commanders with the tools they need to improve combat readiness through operational excellence and the preservation of our precious warfighting assets and people.

Future of Electronic Warfare

Beyond the Prowler, the future of EW within the Marine Corps will be comprised of a networked system-of-systems. The constituent components of this network include the F-35B Joint Strike Fighter, with its impressive array of embedded EW capabilities; UAS capable of carrying scalable and specifically tailored EW payloads; ISR pods and payloads; Next Generation Jammers (NGJs) operating from multiple platforms; and ground systems already fielded or under development. This system will possess both offensive and defensive capabilities. A key tenet of our future vision is the array of EW capabilities accessible throughout the battle space, not just those that reside on dedicated EW platforms, with the individual pieces of hardware used as tentacles of the distributed EW network. This is a critical and important distinction that promises

to make USMC EW capabilities more readily available and applicable to MAGTF and Joint Force Commanders of the future in ways that are only now beginning to be well understood and exploited.

VI. Conclusion

The Marine Corps has a heritage of fighting battles and winning wars on the ground, at sea and in the air. Since 2001, we have done so while supporting extremely high operational tempo, conducting combat operations, growing the force and introducing new aircraft and systems. My respect for the accomplishments of the men and women who comprise Marine aviation, past and present, is only exceeded by my confidence that we are poised to meet our future challenges. As we move forward we will execute the Marine Aviation Plan with a careful eye to maximizing efficiency gained early in each T/M/S transition. The resources Congress provides will continue to be used wisely in direct support of our most precious and important asset - the United States Marine. Thank you for your consideration.

UNCLASSIFIED

House Armed Services Committee
Air and Land Forces and Seapower and Expeditionary Forces Subcommittee

March 11, 2008

Subject: TACAIR

Combined Statement of
Lt Gen Donald Hoffman (SAF/AQ)
Lt Gen Daniel J. Darnell (AF/A3/5)

I. Introduction

Your Air Force is actively fighting terrorism and insurgents around the world in the Global War on Terror (GWOT), and we appreciate the House Armed Services Committee's continued support of our Nation's air, space, and cyberspace forces. Since the GWOT began, congressional supplemental funding each year, including the $5.5 billion provided for FY08, ensured that your Airmen deployed in combat overseas are trained, equipped, and ready day-to-day to perform their mission. As we prepare for the next year of global operations, the Air Force is grateful for the Subcommittee's support provided through the 2008 National Defense Authorization Act, and as always, we appreciate the great lengths to which the subcommittee has gone to support Airmen, their pay, and their quality of life.

In the GWOT, we continue to fulfill our roles as Airmen for the Joint team working with our sister services to provide the desired effects to the Combatant Commanders. Simultaneously, we stand prepared for rapid response and conflict across the globe as our Nation's sword and shield. For over 17 years, the United States Air Force has been engaged in continuous combat operations providing our Nation unparalleled advantage in three war fighting domains: Air, space, and cyberspace. Your Airmen have maintained constant watch, deployed continuously, engaged America's adversaries directly, responded to human crises around the world, and provided the *Global Vigilance*, *Global Reach*, and *Global Power* to secure our Nation.

Your Air Force is the most battle-tested in Air Force history, and every day your Airmen find innovative ways to accomplish their mission more efficiently and effectively. Your Airmen are dedicated to the defense of this Nation and have committed themselves to go to the ends of the Earth, to the most dangerous or austere locations, in our Nation's hour of need or in the world's moment of despair. If tonight, tomorrow, or in 20 years America calls; we will go, because it is our sacred oath to provide America and its Joint team, wherever it might be engaged, the full might of air, space, and cyberspace power.

To ensure success, your Air Force is organizing, training, and equipping our Airmen for both the current and future fights, building in the flexibility to operate across the entire spectrum of conflict. It is no accident that America's Air Force has unprecedented *Global Vigilance, Global Reach,* and *Global Power*. We learned our lessons from our own history and others', and we invested resources and effort to establish and maintain dominance in our three warfighting domains: Air, space and cyberspace. Even after the victory in Operation DESERT STORM, the Air Force upgraded, modernized, and completely changed its training mindset and programs. The result was a flexible, responsive, and lethal force that contributed greatly to the Joint successes in Operations ALLIED FORCE (OAF), ENDURING FREEDOM (OEF), and IRAQI FREEDOM (OIF). Even with these advances, Airmen continue to find ways to improve the combat power provided to the Joint team. Your forces engaged in combat today are fully ready to perform their missions, but future dominance is at risk.

America faces a dangerous and uncertain future and our enemies do not sit idly by. Instead, adversaries – both declared and potential – are developing and fielding new and better means to threaten our Nation, our interests, and stability around the world. At the same time, the average age of our air and space craft continues to rise, and our ability to overcome future threats is diminishing. We also face increased operations, maintenance, and personnel costs that cut into

our ability to finance future dominant capabilities. We are doing all they can to become even more efficient and effective and to defray these costs. Despite our best efforts, we face declining readiness and soaring recapitalization rates. Therefore, we have taken significant steps to self-finance a vital recapitalization and modernization effort for our aging air and space force. The Air Force must be capable of setting the conditions for America's success against emerging threats in the uncertain years that lie ahead.

II. Win Today's Fight

Our first priority is to win today's fight. Air Force GWOT missions are only the latest in a string of over 17 continuous years of combat since Operation DESERT STORM began. Throughout this period, our strategic forces have remained on constant alert. In fact, the United States Air Force has underwritten the national strategy for over 60 years by providing a credible deterrent force, and we continue to serve as the Nation's force of first and last resort, reassuring allies, dissuading competitors, and deterring adversaries by maintaining an always-ready nuclear arm.

Today, Air Force operations are on-going in Iraq, Afghanistan and the Horn of Africa (HOA). Every day, your Air Force flies over 300 sorties in Iraq and Afghanistan directly integrated with and enhancing ground operations. Since GWOT operations began, your Air Force has flown over 80% of the coalition's combat sorties in support of OIF and OEF. These missions provide the Joint and Coalition team airlift, aero-medical evacuation, air-refueling, Command and Control, close air support to ground operations, strike, Intelligence, Surveillance, and Reconnaissance (ISR), and electronic warfare. We have flown over 385,000 mobility sorties moving equipment and troops to and from the CENTCOM Area of Responsibility (AOR). Our intra-theater airlift missions shift convoys to the air eliminating the need to place troops and vehicles in harms way. Aero-medical evacuation missions move wounded Soldiers, Sailors,

Marines, and Airmen to higher levels of medical care at hospitals as far away as the continental United States. In 2007, America's Airmen conducted nearly 1,600 precision strikes in Iraq and Afghanistan, many under the control of Joint Tactical Air Controllers. In Iraq, strikes increased by 171% over the previous year. Added to those numbers, your Air Force has flown over 50,000 sorties protecting the homeland for Operation NOBLE EAGLE.

Air Force engagement in CENTCOM is only the tip of the iceberg. Airmen operate around-the-clock and around-the-globe to provide all Combatant Commanders (COCOMs) with critical capabilities. Over 40 percent of the total force and 53 percent of the active duty force are directly engaged in or supporting COCOM operations everyday. On any given day, the Air Force has approximately 206,000 Airmen (175,000 active duty plus an additional 31,000 guard and reserve) fulfilling COCOM tasks. This includes approximately 127,000 Airmen conducting activities such as operating and controlling satellites, standing alert in our Inter-Continental Ballistic Missile (ICBM) facilities, operating unmanned aerial vehicles, launching airlift and tanker sorties, providing intelligence assessments, and many other functions critical to each of the COCOMs. There are a further 57,000 Airmen stationed OCONUS in direct support of the PACOM and EUCOM missions. Finally, a portion of the above forces plus an additional 22,000 Airman from the current AEF rotation are made available for deployments in support of other COCOM requirements. At any given time, 34,000 of these Airmen are deployed with 25,000 of them deployed to the CENTCOM AOR of which approximately 6,200 are in-lieu-of (ILO) taskings with Airmen filling Army deployment requirements. Since 2004, we have deployed approximately 24,000 Airmen to perform ILO taskings.

III. Air Force Programs

As requested by the subcommittee, the following information provides updates on Air Force programs:

Joint Strike Fighter Alternative Engine Program

The Department continues to believe the risks associated with a single source engine supplier are manageable and do not outweigh the investment required to fund a competitive alternate engine. However, the Air Force and Navy are executing the $480M appropriated by Congress in the 2008 budget to continue development. We have completed the Critical Design Review for the alternate engine in February 2008 and we have completed over 300 hours of engine testing for the conventional take-off and landing aircraft.

The cost to complete remaining F136 development is estimated at $1.4B in Research, Development, Test and Evaluation through 2013. Starting in 2009, continuing the F136 program would require increased procurement to fund the costs of having a second engine on the production line and increased sustainment.

Airborne Electronic Attack (AEA)

A validated requirement for the AEA was established when the Joint Requirements Oversight Council (JROC) approved the Initial Capabilities Document (ICD) on 8 November 2004. The ICD findings are congruent with the results of the AEA analysis of alternatives (AoA) released in 2002 and revalidated by Under Secretary of Defense for Acquisition, Technology and Logistics in 2007. The ICD highlighted three requirements: Timely and accurate threat detection, identification and location; neutralize, destroy, and degrade enemy air defenses; provide access and protection, and affect adversary's information process, systems, and networks.

The Defense Department solution for electronic attack, as reported to Congress in March 2004, included stand-in jamming with the Miniature Air-Launched Decoy - Jammer (MALD-J) and the Joint Unmanned Combat Air System (J-UCAS), modified escort with the EA-6B and EA-18G, penetrating escort using Active Electronically Scanned Array (AESA) radar-equipped

aircraft, and stand-off jamming using the B-52 Stand-Off Jammer (SOJ) for radars and the EC-130H Compass Call for communications jamming.

Congress deferred PB-08 funding for MALD initial production to the FY08 GWOT supplemental. With Congress' inclusion of this funding in the FY08 GWOT supplemental, the MALD program is on schedule and on cost with initial fielding expected in FY10. MALD-J begins System Development and Demonstration (SDD) in FY10 with initial fielding in FY12.

In December 2005, PBD-720 cancelled the B-52 SOJ program due to requirements creep and escalating costs, which jeopardized the ability of the Air Force to meet stand-off jamming requirements by 2012. In response, the Air Force proposed Core Component Jammer (CCJ), refocusing the B-52 SOJ program using fewer assets and more tightly focused radio frequency (RF) spectrum receivers and jammers. CCJ will fulfill the ICD validated requirement for stand-off jamming, and the program adjusts the number of aircraft requiring modification while leveraging receiver technology from the Navy's EA-18G. To date, the proposed CCJ program is unfunded. However, the Air Force is pursuing technical maturation efforts for a possible stand-off jamming solution. Toward this effort, the Air Force increased technical maturation funding in PB08 by $20.5 million and in PB09 by $52 million. The Air Force also applied the $4 million Congressional add in PB08 to risk reduction efforts in pod development and design. The Air Force is investigating phased array weight and power requirements; systems architecture refinement; and development of low-band and mid-band phased array suppliers in order to increase technical readiness levels and position the Air Force for a possible program start of an affordable stand-off capability in the near future.

The EC-130 Compass Call is a low density/high demand asset. The demand for its capability continues to increase with aircraft performing in both theaters. There are currently no plans for recapitalizing the Compass Call fleet or modernizing its avionics.

In summary, to meet the validated AEA requirements, the Air Force must provide a complete AEA capability composed of: sufficient sensing (e.g. threat identification and geo-location) to support reactive jamming; full frequency coverage; stand-in jamming; and specialized high power jamming along with modernized self protection systems and electronic support systems. The Air Force must bring MALD-J to the field by 2012; keep Compass Call viable; modernize the fleet with: digital Radar Warning Receiver (RWR) and Electronic Warfare Integrated Reprogramming (EWIR) capability; and update self-protection pods with Digital Radio Frequency Memory (DRFM) capability. Finally, it is imperative that the Air Force continue technical maturation of Core Component Jammer, to include the possible funding in the Program Objective Memorandum (POM) 10 process for a flight demonstration, in order to achieve a stand-off jam solution.

JASSM and JASSM-ER

The ability to neutralize an enemy's defenses and warfighting infrastructure in an anti-access environment provided by Joint Air to Surface Stand-off Missile (JASSM) remains essential to national security and the Air Force continues to support it. JASSM recently completed a flight test characterization program to clearly understand the missile reliability, demonstrate corrective actions, and provide a complete body-of-knowledge assessment for the Under Secretary of Defense for Acquisition, Technology and Logistics. These flights support the Nunn-McCurdy certification process. We are confident that the missile's merits and recent flight test successes will allow this critical weapon system to gain certification, return to full rate production and restart the enhancement efforts.

If the program is recertified in the April/May timeframe, the baseline JASSM would not require a restructure; however, beyond May, the program is in jeopardy of a production break. JASSM-Extended Range (JASSM-ER) will require a restructure based on a production delay.

The first JASSM-ER activity upon recertification is to complete procurement and assembly of the 12 operational test assets and resume flight testing.

F-22A Procurement Plans

We're proud to tell you the F-22 program has established a world class production program. The F-22A production program is currently delivering Lot 6 aircraft ahead of scheduled contract delivery dates at a rate of about two per month. Additionally, construction has started on Lot 7 Raptors, the first lot of the three-year multiyear procurement contract we awarded last summer. When the plant delivers the last aircraft of Lot 9 in December 2011, we will have completed the program of record of 183 Raptors. The Air Force supports the President's Budget and greatly appreciates the SECDEF commitment to keep the F-22 production line open through a supplemental request. Because of our economic order quantity buy under the multiyear contract, some vendors early in build process will complete deliveries and begin shutdown in November this year (2008). As such, we are on track to release a shutdown request for proposal later this summer and we anticipate FY09 shutdown costs to be $40M.

On the current unfunded requirements list, we requested an additional $600M to buy four more aircraft to replace GWOT losses of legacy aircraft. These aircraft would be dovetailed in at the end of Lot 9 and will only keep the production line open for an additional two months. If we want to keep the line open and deliver an additional F-22 Lot, then the Air Force would require $595.6M in FY09 for Advance Procurement of 24 aircraft. In either case, we are at a critical cross-road: we must make a decision by November to avoid increased costs and a break in the production line before our suppliers begin to exit the market.

F-22A Future Capabilities & Modifications

The F-22A Raptor is the Air Force's primary air superiority fighter, providing unmatched capabilities for operational access, homeland defense, cruise missile defense, and force protection for the Joint Team. The multi-role F-22A's combination of speed, stealth, maneuverability and integrated avionics gives this remarkable aircraft the ability to penetrate and survive in anti-access environments. Its unparalleled ability to find, fix, track, and target enemy air and surface-based threats ensures air dominance and freedom of maneuver for all Joint forces.

The Air Force has accepted 113 F-22A aircraft to date, out of a programmed delivery of 183. Most of these aircraft include the Increment 2 upgrade, which provides the ability to employ supersonic JDAM and enhances the intra-flight data-link (IFDL) to provide connectivity with additional F-22s. The F-22A fleet will be upgraded under the JROC approved Increment 3 upgrade designed to enhance both air-to-air and precision ground attack capability. Raptors off the production line today are wired to accept the Increment 3.1 upgrade. which when equipped, upgrades the APG-77 AESA radar to enable synthetic aperture radar ground mapping capability and provides the ability to self-target JDAMs using on-board sensors, and allows F-22s to carry and employ 8 small diameter bombs (SDB). Increment 3.1 is funded and begins to field in FY2010. Future F-22s will include the Increment 3.2 upgrade, which are funded and feature the next generation data-link, improved SDB employment capability, improved targeting using multi-ship geo-location, automatic ground collision avoidance system (Auto GCAS) and, the capability to employ our enhanced air-to-air weapons (AIM-120D and AIM-9X). Increment 3.2 should begin to field in FY13. The Increment 3.3 upgrade is currently unfunded. It plans to include Mode 5/S, which is the next generation Identification Friend or Foe (IFF) and advanced air-traffic control transponder, radar auto search/auto detect, which gives automated target

cueing using fourth generation AESA radar, and a ground-moving-target-indicator-and-tracking capability.

CSAR-X

The Combat Search and Rescue (CSAR) mission is an Air Force core competency, and the Air Force is the only service with dedicated forces organized, trained, and equipped to perform this mission. Safely securing and returning our Airmen and members of the Joint and coalition team is a moral imperative that we owe our Nation and its allies. The CSAR recapitalization program (CSAR-X) is the Air Force's number two acquisition priority. The CSAR-X helicopter will provide a more capable, reliable and responsive means for rapid recovery of downed, injured or isolated personnel in a threat environment, day or night, and under adverse weather conditions. The CSAR-X will also be capable of supporting military operations other than war such as non-combatant evacuation and disaster relief operations.

The Air Force is committed to openness and transparency while maintaining the integrity of our acquisition processes to procure an aircraft that will meet our warfighters' needs. Purchasing the entire 141 CSAR-X aircraft will relieve the strain caused by the high operations tempo placed on the current inventory of 101 aging HH-60G Pave Hawk helicopters. The submission period for the Request for Proposal Amendment #5 closed on January 7, 2008 and the proposals were received. The evaluation is underway, with Army and Navy helicopter expertise on the source selection team, coupled with OSD participation on the council. We are committed to awarding the CSAR-X contract fairly and hope to announce the decision this fall.

Repeated contract protests have delayed program execution of over $1B, reduced procurement of 15 CSAR-X aircraft through FY13, and could potentially delay the initial operational capability from fourth quarter fiscal year 2012 to third quarter fiscal year 2014. The FY08 Defense Appropriations Act transferred $99M to support HH-60 modifications to ensure it

is capable of safely and effectively completing the CSAR mission until CSAR-X becomes operational. We will be providing the defense committees with reports on the execution of these funds.

CV-22

The Air Force Special Operations Forces need modernized and upgraded platforms. Continued support for CV-22 procurement is essential to fill current shortfalls in capability. The CV-22 is the special operations variant of the V-22 tilt-rotor and provides long-range infiltration, exfiltration, and resupply of Special Operations Forces (SOF) in politically or militarily denied areas. The CV-22 provides the transformational SOF capability required for the global war on terror (GWOT). The Air Force remains committed to modernizing the SOF by fielding the CV-22.

The CV-22 is progressing toward an Initial Operational Capability in FY09. The Navy and Air Force completed Block 10 development this past September and AFOTEC began Initial Operational Test and Evaluation in October. We expect the flying phase of IOT&E to complete in June 2008. This will support a potential first deployment for Air Force Special Operations Command in the fall of 2008. V-22 production is ramping to full rate and we understand the Navy intends to award the FY08-12 multi-year contract this month which includes 26 CV-22s.

Future Fighter Shortfalls and Plans to Mitigate Shortfalls

The Air Force has been at war for 17 continuous years with operations in Southwest Asia, the Balkans, GWOT, and defending the Homeland. This extremely high operations tempo has accelerated the service life consumption for nearly all of Air Force platforms and especially the fighter force. This sustained high operations tempo has contributed to lowered readiness levels, with increasing risks to operations and maintenance.

Your Air Force aircraft are the oldest they have ever been, averaging over 24 years of age. While your Air Force remains able to carry out the missions of today, it is becoming clear that the aging of the fleet is having negative effects that are difficult to forecast. The Air Force faces a recapitalization challenge unlike anything before. Airman must ensure that adequate forces and the right balance of aircraft types are available to meet both the near-term and future needs of our Nation. Today's Airman must ensure that future Airmen inherit an Air Force that is relevant, capable and sustainable.

Fifth-generation fighters' capitalization is essential. F-35s will not field at full rates until beginning in 2014, but at that point the projected fighter retirements will outpace F-35 production. By 2025, most of your legacy air frames will be retired. The Air Force position remains that a 2250 combat aircraft inventory is the required force. However, Airmen realize this will be a difficult challenge based on likely budget availability. The Air Force is gradually retiring the oldest F-15s and plans to keep 177 F-15s, which will be categorized as "golden eagles," for the long term. These aircraft will be upgraded with the Global Positioning System (GPS) and Inertial Navigation System (INS), the Joint Helmet Mounted Cueing System (JHMCS), and the APG-63v3 AESA radar. In addition, starting in FY11, all 224 F-15Es will undergo a radar modernization program that replaces the current radar with new AESA radar, avoiding major sustainability issues; this will occur at a rate of 12 per year.

Health of the F-16 and A10 Fleet

The Air Force fighter force is the oldest it has ever been, at an average age of more than 19 years, it is generally able to accomplish today's missions. However, as with all our legacy fighter aircraft, both the F-16 and the A-10 are showing signs of age. In addition, GWOT duration and operations tempo have accelerated service life consumption for numerous platforms, and the cost of keeping them in the air in terms of dollars and manpower is increasing.

This sustained high operations tempo has contributed to lower readiness levels, which does not allow us to take much risk in operations and maintenance. We must sustain readiness and be able to fight today. GWOT is forcing the Air Force to maintain some legacy systems to meet the current threat.

The Air Force continues to improve the fighter aircraft capability to conduct precision targeting in close coordination with our soldiers on the ground fighting today's fight by fielding the Sniper and Litening Advanced Targeting Pods (ATPs) with video downlink (VDL) capability. VDL-equipped pods are able to transmit streaming sensor video directly to ground forces equipped with the Remotely Operated Video Enhanced Receiver (ROVER) terminal, greatly speeding target acquisition and providing a revolutionary improvement in support to ground forces both in the traditional Close Air Support (CAS) and emerging non-traditional intelligence, surveillance, and reconnaissance (NTISR) missions. There are currently 155 Sniper and 223 Litening ATPs in the Combat Air Forces. Of those, 28 Sniper and 73 Litening are VDL equipped, and 50 of the 74 ATPs in theater have VDL.

F-16

Our F-16s, the bulk of the fighter fleet, are being modified with a structural integrity program to ensure they achieve an airframe life of 8,000 hours. Wing pylon rib corrosion, a known problem with the F-16 aircraft is an issue we monitor closely. This corrosion prevents the F-16s from carrying pylon mounted external fuel tanks, which limits their effective combat range. While we currently have three F-16 aircraft grounded due to wing pylon rib corrosion, the corrosion problem is somewhat common across the fleet. For example, within the past 24 months, we identified 27 aircraft at Aviano Air Base, Italy with this problem. We currently inspect F-16 aircraft every 800 hours to monitor for this problem. Because of inspections, we have also found approximately 16% (69 of 399) of our Block 40/42 F-16 aircraft now have

bulkhead cracks. This discovery has led to 22 Block 40/42 F-16 aircraft grounded due to the severity of the cracks. An additional 41 aircraft continue to fly with flight restrictions. We will continue to monitor this situation closely.

The Common Configuration Implementation Program (CCIP) is the top F-16 priority and will enable the maintenance of a single operational flight profile configuration on both the Block-40 F-16s and Block-50 F-16s. The Block-50 modification is complete and the Block-40 modification will be complete in FY10. It combines several modifications including a new mission computer, color displays, air-to-air interrogator (Block 50/52 only), Link-16, and Joint Helmet Mounted Cueing System.

A-10

The A-10 continues to provide lethal, precise, persistent, and responsive firepower for Close Air Support to ground forces including Special Operations Forces. It has performed superbly in operations DESERT STORM, ALLIED FORCE, OEF and OIF. The GWOT high operations tempo has accelerated usage of the A-10 fleet, which has resulted in wing and landing gear structural problems. The Air Force Fleet Viability Board (FVB) recommended that the Air Force upgrade 242 thin-skin center wing A-10 aircraft to thick-skinned center wing replacements because these wings are failing and repairing them is uneconomical. The Air Force obtained funding for this effort. The FVB also has assessed the risk associated with landing gear. As a result, SPM has initiated an overhaul program to replace fracture-critical, life-limited parts. In the near-term, Service Life Extension Program (SLEP) and overhaul programs will allow us to continue flying these venerable aircraft. The Air Force is upgrading all 356 A-10s to the "C" configuration through the Precision Engagement modification. This integrates digital data links and advanced targeting pods, either Litening or Sniper, with aircraft avionics, adds two color, multi-function displays, hands on throttle and stick controls, added DC power, and a 1760 data

bus to provide compatibility with J-series weapons, such as Joint Direct Attack Munition and Wind Corrected Munitions Dispenser.

Status of F-15 Groundings and Way Forward To Restore Capabilities

The average age of the F-15A-D fleet is over 24 years old and the average age of F-15E fleet is over 17 years old. However, analysis suggests the Air Combat Command can manage the fleet through scheduled field/depot inspections under an Individual aircraft Tracking Program.

The F-15A-D fleet has returned to flying status after engineering analysis confirmed they are safe for flight. Of the 435 aircraft in the inventory, only 9 remain grounded due to the longeron crack. The Commander of Air Combat Command (COMACC) will determine how many of these 9 aircraft will be repaired after considering the projected cost versus the expected service life of each aircraft. We anticipate that most of these aircraft will be repaired this year at a cost of approximately $235,000 each using organic materials and labor at Warner-Robins Air Logistics Center.

On the recommendation of Boeing and depot engineers, the Air Force has instituted recurring inspections of F-15 longerons every 400 flight hours to detect cracks before they become catastrophic. Analysis confirms that this interval is very conservative and will avoid a mishap such as the one that occurred on 2 November 2007. Additionally, the Air Force will conduct a full-scale fatigue test, aircraft teardown, and improved structural monitoring to help establish the maximum F-15 service life and more effectively manage structural health of the fleet. We expect these efforts to successfully enable the F-15C/D "Golden Eagle" fleet to operate safely and effectively through 2025.

Significant Aviation-Related Safety Issues

Air Force Safety (AF/SE) notified commanders that mishaps are on a rise. As of 29 February 2008, the Air Force lost eight aircraft in this fiscal year compared to six lost at this time

last year. We have suffered 12 Class A flight mishaps this fiscal year compared to ten mishaps at this time last year. The Air Force is also experiencing a rise in Class B mishaps over the last ten years: This trend rose from roughly 1.91 Class B mishaps per 100,000 flying hours in FY99 to 4.19 Class B mishaps per 100,000 flyer hours in FY07. In the last two years the Class B mishap rate remained above 4.1 Class B mishaps per 100,000 flying hours. Key mishaps include this year's F-15 mishaps (2 Nov in-flight breakup, 1 Feb loss of control, and 20 Feb midair collision) and the recent B-2 crash.

Human factors continue to dominate the mishap causal factors, consistently accounting for 67% of the last 11-years' mishaps. Specific problem areas include a lack of adherence to procedural guidance, channeled attention similar to target fixation, procedural error, and not making the right decision during operations. These observations are also consistent with similar observations across the aviation industry, and apply to all of Air Force aircraft types--not just fighter aircraft.

AF/SE stepped up emphasis on a back-to-basics approach with a hard re-look at our risk assessment techniques and again ensuring our people understand that rules and technical data are the life blood of doing things the right way. AF/SE maintains and continually improves the ongoing safety evaluation and assessment cycle, so as to determine mishap causes and precursors. This helps commanders prevent the next mishap.

IV. Closing

The United States of America depends on air, space and cyberspace power to an extent unprecedented in history. We are ready and engaged today, and looking toward securing the future. We cannot repeat the mistakes of the past nor can we rest on the laurels of our current dominance. Our Nation must invest today to ensure tomorrow's air, space and cyberspace dominance.

United States Government Accountability Office

GAO

Testimony before the Subcommittees on Air and Land Forces, and Seapower and Expeditionary Forces, Committee on Armed Services, House of Representatives

For Release on Delivery
Expected at 10:00 a.m. EDT
Tuesday, March 11, 2008

JOINT STRIKE FIGHTER

Impact of Recent Decisions on Program Risks

Statement of Michael Sullivan, Director
Acquisition and Sourcing Management

GAO-08-569T

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Accountability • Integrity • Reliability

Highlights

Highlights of GAO-08-569T, a testimony before the Subcommittees on Air and Land Forces, and Seapower and Expeditionary Forces, Committee on Armed Services, House of Representatives

Why GAO Did This Study

The Joint Strike Fighter (JSF) is the Department of Defense's (DOD) most expensive aircraft acquisition program. DOD is expected to develop, procure, and maintain 2,443 aircraft at a cost of more than $950 billion. DOD plans for the JSF to replace or complement several types of aircraft in the Air Force, Navy, and Marine Corps.

Given the program's cost and importance, it is critical that decisions are made within this program to maximize its benefit to the nation. This testimony highlights a number of those decisions and impacts. It

(1) discusses emerging risks to the overall program, and
(2) updates information for GAO's cost analysis of last year regarding sole-source and competitive scenarios for acquisition and sustainment of the JSF engine.

Information on the overall program is from our mandated annual report, also issued today. GAO tracked annual cost and schedule changes, reasons for changes, decisions affecting development, and compared DOD cost estimating methodologies to best practices. For the two engines, GAO updated cost data from last year's testimony and made new projections.

What GAO Recommends

This testimony does not have recommendations, but GAO's mandated report recommends revisiting the mid-course plan and improving cost estimates. DOD substantially agreed.

To view the full product, including the scope and methodology, click on GAO-08-569T. For more information, contact Michael Sullivan at (202) 512-4841 or sullivanm@gao.gov.

March 11, 2008

JOINT STRIKE FIGHTER

Impact of Recent Decisions on Program Risks

What GAO Found

GAO believes recent DOD decisions, while potentially reducing near-term funding needs, could have long-term cost implications. DOD's recent plan to reduce test resources in order to pay for development cost overruns adds more risk to the overall JSF program. Midway through development, the program is over cost and behind schedule. Difficulties in stabilizing aircraft designs and the inefficient manufacturing of test aircraft have forced the program to spend management reserves much faster than anticipated. To replenish this reserve, DOD officials decided not to request additional funding and time for development at this time, but opted instead to reduce test resources. GAO believes this plan will hamper development testing while still not addressing the root causes of related cost increases. While DOD reports that total acquisition costs have increased by $55 billion since a major restructuring in 2004, GAO and others in DOD believe that the cost estimates are not reliable and that total costs will be much higher than currently advertised. Another restructuring appears likely—GAO expects DOD will need more money and time to complete development and operational testing, which will delay the full-rate production decision and the fielding of capabilities to the warfighter.

This year, DOD is again proposing cancellation of the JSF alternate engine program. The current estimated remaining life cycle cost for the JSF engine program under a sole-source scenario is $54.9 billion. To ensure competition by continuing the JSF alternate engine program, an additional investment of about $3.5 billion to $4.5 billion may be required. However, potential advantages from a competitive strategy could result in savings equal to or exceeding that amount across the life cycle of the engine. GAO's updated cost analysis suggests that a savings of 9 to 11 percent—about 2 percent less than what GAO estimated last year—would recoup that investment. Also, as we noted last year, prior experience indicates that it is reasonable to assume that competition on the JSF engine program could yield savings of at least that much. Further, non financial benefits in terms of better engine performance and reliability, more responsive contractors, and improved industrial base stability are more likely outcomes under a competitive environment than under a sole-source strategy. While cancellation of the program provides needed funding in the near term, recent test failures for the primary JSF engine underscore the importance and long-term implications of DOD decision making with regard to the ultimate engine acquisition approach.

Mr. Chairmen and Members of the Subcommittees:

I am pleased to be here today to discuss the Joint Strike Fighter (JSF) program. The JSF is the linchpin of future Department of Defense (DOD) tactical aircraft modernization efforts because of the program's sheer size and envisioned role to replace or complement several different types of aircraft providing a wide variety of missions in the Air Force, Navy, and Marine Corps. Given the program's cost and military importance, it is critical that decisions are made within this program to maximize its benefit to the nation. Today, my testimony highlights a number of those decisions by (1) discussing emerging risks to the overall program and (2) updating information for the cost analysis we performed last year regarding sole-source and competitive scenarios for development, production, and sustainment of the JSF engine. Information on the overall program risks is taken from our annual mandated report, also being issued today.[1] Using updated cost data, we projected cost and savings for one and two engine programs utilizing the parameters and overall methodology from our testimony of last year.[2] Appendix I describes our scope and methodology. For this testimony, we conducted a performance audit from February 2008 to March 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Summary

In the past year, DOD reported that JSF procurement cost estimates increased by more than $23 billion due to a 7-year extension to the procurement period, future price increases, and airframe material cost increases. The official development cost estimate remained about the same; however, only by reducing requirements, canceling funding for the alternate engine program, and reducing test resources. Repercussions

[1]GAO, *Joint Strike Fighter: Recent Decisions by DOD Add to Program Risks*, GAO-08-388 (Washington, D.C.: March 11, 2008). This report is the fourth as mandated in the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005. See Pub. L. No. 108-375, § 213 (2004).

[2]GAO, *Defense Acquisitions: Analysis of Costs for the Joint Strike Fighter Engine Program*, GAO-07-656T (Washington, D.C.: Mar. 22, 2007).

from late release of engineering drawings to the manufacturing floor, design changes, and parts shortages forced the program to deplete its management reserve funds by $600 million, but DOD officials have decided not to request additional funding and time, opting instead to reduce test resources in order to replenish those reserves. This decision eliminated two development test aircraft, reduced flight tests, revised test verification plans, and accelerated the reduction in the prime contractor's development workforce. Officials from several prominent defense offices found that the plan was too risky because it increases the risks of not finding and fixing design and performance problems until late into production, when it is more expensive and disruptive to do so. We agree and our report recommends revisiting the plan to address these concerns and examine alternatives. DOD stated that it believes the plan is a cost effective approach with a manageable level of risk, but will monitor execution and revise the plan if necessary.

We do not think the official JSF program cost estimate is reliable when judged against best practice cost-estimating standards used throughout the federal government and industry. Specifically, the program cost estimate is not comprehensive, accurate, well documented, or credible. In addition to higher estimates made by the three independent defense organizations, we found that (1) DOD has identified billions of dollars in unfunded requirements; (2) there is continued degradation in the schedule; and (3) both the engine and airframe contracts have substantial negative cost variances. The prime contractor and program office are readying a new estimate, which is expected to be much larger than what is now budgeted. We made several recommendations to improve cost-estimating and the Department generally agreed. Looking to the future, the program makes unprecedented demands for funding from the defense budget—averaging about $11 billion each year for the next two decades—and must compete with other priorities for the shrinking federal discretionary dollar.

This year, DOD is again proposing cancellation of the JSF alternate engine program. Under a sole-source scenario, the current estimated remaining life cycle cost for the JSF engine program is $54.9 billion.[3] By continuing the JSF alternate engine program, an additional investment of about $3.5 billion to $4.5 billion may be required to ensure competition. However, as

[3]To maintain consistency with our statement from last year, unless otherwise noted, all costs related to the engine program are reported in base year 2002 dollars; all other figures in the statement are reported in then year dollars.

we reported last year, a competitive strategy could result in potential savings equal to or exceeding that amount across the life cycle of the engine. In fact, our updated cost analysis suggests that a savings of 9 to 11 percent—about 2 percent less than what we estimated last year—would recoup that investment. Further, prior experience indicates that it is reasonable to assume that competition on the JSF engine program could yield savings of at least that much. Further, non financial benefits in terms of better engine performance and reliability, more responsive contractors, and improved industrial base stability are more likely outcomes under a competitive environment than under a sole-source strategy. While cancellation of the program provides additional funding for other near-term needs, recent test failures for the primary JSF engine show how the ultimate engine acquisition approach selected could have long-term implications on DOD decision making.

Background

The Joint Strike Fighter is DOD's most expensive aircraft acquisition program. The number of aircraft, engines, and spare parts expected to be purchased, along with the lifetime support needed to sustain the aircraft, mean the future financial investment will be significant. DOD is expected to develop, procure, and maintain 2,443 operational aircraft at a cost of more than $950 billion over the program's life cycle. The JSF is being developed in three variants for the U.S. military: a conventional takeoff and landing aircraft for the Air Force, a carrier-capable version for the Navy, and a short takeoff and vertical landing variant for the Marine Corps.[4] In addition to its size and cost, the impact of the JSF program is even greater when combined with the number of aircraft expected for international sales (a minimum of 646 aircraft and potentially as many as 3,500). Finally, because a number of current U.S. aircraft will either be replaced by or used in conjunction with the JSF, the program is critical for meeting future force requirements.

The JSF program began in November 1996 with a 5-year competition between Lockheed Martin and Boeing to determine the most capable and affordable preliminary aircraft design. Lockheed Martin won the competition. The program entered system development and demonstration in October 2001. At that time, officials planned on a 10½ years development period costing about $34 billion (amount includes about $4

[4]Eight allied nations are also participating in the JSF program: United Kingdom, Norway, Denmark, the Netherlands, Canada, Italy, Turkey, and Australia.

billion incurred before system development start). By 2003, system integration efforts and a preliminary design review revealed significant airframe weight problems that affected the aircraft's ability to meet key performance requirements. Weight reduction efforts were ultimately successful but added substantially to program cost and schedule estimates. In March 2004, DOD rebaselined the program, extending development by 18 months and adding about $7.5 billion to development costs. In total, estimated development costs for the JSF are now about $10 billion more than at start of system development.

In August 2005, DOD awarded a $2.1 billion contract for alternate engine system development and demonstration, of which more than $1 billion has been appropriated to date.[5] Since awarding that contract, DOD's last three budget submissions have included no funding for the alternate engine program and DOD has proposed canceling it, stating that (1) no net acquisition cost benefits or savings are to be expected from competition and (2) low operational risk exists for the warfighter under a sole-source engine supplier strategy. We have previously reported that DOD's analysis to support this decision focused only on the potential up-front savings in engine procurement costs. That analysis, along with statements made before this committee last year, inappropriately included cost already sunk in the program and excluded long-term savings that might accrue from competition for providing support for maintenance and operations over the life cycle of the engine.

In fiscal year 2007, the program office awarded the first of three annual production contracts to Pratt & Whitney for its F135 engine. Under that acquisition strategy, the program then planned to award noncompetitive contracts to both Pratt & Whitney and to the Fighter Engine Team in fiscal years 2010 and 2011.[6] Beginning in fiscal year 2012, the program planned to award contracts on an annual basis under a competitive approach for quantities beyond each contractor's minimum sustaining rate. Full-rate production for the program begins in fiscal year 2014 and is expected to continue through fiscal year 2034. The JSF program intends to use a combination of competition, performance-based logistics, and contract incentives to achieve goals related to affordability, supportability, and

[5]Prior to that contract, DOD had invested $722 million in the alternate engine program.

[6]The Fighter Engine Team is a single company, created in July 2002 by General Electric and Rolls-Royce, and formed for the development, deployment, and support of the F136 engine for the JSF program.

safety. Through this approach, the JSF program office hopes to achieve substantial reductions in engine operating and support costs, which traditionally have accounted for 72 percent of a program's life cycle costs.

Recent Decisions by DOD Add to Overall JSF Program Risk

Today, we are issuing our latest report[7] on the JSF acquisition program, the fourth as mandated in the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005.[8] In our report we acknowledge the challenges in managing such a complex and ambitious acquisition and cite recent progress in refining system requirements, forging production agreements with international partners, and beginning flight testing of the prototype aircraft and a flying test bed. DOD also extended the procurement period for 7 years, reducing annual quantities and the rate of ramp up to full production. These actions somewhat lessened, but did not eliminate, the undue concurrency of development and production we have previously reported.

We also report continuing cost increases and development risks resulting from recent decisions by DOD to eliminate test resources to replenish needed management reserve funds. We expect that DOD will eventually need more money and time to complete development and operational testing, potentially delaying the full-rate production decision now planned for October 2013. We further report that the official program cost estimate before the Congress is not reliable for decision-making, based on our assessment of estimating methodologies compared to best practice standards. With almost 90 percent of the acquisition program's spending still ahead, it is important to address these challenges, effectively manage future risks, and move forward with a successful program that meets ours' and our allies' needs.

Program Cost Estimate Increased Since Last Year

DOD reported that total acquisition cost estimate increased by more than $23 billion since our last report in March of 2007, and $55 billion since the program underwent a major restructure in 2004. Recent increases in the procurement cost estimate were principally due to (1) extending the procurement period seven years at lower annual rates; (2) increases to future price estimates based on contractor proposals for the first production lot, and (3) airframe material cost increases. The official

[7] GAO-08-388.

[8] Pub. L. No. 108-375, § 213 (2004).

development cost estimate remained about the same. However, this was largely achieved by reducing requirements, not fully funding the alternate engine program despite congressional interest in the program, and reducing test resources in order to replenish management reserve funds which were spent much faster than budgeted. Table 1 shows the evolution in costs, unit costs, quantities, and deliveries since the start of the JSF's system development and demonstration program.

Table 1: Changes in Reported JSF Program Costs, Quantities, and Deliveries

	October 2001 (development start)	December 2003[a]	December 2005[a]	December 2006[a] (latest available data)
Expected quantities				
Development quantities	14	14	15	15[b]
Procurement quantities (U.S. only)	2,852	2,443	2,443	2,443
Total quantities	**2,866**	**2,457**	**2,458**	**2,458**
Cost estimates (then year dollars in billions)				
Development	$34.4	$44.8	$44.5	$44.2
Procurement	196.6	199.8	231.7	255.1
Military construction[c]	2.0	0.2	0.2	0.5
Total program acquisition	**$233.0**	**$244.8**	**$276.5**	**$299.8**
Unit cost estimates (then year dollars in millions)				
Program acquisition	$81	$100	$112	$122
Average procurement	69	82	95	104
Estimated Delivery Dates				
First operational aircraft delivery	2008	2009	2009	2010
Initial operational capability	2010-2012	2012-2013	2012-2013	2012-2015

Source: GAO analysis of DOD data.

[a]Data is from the annual Selected Acquisition Reports that are dated in December but not officially released until March or April of the following year. The December 2003 data reflects the 2004 Replan. The December 2006 data is the latest information on total program costs made available to us by DOD.

[b]A subsequent decision by DOD in September 2007 has reduced development test aircraft by 2 to 13.

[c]Military construction costs have not been fully established and the reporting basis changed over time in these DOD reports. The amount shown for December 2006 represents costs currently in the 2008 future years defense plan.

JSF Development Program Faces Increased Risks of Further Cost Increases and Schedule Delays

Midway through its planned 12-year development period, the JSF program is over cost and behind schedule. The program has spent two-thirds of its budgeted funding on the prime development contract, but estimates that only about one-half of the development work has been completed. The contractor has extended manufacturing schedules several times and test aircraft delivery dates have continually slipped. Repercussions from late release of engineering drawings to the manufacturing floor, design changes, and parts shortages continue to cause delays in maturing manufacturing processes and force inefficient production line workarounds.

These design and manufacturing problems depleted management reserve funds to an untenable level in 2007. Facing a probable contract cost overrun, DOD officials decided not to request additional funding and time for development, opting instead to reduce test resources in order to replenish management reserves from $400 million to $1 billion. The decision to replenish management reserves by reducing test resources, known as the Mid-Course Risk Reduction Plan, was ratified by OSD in September 2007. It eliminated two development test aircraft (reducing the total from 15 to 13), reduced flight tests, revised test verification plans, and accelerated the reduction in the prime contractor's development workforce. Officials from several prominent defense offices objected to specific elements of the plan because of risks to the test program and because it did not treat the root causes of production and schedule problems.

We agree with this prognosis and believe the mid-course plan should be re-evaluated to address these concerns, examine alternatives, and correct the causes of management reserve depletion. The plan significantly increases the risks of not completing development testing on time and not finding and fixing design and performance problems until late into operational testing and production, when it is more expensive and disruptive to do so. It also does not directly address and correct the continuing problems that caused the depletion in management reserves. This increases the risk that development costs will increase substantially and schedules will be further delayed. The flight test program has barely begun, but faces substantial risks with reduced assets as design and manufacturing problems continue to cause delays that further compress the time available to complete development. We expect that DOD will have to soon restructure the JSF program to add resources and extend the development period, likely delaying operational testing, the full-rate production decision, and achievement of initial operational capabilities.

JSF Program Cost Estimate Is Not Reliable

We do not think the official JSF program cost estimate is reliable when judged against cost estimating standards used throughout the federal government and industry. Specifically, the program cost estimate: (1) is not comprehensive because it does not include all applicable costs, including $6.8 billion for the alternate engine program; (2) is not accurate because some of its assumptions are optimistic and not supportable—such as applying a weight growth factor only half as large as historical experience on similar aircraft—and because the data system relied upon to report and manage JSF costs and schedule is deficient; (3) is not well documented in that it does not sufficiently identify the primary methods, calculations, results, rationales and assumptions, and data sources used to generate cost estimates; and (4) is not credible according to individual estimates from OSD's Cost Analysis Improvement Group, the Defense Contract Management Agency, and the Naval Air Systems Command.

All three of these defense offices concluded that the official program cost estimate is understated in a range up to $38 billion and that the development schedule is likely to slip from 12 to 27 months. Despite this and all the significant events and changes that have occurred in the 6 years since the start of system development, DOD does not intend to accomplish another fully documented, independent total program life-cycle cost estimate for another 6 years. Twelve years between high-fidelity estimates is not acceptable in our view, especially given the size of the JSF program, its importance to our and our allies' future force structures, the changes in cost and quantity in the intervening years, and the unreliability of the current estimate.

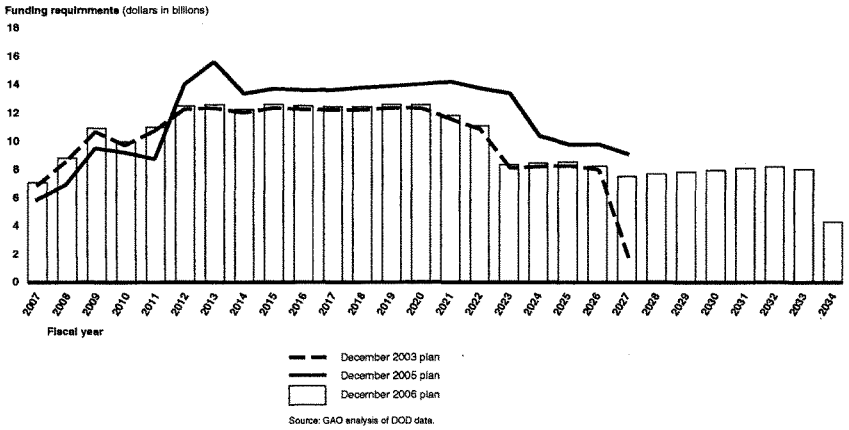
Based on the evidence we collected, we believe a new estimate will likely be much higher than now reported. In addition to the higher estimates made by the three independent defense organizations, we determined that:

- DOD has identified billions of dollars in unfunded requirements that are not in the program office estimate, including additional tooling and procurement price hikes.
- A new manufacturing schedule in the works indicates continued degradation in the schedule and further extends times for first flights.
- Both the aircraft and engine development contracts have persistent, substantial cost variances that cost analysts believe are too large and too late in the program to resolve without adding to budget.
- The prime contractor and program office are readying a new estimate needed to complete the program, which is expected to be much larger than what is now budgeted.

JSF Faces Challenges as Program Moves Forward

The first and foremost challenge for the JSF program is affordability. From its outset, the JSF goal was to develop and field an affordable, highly common family of strike aircraft. Rising unit procurement prices and somewhat lower commonality than expected raise concerns that the United States and its allies may not be able to buy as many aircraft as currently planned. The program also makes unprecedented demands for funding from the defense budget—averaging about $11 billion each year for the next two decades—and must compete with other priorities for the shrinking federal discretionary dollar. Figure 1 compares the current funding profile with two prior projections and shows the impact from extending procurement 7 more years to 2034. This reduced mid-term annual budget requirements, but added $11.2 billion to the total procurement cost estimate.

Figure 1: JSF Acquisition Program's Annual Funding Requirements



Source: GAO analysis of DOD data.

Further, informed by more knowledge as the program progresses, DOD doubled its projection of JSF life-cycle operating and support costs

compared to last year's estimate and its expected cost per flight hour now exceeds the F-16 legacy fighter it is intended to replace. With almost 90 percent (in terms of dollars) of the acquisition program still ahead, it is important to address these challenges, effectively manage future risks, and move forward with a successful program that meets our military needs, as well as those of our allies.

Engine Competition Benefits Could Outweigh Costs

As we noted in testimony before this committee last year, the acquisition strategy for the JSF engine must weigh expected costs against potential rewards. Without competition, the JSF program office estimates that it will spend $54.9 billion over the remainder of the F135 engine program. This includes cost estimates for completing system development, procurement of 2,443 engines, production support, and sustainment. Due primarily to the money spent on the engine program over the past year, thereby increasing the sunk costs in our calculations, we believe competition could provide an even better return on investment than our previous assessment. Additional investment of between $3.5 billion to $4.5 billion may be required should the Department decide to continue competition. While Pratt & Whitney design responsibilities and associated costs may actually be reduced under a sole-source contract, we remain confident that competitive pressures could yield enough savings to offset the costs of competition over the program's life. This ultimately will depend on the final approach for the competition, the number of aircraft actually purchased, and the ratio of engines awarded to each contractor. Given certain assumptions with regard to these factors, the additional costs of having the alternate engine could be recouped if competition were to generate approximately 9 to 11 percent savings—about 2 percent less than we estimated previously. According to actual Air Force data from past engine programs, including the F-16 aircraft, we still believe it is reasonable to expect savings of at least that much.

Sole-Source Approach Results in Reduced Upfront Costs

The cost of the Pratt & Whitney F135 engine is estimated to be $54.9 billion over the remainder of the program. This includes cost estimates for the completion of system development, procurement of engines, production support, and sustainment. Table 2 shows the costs remaining to develop, procure, and support the Pratt & Whitney F135 engine on a sole-source basis.

Table 2: Costs to Complete Pratt & Whitney F135 Engine Program (Fiscal year 2002 dollars in billions)

Cost element	Cost
System development and demonstration costs	$0.7
Total engine unit recurring flyaway costs	$19.5
Production support costs (including initial spares, training, manpower, and depot standup)	$3.1
Sustainment costs of fielded aircraft	$31.6
Total	**$54.9**

Source: JSF program office data; GAO analysis.

Note: Based on 2,443 installed engines and spares.

In addition to development of the F135 engine design, Pratt & Whitney also has responsibility for the common components that will be designed and developed to go on all JSF aircraft, regardless of which contractor provides the engine core. This responsibility supports the JSF program level requirement that the engine be interchangeable—either engine can be used in any aircraft variant, either during initial installation or when replacement is required. In the event that Pratt & Whitney is made the sole-source engine provider, future configuration changes to the aircraft and common components could be optimized for the F135 engine, instead of potentially compromised design solutions or additional costs needed to support both F135 and the F136, the alternate engine.

JSF Engine Competition Could Result in Future Savings

The government's ability to recoup the additional investments required to support competition depends largely on (1) the number of aircraft produced,[9] (2) the ratio that each contractor wins out of that total, and (3) the savings rate that competitive pressures drive. Our analysis last year, and again for this statement, estimated costs under two competitive scenarios; one in which contractors are each awarded 50 percent of the total engine purchases (50/50 split) and one in which there is an annual 70/30 percent award split of total engine purchases to either contractor, beginning in fiscal year 2012. Without consideration of potential savings, the additional costs of competition total about $4.5 billion under the first

[9]In conducting our cost analysis of the alternate engine program, we presented the cost of only the 2,443 U.S. aircraft currently expected for production. These costs assume the quantity benefits of the 730 aircraft currently anticipated for foreign partner procurement.

scenario and about $3.5 billion under the second scenario. Table 3 shows the additional cost associated with competition under these two scenarios.

Table 3: Additional Costs for Competition in JSF Engine Program (Fiscal year 2002 dollars in billions)

Additional costs	50/50 Aircraft award split	70/30 Aircraft award split
System development and demonstration costs	$1.1	$1.1
Total engine unit recurring flyaway costs	$3.2	$2.3
Production support costs (including initial spares, training, manpower, and depot standup)	$0.1	$0.1
Sustainment costs of fielded aircraft*	N/A	N/A
Total	**$4.5**	**$3.5**

Source: JSF program office data; GAO analysis.

Notes: Based on 2,443 installed engines and spares. Numbers may not add due to rounding.

*No additional sustainment costs were considered because the number of aircraft and cost per flight hour would be the same under either scenario.

The disparity in costs between the two competitive scenarios reflects the loss of learning resulting from lower production volume that is accounted for in the projected unit recurring flyaway costs used to construct each estimate. The other costs include approximately $1.1 billion for remaining F136 development and $116 million in additional standup costs, which would be the same under either competitive scenario.

Competition may incentivize the contractors to achieve more aggressive production learning curves, produce more reliable engines that are less costly to maintain, and invest additional corporate money in technological improvements to remain competitive. To reflect these and other factors, we applied a 10 to 20 percent range of potential cost savings to our estimates, where pertinent to a competitive environment.[10] Further, when comparing life cycle costs, it is important to consider that many of the additional investments associated with competition are often made earlier in the program's life cycle, while much of the expected savings do not accrue for decades. As such, we include a net present value calculation

[10]Our review of DOD data as well as discussions with defense and industry experts, confirmed this as a reasonable range of potential savings to consider.

(time value of money) in the analysis that, once applied, provides for a better estimate of program rate of return.

When we apply overall savings expected from competition, our analysis indicates that recoupment of those initial investment costs would occur at somewhere between 9 and 11 percent, depending on the number of engines awarded to each contractor. A competitive scenario where one of the contractors receives 70 percent of the annual production aircraft, while the other receives only 30 percent reaches the breakeven point at 9 percent savings—1.3 percent less than we estimated before. A competitive scenario where both contractors receive 50 percent of the production aircraft reaches this point at 11 percent savings—again about 1.3 percent less than last year.[11] We believe it is reasonable to assume at least this much savings in the long run based on analysis of actual data from the F-16 engine competition.

Past Engine Programs Show Potential Financial Benefits from Competition

Results from past competitions provide evidence of potential financial and non financial savings that can be derived from engine programs. One relevant case study to consider is the "Great Engine War" of the 1980s—the competition between Pratt & Whitney and General Electric to supply military engines for the F-16 and other fighter aircraft programs.[12] At that time all engines for the F-14 and F-15 aircraft were being produced on a sole-source basis by Pratt & Whitney, which was criticized for increased procurement and maintenance costs, along with a general lack of responsiveness with regard to government concerns about those programs. Beginning in 1983, the Air Force initiated a competition that resulted in significant cost savings in the program. For example, in the first 4 years of the competition, when comparing actual costs to the program's baseline estimate, results included

- nearly 30 percent cumulative savings for acquisition costs,
- roughly 16 percent cumulative savings for operations and support costs, and
- total savings of about 21 percent in overall life cycle costs.

[11]These savings amounts reflect net present value calculations that discount costs and savings for both inflation and the time value of money.

[12]Other engine competitions include those for the F-15, F/A-18, and F-22A fighter aircraft.

The Great Engine War was able to generate significant benefits because competition incentivized contractors to improve designs and reduce costs during production and sustainment.

Multiple Studies and Analyses Show Additional Benefits from Competition

Competition for the JSF engines may also provide benefits that do not result in immediate financial savings, but could result in reduced costs or other positive outcomes over time. Our prior work, along with studies by DOD and others, indicate there are a number of non financial benefits that may result from competition, including better performance, increased reliability, and improved contractor responsiveness. In addition, the long term impacts of the JSF engine program on the global industrial base go far beyond the two competing contractors.

DOD and others have performed studies and have widespread concurrence as to these other benefits, including better engine performance, increased reliability, and improved contractor responsiveness. In fact, in 1998 and 2002, DOD program management advisory groups assessed the JSF alternate engine program and found the potential for significant benefits in these and other areas. Table 4 summarizes the benefits determined by those groups.

Table 4: 1998 and 2002 Program Management Advisory Group Study Findings on the Benefits of an Alternate Engine Program

	Beneficial		Marginal		No value	
Factor assessed	**1998**	**2002**	**1998**	**2002**	**1998**	**2002**
Costs			X	X		
Development risk reduction					X	X
Engine growth potential			X	X		
Fleet readiness	X	X				
Industrial base	X	X				
International implications	X	X				
Other considerations*	X	X				
Overall	**X**	**X**				

Source: DOD data; GAO analysis and presentation.

*Other considerations include contractor responsiveness, improved design solutions, and competition at the engine subsystem level.

While the benefits highlighted may be more difficult to quantify, they are no less important, and ultimately were strongly considered in an earlier

recommendation to continue the alternate engine program. These studies concluded that the program would

- maintain the industrial base for fighter engine technology,
- enhance readiness,
- instill contractor incentives for better performance,
- ensure an operational alternative if the current engine developed problems, and
- enhance international participation.

Another potential benefit of having an alternate engine program, and one also supported by the program advisory group studies, is to reduce the risk that a single point, systemic failure in the engine design could substantially affect the fighter aircraft fleet. This point is underscored by recent failures of the Pratt & Whitney test program. In August 2007, an engine running at a test facility experienced failures in the low pressure turbine blade and bearing, which resulted in a suspension of all engine test activity. In February 2008, during follow-on testing to prove the root cost of these failures, a blade failure occurred in another engine, resulting in delays to both the Air Force and Marine Corps variant flight test programs.

The JSF program continues to work toward identifying and correcting these problems. Though current performance data indicate it is unlikely that these or other engine problems would lead to fleetwide groundings in modern aircraft, having two engine sources for the single-engine JSF further reduces this risk as it is more unlikely that such a problem would occur to both engine types at the same time.

Concluding Observations

DOD is challenged once again with weighing short-term needs against potential long-term payoffs within the JSF program, especially in terms of the test program and the approach for developing, procuring, and sustaining the engine. We and others believe that the JSF risk reduction plan is too risky—cutting test resources and flight tests will constrain the pace and fidelity of development testing—and additional costs and time will likely be needed to complete JSF development. Finding and fixing deficiencies during operational testing and after production has ramped up is costly, disruptive, and delays getting new capabilities to the warfighter. Further, without directly addressing the root causes of manufacturing delays and cost increases, the problems will persist and continue to drain development resources and impact low-rate production that is just beginning. These actions may postpone events, but a major restructuring appears likely—we expect DOD will need more money and time to

complete development and operational testing, which will delay the full-rate production decision.

Because the JSF is entering its most challenging phase—finalizing three designs, maturing manufacturing processes, conducting flight tests, and ramping up production in an affordable manner—decision making and oversight by Congress, top military leaders, and our allies is critical for successful outcomes. The size of the JSF acquisition, its impact on our tactical air forces and those of our allies, and the unreliability of the current estimate, argue for an immediate new and independent cost estimate and uncertainty analysis, so that these leaders can have good information for effective decision making. Likewise, the way forward for the JSF engine acquisition strategy entails one of many critical choices facing DOD today, and underscores the importance of decisions facing the program. Such choices made today on the JSF program will have long term impacts.

Mr. Chairmen, this concludes my prepared statement. I will be happy to answer any questions you or other members of the subcommittee may have.

Contacts and Acknowledgments

For future questions regarding this testimony, please contact Michael J. Sullivan, (202) 512-4841. Individuals making key contributions to this testimony include Marvin Bonner, Jerry Clark, Bruce Fairbairn, J. Kristopher Keener, Matt Lea, Brian Mullins, Daniel Novillo, and Charles Perdue.

Appendix I: Scope and Methodology

To conduct our mandated work on the JSF acquisition program, we tracked and compared current cost and schedule estimates with prior years, identified major changes, and determined causes. We visited the prime contractor's plant to view manufacturing processes and plans for low rate production. We obtained earned value data, contractor workload statistics, performance indicators, and manufacturing results. We reviewed the Mid Course Risk Reduction Plan and supporting documents, discussed pros and cons with DOD officials, and evaluated potential impacts on flight plans and test verification criteria.

We reviewed the cost estimating methodologies, data, and assumptions used by the JSF joint program office to project development, procurement, and sustainment costs. We assessed the program office's procedures and methodologies against GAO's *Cost Assessment Guide* and best practices employed by federal and private organizations. We obtained cost estimates prepared by the Cost Analysis Improvement Group, Naval Air Systems Command, and Defense Contract Management Command and discussed with the cost analysts the methodologies and assumptions used by those organizations. We discussed plans, future challenges, and results to date with DOD and contractor officials.

For our work on the alternate engine we used the methodology detailed below, the same as had been used in support of our statement in March 2007. For this statement, we collected similar current information so the cost information could be updated. In conducting our analysis of costs for the Joint Strike Fighter (JSF) engine program, we relied primarily on program office data. We did not develop our own source data for development, production, or sustainment costs. In assessing the reliability of data from the program office, we compared that data to contractor data and spoke with agency and other officials and determined that the data were sufficiently reliable for our review.

Other base assumptions for the review are as follows:

- Unit recurring flyaway cost includes the costs associated with procuring one engine and certain nonrecurring production costs; it does not include sunk costs, such as development and test, and other costs to the whole system, including logistical support and construction.
- Engine procurement costs reflect only U.S. costs, but assumes the quantity benefits of the 730 aircraft currently anticipated for foreign partner procurement.

- Competition, and the associated savings anticipated, begins in fiscal year 2012.
- Engine maturity, defined as 200,000 flight hours with at least 50,000 hours in each variant, is reached in fiscal year 2012.
- Two years are needed for delivery of aircraft.
- Aircraft life equals 30 years at 300 flight hours per year.

For the sole-source Pratt & Whitney F135 engine scenario, we calculated costs as follows:

Development

- Relied on JSF program office data on the remaining cost of the Pratt & Whitney development contract. We considered all costs for development through fiscal year 2008 to be sunk costs and did not factor them into analysis.

Production

- For cost of installed engine quantities, we multiplied planned JSF engine quantities for U.S. aircraft by unit recurring flyaway costs specific to each year as derived from cost targets and a learning curve developed by the JSF program office.
- For the cost of production support, we relied on JSF program office cost estimates for initial spares, training, support equipment, depot stand-up, and manpower related to propulsion. Because the JSF program office calculates those numbers to reflect two contractors, we applied a cost reduction factor in the areas of training and manpower to reflect the lower cost to support only one engine type.

Sustainment

- For sustainment costs, we multiplied the planned number of U.S. fielded aircraft by the estimated number of flight hours for each year to arrive at an annual fleet total. We then multiplied this total by JSF program office estimated cost per engine flight hour specific to each aircraft variant.
- Sustainment costs do not include a calculation of the cost of engine reliability or technology improvement programs.

For a competitive scenario between the Pratt & Whitney F135 engine and the Fighter Engine Team (General Electric and Rolls-Royce), we calculated costs as follows:

Development

- We used current JSF program office estimates of remaining development costs for both contractors and considered all costs for development through fiscal year 2008 to be sunk costs.

Production

- We used JSF program office data for engine buy profiles, learning curves, and unit recurring flyaway costs to arrive at a cost for installed engine quantities on U.S. aircraft. We performed calculations for competitive production quantities under 70/30 and 50/50 production quantity award scenarios.
- We used JSF program office cost estimates for production support under two contractors. We assumed no change in support costs based on specific numbers of aircraft awarded under competition, as each contractor would still need to support some number of installed engines and provide some number of initial spares.

Sustainment

- We used the same methodology and assumptions to perform the calculation for sustainment costs in a competition as in the sole-source scenario.

Savings

- We analyzed actual cost information from past aircraft propulsion programs, especially that of the F-16 aircraft engine, in order to derive the expected benefits of competition and determine a reasonable range of potential savings.
- We applied this range of savings to the engine life cycle, including recurring flyaway costs, production support, and sustainment. We assumed costs to the government could decrease in any or all of these areas as a result of competitive pressures.
- We did not apply any savings to the system development and demonstration phase or the first five production lots because they are not fully competitive. However, we recognize that some savings may accrue as contractors prepare for competition.

In response to the request to present our cost analyses in constant dollars, then year dollars, and using net present value, we:

- calculated all costs using constant fiscal year 2002 dollars,
- used separate JSF program office and Office of the Secretary of Defense inflation indices for development, production, production support, and sustainment to derive then year dollars; when necessary for the out years, we extrapolated the growth of escalation factors linearly; and
- utilized accepted GAO methodologies for calculating discount rates in the net present value analysis.

Our analysis of the industrial base does not independently verify the relative health of either contractors' suppliers or workload.

Related GAO Products

Joint Strike Fighter: Recent Decisions by DOD Add to Program Risks, GAO-08-388. Washington, D.C.: Mar. 11, 2008.

Tactical Aircraft: DOD Needs a Joint and Integrated Investment Strategy, GAO-07-415. Washington, D.C.: Apr. 2, 2007.

Defense Acquisitions: Analysis of Costs for the Joint Strike Fighter Engine Program, GAO-07-656T. Washington, D.C.: Mar. 22, 2007.

Joint Strike Fighter: Progress Made and Challenges Remain, GAO-07-360. Washington, D.C.: Mar. 15, 2007.

Tactical Aircraft: DOD's Cancellation of the Joint Strike Fighter Alternate Engine Program Was Not Based on a Comprehensive Analysis, GAO-06-717R. Washington, D.C: May 22, 2006.

Recapitalization Goals Are Not Supported By Knowledge-Based F-22A and JSF Business Cases, GAO-06-487T. Washington, D.C.: Mar. 16, 2006.

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Tactical Aircraft: Opportunity to Reduce Risks in the Joint Strike Fighter Program with Different Acquisition Strategy, GAO-05-271. Washington D.C.: Mar. 15, 2005.

Tactical Aircraft: Status of F/A-22 and JSF Acquisition Programs and Implications for Tactical Aircraft Modernization, GAO-05-390T. Washington, D.C.: Mar. 3, 2005.

Joint Strike Fighter Acquisition: Observations on the Supplier Base, GAO-04-554. Washington, D.C.: May 3, 2004.

Joint Strike Fighter Acquisition: Managing Competing Pressures Is Critical to Achieving Program Goals, GAO-03-1012T. Washington, D.C.: July 21, 2003.

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QUESTIONS AND ANSWERS SUBMITTED FOR THE RECORD

MARCH 11, 2008

QUESTIONS SUBMITTED BY MR. ABERCROMBIE

Mr. ABERCROMBIE. Admiral Myers, you mention in your statement that the Navy is working with the Air Force on jamming transmitters, and has leveraged previous work completed as part of the B–52 Stand-Off Jammer (SOJ) program, which has now been canceled. Do you believe that the EA–18G will be able to fill the gap that the B–52 SOJ program was intended to fill?

Admiral MYERS. The EA–18G was developed to replace the EA–6B in the carrier air wing. The Navy is executing its program of record and divesting its expeditionary EA–6B squadrons in accordance with the EA–6B service MOA signed by the USN, USMC, and USAF in 2004. The EA–18G is not designed nor was it intended to replace the B–52 SOJ. The USAF is investigating a scaled down version of the SOJ that it refers to as the B–52 Core Component Jammer (CCJ). The Navy has leveraged off the previous work that the Air Force conducted in the early stages of the B–52 SOJ and has applied it toward technology maturation. This will conceptually ensure that the EA–18G with its Next Generation Jammer will become an essential part of the system of systems to counter enemy electro-magnetic capabilities.

Mr. ABERCROMBIE. We noted in your statement that there is a significant increase in Class A flight mishaps in FY 2008 compared to this time last year, and that you see no trends in causal factors at this time, but that Navy leadership has addressed a message to every Naval aviator emphasizing a—"back to basics" operational risk management initiative. Please expand on what this "back to basics" message is, and how you believe this will help to lower the number of Class A mishaps.

Admiral MYERS. Thus far in FY 2008, we have had 10 Class "A" flight mishaps resulting in five fatalities and 11 lost aircraft, which when annualized at our current rate (20 mishaps) is above the norm for the past 10 years (average of 16.5 Class A flight mishaps per year). The causal factors for the Class A's cross the full spectrum of Naval Aviation mishap characterizations including G-induced Loss Of Consciousness (G–LOC), mid-air collisions, material failure, bird strike, several instances of Controlled Flight Into Terrain (CFIT), and loss of situational awareness. As part of the ongoing effort to arrest the rising mishap rate we have taken the following action:

- Commander Naval Air Training Command directed a Professional Excellence Standdown on 17 March.
- Commander Naval Air Forces (CNAF) took the following actions:
  - Sent a "Personal For" message on 16 February to Naval Aviation's Commanders, Commodores, Carrier Air Wing Commanders, Commanding Officers, and Officers in Charge reemphasizing the importance of getting back to the basics of naval aviation.
  - Sent a "Focus on Safety—Back to Basics" message on 25 February for all of Commander Naval Air Forces commands to reiterate the importance and focus on safety and the founding principles of Naval Aviation—"Aviate, Navigate and Communicate." Commander Naval Air Forces reiterated his direction to refocus our aircrew and stick to our proven Tactics, Techniques and Procedures (TTPs), Naval Aviation Training and Operations Procedures Standardization (NATOPS), Standard Operating Procedures (SOPs), and other guidance to ensure safe mission accomplishment.
  - Intend to direct a "strategic human factors review" at the unit level for a comprehensive look at basic aviation skills training and aircrew performance and aptitude. Details are being finalized and will be presented at the O–6 Commanders Conference in April. CNAF will begin the review shortly after the conference and follow up with actionable feedback prior to the end of May.
  - Developing a Strategic Communications Plan to ensure CNAF message regarding operational excellence is understood at every level. The plan is currently in initial draft.

Specifically, the Back to Basics message was provided for an awareness of the ongoing problem of basic mistakes made. The Commander Naval Air Forces wants every aviator to be aware of the issue and that each individual is responsible for leading Naval Aviation to excellence. By itself the message will do little however, it is part of the larger drumbeat, the other measures included above, that continues in the effort to keep the leadership focused and informed.

Mr. ABERCROMBIE. Mr. Balderson, you mention in your statement that, with respect to a competitive JSF engine program, "projected savings from not doing competition outweigh the investment and sustainment costs." We also understand the Department of Defense has budget pressures and believes that there are higher priority needs, but given the importance of the JSF to address that Navy's strike fighter shortfall, how do you view the benefits of competition including better engine performance, improved reliability, increased contractor responsiveness, a more robust industrial base, and improved operational readiness of a two-engine JSF propulsion program?

Mr. BALDERSON. The conclusions of all three 2007 Congressionally-directed engine studies are supportive of competition in general, but do not obviate the Department's initial findings that the expected savings from competition do not outweigh the investment costs. The Department agrees that cited non-financial benefits have merit. Affordability is also a consideration for the Department.

Mr. ABERCROMBIE. You mentioned in your statement that the B–52 Stand-off Jammer program was canceled in December 2005, which "jeopardized the ability of the Air Force to meet stand-off jamming requirements by 2012." You mention that as a result of this, that the Air Force proposed the core component jammer program, but that is it unfunded to date. Will that Air Force be able to meet stand-off jamming requirements by 2012? If not, how will the Air Force compensate for this lack of capability?

General DARNELL. The AF will be unable to achieve a stand-off jamming capability prior to 2012; however, we are still exploring the stand-off jamming mission through tech maturation efforts and possible FY10 program funding efforts.

That being said, our mitigation plan includes the fielding of a stand-in jammer and decoy capability (MALD–J/MALD), the use of stealth capabilities (F–22/F–35), and the development of CONOPS to incorporate these capabilities. MALD is on schedule for fielding in FY10, but is contingent upon Congressionally deferred PBO8 War Consumable funds being replaced in the FY08 GWOT Supplemental. MALD–J is scheduled for fielding by FY 2012.

Mr. ABERCROMBIE. We note that your Class A mishap rate is 12 as compared to 10 at this time last year, and that like that Navy, you have also instituted a "back-to-basics" approach with a hard look at risk assessment techniques. Please further describe this approach and how you believe it may help to alleviate the rising Class A mishap rate.

General DARNELL. AF Safety has asked commanders at all levels to step up emphasis on a back-to-basics approach—a hard relook at our risk assessment techniques, to ensure our Airmen understand that rules and tech data are the life blood of doing things the right way. This approach emphasizes and evaluates Airmen's adherence to established normal and emergency procedures, checklist discipline, and general book knowledge and expertise.

This approach reviews and emphasizes better and appropriate decision-making at all levels during normal and time-critical scenarios for our operations and maintenance Airmen. Our Airmen must be able to accurately and swiftly consider the risks of their activities, weigh whether the mission goals warrant the risk, assess whether risk mitigation factors are viable and in place, and make sound and solid decisions about whether to proceed or halt the activity. If needed, appropriate levels of command must decide to accept—or not accept—the risk. This applies whether patrolling the skies and streets of Baghdad, working the flight line at home station, or playing on the lake during spring break.

Human factors continue to dominate our mishap causal factors, consistently accounting for 67% of the last 11-years' mishaps. Specific areas include adherence to procedural guidance, channelized attention, procedural error, and decision-making during operations. These observations are also consistent with similar observations across the aviation industry, and apply to all of our aircraft types. Experience has shown that human factors mishaps can be prevented through continued training and emphasis on the "basics".

Mr. ABERCROMBIE. The GAO recommends revisiting JSF's mid-course risk reduction plan which has removed two test aircraft, streamlined staffing, and proposes to use test assets more efficiently. Also, the GAO recommended that the JSF program revise its cost estimate. Do you agree with these recommendations?

Secretary YOUNG. The Mid-Course Risk Reduction (MCRR) plan is a cost effective approach to managing the Joint Strike Fighter (JSF) program within the budget and with manageable risk. I approved the MCRR plan with the knowledge that we would monitor the effects and risks to the program. MCRR makes enhanced use of extensive ground test facilities and a flying test bed to accomplish many test points. Further, the two test aircraft removed were flying qualities aircraft, not avionics and mission systems test aircraft. MCRR decisions did not significantly increase testing and actually helped reduce the flight testing workload through the efficient use of other test assets. The Department established metrics to evaluate contractor Management Reserve replenishment and use, manufacturing line progress, and developmental testing progress and impacts. The metrics are updated monthly and I am prepared to adjust the program's assets if MCRR has a negative impact in any of these areas.

The Department is updating the JSF cost estimate through a joint Service team being led by the Department's Cost Analysis Improvement Group. The update will be used to support the Department's FY 2010 budget process.

Mr. ABERCROMBIE. You mention that a decision must be made on F–22 production by November to avoid increased costs. What will be the increased costs if the decision is made when the new Administration takes office after January 2009?

General HOFFMAN. Unless additional aircraft buys are authorized by November 2008, the F–22 production line will begin to shut down. While the last aircraft delivery is scheduled for December 2011, the vendor base for subcomponents completes deliveries as early as late 2008. The cost impact due to a production line break would depend on the duration of that break. Once suppliers begin their shutdown activities, the highly-skilled workforce currently working on the F–22 will begin to transition to other programs. Some components will require redesign and any new suppliers will have to be qualified to deal with increasing diminishing manufacturing sources. If the new Administration elects to add Advanced Procurement for additional F–22s to the FY10 PB, the production break will be at least 11 months. There is an on-going RAND study to determine the costs and feasibility of restarting F–22 production after plant shutdown (Estimated Completion Date: May 08).

Mr. ABERCROMBIE. Mr. Secretary, you noted in your prepared statement that the Department did not direct the Cost Analysis and Improvement group to update their analysis of a one and two engine JSF program last year and that there have been no significant changes to the program that would have resulted in any changes to their findings. Given the fact that there were two F135 engine test failures in the past year, both associated with the first-to-need STOVL variant, and the F136 engine has progressed an additional year after the Congress authorized and appropriated and additional $480 million last year, wouldn't an evaluation of costs, schedule, and performance reveal changes in the value of a competitive engine program to some degree since last year?

Secretary YOUNG. The Department strongly supports the many advantages that competition provides. However, an F–35 competitive engine program would cost an additional $1.4 billion to complete development and $1.7 billion, through Fiscal Year 2015, to establish production. In a constrained budget environment, the funds required for a competitive engine program must compete with other priorities as the Department seeks to provide the best taxpayer value in submitting the Defense budget. The Department will review all aspects of the F–35 program, to include the F135 engine and the F136 engine, as it prepares the FY 2010 budget for submission, and will continue to obligate and expend the funds appropriated by Congress as authorized.

Mr. ABERCROMBIE. The Secretary of Defense, testifying before this committee on February 6th of this year, stated that he would review the development and procurement of a competitive F–35 engine in light of recent F135 engine test failures. Has he completed that review? If so, what did he conclude?

Secretary YOUNG. The Department acknowledges risks associated with a single source provider of the F–35 propulsion system but believes the risks are manageable. The Department is reviewing the F135 engine program as a precursor to releasing funds for the six F–35 Short Take-Off and Vertical Landing aircraft in the FY 2008 Low Rate Initial Production Lot 2 contract. The Department will review all aspects of the F–35, to include the F135 and the competitive F136 engine, during the FY 2010 budget process.

Mr. ABERCROMBIE. Secretary Young, In your written testimony, you state that the Department believes that the C–17 production line should not be kept open; however, the Department removed $217.6 million that was to be used for production line shutdown from its FY 2009 budget submission. Additionally, OSD Comptroller officials have stated that the Department intends to leave the shutdown decision to the next Administration. Can you explain the difference in your written testimony com-

pared to the actual actions of the Department regarding the C–17 production line shutdown decision?

Secretary YOUNG. The Department maintains a disciplined approach in analyzing capability requirements through the Joint Capabilities Integration Development System and validated through the Joint Requirements Oversight Council. The Quadrennial Defense Review (QDR) then determines force structure requirements to provide the capabilities needed to meet the National Military Strategy. In the last QDR, multiple studies indicated that we need to procure fifth generation aircraft to address advanced aircraft and surface-to-air missile threats. The DoD program contains a robust mix of fifth generation F–22s and F–35s in quantities sufficient to prevail against a range of potential foes. The QDR also balances those force structure requirements within a comprehensive budget plan and I believe the tactical air force structure programmed in the FY 2009 budget submission will provide a very capable force and meet the requirements for the National Military Strategy.

Mr. ABERCROMBIE. Secretary Young, You may be aware that the 2005 MCS is considered incomplete in its analysis and recommendations by the GAO and many in Congress because: It did not take into account the end strength increases of 92,000 personnel for the Army and Marine Corps; it did not consider any mobility requirements of the Army's Future Combat System and Modularity concept of employment; it did not consider the fact that the Army Manned-Ground Vehicle is too large to be transported by a C–130 aircraft; it did not consider the 159% over-utilization rate of the current fleet of C–17 aircraft; it did not consider the use of C–17s in multi-use roles for which the C–17 is being used extensively in current operations; and, it did not have or use historical mobility forces operational data in its analysis to verify actual mobility requirements and operations. Did you account for all these factors when determining whether or not to keep the C–17 production line open?

Secretary YOUNG. The Department believes that the Mobility Capabilities Study (MCS) 2005 provides a sound basis for strategic airlift planning. In response to your specific issues with the report, I would note the following: The Department has studied the effects of the ground troop end strength increases, and concluded that, because these ground forces increases did not change the overall wartime defense strategy, there was no change in peak strategic airlift demand. The movement of Army heavy equipment is largely made by pre-positioning or via sealift. Again, the Department does not anticipate that the timing and quantity of any required air movement of these types of assets will drive an increase in the peak airlift demand. Our analysis indicates that the over utilization of C–17s is actually 106 percent. If the fleet continues to fly at this rate throughout its service life, we would need to recapitalize the fleet somewhat sooner. However, over history our airlift fleet is underutilized. Modest over utilization of the fleet for a few years will likely be balanced by periods of underutilization. The Department did examine multi-use roles of the C–17 in MCS 2005, including direct delivery, intra-theater missions, and tactical operations. Historical. analysis was used for the study where it was appropriate to do so. Overall, however, the scenarios envisioned in the MCS were much more demanding than the actual operations that mobility forces have historically flown. Indeed, the scenarios used in MCS, and the closely spaced timing of these scenarios, may very well overstate the airlift requirement.

Mr. ABERCROMBIE. Secretary Young, We understand your written testimony to be inaccurate in describing what the 2005 MCS stated about the Department's required C–5 inventory to meet strategic airlift requirements. Your testimony states that the 2005 MCS concluded that a "fleet of 112 modernized C–5s, provided sufficient strategic airlift capacity" when it actuality, the 2005 MCS states that a fleet of "112 modernized and reliability improved C–5s" meets the Department's airlift and strategic airlift requirements. Can you explain why the "reliability improved" phrase was excluded from your written testimony when referencing 2005 MCS findings and recommendations? Given the fact that only 52 of the Air Force's 111-aircraft C–5 fleet will receive the reliability enhancement and re-engining program, do you view the reduced availability of the remaining 59 C–5 aircraft problematic in meeting the Department's airlift requirements and how does this factor into your opinion to close the C–17 production line?

Secretary YOUNG. The Mobility Capabilities Study (MCS) 2005 findings are based on total fleet capability. With minor exceptions, the C–17s and C–5s are fungible assets. The MCS recommendations for 180 C–17s and 112 modernized and reliability improved C–5s is but one combination of strategic airlift that meets the projected demand. Since the completion of the MCS, 10 additional C–17s have been appropriated by Congress. Subsequent analysis performed in support of the C–5 Reliability Enhancement and Re-engining Program (RERP) Nunn-McCurdy process identified total organic oversized and outsized airlift fleet capacity at 33.95 Million Ton Miles per Day (MTM/D), as informed by the MCS analysis. That analysis also

shows that 189 C–17s (one of the 190 is committed to NATO) and 111 C–5s (including 52 RERP'd C–5s) meet the JROC-validated requirement during surge operations with acceptable risk and that no other alternative provided greater capability at less cost. I would also point out that the programmed fleet represents a significant improvement over our current fleet, since we currently have taken delivery of only 171 C–17s and none of the C–5 fleet has been RERP'd. At this time, I do not believe that the entire C–5 fleet needs to be RERP'd to meet our strategy. However, the option of completing RERP on the remaining C–5As in the future is a potential source of additional airlift capacity should the strategy change in such a way as to demand more airlift. Further, there is great potential to get more operational utility from the C–5 aircraft through increasing spares and maintenance relative to the levels planned under the assignment of these aircraft to Reserve units. Finally, as part of the C–5 decision, the Air Force was directed to pursue Lean Six Sigma efforts to aid C–5 maintenance and operations, potentially yielding even greater airlift capacity.

Mr. ABERCROMBIE. The Navy's statement includes the current UH–1Y/AH–1Z procurement objective of 180 AH–1Zs and 100 UH–1Ys. Do you expect the quantities of helicopters to increase as you evaluate the impact of increasing the Marine Corps end strength of 202,000? If so, by how many helicopters?

General TRAUTMAN. The Marine Corps has requested the H–1 Upgrades Acquisition Program Baseline (APB) Program of Record to increase to 226 AH–1Zs and 180 UH–1Ys in order to support the USMC end strength increase to 202K. The request is supported by Marine Requirements Oversight Council Decision Memorandums 44–2007 dtd 29 May 07 and 51–2007 dtd 9 Jul 07.

Documentation reflecting the increased quantities will be revised in time to support the Full Rate Production decision review scheduled for the fourth quarter FY08.

Mr. ABERCROMBIE. Mr. Secretary, in our February 27th letter to you inviting you to testify here today, we asked that you articulated views of the required tactical air force structure compared to the programmed tactical air force structure and whether you believe the programmed force structure meets requirements for the National Military Strategy. However, we noted that this request is missing from your statement. Could you comment on this for the subcommittees?

Secretary YOUNG. The Department maintains a disciplined approach in analyzing capability requirements through the Joint Capabilities Integration Development System and validated through the Joint Requirements Oversight Council. The Quadrennial Defense Review (QDR) then determines force structure requirements to provide the capabilities needed to meet the National Military Strategy. In the last QDR, multiple studies indicated that we need to procure fifth generation aircraft to address advanced aircraft and surface-to-air missile threats. The DoD program contains a robust mix of fifth generation F–22s and F–35s in quantities sufficient to prevail against a range of potential foes. The QDR also balances those force structure requirements within a comprehensive budget plan and I believe the tactical air force structure programmed in the FY 2009 budget submission will provide a very capable force and meet the requirements for the National Military Strategy.

Mr. ABERCROMBIE. Mr. Secretary, as you know, section 213 of the National Defense Authorization Act for FY 2008 directed the Department to ensure the "obligation and expenditure in each fiscal year of sufficient annual amounts for the continued development and procurement of two options for the propulsion system for the Joint Strike Fighter." However, you state in your written testimony that the Department will "ensure that in each fiscal year where funds are appropriated there is obligation and expenditure of sufficient amounts." Do you believe this answer is consistent with the intent of Congress to take the actions necessary to develop and procure two options for the Joint Strike Fighter's propulsion system? How does the OSD General Counsel view the Department's conformance with section 213 by not including funds in the budget request for a competitive JSF engine?

Secretary YOUNG. The President's annual budget request recommends for congressional consideration such measures as the President shall judge necessary and expedient. The Department will comply with section 213 of the National Defense Authorization Act for Fiscal Year 2008. We will ensure that, in each fiscal year for which funds are appropriated for the Joint Strike Fighter (JSF) program, sufficient amounts are obligated and expended for continued development and procurement of two options for the JSF propulsion system.

Mr. ABERCROMBIE. You mentioned in your opening statement that the Department assessed the risks of the mid-course risk reduction plan, including the deletion of two test aircraft, as manageable since LRIP aircraft could be used if test validation and verification efficiencies were not realized. Will these aircraft be effective for the test mission if they are not specifically constructed with the test wiring and

other systems necessary to most efficient capture test data? Additionally, do you see force structure problems in using LRIP aircraft for test missions rather than operational missions?

Secretary YOUNG. A select number of early low rate initial production aircraft will be instrumented with requisite test wiring and other systems similar to that of our developmental test aircraft. The instrumentation included in these select aircraft was a requirement of the operational test community to assist them in proper evaluation of the F–35 during Initial Operational Test and Evaluation. We do not anticipate creating any force structure issues by using one of twenty Operational Test aircraft for a short duration while finishing developmental testing prior to commencement of operational testing.

Mr. ABERCROMBIE. You mention in your statement that four additional F–22A aircraft to be requested in the FY 2009 supplemental "will provide production line flexibility." At a current production rate of 20 aircraft per year, this appears to be only two and a half moths of production. How do you believe this will provide production line flexibility?

Secretary YOUNG. The Department is working with the Air Force to determine the necessary actions required to keep the F–22A production line viable so that a new Administration, as it looks at the Defense budget and priorities, can make the decision to expand or not to expand the F–22A force.

Mr. ABERCROMBIE. We understand the supplemental budget request will include four F–22As, but this would amount to only two and a half months of production at the current rate of 20 aircraft per year. How will these four additional F–22s keep the production line open as you state in your testimony?

General HOFFMAN. The supplemental extends production by two to three months by continuing the fabrication of parts at the supplier level. Once the parts necessary for the four aircraft are finished, those suppliers will shut down. A production break will ensue until the new administration chooses to procure additional F–22As.

Mr. ABERCROMBIE. We understand that the Department of Defense won't budget for a competitive JSF engine due to higher priority funding needs. What is the Air Force opinion of whether the benefits of the competitive engine program outweigh the costs?

General HOFFMAN. The Air Force continues to believe the risks associated with a single source engine supplier are manageable and do not outweigh the investment required to fund a competitive alternate engine. However, the Air Force and Navy are executing the $480M appropriated by Congress in the 2008 budget to continue development. We completed the Critical Design Review for the alternate engine in February 2008 and we have completed over 300 hours of engine testing for the conventional takeoff and landing aircraft.

Mr. ABERCROMBIE. We understand that the Air Force has expressed a concern about a fighter inventory shortfall potentially beginning in the 2017 timeframe, but that includes service life extension programs for the A–10, F–15E and the 177 F–15C/Ds (so called "Golden Eagles"). Are life extension programs for these aircraft fully funded in the FY 2009 budget request and in the future years defense program?

General DARNELL. The A–10 has a two-fold approach to extend its service life to 16,000 hours. First, an intensive aircraft inspection is accomplished at 8,000 hours to strengthen or replace key structural components. Thereafter, aircraft undergo a structural service inspection every 2,000 hours. Second, the A–10 wing replacement program is replacing existing thin-skin wings with new thick-skin wings. The wings program is currently funded to replace 228 of 242 thin-skin wings. There are 14 wings and 3 spares on the FY09 unfunded requirements list.

The F–15 does not have an official Service Life Extension Program (SLEP) nor is one programmed; however, aircraft receive extensive inspections at depot every 6 years. The 2 Nov 07 mishap led to a thorough evaluation of previous F–15 fatigue testing. The evaluation has recommended a complete aircraft teardown, full-scale fatigue test, and other safety modifications. This testing will require FY09 and future years funding which is not currently identified.

Failure modes discovered during the full-scale fatigue test could potentially lead to a SLEP requirement. From inspections following the mishap, nine aircraft were discovered to have longeron cracks. Five of these will undergo longeron replacement, while four will be retired due to their existing near-term retirement date. Recurring longeron inspection criteria is being developed for all F–15A–D aircraft. The F–15 is the next aircraft to be assessed by the Fleet Viability Board (FVB). The FVB will forecast operational health and structural viability of the F–15C/D for the next 20+ years. The FVB independent technical assessment will inform sustainment and retirement decisions.

Mr. ABERCROMBIE. We note that the CSAR–X program has undergone a two-year delay due to GAO protests. Based on this delay, we understand that the 101 HH–60Gs will be required to last an additional two years. Is the HH–60G modification budget in FY 2009 and in the FYDP fully funded to meet CSAR requirements?

General DARNELL. HH–60G funding is sufficient to meet current requirements; however, additional outyear funding may be required if CSAR–X is further delayed.

QUESTIONS SUBMITTED BY MR. ABERCROMBIE AND MR. TAYLOR

Mr. ABERCROMBIE. and Mr. TAYLOR. 1. Engine Competition—Do you believe life-cycle savings comparable to the past F100 and F110 competition axe achievable for the JSF?

Mr. SULLIVAN. It was a pleasure appearing before your subcommittees on March 11, 2008 to discuss the Joint Strike Fighter (JSF).[1] This is our response. Our recent report on the JSF provides more details on these and other related issues.[2]

Our analysis shows that it is reasonable to assume that competitive pressures would yield enough financial savings to offset the costs associated with ensuring competition, given the current number of engines to be procured, length of the program, and expected costs to operate and support the engines. We believe it is reasonable to assume at least this much savings (9 to 11 percent) based on past analysis of actual data from past competitions, including the F–16 engine competition. While we did not do a detailed comparison between the JSF and F–16 engine competitions, we believe the JSF competitive engine program with the proper structure and attention, and up-front investments, may achieve life-cycle savings rates similar to the F–16 competitive engine program. Additionally, there are a number of non-financial benefits that may result from competition, including better performance, increased reliability, and improved contractor responsiveness, that should be taken into strong consideration.

Mr. ABERCROMBIE. and Mr. TAYLOR. 2. JSF Plans and Use of Management Reserves (a) How did the program deplete reserves and why are additional funds necessary?

Mr. SULLIVAN. The Joint Strike Fighter program used its management reserves much faster than expected to pay for development cost increases and schedule delays, which were the consequences of the late release of engineering drawings, manufacturing taking longer than planned, and late delivery of parts from suppliers. These in turn contributed to continuing cost and schedule impacts in the manufacture of development test aircraft, including extensive and inefficient out-of-station work and delays in the manufacturing schedule. By mid-2007, the aircraft development contract had completed one-half of the amount of work scheduled, but had expended two-thirds of the budget, depleting a large portion of the reserves. Figure 1 shows how management reserves totaling almost $1.5 billion were applied since the major restructuring of the program in 2004.

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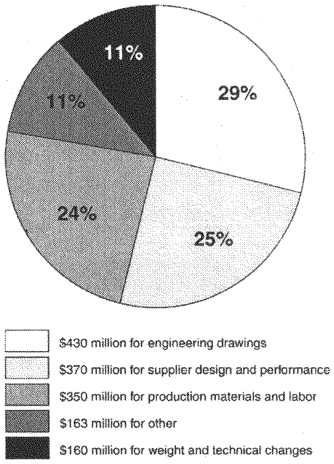
[1] GAO, *Joint Strike Fighter: Impact of Recent Decisions on Program Risks,* GAO–08–569T (Washington, D.C.: Mar. 11, 2008).

[2] GAO, *Joint Strike Fighter: Recent Decisions by DOD Add to Program Risks,* GAO–08–388 (Washington, D.C.: Mar. 11, 2008.

Figure 1: JSF's Use of Management Reserves



Source: GAO analysis of DOD data.

Management reserves are budgeted funds set aside for unanticipated development challenges and for known and unknown cost risks. Maintaining an adequate level of reserves throughout system development is prudent. At development start, the JSF program budgeted reserves at 10 percent of contract value and expected to draw on them at about the same rate as contract execution. This proved insufficient as the design and manufacturing problems noted above decreased management reserves to about $400 million in 2007, less than half the amount officials believed necessary to complete the remaining 6 years of development. Moving forward, the program faced significant manufacturing and software integration challenges, costly flight testing, and $950 million in other known cost risks. This presented the program with a likely untenable contract overrun in 2008 if no action was taken. Officials decided not to request more funding, and instead adopted a mid-course plan that reduced test assets and made other changes in order to replenish reserves to about $1 billion-the amount officials believe will be needed to complete development in October 2013.

Mr. ABERCROMBIE. and Mr. TAYLOR. (b) What could have been done to prevent, or at least mitigate, the setbacks in design and manufacturing that precipitated the depletion of management reserves?

Mr. SULLIVAN. The JSF started system development before requisite technologies were ready, started manufacturing test aircraft before designs were stable, and moved to production before flight tests had adequately demonstrated that the aircraft design meets performance and operational suitability requirements. We previously reported that the JSF acquisition strategy incorporated excessive overlap in development and production, posing substantial risks for cost overruns, schedule slips, and late delivery of promised capabilities to the warfighter.[3] The outcome was a cascading effect from late engineering drawings, numerous changes to drawings, late standup of suppliers, parts shortages, and delayed, inefficient manufacturing with substantial out-of-station work.

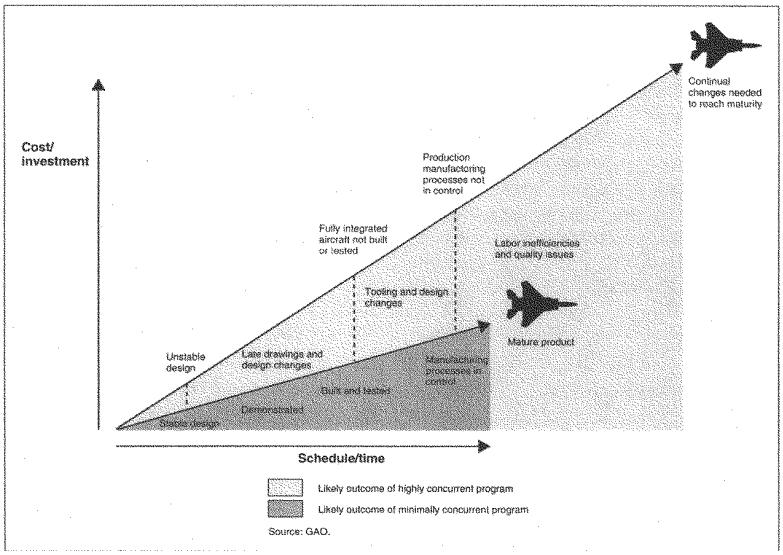
We find much the same behavior, and poor outcomes, in many major defense programs that do not adequately follow evolutionary, knowledge-based acquisition practices. Our recent assessment of 72 weapon systems found that none of them proceeded through system development meeting the best practices standards for mature technologies, stable designs, or mature manufacturing processes by critical junctures of the program.[4] Figure 2 is a notional illustration, relevant to the JSF and other major weapon systems. It shows the negative cost and schedule impacts from a highly concurrent acquisition strategy that proceeds without requisite knowl-

[3] GAO, *Joint Strike Fighter: Progress Made and Challenges Remain,* GAO–07–360 (Washington, D.C.: March 15, 2007).

[4] GAO, *Defense Acquisitions: Assessments of Selected Weapon Systems,* GAO–08–467SP (Washington, D.C.: March 31, 2008).

edge and compares it with an acquisition strategy with less concurrency that captures key design and manufacturing data before production begins.

Figure 2: Notional Illustration Showing the Different Paths That JSF and Other Major Programs Can Take



Mr. ABERCROMBIE. and Mr. TAYLOR. (c) What do you see as the benefits and/or risks associated with DOD's decision to go ahead and implement its Mid-Course Risk Reduction Plan?

Mr. SULLIVAN. The mid-course plan may relieve short-term funding pressures but at the cost of increased future risks to cost and schedule. Adequate management reserves throughout the development period are essential to handle new and unforeseen problems. Replenishing them likely avoided a cost overrun this year. However, we believe it likely that DOD will need to eventually restructure and add more money and time to development, a critical issue that should be addressed now rather than one or two years from now.

The Director, Operational Test and Evaluation, and officials from other prominent defense offices perceived the plan as too risky because it does not provide adequate resources for development testing or resolve systemic problems that depleted management reserves. With reduced capacity and fewer flights, the time to complete development effectively will get more and more compressed, affecting the planned start of operational testing in 2012 and production decisions in 2013. The mid-course plan's reduction of test resources will likely result in design and performance problems not being found until late in development during operational testing and after considerable numbers of aircraft have been ordered. This would likely make fixes more expensive, requiring retrofit of already-built aircraft, and delays getting aircraft to the warfighter.

We also note that the mid-course plan to reduce flight tests relies more on computer modeling and simulation and laboratories. However, the specific details on exactly how this will be done have not been finalized. The Rand Corporation reported in a study on testing and evaluation that modeling is not a substitute for flight testing.[5] Rand found that even in performance areas that are well understood, it is not unusual for flight testing to uncover problems that were not apparent in simulations. Examples include flight effects on the wing of the F/A–18E/F and buffeting of stores externally carried by various aircraft.

Mr. ABERCROMBIE. and Mr. TAYLOR. 3. JSF Cost Estimate—Can you shed further light on your concerns with the program's cost estimate? What is the basis for your concerns?

[5] Rand Corporation, *Test and Evaluation Trends and Costs for Aircraft and Guided Weapons* (Santa Monica, California, 2004).

Mr. SULLIVAN. In our latest report on the JSF, we determined that the official program cost estimate is not reliable when judged against best practice standards used in the federal government and industry.[6] Specifically, the program cost estimate (1) is not comprehensive because it does not include all applicable costs, including $6.8 billion for the alternate engine program; (2) is not accurate because some of its assumptions are overly optimistic and not supportable—such as applying a weight growth factor only half as large as historical experience on similar aircraft—and because the data system relied upon by the prime contractor and the program office to report and manage JSF costs and schedule is deficient; (3) is not well documented in that it does not sufficiently identify to cost analysts the primary methods, calculations, results, rationales and assumptions, and data sources used to generate cost estimates; and (4) is not credible according to three independent defense offices who all have concluded that program cost estimates are understated by as much as $38 billion and that the development schedule is likely to slip from 12 to 27 months.

We were concerned that, despite these findings and all the significant events and changes that have occurred since the start of system development in 2001, DOD did not intend to accomplish another fully documented, independent total program lifecycle cost estimate for another 6 years. Because of the size of this acquisition, its impact on our and allied tactical air forces, and the unreliability of the current estimate, we recommended that an immediate new and independent cost estimate and an uncertainty analysis be done to more firmly establish funding requirements needed to complete development and to provide more confidence in the fidelity of the procurement cost estimate as production ramps up. DOD concurred and said that a new comprehensive and independent estimate is underway but did not believe an uncertainty analysis was needed.

Although the new JSF Selected Acquisition Report, dated December 2007, indicates that development and procurement costs have remained relatively stable from the prior year, we continue to believe that costs will increase significantly in the future, perhaps with the new comprehensive estimate being readied for the fiscal year 2010 budget cycle. The design and manufacturing problems that gave rise to cost and schedule increases and depleted management reserves will continue to exert pressure. The program does not expect a quick turnaround in production line efficiency with cost pressures persisting well into 2009.

There are other indicators that acquisition costs will substantially increase from what is now being reported to Congress. Specifically:

- DOD has identified billions of dollars in unfunded requirements that are not in the program office estimate, including additional tooling and procurement price hikes.
- A new manufacturing schedule indicates continued degradation in the schedule and further extends times for first flights.
- Both the aircraft and engine development contracts have persistent, substantial cost variances that cost analysts believe are too large and too late in the program to resolve without adding to budget.
- As discussed above, officials at three defense organizations independent of the JSF program office stand by their assessments that the program office's cost estimate is significantly understated and the current schedule unlikely to be achieved.

Mr. ABERCROMBIE. and Mr. TAYLOR. 4. JSF Challenges—With 90 percent of its planned investment remaining, what are some additional concerns and risks for the program is it moves forward?

Mr. SULLIVAN. Only about halfway through its planned development period, the JSF is in its most challenging phase as it seeks to finalize three designs, mature manufacturing processes, conduct flight tests, and ramp up production toward a full-rate production decision in 2013. The JSF program's acquisition strategy includes significant challenges to achieve projected cost and schedule goals. The program has begun procurement but not yet demonstrated that the aircraft design is mature, can be manufactured efficiently, and can be delivered on time. The flight test program has just begun, and there is always risk of problems surfacing and causing further delays. The degree of concurrency between development and production in the JSF program's acquisition strategy poses significant risks of cost and schedule overruns and late delivery of promised capabilities to the warfighter:

Specific challenges:

[6] GAO–08–388. Appendix II provides a detailed analysis of our concerns about the reliability of the program office cost estimate.

- Keeper aircraft affordable. From its outset, the JSF goal was to develop and field an affordable, highly common family of strike aircraft. Rising prices and somewhat lower commonality than expected raise concerns that the United States and its allies may not be able to buy as many aircraft as currently planned. Rising prices erode buying power, likely resulting in reduced quantities and delaying the delivery of promised capabilities to the warfighter. Average unit procurement costs are up 27 percent since a major restructuring in 2004 and up 51 percent since the start of system development in October 2001.
- Annual funding reguirements. The program places an unprecedented demand on the defense budget for an average of about $11 billion a year for the next two decades-with attendant funding risk should political, economic or military conditions change. The JSF will have to annually compete with other defense and nondefense priorities for the shrinking discretionary federal dollar. To complete the acquisition program as currently planned, JSF will require about $269 billion from 2008 through 2034. Annual funding requirements for procurement increase rapidly as production ramps up to the full-rate production decision expected in October 2013. During the peak years of production, JSF procurement funding requirements are expected to average about $12.5 billion per year for the 12-year period spanning fiscal years 2012–2023. The program is so large that even small cost increases have significant budget consequences.
- Operating and support costs. Once fielded, the maintenance and operation of the JSF fleets will require large annual outlays. Assuming the current operating and support cost estimate, the quantities now planned, and an expected 8,000hour service life for each aircraft fielded over time, DOD would incur outlays of nearly $29 billion annually. DOD sharply increased its projection of JSF operating and support costs compared to previous estimates. The December 2007 SAR projected operating and support costs for all three variants at $764.1 billion, up from $650.3 billion in the last year, and more than double the $346.7 billion amount shown in the December 2005 SAR. The operating cost per flying hour for the JSF conventional takeoff and landing variant is now estimated to be greater than current flying hour cost for the F–16, one of the legacy aircraft to be replaced.
- Containing weight growth. Weight growth early in the program was the most significant factor causing a $10 billion cost increase and an 18-month extension in development. As designs continue to mature and flight testing intensifies, maintaining weight within limits to meet warfighter capability requirements will pose a continuing challenge to cost, schedule, and performance goals. Aircraft weight generally continues to increase during the balance of the development period; an OSD official told us that half of all weight growth during the development effort can be typically expected after first flight but prior to initial operational capability, and that additional small but persistent weight increases can be expected during the aircraft's service life. First flight of a productionrepresentative JSF has not yet occurred, and weight is running very close to the limits as evaluated by engineering analyses and trend extrapolation.
- Unsettled quantities and mix of aircraft. The current JSF program shows a total of 680 aircraft to be procured by the Department of the Navy, but the allocation between the carrier variant and the short take off and landing variant has not been officially established. We observe that the Navy and Marine Corps have somewhat divergent views on the quantities, intended employment, and basing of JSF aircraft. The Navy wants the Marine Corps to buy some carrier variants and continue to man some of its carrier-based squadrons. The Marine Corps, however, wants to have a future strike force composed solely of the short take-off and landing variant and has established a requirement for 420 aircraft. During conflicts, the Marines plan to forward deploy JSFs to support the expeditionary ground forces.

Navy and Marine Corps officials expressed concerns whether they can afford the quantities now planned at peak production rates. Officials told us last year that buying the JSF at the current planned rate—requiring a ramp-up to 50 by fiscal year 2015—will be difficult to achieve and to afford, particularly if costs increase and schedules slip. Officials told us that a maximum of 35 per year was probably affordable, given budget plans at that time.[7]

[7] GAO, *Tactical Aircraft: DOD Needs a Joint and Integrated Investment Strategy,* (GAO–07–415 (Washington, D.C.: Apr. 2, 2007).

We look forward to our continuing work with your staffs on this extremely important and challenging program.

QUESTIONS SUBMITTED BY MR. MILLER

Mr. MILLER. It is my understanding that the Air Force (AF) Civil Engineering Support Agency predicts the heat signature of JSF operations, which is substantially higher than for any other aircraft in the inventory, will result in accelerated deterioration of airfield pavements at main operating bases, dual use commercial military airfields, such as Eglin AFB FL, and expeditionary airfields like those supporting the global war on terrorism. In addition to premature pavement failures, potentially, this could result in high instances of foreign object damage hazard to aircraft operations. Given the timing of beddown activities at Eglin AFB, what action is being taken that DoD develop a joint pavement solution to this situation?

Secretary YOUNG. The F–35 Program Office has been addressing the issue of heat generated by the F–35 Integrated Power Package (IPP), roll posts, and main engine for several years. Early in development, the program collected full scale F–135 engine data to better understand the external environment associated with Short Take-Off and Vertical Landing (STOVL) operations. In late 2007, one third sub-scale model test of the IPP was performed in the Lockheed Martin hot gas lab in which the IPP exhaust temperatures and velocities were quantified to better understand the impacts to the primary operating surfaces (concrete, asphalt, AM–2, ship steel and non-skid). Our initial assessment concluded it is possible that IPP and engine exhaust may be high enough to cause damage to these surfaces. We will continue to assess the impact of the F–35 on these operating surfaces as we begin flight test of the STOVL airplane later this summer.

In the interim, we are working with the Services to develop mitigation plans should flight test show additional actions are required. One change already implemented for flight test is a software modification which prevents the IPP from entering one of the modes which could potentially damage asphalt. We are evaluating the acceptability of this particular mode for production airplanes.

The largest concern is the temperatures created by the main engine during vertical landings. We are working with the Air Force Civil Engineering Support Agency, Naval Facilities Command, Office of Naval Research, and Air Force Research Laboratory on a joint pavement initiative to develop an improved heat resistant concrete. If successful, this initiative would develop a solution to mitigate the damage to concrete at bases such as Eglin Air Force Base, the first F–35 Integrated Training Center, where pilots learn to execute F–35B vertical takeoffs and landings from concrete pads. Additional initiatives are looking at new coatings for expeditionary field matting and a more heat resistant non-skid surface for shipboard operations.

QUESTIONS SUBMITTED BY MR. LOBIONDO

Mr. LOBIONDO. In the event the F–22A buy remains at the current planned level of 183 planes, what is the plan for the 177 Golden Eagles? Will they remain in the USAF or will they be turned over to the Air National Guard for the Air Sovereignty Alert mission?

General DARNELL. If the F–22A buy remains at the current programmed level the Air Force will have to reassess the number of F–15Cs to keep in order to provide the required COCOM support to the National Military Strategy. The ability of the Air Force to reduce the F–15C fleet to 177 Golden Eagles was predicated on a procurement of greater than 183 F–22As. The F–15C Golden Eagle fleet will be used to supplement the F–22As and will likely be called upon to forward deploy to support any type of large force conflict. Additional F–15Cs will need to remain in the inventory to provide the necessary force structure for the Air National Guard to perform their Air Sovereignty Alert mission. How the Golden Eagles are employed and by whom will be a function of the Total Force management practices. Through force management, the Air Force will closely monitor the service life and fleet health of its air defense-capable platforms to ensure support to ASA and expeditionary demands. Also we are continuing to study second and third order effects of the recent structural issues encountered by the F–15 aircraft to assess the impact to future fighter force structure.

QUESTIONS SUBMITTED BY MR. ELLSWORTH

Mr. ELLSWORTH. The Navy in September 2000 designated the ALQ–214 Integrated Defense Countermeasures (IDECMP as a core system requiring organic depot maintenance capability under Title 10, U.S. Code, Section 2462. The system is currently supported by contractorprovided maintenance. The committee understands the total cost to stand up organic capability is $17.6 million but the Navy has not included any funding for this capability in its budget request. What is the Navy's plan for establishing organic depot maintenance capability for the IDECM system as required by law?

Mr. BALDERSON. The ALQ–214 program began in 1995. The maintenance concept at the program start was Organizational to Depot, with the contractor performing as depot. The system was designated as Core in September of 2000. The Core logistics capabilities statute (10 U.S. C. §2464) requires establishment of organic depot capability by IOC + 4 years. The system reached Initial Operational Capability (IOC) September 2004. The Depot Source of Repair (DSOR) analysis, completed in March 2007, resulted in selection of Naval Warfare Center Crane, Indiana, as the depot. The Navy continues working to identify funding resources for an organic depot capability. Due to fiscal constraints the requirement (approximately $17.6M) remains unfunded at this point.

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