

**HEARING TO RECEIVE TESTIMONY ON STRATEGIC FORCES PROGRAMS IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2011 AND THE FUTURE YEARS DEFENSE PROGRAM**

WEDNESDAY, MARCH 17, 2010

U.S. SENATE,  
SUBCOMMITTEE ON STRATEGIC FORCES,  
COMMITTEE ON ARMED SERVICES,  
*Washington, DC.*

The subcommittee met, pursuant to notice, at 2:40 p.m. in room SR-232A, Russell Senate Office Building, Senator E. Benjamin Nelson (chairman) presiding.

Committee members present: Senators E. Benjamin Nelson, Begich, Sessions, and Vitter.

Majority staff members present: Madelyn R. Creedon, counsel; and Richard W. Fieldhouse, professional staff member.

Minority staff member present: Daniel A. Lerner, professional staff member.

Staff assistants present: Kevin A. Cronin and Brian F. Sebold.

Committee members' assistants present: James Tuite, assistant to Senator Byrd; Ann Premer, assistant to Senator Ben Nelson; Lindsay Kavanaugh, assistant to Senator Begich; Rob Soofer, assistant to Senator Inhofe; and Sandra Luff, assistant to Senator Sessions.

**OPENING STATEMENT OF SENATOR E. BENJAMIN NELSON,  
CHAIRMAN**

Senator BEN NELSON. I call this subcommittee hearing to order. The Strategic Forces Subcommittee is meeting today. Good afternoon. But before we begin, I have one administrative announcement. The open portion of this hearing will continue until approximately 3:45 p.m., at which point we will recess and immediately move to SVC, the Visitors Center, 217, where we will reconvene at 4 o'clock for a closed briefing. This briefing will be for members and designated staff only.

We welcome all of our witnesses today to discuss strategic and nuclear forces of the Air Force and the Navy. Appearing before the subcommittee are: Dr. Bradley Roberts, Deputy Assistant Secretary of Defense for Nuclear and Missile Defense Policy; Lieutenant General Frank Klotz, Commander, Air Force Global Strike Command; Lieutenant General Mark Shackelford, Military Deputy, Office of the Assistant Secretary of the Air Force for Acquisition; Major Gen-

eral Donald Alston, Assistant Chief of Staff, Strategic Deterrence and Nuclear Integration, U.S. Air Force; Major General David J. Scott, Director, Operational Capability Requirements, and Deputy Chief of Staff for Operations, Plans, and Requirements, U.S. Air Force; and Rear Admiral Stephen Johnson, Director of Strategic Systems Programs, U.S. Navy.

The new Quadrennial Defense Review reaffirms that the United States must prevent and deter conflict by maintaining both strong conventional and nuclear forces. Until such time as the administration's goal of a world free of nuclear weapons is achieved, nuclear capabilities will be maintained as a core mission for the Department of Defense. It will maintain a safe, secure, and effective nuclear arsenal to deter attack on the United States and on our allies and partners.

Today's hearing will discuss issues associated with maintaining the nuclear deterrent and the conventional operations of the long-range bomber force. When we scheduled this hearing, we had assumed that the Nuclear Posture Review, which was supposed to be submitted with the QDR and budget request, would have been submitted as well. Unfortunately, that's not the case, so some of the policy and nuclear force structure decisions have not yet been announced. Dr. Roberts, I will ask you later in this hearing to provide an update on the NPR and when we might expect to receive it.

General Klotz, this is your first opportunity as the Commander of the new Global Strike Command to testify before this committee, so we look forward to hearing your plans for the new command and how this will improve the Air Force nuclear enterprise. While the new command has all of the Air Force nuclear-capable assets assigned to it, I also understand that this is not exclusively a nuclear command or an effort to recreate the old Strategic Air Command. I'd like to understand in more detail how the operational control of bomber aircraft will be managed, the relationship to Air Combat Command, including how the B-1 fits into this picture, and how the new command will influence the requirements process for the next generation long-range strike capability.

Keeping the bomber force flying and fully capable to serve in its demanding conventional role is essential. All of these aircraft are old, the B-52 being the oldest, and all need to be modernized and maintained well into the future. The B-52s will have been flying for 80 years when they retire around 2040 under the current plan. These aircraft have a unique capability to sustain long loiter times to provide a broad variety of ordnance when and where needed.

General Shackelford and General Scott, we look forward to hearing from you how all of the bomber aircraft are performing and the plans and funding needed to meet the mission-capable rate goals.

Over the last 2½ years, the Air Force has taken many actions to correct the problems that were uncovered after Labor Day Weekend 2007, when a B-52 bomber unknowingly carried nuclear weapons across the country. General Alston, you've been working on fixing these problems for a while. We'd like to hear from you how you think we're doing, what are the successes, and what do you still worry about.

Admiral Johnson, the Navy has embarked on an ambitious replacement program for the Ohio-class ballistic missile submarines.

This will be a costly program that's going forward without the benefit of an NPR. We look forward to hearing from you about this major undertaking, including the plans, the schedule, and the funding that will be needed.

Last week the subcommittee held a hearing on space systems. In that hearing we had a good discussion about solid rocket motors and other aspects of the space launch industrial base. General Klotz and Admiral Johnson, I would like to hear your thoughts on this industrial base, as it is the same one that supports the ballistic missiles, and what each of you are doing to address those concerns.

Again, welcome to all our witnesses. I'd like to note that each of the prepared statements that we've received will be included in the record without objection. Let me say also I hear there may be another vote coming, so we'll try to work around that schedule.

Senator Vitter, would you like to give an opening statement at this time?

#### **STATEMENT OF SENATOR DAVID VITTER**

Senator VITTER. Thank you very much, Mr. Chairman. I'll submit my written statement for the record and just focus on some highlights of that.

First of all, I certainly also look forward to the administration's Nuclear Posture Review as soon as possible. Obviously, this discussion is a little bit partial and incomplete without it, so we await that and await filling in major blanks as we get that. I do believe we're at a particularly critical time and a turning point for the DOD nuclear enterprise and we all need to be focused on making sure that happens properly.

In that vein, I would quote the Congressional Commission on the Strategic Posture of the U.S., which said that as the number of warheads decreases, the importance of our triad of strategic delivery systems dramatically increases. And they rightly noted that each leg of the triad provides "unique contributions to stability." And as "the overall force shrinks, their unique values become more prominent." I think this is very important to keep our eye on.

Lastly, I would simply underscore the chairman's comments about the position of our industrial base, particularly with regard to solid rockets. I am very concerned, as I mentioned here previously, about the dramatic change in course proposed at NASA and what it would do to our solid rocket industrial base, which would have in my opinion a major negative impact on a lot of your capability and the costs of keeping that capability up. I look forward to General Klotz and others' discussion of that.

Thank you, Mr. Chairman.

[The prepared statement of Senator Vitter follows:]

[SUBCOMMITTEE INSERT]

Senator BEN NELSON. Thank you, Senator Vitter.

The panel is fairly large today, as we can see, so I would hope that each of you would highlight your comments as best you can, having already taken your written statements into the record. We would begin with you, Dr. Roberts.

**STATEMENT OF BRADLEY H. ROBERTS, PH.D., DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR NUCLEAR AND MISSILE DEFENSE POLICY**

Dr. ROBERTS. Thank you, sir, and thank you for the opportunity to be here today.

Let me address directly your question about the state of the Nuclear Posture Review and the report of the review. The review has been under way for 11 months following the legislative mandate and a presidential study directive. It is wrapping up. The report itself is nearing completion and we expect completion and delivery here to the Congress within the next few weeks at the most. We're very much in the end game.

We do recognize the delay. We apologize for the delay, regret it. But there was the need to be thorough in the review and the need to ensure that we had official agreement at the highest level on how to approach a balanced strategy for reducing nuclear dangers in the 21st century.

I can report that the report itself will be organized around five key policy objectives. The first of those is to prevent nuclear performance and nuclear terrorism. The second is to reduce the role of nuclear weapons in U.S. military strategy. The third is to maintain effective strategic deterrence at lower force levels. The fourth is to strengthen regional deterrence, regional deterrence, and assure U.S. allies and partners. And the fifth objective is to sustain a safe, secure, and effective nuclear arsenal.

Let me highlight here two of the main themes that bear on the discussion today, two of the main findings of the review. The first is that under New START the United States should retain the triad. This is reflected in the fiscal year 2012 budget submission, which reflects commitments to sustain the ICBM in the manner directed by the Congress to begin the development of the follow-on class for the SSBN force and to sustain the bomber force and to upgrade the B-2s over the coming 5-year period.

You will hear discussion today also of a study that the Department has under way which will bring forward results in the next budget, which is a study of the requirements of strategic—well, what are we calling it—a long-term mix of non-nuclear strike capabilities, non-nuclear ballistic missiles, cruise missiles, and bombers, and how are those integrated in the emerging strategic environment. This is a study that's under way and will be concluded in time to impact the fiscal year 2012 budget.

So I said two themes from the NPR bearing on today's discussion. The first is sustaining the triad under New START. The second is to recommend a plan for sustaining the stockpile, a plan that's consistent with the requirements of the NDAA of fiscal year 2010, the stockpile management plan described therein. In support of this commitment, you know we've requested a 13 percent increase in NNSA's fiscal year 2011 budget in order to modernize the complex, in order to strengthen surveillance of the stockpile, in order to strengthen the science, technology, and engineering base in the nuclear complex.

This budget also supports the life extension programs for the 76 and 61, and it allows for a follow-on LEP study for the W-78.

I hope that in setting out these two themes from the NPR we're helping to inform today's discussion. I look forward to the opportunity to answer any questions you might have, but also to come back and discuss the NPR in its entirety within a relatively short period of time.

Thank you.

[The prepared statement of Dr. Roberts follows:]

[SUBCOMMITTEE INSERT]

Senator BEN NELSON. Thank you.

General Klotz.

**STATEMENT OF LT. GEN. FRANK G. KLOTZ, USAF,  
COMMANDER, AIR FORCE GLOBAL STRIKE COMMAND**

General KLOTZ. Chairman Nelson and Ranking Member Vitter: It's an honor to appear before you today for the first time as the Commander of Air Force Global Strike Command. I thank you for the opportunity to talk a little bit about the Air Force's newest major command.

Global Strike Command is now assumed responsibility for both the intercontinental ballistic missile and the long-range nuclear-capable bomber force. In 16 months we've gone from a provisional headquarters here at Bolling Air Force Base in Washington, DC, of about 100 people to a command comprising over 23,000 Air Force professionals at 5 different operational bases across the United States.

The fundamental mission of Air Force Global Strike Command is to provide for safe, secure, and effective forces for nuclear deterrence and for global strike, both to deter aggression against the United States and to provide assurance to our allies. We perform this mission with a very elite and highly professional, disciplined team of American airmen who have a special trust and responsibility for the most powerful weapons in our Nation's arsenal.

The Minuteman III ICBM and the nuclear-capable B-52 and B-2 bombers have been and, most importantly, remain very important elements and components of the United States armed forces. The ICBM with its unmatched responsiveness and the bomber with its tremendous flexibility provide unique and complementary capabilities to the Nation's strategic nuclear triad.

As you rightly pointed out, Mr. Chairman, the bombers of Global Strike Command also offer critically important conventional capabilities to the combatant commanders. Even though it's a truism that the creation of Global Strike Command resulted largely from concerns about the state of the Air Force nuclear enterprise, this command takes the conventional role of the B-52 and the B-2 very, very seriously. To that end, Global Strike Command will continue to work very closely with Air Combat Command and the other major commands that are part of the combat air forces to continuously develop and refine weapons and tactics for employment the bombers in conventional operations.

So I look forward to the opportunity to discuss these and other issues this afternoon.

[The prepared statement of General Klotz follows:]

Senator BEN NELSON. Thank you.

General Shackelford.

**STATEMENT OF LT. GEN. MARK D. SHACKELFORD, USAF, MILITARY DEPUTY, OFFICE OF THE ASSISTANT SECRETARY OF THE AIR FORCE FOR ACQUISITION**

General SHACKELFORD. Mr. Chairman and Senator Vitter:

Thank you very much for offering me the opportunity to speak with your committee today.

Air Force Acquisition has a number of modernization programs applicable to each of the three bombers to support our commitment to long-term support for those bombers out into the future. At the same time, we're doing the appropriate risk reduction and requirements refinement for a future bomber or long-range strike capability.

I look forward to your questions.

[The prepared statement of General Shackelford follows:]

Senator BEN NELSON. General Alston.

**STATEMENT OF MAJ. GEN. C. DONALD ALSTON, USAF, ASSISTANT CHIEF OF STAFF, STRATEGIC DETERRENCE AND NUCLEAR INTEGRATION, U.S. AIR FORCE**

General ALSTON. Mr. Chairman, Ranking Member Vitter: Thank you very much for the privilege to testify before you this afternoon.

I have been in my position as the assistant Chief of Staff of Strategic Deterrence and Nuclear Integration for just the last 15 months that the organization stood up. We stood it up in November 2008. But actually I arrived in the position to be working the challenges the Air Force has just a couple of days after our event that you mentioned in your opening remarks. So I look forward to discussing and answering your questions with regard to the variety of initiatives that we've undertaken with regard to process, structure, and culture in order to have the positive impacts that are required for us to perform at the level demanded by weapons, by nuclear weapons.

So I look forward to your additional questions on this.

[The prepared statement of General Alston follows:]

Senator BEN NELSON. Thank you.

General Scott.

**STATEMENT OF MAJ. GEN. DAVID J. SCOTT, USAF, DIRECTOR, OPERATIONAL CAPABILITY REQUIREMENTS, AND DEPUTY CHIEF OF STAFF FOR OPERATIONS, PLANS, AND REQUIREMENTS, U.S. AIR FORCE**

General SCOTT. Yes, sir. Mr. Chairman, Mr. Ranking Member: As the Director of Requirements for the Air Force, I work hand in hand with the MAJCOMs on the requirements throughout, whether it's from a bomber force or the fighter force, but all those requirements. So I will work directly with General Klotz on the requirements that he has, or hand in hand with General Shackelford to hand off the requirements for the acquisition.

So many of the things that you see in the beginning of the phase of the JCIDS and the FROC, the oversight council, are the things that we'll be working, and work the conventional side of that. And, sir, I'm looking forward to your questions also.

[The prepared statement of General Scott follows:]

Senator BEN NELSON. Thank you.

Admiral.

**STATEMENT OF RADM STEPHEN E. JOHNSON, USN, DIRECTOR,  
STRATEGIC SYSTEMS PROGRAMS, U.S. NAVY**

Admiral JOHNSON. Thank you, Mr. Chairman. The Strategic Systems is impeccably supported by the Secretary of the Navy, the Chief of Naval Operations, and by your committee in all aspects of our program. We have returned three SSBNs to strategic patrol in the past 12 months. USS *Alabama*, Her Majesty's Ship Victorious, and USS Alaska have all completed their demonstration and shakedown operations and all are ready or already on patrol, strategic patrol.

Last December, it was the USS *Alaska*, the third of those three SSBNs to return to strategic operations, conducted the 130th consecutive successful flight of the Trident II D5 missile. This record of successful flight tests is unmatched by any other missile system in the world.

I would like to thank the committee for its—I would also like to thank the committee for its strong support of the Ohio replacement program and I look forward to our discussion today in that area.

The men and women of the Strategic Systems Program are committed to the highest standards of safety, surety, and reliability for our systems. We sincerely appreciate the committee's support.

[The prepared statement of Admiral Johnson follows:]

Senator BEN NELSON. Thank you.

Senator Begich has joined us. Do you have any opening comments you might like to make?

Senator BEGICH. No, I will pass, Mr. Chairman.

Senator BEN NELSON. You'll pass? We just mentioned the SSBN Alaska.

Senator BEGICH. We like that.

Senator BEN NELSON. Dr. Roberts, can you give us just—things do slide from time to time. Is there any particular reason that this report has slid? Is it just taking too much time to develop it? Because the questions that come about then are everything in the report in the budget or are there things that are going to be outside the budget that will come about as a result of this report?

Dr. ROBERTS. The budget that was submitted reflects the results of the NPR and we don't expect subsequent changes. The following year budgets may reflect some additional initiatives.

The delay is essentially a reflection of the fact that this third NPR since the Cold War is more comprehensive and complex than the prior two. The first, the 1994 Nuclear Posture Review, was a strictly internal DOD planning activity and set out the key themes, lead but hedge, lead to reduce nuclear risks, but hedge against the possibility of a Russian turn to the worse by maintaining current force structure capability.

There was an unclassified summary of that report made available in Powerpoint form a year or 2 after the fact. But it was very much an internal DOD force planning exercise.

The 2001 Nuclear Posture Review received slightly broader inter-agency review, but was still essentially an internal planning DOD activity. This Nuclear Posture Review reflects the fact of the legislation that required a comprehensive review of arms control strat-

egy and an integrated look at nonproliferation and other, I think the language was, emerging 21st century threats, to include nuclear terrorism. And this of course dovetailed with the instinct of the administration to take a very broad look.

The legislation also mandated that this would be a DOD-led, but interagency, review of policy, strategy, and capabilities. So as we have moved through our work we have found a very complex landscape. We were given additionally the framework of the Prague speech and the desire to both take concrete steps to reduce nuclear roles while at the same time maintaining not just deterrence, but strategic stability and assurance of our allies. And how to accomplish this very broad set of objectives in a balanced and comprehensive way has required a lot of analytical work and a lot of debate at every level in the Executive Branch.

We've learned, moreover, that our leadership wishes to be very deliberative in moving through these discussions. We had set two deadlines, the original deadline and a fallback deadline, and we learned that we simply need to allow the leadership to work its way through the issues to the point where it's satisfied with the result. We think we're just about at that point right now.

Senator BEN NELSON. General Klotz, you recently assumed this command, as you indicated. How has the transition of bombers and ICBMs gone so far and what's left to be accomplished in that regard?

General KLOTZ. Well, thank you very much, Mr. Chairman. My sense is it has gone very well and the feedback I get from the airmen at each of our bases reinforces that opinion. We have started this whole process in a very systematic, methodical way, beginning with a program plan that was developed by General Alston and others in the Air Force headquarters that had literally hundreds of action items to be completed as part of the transfer of forces to Global Strike Command.

As soon as we stood up our headquarters on the 7th of August, we set about as a command working through each and every one of those steps. We established working groups with both Air Force Space Command, from which we assumed the intercontinental ballistic missile mission, and with Air Combat Command, from whom we assumed the B-52 and B-2 missions. We had working groups. We had weekly videoteleconferences. We had periodic meetings at the two-star level, then ultimately a meeting between myself and the commanders of both those organizations to ensure that we had crossed every t and dotted every i in terms of assuming those forces.

So we did in fact assume the intercontinental ballistic missiles on the 1st of December of last year and the long-range bomber force on the 1st of February this year. We continue to have a relationship with both Space Command and Air Combat Command. I anticipate that those relationships will be very intense through the end of this fiscal year as they continue to discharge some of the responsibilities they have from a financial point of view, and also well into the future, particularly with Air Combat Command, since they have the responsibility as the lead major command for developing conventional weapons and tactics which will apply to not

only the aircraft which they have responsibility for, but for both the B-52 and the B-2.

Senator BEN NELSON. The Nuclear Weapons Center at Kirtland Air Force Base of course is responsible for maintaining nuclear weapons and systems, but it's not under Global Strike Command. Is this a good decision for it not to be under Global Strike?

General KLOTZ. I think it's a good decision, but I will caveat that by saying we need to constantly check how we're doing and assess the strong points of that change as well as ways we can improve it.

Let me tell you why I think it's a good decision. To some extent—and Admiral Johnson can talk to this in greater detail—we've taken a page from the Navy's playbook in the sense that they have, as I understand it, a single entity which has responsibility for what happens inside a weapons storage area. The technical operations that take place there are all managed by a single group.

In many respects, it was fragmented in the Air Force enterprise by having each wing commander or each base responsible for the actions and activities that took place inside the weapons storage area. We thought, given the critical self-assessment we went through after the Minot incident, which you mentioned, that we ought to adopt a process by which we had a single organization responsible for activities that went on in the weapons storage area regardless of where they were, whether they were on a bomber base or whether they were on a missile base, and whether they were in a missile base in North Dakota or a missile base in Montana or Wyoming.

So, having said that, I have gone out and I visited weapons storage areas at all of our bases. I've been very impressed with the enthusiasm, the energy, and the sense of purpose and seriousness on the part of the Air Force Nuclear Weapons Center personnel that are operating inside the weapons storage areas. So I'm very—I'm very optimistic about that, but I will caveat that by saying we need to constantly go back and make sure that we've got it right.

Senator BEN NELSON. A final question in that area. There was a concern that getting personnel to transfer to the new command might be a challenge for recruiting and retention. How has that gone thus far?

General KLOTZ. Quite the opposite, Mr. Chairman. I have been very pleased that people have been signing up in large numbers to come to Air Force Global Strike Command, both active duty military as well as government civilians and contractors. I think there's a couple reasons for that. Many of the people who come are those who served in Strategic Air Command or in the nuclear enterprise for a number of years. They understand the seriousness which the Secretary of Defense, the Secretary of the Air Force, and the Chief of Staff have placed on continuing to strengthen the nuclear enterprise. They think that is important, worthy, and noble work to do, and they want to participate. So it's an opportunity for them to come back and do that.

The other reason I think is probably a little more esoteric, in the sense that people are motivated by the fact that they're coming and standing up a brand new organization. So rather than going into an organization which already exists and fitting in and perhaps

maybe improving it, they have an opportunity to create an organization essentially from whole cloth. A lot of people find that a very exciting prospect and they want to be in on the ground floor and, as I said, we've had no lack of people signing up to come and work in the headquarters and in our units.

Senator BEN NELSON. Well, let's hope that continues. Thank you. Senator VITTER.

Senator VITTER. Thank you.

Thank you, General Klotz. And you didn't even mention the two other key factors. The food and the Saints' Superbowl win helps, too.

Dr. Roberts, I was happy to hear your comments about the nuclear triad. Given that, when will the Department make a decision with respect to the design of the next generation bomber and its nuclear capabilities?

Dr. ROBERTS. I believe that will be a consequence of the study that's under way on this future look at conventional strike, the future role of the bomber, and the follow-on cruise missile. These are meant to be part and parcel of an integrated look at strike.

Senator VITTER. Real roughly, how would you lay that out in terms of a timetable with regard to the bomber after the Nuclear Posture Review?

Dr. ROBERTS. For the study and the budget result? This would be, we would expect to put forward the results of this study in the fiscal year 2012 budget.

Senator VITTER. Okay.

General SCOTT. Sir, I don't want to jump in, but I'm part of the USD study team and I can give you time lines. We've just kicked off that particular study team. The family of systems that they're looking at are what they call long-range strike. Within that family of systems will be the long-range persistent strike aircraft, the conventional prompt global strike, and then the standoff weapons and the standoff platforms.

In about the May time frame will be the first—we'll start talking about it, but the whole length of it, it's a 1-year study that we're working with Rand on.

Senator VITTER. Okay, thank you.

General SCOTT. Yes, sir.

Senator VITTER. General Klotz, how important do you believe the ICBM force is in the triad, and specifically how critical do you think a 450-single warhead ICBM force is?

General KLOTZ. The intercontinental ballistic missile in my view is extraordinarily important to the triad and to our overall defense posture. Without saying a specific number, I think the numbers really do matter. By presenting a potential adversary with a fairly large, complex target set that he would have to deal with should he contemplate attacking the United States, having a large number of ICBMs literally forces any adversary to exhaust his entire force in an attempt to defeat it or to disarm it. And in the process, if he does that, then he's still faced with the other two elements or components of the triad, the manned bomber and the sea-launched ballistic missile, which will provide for continuing deterrence after that attempt. So I think that's extraordinarily, extraordinarily important.

The other point is that the ICBM is perhaps the most responsive of all elements of the triad because it is land-based, it's located in the continental United States, there are multiple and redundant communication paths to the launch control centers, so a very responsive system.

By touting the strengths of the ICBM, I continue to be a champion for the manned bomber, as you would expect the Commander of Air Force Global Strike Command to be, but also for the sea-launched ballistic missile because of its tremendous survivability and power that it also brings to the deterrent and assurance equation.

Senator VITTER. General, going back to your comments about the ICBM, I assume you think—and you can expand on this—whatever the number is, there's a big difference between that number in a single-warhead force versus multiple warheads, the same number of warheads. Can you comment on the difference and what that means strategically?

General KLOTZ. Again, I think the key and critical point from a deterrence point of view, but also from the stability point of view, is the number of silos or delivery systems you have in those, not so much the warheads. Indeed, as we were going through the negotiations for the START II Treaty, a treaty which, by the way, was never ratified, the assumption, which I think continues to hold true, is that as both sides go to single—less numbers of warheads on delivery vehicles, that creates an inherently more stable situation in a crisis.

So again, I think keeping the numbers of ICBMs at a robust number gives you the option to reduce the number of warheads and still provide for the stability in a crisis that we seek through the ICBM leg of the triad.

Senator VITTER. Okay, thank you.

Admiral Johnson, last week the Air Force confirmed during our space posture hearings that the cost of some components of the Evolved Expendable Launch Vehicle are likely to rise significantly, maybe as much as 100 percent, as a result of the administration's decision to retire the shuttle and cancel Constellation. How will this proposed NASA change in mission affect the cost of Trident D5 life extension rocket motors and what sort of gap in the industrial base does this raise the prospect of?

Admiral JOHNSON. Senator, we are in low rate of production and intend to remain in low rate production for at least the next 10 years. The change in the industrial base and the National orders for large-diameter rocket motors causes more of the fixed costs to fall upon the Navy's production cost. We expect to see a rise, not of the order that you referred to in your question, but we do expect to see a rise of 10 to 20 percent. We are working with the Department of Defense and with the two companies involved to control those costs. But they will, they will increase. We have seen an increase and they will continue.

On the other side of that equation, because we intend to remain in production for the next 10 years or so, that provides a warm industrial base for the work that comes. So I would describe the industry as fragile. The government plays an important role in man-

aging that industrial base and I think that it is manageable. The costs will go up.

Senator VITTER. For that solid rocket industrial base, right now doesn't NASA business represent the majority for them and DOD business represent the minority? So I guess my question is, in fact—and this isn't decided by Congress, but if in fact that 70 percent majority business, whatever it is from NASA, just goes away, it strikes me as a layperson that that is going to probably cause you more than a 10 or 20 percent cost problem. What am I missing?

Admiral JOHNSON. At the surface level, were we to not take action that would exactly be the result. The difference in the manufacturing requirement for the NASA is so much larger—even as big as the Trident missile is, it is so much larger than ours, I think we can control those costs by closing down portions of the facilities and removing those costs from the Trident program. But we cannot completely eliminate that. And we don't know exactly what those costs are going to be.

So I think there's a very valid concern. There's no doubt our costs are going to go up. I don't think they'll double, but there's absolutely no doubt it's going to be significant and it's going to be a difficult cost for the Navy to absorb.

Senator VITTER. Thank you, Mr. Chairman.

Senator BEN NELSON. Senator Begich.

Senator BEGICH. Mr. Chairman, thank you very much.

I'm going to actually follow up on what Senator Vitter just talked about. I want to, if I can, just probe a little bit on the costing factor, and I'm not sure who would be the best, but I'll look to you, Rear Admiral, in regards to: The estimate you give is 10 to 20 percent. Give me kind of an assurance in how you come to that number? I'm new to all this, about a year and a half in now, but I have come to the conclusion estimates aren't the most accurate any more. And no disrespect to any of the military folks, but it seems like every meeting I go to there is an estimate, and then I go to another meeting and the estimate's just a little off. And a little off in the military is millions and billions.

So help me understand why you think it's only 10 to 20 percent when those fixed costs are going to be spread no matter what? Help me understand that?

Admiral JOHNSON. Yes, sir. They've already gone up once.

Senator BEGICH. How much did it go up last time?

Admiral JOHNSON. On an individual rocket motor set price, it went up about \$1.8 million per set, so that's about a 15, 18 percent change already. I'll give you—I'll take that for the record and give you an exact number so you can have it.

Senator BEGICH. That would be great.

[The information referred to follows:]

[SUBCOMMITTEE INSERT]

Admiral JOHNSON. So it's already gone up already as I testify before you today. Then of course, I said "at least," as a minimum, not less than 10 or 20 percent. We don't really know the full extent at this moment. We're working on that. I don't expect it will double yet again, but it's going to be a sizable cost for the Navy.

Senator BEGICH. When you say you're working on it, is that an internal process with the contractors to come to an understanding or is it just an internal process that you're coming to with your team to kind of guesstimate what it might be?

Admiral JOHNSON. SB is part of an interagency task force headed by OSD Industrial Policy, that has members from all the parties involved, and are examining that together. Congress has requested a plan, not a study but a plan, by June. It's that team that interagency team that I referred to that will bring, I think, a credible solution forward to the committee on time in June. That's my expectation.

So it's a not less. My position was not less, and then it was also based on an increase already seen.

Senator BEGICH. That's fair.

Admiral JOHNSON. So I don't think I'm too far off from you when the dust settles.

Senator BEGICH. When you say—to make sure I understand—and I apologize, I wasn't here for all your folks' opening; I was still down on the floor—is the group—the industry folks are part of that discussion or not?

Admiral JOHNSON. Yes.

Senator BEGICH. Yes. For this June plan that's coming forward, that's been requested?

Admiral JOHNSON. Yes. There's an industry role. This team was at one of the manufacturers, ATK, in February with a group of 16. So this is very credible work, this interagency task force, and that lies behind some of the unwavering position, even though I wiggled a little bit.

Senator BEGICH. Well, I want to echo what I know the chair and the ranking member talked about with the industrial base when it comes to the rockets, that it is a concern to me also in how we manage it. It sounds like, obviously, you see it as not only a short-term, but a long-term concern, how to maintain that. And the cost component is becoming a bigger issue.

You anticipate the June plan will be on time?

Admiral JOHNSON. Yes, sir.

Senator BEGICH. Do you think the plan will be detailed enough for us to understand kind of the next stages short-term and long-term to ensure that we have the industrial base there, but also the resources to meet those needs?

Admiral JOHNSON. That level of question is really an OSD question. Of course, it's their study and their responsibility. But I have great confidence in this group and I don't think they will let you down, sir.

Senator BEGICH. Great. Thank you very much. Again, I just want to echo again what the chair—and I appreciate your comments.

Let me, if I can, just if I can ask a couple more quick questions, and I'll just kind of open it—I'm not sure who the right person will be to answer it, so whoever jumps in first will be the right person. Actually, this one's easy. This one's for, I'll specify it to General Shackelford if I could. That is, you talk about the future years defense program and modernization and sustainment for the bomber fleet, I think it's about five point some billion. Can you just give me a little bit on how you intend to—how that investment will

work to maintain? How will that be used, if you can help me there a little bit?

General SHACKELFORD. Thank you, Senator.

Senator BEGICH. Did I pick the right person to ask?

General SHACKELFORD. Yes, sir.

Senator BEGICH. Okay, good.

General SHACKELFORD. We have investments going to all three bombers with the intent on not just sustaining the capability, but modernizing where it's appropriate. For instance, in the B-1 we have computer issues that we need to deal with, so we're putting in a fully integrated data link that includes a backbone with communications technology for a Link 16 data link as well as the beyond line of sight capability.

This has as part of it new displays, which provide additional information to both cockpits of the B-1, the internal diagnostic computer that provides status of health information to the crew, some modernization of components within the radar, as well as in terms of a major capability improvement the laptop-controlled targeting pod, which has been very well received in Southwest Asia in the war, which allows us to collect nontraditional intelligence, reconnaissance, and surveillance data, as well as target our Joint Direct Attack Munition, our GPS, Global Positioning System-guided weapons from the bomber itself.

Moving over to the B-2, we have the combat network communications technology which now also provides a digital backbone to what was a very dated infrastructure within the aircraft itself, and allows us to do things like beyond line of sight retasking of the aircraft.

Similarly, as we look to the future, for now what is a strategic nuclear-capable bomber, the extremely high frequency radio communication and computer mod starts out with a new computer, because all of our bombers are common in being maxed out on computer capacity. It starts out with that computer mod, then moves into the integration of terminals to talk to the newer satellite systems as they come on line over the next several years.

We're looking at a strategic radar replacement to upgrade what is also a fairly dated radar with the B-52. At the same time, we're bringing on capability to use the GPS, Global Positioning System, weapons out of the internal bomb bay. We can carry them externally, but putting them on internally and then integrating that into the aircraft is a very, very important upgrade.

Then in the case of the B-2, the same extremely high frequency radio mod. This one brings on a computer, it brings on a new antenna to give us capability to talk to those satellites as they get on orbit and we get the receivers into the bomber itself. We're also updating the radar with a modernization program that just 2 days ago reached required assets available for 4 aircraft in terms of its ability to be used by the warfighter in a contemporary sense.

Senator BEGICH. Let me ask you one other, to just kind of tee off of that. I appreciate that. It gives me a little sense of what the upgrades are. Do you think, for either one of you, the 2011 budget requests are sufficient, not only for what you're planning here, but other needs within the bomber fleet?

General SHACKELFORD. With respect to the modernization program?

Senator BEGICH. Yes, and sustainment.

General SHACKELFORD. I believe we're in good shape there. There is a shortfall we're working on the B-1 side, on the vertical situation display unit. That is fallout of previous execution issues which have now been corrected.

Senator BEGICH. What's the size of that shortfall? Then I have to—I've run out of time here.

General SHACKELFORD. I'll have to get you that dollar figure.

[The information referred to follows:]

[SUBCOMMITTEE INSERT]

Senator BEGICH. Could you do that for the record, just so I understand what that gap is there.

But generally you feel good, but there is some that we need—you're examining now to figure out how to resolve; is that a fair statement?

General SHACKELFORD. As we were working to keep the fully integrated data link in that diagnostic computer on track, the piece that we had to tap to give the funds to those was the vertical situation display unit.

Senator BEGICH. It came from one to the other.

General SHACKELFORD. Right. And we didn't have sufficient funds in the program line to cover that over the last year. We're working on reprogramming and asking for more there.

Senator BEGICH. If you could show me what that is at some point, that would be great, and just get it to us.

Thank you very much.

Thank you, Mr. Chairman.

Senator BEN NELSON. Thank you.

Senator SESSIONS. And we do have a vote that's being called at 3:30.

I'll be brief, Mr. Chairman. I will submit some questions for the record.

Last year I think, General Alston and Admiral Johnson, you testified about Air Force test flights and that the Air Force conducts three flight tests each year of the Minuteman III ICBM and the Navy conducts four test flights of the Trident to determine weapon reliability as required to meet your estimation of the strategic command requirements. Would you explain why that testing is necessary, that kind of testing?

General ALSTON. Let me take it from the Air Force side since that's a responsibility that now falls under Air Force Global Strike Command. We do a lot of different tests, Senator Sessions, with the ICBM, not just flight testing. It's part of a broad family of testing that takes place every month at a missile wing, goes through annual tests of the electronic launch capabilities associated with it.

But at the end of the day we feel we need to fly at least three actual flights from Vandenberg and launch them out into the Pacific Range to Kwajalein to see if it all comes together—the command and control, the equipment, and the missile silo, as well as the booster itself and elements of the reentry system—to make sure that this whole system of systems comes together.

We derive important data from the process of actually configuring these missiles for launch, as well as data from telemetry as the missile flies through the boost phase and through the trajectory phase, all the way down to the reentry phase.

We'd like to do more. I know the Department of Energy would clearly like us to do more tests, because one of the—we talked earlier in a response to a question from the chairman or the ranking member that as we drive toward lower numbers of warheads that means every time we test an intercontinental ballistic missile we test less reentry systems. So there is less data available for the Department of Energy.

But I don't see any substitute to actually doing a very robust flight test program. We do not have the great advantage of our flying Air Force in the sense that every time an airplane takes off and goes for a flight and lands to a certain extent you're doing an operational test of that aircraft, not a formal test, but you're making sure all the systems work. So for the ICBM there's no other way we can do it.

Senator SESSIONS. Well, I think that makes sense to me as a layperson looking at it, because there are so many complexities, so many thousands of components and computer capabilities, systems, and other things that go into this system.

Mr. Chairman, I just wanted to highlight these facts with respect to the annual ICBM flight testing because I want to bring our attention to the fact that similar flight testing for the ground-based, the GBI, which is a long-range interceptor that will be part of the National missile defense system—according to the Missile Defense Agency, it plans to acquire only 22 GBI's for the purpose of flight testing. This will be the 30 in Alaska plus the ones in California. According to their test plans to date, 19 of the 22 are expected to be consumed through 2019, which isn't a robust testing system, but it's a couple of years maybe or maybe a little less.

But that leaves only three GBI's in the inventory then over the 12 years from 2020 through 2032. It means I guess one flight test every 4 years as the system has aged some. So to me, I think my question, General Klotz, maybe would be, while we have an assembly line up and running, might not it be smarter to go on and add to our inventory more GBI's so that we could maintain at least a minimum level of testing through the next decade?

General KLOTZ. Well, Senator, with respect, that's a question really for MDA to answer. I can tell you how the Air Force would approach it and the Air Force Global Strike Command approaches it, is that we need sufficient assets in our Minuteman III inventory, as well as the equipment that goes with it, to conduct a minimum of three tests per year.

We face a particular challenge that perhaps the MDA does not, and that is our Minuteman III's were first deployed in the 1970s, so one of the things that's important for us in the testing program is not just to make sure things work, but to see how the system ages and whether it ages gracefully or whether there are other defects in the system, either at the design or as a result of longevity, that we're not aware of through ground testing.

Senator SESSIONS. Dr. Roberts, I guess you've got the responsible oversight of this. Do I have your assurance and can we be assured

that you will examine what appears to me to be a gap in our capability for the kind of minimal testing that looks to be required?

Dr. ROBERTS. Certainly.

Senator SESSIONS. We've reduced the number of GBI's being produced dramatically, more than I think we should. But we've done that. I guess that's a firm decision that is not likely to be reversed. But that does suggest to me that, with fewer systems in the ground ready to launch, we ought to be sure that they're safe and reliable, and I hope that you will look at that. It would be cheaper to me to complete that inventory now than having to reconstitute an entire assembly line a decade away.

Thank you.

Senator BEN NELSON. Thank you.

The vote has been called, so I'll have another question, then we'll reconvene back at the Visitors Center.

General Alston, in the Air Force nuclear roadmap, which is the strategy document for fixing the Air Force nuclear enterprise, ten key actions were identified. We've talked about some of these, but I have a question about two more. The first is to create strategic plans that address long-term nuclear requirements—cruise missile, bomber, DCA, ICBM. Has that plan developed, been developed, and would it be available to be provided to Congress?

The second is: Charge the Under Secretary of the Air Force with ongoing broad policy and oversight responsibility for nuclear matters. Now, we've just confirmed a new Under Secretary here. The statutory requirement for the Under Secretary of the Air Force and for all Service Under Secretaries is that they shall be the chief business management officer for their respective Services. With this change, will the roadmap action designate the Under Secretary with oversight and policy for nuclear matters? Will it be implemented or not, and if it isn't what kind of implementation might be required?

It's a long question. I'm going to have to run in a minute, but I'll try to get something before.

General ALSTON. Yes, sir. Mr. Chairman, I think I can be brief with these. I may have to turn and depend on Lieutenant General Shackelford a bit. But we have, particularly over the last year, examined through our stewardship responsibilities what we should—what actions are appropriate with the air-launched cruise missile, how do we get the Minuteman III to 2030, which Congress has directed us to do, our partnership with the Department of Energy for the life extension program for the B61. And we don't have responsibility for that weapon end to end, but we do have great equities in that particular process.

But we looked at all of our platforms and our capabilities and we found that we did not have the kind of content that good stewardship would require. So we have begun a process that will put a follow-on standup capability—it's now entering the JCIDS process, the DOD requirements process, this spring, with analysis of alternatives to commence in the fall.

We have a roadmap to get the Minuteman to 2030, which continues to be refined. The acquisition community actually has structured plans across the systems in order for us to understand and

more thoroughly add content as we build—as the resourcing requirements mature.

So I would agency that right now we have taken the appropriate action that we set out to do and we've set ourselves on a course for more improved stewardship of our strategic delivery capabilities than where we were a year ago, even a year ago. So I believe that's on course.

With regard to the Under Secretary, the Under Secretary has authority to stand in for the Secretary for all the responsibilities that the Secretary of the Air Force has. But we felt that for a point of emphasis in our roadmap, without any compelling authoritative power behind it other than it being the Air Force strategic vision for our nuclear enterprise, and it being an expression of the Chief of Staff and the Secretary on the courses of action and the course they set for our Air Force with regard to the nuclear enterprise, it was important to us to designate the Under Secretary to emphasize the value that was seen in that position having a specifically articulated responsibility to support the development and stewardship of the nuclear enterprise.

So that was the motivation by the Chief and the Secretary to put that content in the roadmap, and we are delighted that our Under Secretary is on board and able to help us do the heavy lifting that's still required.

Senator BEN NELSON. That was short. Thank you.

We'll see you downstairs.

[Whereupon, at 3:28 p.m., the subcommittee adjourned.]