HEARING TO RECEIVE TESTIMONY ON ARMY MODERNIZATION IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2011 AND THE FUTURE YEARS DEFENSE PLAN.

THURSDAY, APRIL 15, 2008

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

The subcommittee met, pursuant to notice, at 2:04 p.m. in room SR–222, Russell Senate Office Building, Senator Joseph I. Lieberman (chairman of the subcommittee) presiding.

Committee members present: Senators Lieberman, Hagan, Begich, Kaufman, Inhofe and Thune.

Majority staff member present: William K. Sutey, professional staff member.

Minority staff member present: Paul C. Hutton IV, professional staff member.

Staff assistant present: Brian F. Sebold and Breon N. Wells.

Committee members' assistants present: Christopher Griffin, assistant to Senator Lieberman; Patrick Hayes, assistant to Senator Bayh; Gordon Peterson, assistant to Senator Webb; Tressa Guenov, assistant to Senator McCaskill; Michael Harney, assistant to Senator Hagan; David Ramseur, assistant to Senator Begich; Halie Soifer, assistant to Senator Kaufman; Mark Powers, assistant Senator Inhofe; Lenwood Landrum, assistant to Senator Sessions; Jason Van Beek, assistant to Senator Thune; and Scott M. Clendaniel, assistant to Senator Brown.

OPENING STATEMENT OF SENATOR JOSEPH I. LIEBERMAN, CHAIRMAN

Senator LIEBERMAN. The Subcommittee on Airland will come to order with noting the presence of my friend from Oklahoma, Senator Inhofe and being informed that the Ranking Member, Senator Thune is outside the door.

Senator INHOFE. 14th Street Bridge—[Laughter.]

Senator LIEBERMAN. When I first arrived at the Senate in much looser times I was told that if I could tell the cloakroom that I could see the Capitol dome they would hold the vote open for me. [Laughter.]

But I didn't have to tell them how far I was from the Capitol.

Anyway, this hearing is on the question, very important question of Army modernization. After nearly nine years of war in Iraq and Afghanistan I must say I continue to marvel at the extraordinary performance of America's Army. Today the Army is battle tested, battle proven and battle hardened by years of combat in the harshest and most uncertain conditions. And the members of our Army have performed with remarkable professionalism, courage and I would say, idealism.

We find that from the leaders, the soldiers and from their families. And I asked the two leaders of the Army that are with us today whenever you have a chance to please convey our gratitude to all those people who are serving for us. Our nation is deeply grateful.

The subject of today's hearing, Army modernization, merits particular attention because of the many initiatives begun last year to reorient and restructure the Army's acquisition policies. I'm just paused for the moment to note a kind of irony which is and we'll focus on this as the hearing goes on. There's not been much stability about Army modernization programs over the last several, several years that I've been on the committee which is regrettable.

And yet, I must say, the Army works. The Army succeeds as I said in my opening remarks. And this doesn't mean we should not try to achieve more stability and progress in Army modernization. But it's quite remarkable how our troops have managed to do as well as they have, really extraordinarily well.

The fiscal year 2011 Army budget contains, continues implementation of the major program changes directed by the Secretary of Defense to restructure the Future Combat System Program.

Limit the Army's brigade growth to 45 instead of 48 combat brigades.

Start a new ground combat vehicle program.

And integrate our 12,000 mine resistant ambush protected or MRAP vehicles that have been procured into the Army's force structure.

These changes necessarily have an incomplete nature in last year's budget request are, I would say, further clarified in the Army's fiscal year 2011 request that is before our Subcommittee now. This hearing therefore is an opportunity for our witnesses to bring the Subcommittee up to date and to describe how risks facing the Army's modernization program have been addressed in the budget for the next fiscal year.

This year's Army budget request is also guided by the findings and recommendations of the 2009 Quadrennial Defense Review that places significant additional emphasis on improving the capabilities of currently fielded technologies to deal with the wars we are in now and at the same time search for next generation capabilities to meet the demands of an uncertain future.

I do want to note two encouraging management initiatives on the part of the Army.

The first, Secretary McHugh, last February ordered a yearlong comprehensive capability portfolio review to validate the operational value of requirements for new weapons and importantly to inform what he recognizes will be tough decisions the Army will have to make in fiscal years 2012 to 2017, long range budget plans.

That review has already started under the supervision of the Under Secretary of the Army, Joe Westfahl and the Army's Vice Chief of Staff, General Peter Chiarelli. Initial indications are that this review process is aggressive, objective, realistic and demanding and for that I am grateful.

Additionally General Casey announced in January that the Army plans to use this year to reform the process used to develop requirements for future capabilities. Consistent with the Secretary's capability portfolio reviews these reforms could include a more systematic and disciplined consideration of potential operational value through cost benefit analysis as well as earlier and direct involvement of the Army's most senior leadership and the requirements process. Both of these steps, I think, are consistent with our recently enacted Weapons System Acquisition Reform Act of 2009. And for this I also commend the Army.

But these initiatives foreshadow that additional changes may be on their way for Army's requirements, priorities and modernization strategy. Although the Army's fiscal year 2011 budget request includes both continuity and change it remains to be seen if the Army will successfully use this year's request as an opportunity to apply the lessons of the last decade that establishes and maintains control of a stable, achievable and affordable modernization strategy. Those are some of the overall topics we have to consider.

Senator LIEBERMAN. I welcome our witnesses who are here today.

Lieutenant General Robert P. Lennox is Deputy Chief of Staff of the Army (G–8) responsible for broad staff oversight and recommendations regarding Army current and future requirements, priorities and resource allocation.

Lieutenant General William N. Phillips is the Principal Military Deputy to the assistant Secretary of the Army for Acquisition, Logistics, and Technology and Director of the Acquisition Career Management. As his title indicates he is responsible for staff oversight and recommendations for the planning and execution of research development and acquisition programs necessary to meet the Army's current and next generation requirements.

Although Generals Lennox and Phillips are new to their positions this year they both have exceptional records of service and leadership to the Army and our country. I note also that this is their first appearance before our Airland Subcommittee. And I don't know that we have a medal to award you in return for this, but we thank you for being here.

Ok, we're also joined today by two witnesses who represent agencies that have closely watched the planning and execution of Army modernization for many years. They will provide the Subcommittee with their assessments of Army modernization management, review the main lessons learned over the last decade and suggest which lessons are relevant and applicable to the Army's current modernization strategy and its next ground vehicle program. And in that regard we welcome particularly Michael J. Sullivan, Director of Acquisition and Sourcing Management at the Government Accountability Office joined by David W. Duma, Principal Deputy Director, Operational Test and Evaluation at the Department of Defense.

This year's hearing is a little bit different from ones we've had before as we have not previously included the Army's witnesses together on the same panel with the GAO and DOD and E. And so this will be a remarkable adventure and experience. But obviously we hope that this arrangement will allow us a good direct exchange of views that will help better inform the members of this Subcommittee as we do our work on the 2011 Department of Defense authorization bill.

Senator Thune, thank you.

STATEMENT OF SENATOR JOHN THUNE

Senator THUNE. Thank you, Mr. Chairman. And as you mentioned today's testimony will inform the subcommittee's thinking as we prepare to mark up the National Defense Authorization Act for Fiscal Year 2011. And I want to echo what you said and join you in welcoming our witnesses.

General Lennox and General Phillips, thank you for appearing before the committee to explain the Army's modernization efforts and for your many years of distinguished service.

And Mr. Sullivan, Mr. Duma, your views as independent auditors and testers will be extremely valuable. And we look forward to hearing them.

The need to continuously modernize the Army is self evident. But in practice the modernization can be very difficult. We are in a period of unrelenting technological change, shifting operational requirements and we face an adaptive enemy.

The Army's challenge with maintaining a technological edge over any adversary while providing a force equipped to meet almost any conceivable threat. This is complex and important work. And we thank you for it.

The Army revised its modernization strategy in 2009 as currently developing and testing technologies that it hopes will provide soldiers with improved capabilities. Two important activities will influence modernization.

The first directed by General Casey is a critical look at the way the Army generates requirements. The time requirements to value is a must. And I'm happy to see this development.

Second, is a broad review of Army technology area portfolios led by the Vice Chief, General Chiarelli.

Both of these activities are ongoing. And while they may have a greater impact on future budgets than on this on, I believe they point the Army in the right direction. The committee is interested to know what affect these activities may have on some $3 billion requested for Army modernization in fiscal year 2011.

In practical terms the Army modernizes by upgrading its legacy systems while simultaneously developing and fielding new technologies. The Army's written testimony makes clear the need to do both and the combination helps to balance capability and affordability. Over the coming year the committee will pay close attention to the development of new systems like the suite of technologies designed for infantry and the ground combat vehicle as well as to programs that upgrade Stryker, Paladin, and others.

Recent testing of some developmental systems has revealed worrisome shortfalls and performance and reliability. And the wit-

nesses will be asked to recommend courses of action to mitigate these issues. Additionally questions of affordability haunt any weapons acquisition and Army modernization programs are no different.

The nation is served poorly when capable systems are priced off the battlefield and the committee is keen to know how the Army plans to reduce development procurement costs. The success or failure of our efforts to modernize and transform the force of the future rests on decisions proposed and implemented today. There is concern among members of the committee which you will hear regarding the recent history of Army modernization efforts.

The challenge of delivering capability amidst technological change and shifting requirements is indeed a difficult one. We are eager to understand the Army's vision for the future and the strategy to achieve it. I should emphasize here that while this hearing may be focused on weapon systems and on the acquisition process the center of gravity has and will always be the soldiers themselves.

Our thanks and gratitude extends to all servicemembers at home or abroad and to the families that support them.

So Mr. Chairman, thank you again for convening this hearing. And I look forward to hearing our witnesses' testimony.

[The prepared statement of Senator Thune follows:]

[SUBCOMMITTEE INSERT]

Senator LIEBERMAN. Thank you, Senator Thune and thank Senator Inhofe and Senator Kaufman for being here. And we'll call now on General Lennox.

General, move that—yeah it looks pretty good, as close as it can. They're very directional.

STATEMENT OF LTG ROBERT P. LENNOX, USA, DEPUTY CHIEF OF STAFF, ARMY (G–8)

General LENNOX. Good afternoon, Chairman Lieberman, Senator Thune, and distinguished members of the Airland Subcommittee. Thanks for your warm welcome for General Phillips and I and for the entire panel in fact. Very kind of you.

Together General Phillips and I today are pleased to represent the Army leadership and members of the acquisition workforce and the more 1 million courageous men and women who have been serving this Nation at war for the last 9 years as you mentioned, sir. And we're proud and honored to have been able to provide them with world class weapon systems and equipment that's enabled their mission success during that time period. And we thank you and members of this committee for your steadfast support and for the shared commitment to that very same goal.

This afternoon I'd like to discuss how the Army modernization strategy plans to meet this continuing objective. And I'd like to open by talking about that Army modernization strategy in using some of the programs in the fiscal year 2011 budget to illustrate that. The Chief of Staff of the Army has recently approved an Army modernization strategy whose ends include:

Developing and fielding affordable and interoperable mix of the best equipment available to allow our soldiers and units to succeed

in today's fight but also to win tomorrow's full spectrum operations. And we plan to do that, sir, by following three lines of operation.

The first is, buying new capabilities that address current capability gaps. So for example, you'll hear us talk about today the brigade combat team modernization strategy. That's one of our key efforts. And I'll come back to that in a minute and talk about it.

But one of the key things that come out of the QDR in recognizing Department of Defense is the stand up and importance of aviation in particular. So the formation of the 12th combat aviation brigade out of the assets that we currently have today. And then the funding of the 13th combat aviation brigade and that would be part of our fiscal year 2011 proposal.

Additionally today's war fight tells the importance of ISR, Intelligence, Surveillance and Recognizance. And there will be—the Army is looking to invest heavily in the extended range, multipurpose aircraft, the Sky Warrior, about half a billion dollars and in the shadow unmanned aerial vehicle to enable our brigade combat teams for the future.

And finally in this first line of effort we are continuing to buy and to equip our Reserve component forces. In fact since September 2008 to September of this year we'll have increased equipment on hand in the Reserve component by 11 percent and the modernization of those forces by 12 percent.

Our second line of effort really focuses on being good stewards of the equipment we have now and a path forward to improve them and keep them relevant for the future. An example of that is the OH58 D Kiowa Warrior Program helicopter has been used extensively in Iraq and Afghanistan. And as most of you know it is an older aircraft. We are investing now in both cockpit upgrades and sensor and safety measures to keep that aircraft a contributing member of the fleet until 2025.

We also have efforts to lighten the soldiers load. Improvements to the outer tactical vest to lower the weight, fielding plate carriers that are lighter in weight, but give the soldiers in Eastern Afghanistan in particular, better able to climb the hills and deal with the altitude.

And finally we're divesting our oldest equipment. Last December we finally divested the last UH1 Huey helicopter, a vintage performer from Vietnam. The last one went out of the active force and active units in December. And within two years we'll divest the last M35, two and a half ton truck, currently known as the deuce and a half. And that will be out of the inventory by the end of fiscal year 2011.

The last aspect of our modernization strategy is to field in accordance with Army priorities and the Army force generation cycle. And in the past we used to have two tiered units. So if you were in the active component you were equipped and armed better than the Reserve component was.

Today and in this published and approved doctrine that went back to last October, the Army recognizes that Reserve component are doing the same kinds of missions as the Active component. Every unit now is equipped for the mission they're facing. So if you're deploying overseas you're equipped the same if you're Active or Reserve. If you have a homeland defense mission you're

equipped for that homeland defense mission. And we take that very, very seriously.

Finally if I could, speak for a minute about the brigade combat team modernization strategy. And this is probably—it has four elements. It's probably the most important part of our modernization strategy.

Those elements include things like incorporating the MRAPs and the MRAP all terrain vehicles into our fleet. And we have a plan to do that. And that's been approved by the Secretary of Defense.

The next step and one of the most important is incremental improvements to our network. We find that the network is a key capability. At a seminar yesterday with multiple brigade commanders they echoed the importance of improvements to the network, getting the network down to commanders on the move, getting wide band capability down to the individual soldiers and talked repeatedly about how much of a difference that makes. If we can get the network to work amazing things will happen as a result they assured me again yesterday. I believe it and they assured me again yesterday.

The third part is the ground combat vehicle. We think we need this to provide a versatile range of capabilities that include things like force protection that we currently don't have, off road mobility, urban operational mobility and the space, weight and power to deal with the network and other things that we have to load onto vehicles today and the plan for the ground combat vehicles to field that in seven years. And we're comfortable talking about that, explain the way ahead in the approach.

The very last part of the brigade combat team modernization is the fielding of capability packages to our infantry brigade combat teams. And as you mentioned, Senator, these are the FCS technological spin outs. They were tested last year in the second of four stage test.

They were shown to have a number of challenges both in size, weight. Meantime between failure you'll find that we agree with the findings that came from DOTE and the GAO in this regard that there is plenty of work to be done. Where we probably disagree is the way ahead.

We think that there's probably very little risk in proceeding ahead of time. And we think this way primarily because we've demonstrated in the past that if a system or capability doesn't meet with our soldiers' need we have willingly taken that off the table. Examples include the class four unmanned aerial vehicle and the MULE automated robotic vehicle didn't meet the Army's needs in a cost benefit way and we've taken them off.

And we pledge to you that we'll do the same thing. If equipment is not ready to put in the hands of soldiers, we won't put it in the hands of soldiers.

In closing in support of Army modernization the Army submitted a research development acquisition budget request of $31.7 billion for fiscal year 2011. We believe that this budget appropriately allocates resources between bridging advanced technologies to our soldiers for the war fight today and to develop new technologies and new capabilities to bring the required capabilities of our soldiers in the future.

Mr. Chairman, Senator Thune and members of the Committee, on behalf of our soldiers and their families we greatly appreciate the tremendous support that we receive from this Congress and the American people. We don't take that for granted. In order to successfully implement the plans we've shared with you today we urge this same continued support in the future. Providing all of America's sons and daughters who serve in our Army the most capable equipment for the battles they are fighting today and are likely to face in the future are the responsibility that the Army takes seriously and is committed to accomplishing.

Thank you for your time.

[The prepared statement of General Lennox follows:]

Senator LIEBERMAN. Thank you, General. Well said.

General Phillips, welcome.

STATEMENT OF LTG WILLIAM N. PHILLIPS, USA, PRINCIPAL MILITARY DEPUTY TO THE ASSISTANT SECRETARY OF THE ARMY FOR ACQUISITION, LOGISTICS, AND TECHNOLOGY, AND DIRECTOR, ACQUISITION CAREER MANAGEMENT

General PHILLIPS. Sir, thank you. Chairman Lieberman, Senator Thune and distinguished members of the Subcommittee, I do not have an opening statement. But I just have some quick thoughts for you. And I'll echo what General Lennox has said.

First of all, it's an honor for me to be here with this distinguished panel. But sir, on behalf of all our soldiers and their families I want to thank you for the great work that this Committee does to provide and quite frankly, the American taxpayer, to provide our Army and our Armed forces the best equipment, world class equipment for our soldiers.

I just came back from a year tour in Iraq. And I watched our soldiers operate on the field of battle with great distinction and excellence. And sir, I would borrow the words that you just said, with great professionalism and extraordinary courage. So I thank you and this Committee for what you do for our soldiers.

And I look forward to your questions, sir.

Senator LIEBERMAN. Thanks, General. That was very kind of you to say.

Mr. Michael Sullivan, welcome.

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

Mr. SULLIVAN. Thank you, Mr. Chairman, Ranking Member Thune, members of the Subcommittee. It's my pleasure to be here with you today to discuss the current status of the Army's modernization efforts since the Secretary of Defense's decision to restructure the future combat systems program back in April. My testimony will focus on current challenges and opportunities for the Army in moving forward with its acquisition plans including its current contracting activity, our views on the status of the initial brigade combat team increments and our views on the ground combat vehicle development effort.

For the time being the Army is continuing development of the initial brigade combat team equipment and the supporting network

under the modified future combat system development contract. It has also awarded a contract to procure long lead items for the brigade combat team equipment procurement and has issued a modification to that contract to begin low rate production.

With regard to the status of the development program for the initial increment recent testing revealed significant reliability problems during a recent series of tests designed to prove capabilities in the field. Systems proved unable to perform as accepted and fell far short of current reliability thresholds. Five of the systems are currently being redesigned and will undergo further testing over the coming months.

In light of these issues, as General Lennox stated, we are concerned that the Army's production decision that was approved by the Department may be too risky at this time. The Army is proceeding with procurement despite having acknowledged that systems are in some cases immature, still not reliable and cannot perform as required in the field. The decision to move into production with this risk is a variance with DOD's acquisition policy and best practices that emphasize knowledge based and incremental product development and production.

As a result we recommended that the Army correct all of the maturity and reliability issues with that initial increment that testing has or will identify before the Department approves any additional production lots after this one and before any of these systems are fielded. And the Army did agree with that recommendation as the General stated.

We also looked at the ground combat vehicle development program. And our views on that are slightly more optimistic at this point. It's very early in that program. And I think the key to success on that program at this point will be to keep agreed upon requirements in line with the resources that are available. That being time, of course, seven years to deliver, money and technologies that are available today.

The Department made a material development decision this February. And the Army is planning to award multiple contracts to begin technology development this September, September 2010. It's proposing the use of competitive prototyping during technology development which is something we like to see.

We think that reduces risk. And we think that will emphasize mature technologies. And it's also planning a preliminary design review that will validate contractor readiness to begin product development sometime in fiscal year 2013.

So we think they're taking their time at the right time to ensure that the requirements can be delivered with mature technologies. Current plans, of course, are to deliver the initial ground combat vehicle in late fiscal year 2017, which is, of course, a fairly quick developmental period. But if done properly and they keep an eye on the requirements and level those with the available technologies it probably is doable.

Mr. Chairman, as you can see the current post future combat system modernization environment is mixed and still taking form. It's important to note that when added up ongoing development and procurement funding for the brigade combat team increments and development funding for the ground combat vehicle represents

about $24 billion in the Army's planned budget from 2011 to 2015. With that amount of money on the line it's critical to get things right at this time.

That is why we also recommended in our report that was issued in March that the Army report to the Congress by the end of this fiscal year the full details of its new modernization acquisition strategy including plans for program management and contracting. And again, the Army agreed with that recommendation. And said they would deliver that.

Mr. Chairman, that completes my statement. I'd be happy to answer any questions.

[The prepared statement of Mr. Sullivan follows:]

Senator LIEBERMAN. Thanks very much, Mr. Sullivan. I appreciate the ongoing dialogue you have with the Army.

Mr. SULLIVAN. Yes.

Senator LIEBERMAN. Mr. Duma, welcome.

STATEMENT OF DAVID W. DUMA, PRINCIPAL DEPUTY DIRECTOR, OPERATIONAL TEST AND EVALUATION, DEPARTMENT OF DEFENSE

Mr. DUMA. Thank you, Mr. Chairman, Senator Thune, distinguished members of the Committee, thank you for the opportunity to provide the DOT&E assessment of the early infantry brigade combat team increment one and Army modernization programs. My written testimony has been submitted for the record. So my opening remarks will be brief.

Regarding the increment one of the early infantry brigade combat team or EIBCT, the DOT&E operational assessment of the EIBCT performance is based upon the results of a September 2009 limited user test also known as a LUT and the non line of sight launch system flight LUT conducted in February of 2010. That assessment also used data from developmental testing wherever appropriate. Each of the EIBCT systems requires further development prior to conducting the initial operational test and evaluation or making a fielding decision.

All of the systems have notable performance deficiencies and the operational reliability for each of the systems falls significantly below the stated requirements. The Army is addressing the reliability problems. And will test the system improvements in the LUT to be conducted in September 2010 and again in the IOT&E scheduled for 2011.

Regarding the Stryker Double-V Hull, the Army is investigating using a Double-V Hull design in the Stryker. Testing of prototype vehicles must be adequate to assure vehicles built with the Double-V Hull provide improved protection to the soldiers. We are working with the Army to determine the numbers and types of prototypes required for testing. This testing will inform decision makers prior to a production decision.

Regarding the Stryker mobile gun system, we have reviewed the Army's update to Congress on the status of actions taken to mitigate the Stryker mobile gun system deficiencies. We assess the following remaining deficiencies as being the highest priority for correction.

First, improving the mission equipment package reliability.

Second, developing the long-term solution for rocket propelled grenade and anti-tank guided missile protection.

And third, increasing the gun pod protection level.

Regarding the ground combat vehicle or GCV of the Army brigade combat team modernization, the Army's GCV is in the earliest stages of acquisition. In preparation for a milestone A decision later this year our office is working closely with the Army to develop a test and evaluation strategy for that program. Our office will be involved in the test and evaluation of any future capability increments to the Army brigade combat team modernization. Once the Army defines the acquisition strategies the test and evaluation program will be tailored to support those acquisition programs.

Regarding two specific radios of the joint tactical radio system, commonly known as JTRS, the ground mobile radio or GMR and the handheld man pack and small form fit or HMS radio. Both the JTRS, GMR, and HMS radios are schedule driven programs working to complete system development prior to operational tests scheduled to start in November 2010. Readiness for operational testing is dependent upon the completion of user requirements, the development of supporting wave forms and the success of developmental testing.

Mr. Chairman, Senator Thune, distinguished members of the Committee, this completes my opening remarks. And I'll be happy to answer your questions.

[The prepared statement of Mr. Duma follows:]

Senator LIEBERMAN. Thanks very much, Mr. Duma. we'll have seven minute rounds of questions. Let me begin with a look back and kind of a broader look question for the four of you.

As I mentioned briefly in my opening statement, as you look back over the last period of time the Army's largest modernization programs have not really been successful and stable. In some ways you have to over the years seem to me watch the bouncing ball. We went from digitization to Force 21 to the Army after next to the interim force to the objective force to FCS and modularity.

Well it wasn't all lost. I mean, some things were gained from some of those investment programs. And as I said before we have an extraordinary Army in the field. But still I don't think it would be the—it's the desired course.

So I want to ask each of you to answer basically two questions.

What you think have been the greatest sources of instability for the Army modernization programs over the years?

And second, essentially have we learned the lessons? Are the current efforts underway sufficient to stabilize Army modernization? Maybe we'll give you the first shot at that, General Lennox.

General LENNOX. Senator Lieberman, thanks. There have been an awful lot of failed efforts in the past. My experience really goes back to the most recent one, so I'll speak from that if you don't mind. It's the future combat system.

Senator LIEBERMAN. Great.

General LENNOX. And I think what we did in that and one of the challenges we face in that was we overreached. We thought that we'd rely on systems and technologies that would develop over a certain period of time. They didn't. Their technology levels were relatively low and I think we were counting on a series of, not mir-

acles, but important things to happen, technologically, in order for that system to develop and develop on time.

Senator LIEBERMAN. So that's important. Excuse me for interrupting. But are you talking about technological over reach, not financial over reach, for instance?

General LENNOX. Well, I'm probably not as experienced enough to talk about it in that term, sir.

Senator LIEBERMAN. No, but the terms you're talking about may be the decisive terms, so.

General LENNOX. And I think with how we're addressing that though, in particular with the ground combat vehicle is we're looking specifically at technologies that are much more mature.

Senator LIEBERMAN. Right.

General LENNOX. And not—and looking at much more of an incremental rather than revolutionary kind of approach as we deal with the ground combat vehicle, for example.

Senator LIEBERMAN. In other words technologies that are mature out in the commercial marketplace, for instance.

General LENNOX. In many ways, yes, sir.

Senator LIEBERMAN. Yes. General Phillips, you want to add to that?

General PHILLIPS. Sir, just a couple of comments. And the one program that comes to mind for me is Comanche.

Senator LIEBERMAN. Right.

General PHILLIPS. And what we did on the Comanche program that I think we've learned valid lessons from that. The Army essentially put much of its resourcing and strategy and the growth of requirements into Comanche. And then we realized that somewhere around 2003–2004 we made the Comanche decision and decided to reinvest into Army aviation. And I think the results of that program today have borne great fruit for the Army and also for Army aviators and soldiers both in Iraq and Afghanistan.

We've also learned the lessons from looking at how we grow requirements. I believe the Reno study is one of those recent ones that has been of great value to the Army. The capability portfolio reviews that you and Senator Thune have mentioned have also helped us get our hands around requirements and more to come on that.

And I'll turn to contracting and acquisition reform real quick. You just some other members of the panel talk about GCV and acquisition reform. we've heard the lessons of Congress and we are implementing acquisition reforms within GCV and other programs as well and also focusing on contracting and fixing contracting within the Army as a result of the Gansler Study.

So, sir I guess that would leave it with we've heard what you and others have said. And we've taken those hard lessons and we're working hard to apply them.

Senator LIEBERMAN. So go back to Comanche. So was that—and I appreciate what you said about the resources that were going to be given to Comanche being used in other ways that have been effective. So was that a budget over reach or was that also a technological over reach?

General PHILLIPS. Sir, from my knowledge on the program at that point about 2003–4 we had about $14 billion, just over in the Comanche program.

Senator LIEBERMAN. Right.

General PHILLIPS. And if you looked at Apache, Black Hawk, Kiowa and other systems, Chinook, those programs didn't really have the funding that they needed to make sure those programs were modernized in a way that the Army could benefit from that. So the Army, in my opinion, made the right decision. And they took the $14 billion and they put it back into those programs to include about $2 billion into Army survivability equipment which went directly into aircraft flying in Iraq and Afghanistan.

So the Army looked at its requirements, holistically, and I think made the right decision on the Comanche program to reinvest in Army aviation.

Sir, I hope that answers your question.

Senator LIEBERMAN. It does.

Mr. Sullivan, Mr. Duma, so from your perspective being outside the Army, but following it how do you explain the instability in the Army modernization programs and do you think we've learned some lessons from it now?

Mr. SULLIVAN. I think probably, General Phillips pointed out one lesson we learned was when they terminated Comanche and used it to upgrade existing systems. I think that was a good use of funds. I think the answer, my perspective on the Comanche is it was a technological over reach.

It was a program that started in the late 1980s and was finally terminated in the mid 2000s as a result of not being able to achieve the requirements they had set. Some of the mission equipment package that they were trying to get on the Comanche was just not achievable given the space, power, cooling, weight. And there were a lot of contradictory requirements there.

Senator LIEBERMAN. So from your perspective how are those, I call them mistakes made, is it kind of too much optimism at the outset? Reaching for too much?

Mr. SULLIVAN. I think what we have found consistently over, you know, 15 years of looking at these programs and I would say this now, there does seem to be some reason for optimism with the acquisition reforms that are in place.

Senator LIEBERMAN. Right.

Mr. SULLIVAN. And there seems to be a more serious effort in the Pentagon today to try to achieve these. I think everybody is feeling the budget crunches these days. But to get back to it, I think it is optimistic. You know there's an optimistic tone when you want to set requirements for a weapons system.

Senator LIEBERMAN. Right.

Mr. SULLIVAN. That goes back to almost a kind of an unhealthy competition that goes on to begin weapon systems because in order to get a weapon system started, of course you?ve got to be the best. It's got to be better than anything else that's going. It's got to be cheaper than anything else so you tend to come in with very low, optimistic cost estimates based on very little knowledge since it has to do so much you usually have to tie requirements to technologies that, in some cases, haven't even been invented yet.

So yes, it's due to very optimistic requirements at the outset that require technologies that haven't been invented. And I think part of that goes to all this talk about portfolios. There's the overall portfolio across all three services for major weapon system acquisitions is today not managed very well.

I think the Secretary of Defense made some big leadership decisions and got some attention last year. And I think a lot of the focus that you?ve talked about and the Generals have talked about these portfolio management exercises that are going on now are crucial to getting that under control.

Senator LIEBERMAN. Thanks.

Mr. Duma, my time is up, but I'd like to hear an answer anyway.

Mr. DUMA. Very quickly, I think that the programs that you've described were large and complex so when it came under a technological problem it rippled through the program. And that showed up not only in the technological challenge but in a schedule slip and a cost overrun. So I think technology readiness drives cost and schedule.

Senator LIEBERMAN. Right.

Mr. DUMA. I also think that once that happens the programs get into a reactive mode and the requirements change as a result of real world facts of where they are and they become reactive and not carrying out a planned out event.

Senator LIEBERMAN. Ok, those are helpful answers. I assume then that you'd say that—my time is up. But I'm going to come back and ask you about Secretary Gates? 80 percent solution idea which seems to respond to some of what all four of you said that we should be satisfied with an 80 percent solution to a weapons system requirement rather than continuing the chase, what I think he called exquisite technologies that are costly and going back to you, General Lennox, immature.

Thank you.

Senator Thune?

Senator THUNE. Mr. Chairman, if there's no objection I'd like to yield my place in the order to Senator Inhofe. He's got some—

Senator LIEBERMAN. I'd like to object, but I can't take his place. [Laughter.]

Senator LIEBERMAN. Go ahead.

Senator INHOFE. I have three very brief questions. Thank you very much, Senator Thune.

First of all, we've heard from a lot of different sources, I'd ask the two Generals this that there's a disagreement between DOD and the Army about the Army's ground combat vehicle. And Reuters specifically said U.S. Army Pentagon at odds over new vehicle. Do you know what—can you share with us what the disagreement is?

General PHILLIPS. Sir, I'll answer that. I'm not aware of any disagreement. Dr. O'Neil, who is brand new as the Army Acquisition Executive has been here for a month or so and I both met with Dr. Carter, I just met with him last week and met with Mr. Frank Kendall, his right hand, talking about ground combat vehicle and the way ahead.

I think we're in sync with OSD. We have had the review back in February where they approved through the milestone decision 40 to go forward with the program.

Senator INHOFE. That's fine. You don't need to explain. I just thought there was something you, you know, you were going to share with us there.

Second, I thought the question that Senator Lieberman was going to ask when he started off talking about the platforms, the armed gun system, the Comanche, then the Crusader and then FCS and you know, I've been through this. And I can remember so well. And certainly this is not a partisan thing because it was President Bush that axed the Crusader system right? Actually we were in mark up when that happened. And I didn't know anything about it. And I thought that was very bad.

Then the FCS and we went through that. And General Shinseki was kind of a driver there. And that terminated.

By the way, I heard you use two characterizations, Mr. Sullivan. You said restructuring the FCS and modernizing FCS. I haven't heard that before. I think that was terminated.

The question I'd ask any of you who want to answer is the why do you think that the ground combat vehicle won't meet the same fate? Is there—what is different about this that we—because we don't want that to happen.

General LENNOX. Senator, I'll try first. I think that the different approach is the fact that the technological radiance levels of what we think the ground combat vehicle will look like is much more mature than the manned ground vehicle and some of the other things we and the other panel members have talked about. So I think we're farther along technologically so we won't run into surprises or as many surprises that would cost overruns and delays.

I think additionally the approach that the acquisition team is taking—I'll let General Phillips talk more specifically about it. But the prototyping, the multiple vendors involved, I think that will keep us both innovative and on the right track. So I'll pass this over to General Phillips.

General PHILLIPS. Sir, just a couple comments I would add to that.

Number one, we have learned from FCS in the termination and we've taken a number of technologies and we've offered that to industry. And we're not asking the industry to really go off and invent something. In the case of armor solutions that we might put on a ground combat vehicle we're offering what the Army and our research scientists have already developed to be able to put into that solution.

Sir, we've listened to acquisition reform as well. And you've heard the panel talk about the strategy going forward for ground combat vehicle. It's in line with weapons system acquisition reform. And I think it gives the Army the greatest opportunity to execute this program and deliver in 2017.

Senator INHOFE. Ok. I didn't mean that critically when I said that. It was just an observation because I hadn't heard that characterization before.

The last thing I wanted to ask about is having to do with something that we're all familiar with or those of us who spend some

time in the field and in some of the depos and that has to do with the vehicles left behind, the reset program. I know it's created some home station training problems. And I think there's what, 10.8 billion, I guess in this budget. I think it was around 8 billion last year.

Do you think that's, number one, is that adequate?

Number two, do you want to say anything at all about the reset problems that are out there?

General LENNOX. Well, sir, first of all I think the funding that we have is adequate for the reset program. And the depos and our Army Material Commander has done a remarkable job at meeting the demand to reset vehicles as they come back from combat. I think we're in a period of time here where we're going to be challenged.

Quite frankly I think it has to do with the ramp up in Afghanistan while we're waiting for things to ramp down in Iraq. So they'll be a little bit of period of time that we'll probably have a bubble at some of our depos and some of the capability getting the equipment through. And I think that will have a short-term impact on home station training, for example.

Senator INHOFE. Well, ok. Well, thank you very much. And thank you, Senator Thune, for giving me—

Senator LIEBERMAN. Thank you, Senator Inhofe. Thanks for your questions.

Next is Senator Begich.

Senator BEGICH. Thank you very much, Mr. Chairman. I have a couple questions.

One I'm not sure you can answer, but I want to kind of put it on the record and if you can answer it that would be great. And that's I sent a letter to Secretary Gates back in—I just want to look at the date to make sure I'm correct, March 8th. And it was regarding the adding of two combat aviation brigades and kind of the status of that. What going to happen?

As you know that's going to be made up of some assets aviation has inside Alaska as well as the low 48, obviously that concerns me a great deal of what will happen with those assets. How will Alaska be treated with the new, the two combat aviation brigades and what impact that will have on Alaska? Can you give me any update on what's happening or not happening?

And then to be very, very parochial what are you doing to Alaska?

General LENNOX. Senator—

Senator BEGICH. Not to be so parochial, but, please.

General LENNOX. Those are great concerns, Senator. And we acknowledge that. The final decision hasn't been made specifically about the 12th combat aviation brigade where the flag will be. But believe me the concerns of the soldiers and the needs in Alaska are a big part of that decision.

We've got to make sure that we have the right kind of aviation there to conduct training to respond to the Governor and the Homeland Defense kind of needs in the state. And I think when the final decision is made you'll see that those concerns were addressed.

Senator BEGICH. I appreciate that. I just want to, you know, I know there are some impacts and we recognize the restructuring that's going on and the efforts. But you know better than I do the important strategic component of the position of where is Alaska is and some of its assets especially up in the Fairbanks region, Fort Wainwright area.

And so I just, as you move forward, you know, we want to be well, kept well in tune to what's going on, but also the time table is, to us, important to understand that. But seems every time I hear about this there's always no decision yet which to be very frank, makes me nervous. Because then someday I might be in some meeting and the decision made, I don't know about it, so if you could keep us well informed.

I understand through your own documents and work that you have done, not you personally, but the Army the importance has been laid out of the strategic location of Alaska with these units. I just want to make sure that's all part of the equation when finally decided.

General LENNOX. Senator, I can assure you that that is absolutely part of the equation, that and the fact that we have to get the soldiers there that are deploying trained and ready and integrated with aviation. It's all part of the factors.

Senator BEGICH. Excellent. The other one, if I can, and this is we really haven't talked about it, but it's—and I asked this kind of in a variety of the subcommittee's—on the industrial base of kind of what we're doing and what we're not doing in certain components to support the military mission. But last year Congress provided to the Secretary of Defense the authority to expand a small arms production industrial based.

Can you give me just any update of what's happening, what's not happening there? Again my issue is is that it doesn't, you know, it's for everything from small arms to large facilities. How do we ensure that as we're constantly restructuring and we have financial constraints what are we doing to make sure the industrial base is still strong enough to support that which we need to do in a competitive nature?

Can you respond to this? Specific on the small arms end, if you want to expand broader that's fine with me.

General LENNOX. I'll start, Senator. In the area in particular for us and force a critical concern the way ahead. And I'm sure you're familiar with the fact that we're taking a two prong approach to addressing the M–4.

Senator BEGICH. Right.

General LENNOX. And that's both improving the capability we have today incrementally and then we're going to compete a new requirement for a carbine in the future. So as with almost every other area we do the industrial base is a concern, especially in these kind of key capabilities. So I think that will be, it will be a factor in the decision.

General PHILLIPS. Sir, I agree. I would only add a couple things. A healthy industrial base within the U.S. is incredibly important because without that I don't think we would be able to provide that world class equipment to our soldiers that are serving in Iraq and Afghanistan in particular.

And General Lennox just hit the nail on the head. The M–4 and the industrial bases for its small arms is incredibly important. And I would add munitions to that as well.

Senator BEGICH. That's a good point.

General PHILLIPS. Because without the munitions and the industrial base that supports that we wouldn't have the ammunition that our soldiers and service members need in the field. And we're going to work hard to sustain and to keep that capability for our Nation and for our service members.

Senator BEGICH. Will there be an opportunity, I don't know if it's through your office or even from the GAO is there some process that you'll be able to report back to this Subcommittee or the Committee in total kind of where you're at and if you're having success to maintain that? Because again this is something you just can't turn a dime and turn it back on. If it's starting to degrade or diminish it becomes a bigger problem down the road.

Is there a process you have implemented or will you implement to keep us informed on how you're moving forward? Maybe I just asked for that process, I'm not sure.

General PHILLIPS. Yes, sir. I would answer like this. We team with the defense contract management agency who sustains or has some industrial based capacity or I'm sorry, the ability to look at the industrial base.

Senator BEGICH. Ok.

General PHILLIPS. And to come back to the Department of Defense because they serve under the Department of Defense and then eventually I would assume report to Congress on the health of that industrial base. And working through our defense contract management agency partners I think we could, as we see gaps in the industrial base, we could certainly come back and make sure that Congress and the Department of Defense is aware of that.

Senator BEGICH. That would be great. I appreciate that. Does GAO do any kind of analysis on industrial base? I'm just curious.

Mr. SULLIVAN. We have some teams that look at things like that. We don't have any one looking at this particular thing, but it's something we can talk to your staff about.

Senator BEGICH. Ok, that would be great. Thank you. Thank you very much.

I think I have no time left. I've just been given the card. That's how my life—thank you very much for your ability to comment on these questions. Thank you, Mr. Chairman.

Senator LIEBERMAN. Thank you, Senator Begich.

Senator Thune?

Senator THUNE. Thank you, Mr. Chairman. Gentlemen, the Army is developing a suite of systems for the infantry including a robot, a UAV, digital radios and wireless sensors that are collectively called increment one. Mr. Duma, in your written testimony you state that the liability desired for increment one is not achievable by the time of the operational test without an extensive redesign. And I'd be interested in knowing, Lieutenant Lennox, Lieutenant Phillips, do you agree or disagree with this assessment?

General LENNOX. Senator Thune, we've looked at this extensively too. First of all we agree completely with the assessment that's been done. This is an assessment of the test that we had set up

last September, the Army set up. We put the equipment in the hands of some soldiers hopeful to find these kinds of things.

Can they shake out? Do they meet requirements? And in this case many of them failed. And they failed in a variety of different ways.

The minute that test was over the PM started to work on a path that had improved the systems. And I'll let General Phillips talk to you maybe about some of those specifics. But we're starting to see the improvements show up.

So for example during last year's test we used a pre-engineering design model radio, the ground mobile radio. And now the engineering design model radio is being fielded to soldiers at Fort Bliss.

There were problems with the robot. You throw it through a window and the robot would break. The robot has now been replaced with titanium in certain parts of it. It's much more durable.

I think what we're asking for is the patience to test this again. It's in the hands of soldiers. They're the ones that will tell us whether or not this works or not.

When we talk to the brigade commander he said we take two of the systems today. If we're going to war today, we'd take the Class One UAV, the hovering vertical UAV and we'd take that small robot. And the other ones we'd like to see some more work done.

I think what we're asking for is the patience to let us keep that in the hands of soldiers. Keep working in along our time and the trust and confidence that we won't do the wrong thing that if it doesn't measure up, just like the other systems that didn't measure up. We won't put any soldiers in jeopardy by putting this in their hands.

And we think the risk of putting soldiers in jeopardy is very, very low by continuing this process.

Senator THUNE. General Phillips, do you see the Army redesigning any of the systems in that increment?

General PHILLIPS. Sir, that's certainly the potential. But I'd like to just reiterate, sir. We totally agree with GAO and DOT&E. And we've taken the results of the limited user test in 2009, September 2009, learned from those lessons. And we have 100 percent of the reliability issues that came out of that LUT and we're implementing them in fixes.

I would just add that about 10 days ago I went out to Fort Bliss with the Vice Chief of Staff for the Army, General Chiarelli. And he and I sat and watched soldiers using the systems. The Class One UAV in particular we saw one soldier that had used over—had flown over 100 flight hours with the Class One system and said he would take it in the theater today.

So sir, I would simply ask the Army has taken this very seriously. And I'll reiterate what General Casey said, we're not going to field one system that is not suitable, effective for our soldiers in theater. And if it doesn't meet the mission, sir, we're not going to field it. And it means that we go out and find something different, then we'll go out and seek the right solution to give our soldiers the right capabilities.

So, sir, I agree with your question.

Senator THUNE. Let me, Mr. Sullivan, in your written testimony you indicated that increment one may not meet the most important

justification for its acquisition. You seem to doubt that it will meet warfighter needs. And I would ask you if you could elaborate on some of those concerns.

Mr. SULLIVAN. Yes, I think one of the things that we look at is, you know, they just went through acquisition reform and re-established a lot of really good policies for establishing a business case for the warfighter which really includes that that's at a time when you go and you meet with your customer. And you say, how many do you need and when do you need them. And that usually happens at a milestone B before you start development.

It's a solid business case that's based on knowledge. Where the Army is right now on increment one is they're at milestone C which is really entering in the production much later than when that business case should be set. And what you have now is kind of a loosening of the policy, so to speak, to say the business case is this. We have a certain amount of money. we're far along on some of these, not on all. But we will deliver you what we can get to you.

If the warfighter understands that, you know, I would assume the warfighter, the business case was we're going to deliver all these things, you know, within a certain period of time. If the warfighter understands that all those things aren't going to be delivered, I guess that's ok. But it wasn't the deal that was made originally according to policy.

So I guess our take on it right now is they're not following the tenants of their basic policies on increment one specifically at this point.

Senator THUNE. Do either one of you gentlemen want to respond to that?

General PHILLIPS. Sir, I would simply say this that once again we're not going to field something that's not ready. So if one of those increments, like the Urbanogs or something isn't ready than we're not going to ask to take that and field that to our soldiers. we're going to look for the right solutions.

Sir, I would also add that we're in—we just started the third year of a four year test. we've done limited user tests last year. We learned a lot from that. And GAO and DOT&E has helped us understand that better.

we're implementing those fixes. Technical test is ongoing right now out at Fort Bliss. We will do another limited user test in August/September time frame. We will learn from that. As we drive toward another milestone decision to buy more of these increments.

So, sir we're still going through the test, fix, test scenario to make sure that we can get these systems right to include the network that General Lennox described as being so important to the sensors and for situational awareness. And sir, again, we're not going to field something that's not ready.

Senator THUNE. One element of the Army modernization is the non line of sight launch system referred to informally as rockets in a box. The Army briefing document suggests the cost of each of these launch systems during low rate, initial production will be about $466,000. Lieutenant Phillips or Lieutenant General Phillips, Lieutenant General Lennox, could you have concerns about the affordability of this system?

General LENNOX. Senator, the short answer is yes. It's very expensive. It's part of our capability portfolio reviews right now. we're looking at it in light of the limited user test where it failed to hit four times out of six.

So we're taking it very seriously. we're looking at cost and benefit of it right now.

Senator THUNE. Is the Army considering other technologies as alternatives to that? There are some other ones, I'm told, Excalibur artillery rounds, guided MLRS rockets that also deliver precision munitions. Are those things that would be alternatives or options?

General LENNOX. That's exactly the purpose of the portfolio review, sir. we're going through and saying what gap does this fill. And then looking at the cost of it and looking at the benefit for soldiers. That's exactly the process we're going through.

Senator THUNE. My time is up, Mr. Chairman.

Senator LIEBERMAN. Thank you, Senator Thune.

Senator Hagan.

Senator HAGAN. Thank you, Mr. Chairman. I think it was General Phillips in your opening statement you, in response to a question, you mentioned that we needed a healthy industrial base as well as a healthy munitions base. And I think those are extremely important and not only for our Nation, but certainly for our service members. So I appreciate those comments.

And we are also discussing how in April of last year Secretary Gates directed the Army to cancel the vehicle component of the future combat system program, re-evaluate the requirements for technology and approach and then re-launch the Army's vehicle modernization program. General Phillips, I was wondering as part of the Army's next generation infantry fighting vehicle development, has consideration been given to the inclusion of fuel efficient, hybrid engine technology in an effort to reduce the petroleum demands when we're operating in these other environments?

General PHILLIPS. Yes, ma'am, great question. That is a key concern for that program, but also for the Army as a whole. When you look at Afghanistan and Iraq and the fuel requirements that our Army, it takes to support our Armed forces and in this vehicle in particular we have a key performance parameter of KPP that is associated with energy efficiency.

So how can we drive efficiency inside the vehicle to get the greatest mileage per ton for the fuel that it will use? And we're asking industry to take a look at that and propose innovative solutions to drive fuel efficiency inside the program.

And ma'am, if I could add one other thing, JLTV has a similar requirement, not a KPP, key performance parameter, but it has a requirement for fuel efficiency. And it's called tons per mile. And for that system in particular which is still going through technology development we are working to, with industry partners, to be able to put energy efficiency inside that vehicle because I think that's going to be important to the Army in the future.

Ma'am, if I could add one more thing. With our Army material command partners, General Dunwoody, underneath material enterprise, we do look at our industrial base very strongly. So that should have been a part of my answer earlier as well.

Senator HAGAN. When you were talking about the KPP and the vehicle what's been done so far? Are you seeing any progress at this point? Is anything out there that needs to be tested?

General PHILLIPS. Ma'am, under ground combat vehicle we have not gotten any feedback from industry. we're still, the RFP is still on the street. And we expect industry to come back to us at the end of this month with some of those answers.

And the source selection process for the JLTV, it's really a good news story. The threshold requirement is 60 tons per mile. That sounds like a strange requirement, but that's tons per mile depending on how big the vehicle might be. Industry has shown already with three variance that we can achieve beyond even the objective requirement around 76 tons per mile.

So we think that we have an opportunity to increase the energy efficiency of our vehicles.

Senator HAGAN. Along those same lines when we're talking about energy efficiency, how about mobile alternative power systems? As the Army moves forward with its modernization program it's apparent that the proliferation of electronic equipment that you've been talking about, communication systems and robotic platforms increases the Army's reliance upon deployable power systems. My question is what R&D programs and initiatives are included as part of the Army's modernization program that will address an increasing reliance upon petroleum fuel supplies?

General LENNOX. we're looking at each other to see who could do a better job at answering that, Senator.

Senator HAGAN. You got it.

General LENNOX. I'm not sure either of us will be that good. We may have to take this for the record, if my answer doesn't apply. Very critical and we're looking at it in a number of different ways.

One way is we're looking at the, for the ground combat vehicle for example. It's very, very important that we build the capability for growth. It seems like we never get less power or we never end up with extra power on a vehicle. We always seem to grow and expand to absorb all the capability of that vehicle and then more. And we're in that condition of a number of different vehicles.

we're also looking at systems that can reduce the demand on the vehicle using a network integration kit that we have it four plus now in a very preliminary fashion. But later on hopefully that will help us reduce routers and reduce interfaces and things like that. So with industry's help we might be able to reduce the demand on the given vehicle today.

Now I don't think that gets to your answer on the mobile capabilities unless you have something?

General PHILLIPS. Ma'am, I just have one other area to add and that would be in soldiers. When we look at soldiers and what they carry weight is important. And mobile power and batteries that our soldiers are carrying on the equipment and the systems we are looking for industry.

I know we're looking at that. I don't have any specific answers for you today. And we'll get back with you. But we're looking at ways to reduce the amount of pounds that soldiers carry and a piece of that is batteries to power the systems on the soldier.

[The information previously referred to follows:]

Senator HAGAN. I just got back Afghanistan, Iraq and Pakistan while we were over there. And they certainly do carry quite a bit.

The Stryker vehicle has a planned procurement of nearly 4,000 vehicles with, I understand, probably about 80 percent of those vehicles having been delivered by January of this year. And reports indicate that the newly designed Double-V Hull being integrated into the current vehicle platform has the potential to provide MRAP level protection against the IEDs.

General Phillips, can the existing fleet of Stryker vehicles be retrofit with the Double-V Hull? And if you think that's a good idea what's the projected cost associated with refurbishing the fleet? And are there plans underway to execute this upgrade?

And while I was in Afghanistan we actually had the opportunity to go in a Stryker, go to a FOB and actually go out with the soldiers. It was very interesting for me.

General PHILLIPS. Ma'am, great question. I would start to answer this way. There's been 12 rotations of Stryker to Iraq and Afghanistan and they put over 24,000 miles on those vehicles. It is an extraordinary capability that helps our soldiers in their brigade combat team.

I hope I answer your question correctly. We cannot take the current Stryker vehicle and retrofit it with a Double-V Hull. It is a brand new hull.

So as we build this vehicle it will come off the production line from our industry partner as a brand new hull. Then we can put the equipment back on it much of that will be currently in existence. we're optimistic about what that hull might do to provide added protection for our soldiers. But before we invest in the production dollars in a significant way we want to make sure that we work with our DOT&E partners and our test community to understand what level of protection it does provide.

Our initial simulation and some shots that we've done already with the basic hull give us a certain level of confidence that it will protect us up to an MRAP like capability. But the test that we will conduct with our ATEC, our test community and the Army and DOT&E will inform us that it does provide this level of protection up to MRAP, potentially higher, potentially lower. we'll be very disciplined as we make that decision, ma'am.

Senator HAGAN. My time is up. Thank you.

Senator LIEBERMAN. Thanks very much, Senator Hagan. Good questions. we'll do a second round of 5 minutes each as the members want to stay.

Mr. Sullivan, I want to draw you out a little bit on your feelings about the increased risk that you believe result from the Army's decision to go with the low rate initial production of the early infantry brigade combat team, increment one at this point. Talk a little bit more about what your specific concerns are. And then I'm going to ask the Army to respond.

Mr. SULLIVAN. The concerns that we look at have to do with following the rules, I guess in a way. And one of them is that they—when you have a business case that establishes a set delivery time and number of quantities of things to deliver and you're spending money that has been budgeted to do that, $682 million will be budgeted this year.

Senator LIEBERMAN. Right.

Mr. SULLIVAN. To accomplish increment one, so you're basically spending money on all of these things you may not be able to deliver. It's just, you know, if the warfighter needs the capability and that has been established then that's the deal more or less. Now if the—this is a case where these are spin outs.

Senator LIEBERMAN. Right.

Mr. SULLIVAN. From a program that had a lot going on. So I'm not—I don't know how much the warfighter has weighed in since they, you know, terminated FCS and started this up. But that's the thing, warfighter is expecting increment one brigade equipment that is, you know, the six or seven things that they've outlined here and they may not get them. So there's risk there.

Senator LIEBERMAN. So is the concern you have about the fact that we're putting a lot of money and the systems are not going to be able to be delivered on time or ready on time, not going to be able to be purchasable on time or is it that they are going to arrive and they're not going to be up to what the warfighter needs?

Mr. SULLIVAN. I think both of those things.

Senator LIEBERMAN. Both.

Mr. SULLIVAN. Yeah. I think there's risk. There's risk that you're losing the bang for the buck.

Senator LIEBERMAN. Right.

Mr. SULLIVAN. You're investing a set amount of money you may not get what you asked for in the end. And therefore, it becomes more expensive. And the reliability testing that they did most recently showed that some of these may not be deliverable.

Senator LIEBERMAN. Yeah.

Mr. SULLIVAN. I don't know. I mean at some point—there's still too much risk in knowing whether they'll ever be deliverable. One of the—I think that they've now done a technology readiness assessment on the components in increment one that the program had set at somewhere around a TRL6 or 7 which means ready to go.

Senator LIEBERMAN. Right.

Mr. SULLIVAN. And the S and T community, DDR&E, the scientists went in and looked at that and they reset some of those technology maturities at fours which means still being invented.

Senator LIEBERMAN. So what would you do if you were Secretary of the Army today with this program?

Mr. SULLIVAN. I would probably establish a business case based on the knowledge of what I could deliver today.

Senator LIEBERMAN. And—

Mr. SULLIVAN. That's the warfighter and ask if that was acceptable if this was—if there's an urgent need.

Senator LIEBERMAN. Right.

Mr. SULLIVAN. And we can deliver it, we'll get it to you.

Senator LIEBERMAN. So in other words you'd acquire fewer now because you don't have that full confidence.

Mr. SULLIVAN. Yes. I think right now you could set a business case for what you know you'll be able to deliver.

Senator LIEBERMAN. Right.

Mr. SULLIVAN. And spend money on that.

Senator LIEBERMAN. General Phillips or General Lennox, why don't you respond?

General PHILLIPS. Sir, I'll start first and then let General Lennox weigh in. And sir, I want to assure you and the Committee that we are following the Federal acquisition rules. And it's a far based contract.

And the oversight of the EIBCTs is from the Office of Secretary of Defense Acquisition Logistics and Technology, Dr. Carter. And he has provided us the authority today for one brigade set. And that's what we're buying to make sure that we can do the testing and determine what the reliability standards are.

And we haven't gone through an initial operational test and evaluation yet. We still have that to do with one more limited user test as we drive toward that decision point. So I think the Army's position is this is a key part of our modernization strategy.

Senator LIEBERMAN. Right.

General PHILLIPS. And I would just add that it's important for the infantry brigade combat team and Bill Phillips speaking from my time being in acquisition, this is a great opportunity for the Army to really provide the infantry brigade combat team a significant capability over what they have today.

Senator LIEBERMAN. Yeah.

General PHILLIPS. A network sensor capability that provides soldiers all the way up to the brigade commander the ability to see the battlefield, to have true situational awareness and to increase their combat capability. But sir, again, I assure you that I believe we're following the rules as set out by Dr. Carter, OSD and others.

Senator LIEBERMAN. Mr. Sullivan—oh, go ahead, General.

General LENNOX. Sir, I just wanted to address the concern about did the warfighters, have the warfighters asked for this?

Senator LIEBERMAN. Yes.

General LENNOX. When the future combat system program was terminated last spring, we asked the training and doctor in command to do an assessment based on lessons learned in combat. What kind of capabilities we ought to put in these capability packages? They undertook that study over last summer.

They presented to us in the fall a series of items that they thought were both beneficial and technologically mature enough to be spun out to the infantry brigade combat teams. That was our basis. But the best thing, the best way I think to determine that these systems are ready is putting them in hands of soldiers and letting them play with this kind of equipment, evaluate it, tell us what works and what doesn't work in a series of tests and help, let them help us make the decision.

As we mentioned earlier two systems in particular they said they'd take to war today, the Class One UAV and the small robot. With the improvements they may choose other ones, but I think we've learned as a result of this process whether or not these are really valued by soldiers.

Senator LIEBERMAN. That's a really interesting answer because in a way it's a variant, I suppose, on Secretary Gates 80 percent solution. I don't know whether part of the problem here is that the Army wanted 100 percent and maybe should have settled for 80 percent. But I think you're saying you have confidence, General

Lennox, that these systems are good enough that if you put them in the field the warfighter will tell the manufacturer essentially how to make them good enough to meet their needs.

General LENNOX. Put them in the field of four plus taxes, Senator.

Senator LIEBERMAN. Yes, right.

General LENNOX. Right, not in combat yet.

Senator LIEBERMAN. Right.

General LENNOX. They're not ready for that.

Senator LIEBERMAN. Right.

General LENNOX. But allow us to mature them in the hands of soldiers and find out if they are or not. they'll sink or swim on their own.

Senator LIEBERMAN. Gotcha. Thank you.

Mr. SULLIVAN. Senator, if I could, just to follow up on that.

Senator LIEBERMAN. Please.

Mr. SULLIVAN. I think that's a good strategy during development, but they are in procurement with these now.

Senator LIEBERMAN. Yes.

Mr. SULLIVAN. I think that's the risk that we're talking about is they're spending dollars to purchase, you know, to procure the items when they're still trying to understand the growth of the reliability.

Senator LIEBERMAN. Yes, understood. And I know, Mr. Duma, the DOT&E did not agree that increment one provided an increased operational capability. Am I right?

Mr. DUMA. That was very difficult to determine because the LUT that occurred last September was a company and scout platoon level LUT. That was a small scale test. The LUT that we are going to do this September will involve two companies and a scout platoon so you will see comparisons able to be made on the distances that are operationally realistic that we could not look at in the initial LUT.

For instance the communications distances that we looked at were small and the soldiers were able to do things with the equipment that they won't be able to do in the LUT in September because it's more realistic to what they'll find in theater. So there are some comparisons that we will be able to make in this summer's LUT that we were unable to do there. So to say that shows a measureable improvement over what we have, that was not available to be determined last year. It will be part of the assessment this summer.

Senator LIEBERMAN. Thank you.

Senator Thune?

Senator THUNE. Thank you, Mr. Chairman.

Mr. Duma, I want to come back to the Stryker for just a moment. The industry claims to have already conducted its own testing on this Double-V Hull. And I guess my question is did that testing provide sufficient data, in your judgment for the Army to make a decision about production?

Mr. DUMA. Certainly not for production. I'm not aware of what that data looks like personally. However, industry often does things under IR&D in their own companies and proposes something to the

military. That's a typical way to approach and provide a technological upgrade to the system.

That's exactly where the Army is right now in my opinion. There's a theory behind that this is going to help. That needs to be verified. And that's exactly the case that the Army is in right now to procure some vehicles with the Double-V Hull protection and then to evaluate the performance through Army testing.

Senator THUNE. General, do you want to add to that?

General PHILLIPS. We agree. We have not asked for from OSD, Dr. Carter or OSDAT&L is a milestone decision authority. We have not asked for production. But we have asked for long lead items associated with production. And we've asked for a number of vehicles to go out to procure in order to do the testing that was just described.

And sir, we agree, if it does not provide the protection that we think it will for our soldiers that are going into battle, we don't want to procure this vehicle. And the testing that we'll do in the next several months will answer that question, sir.

Senator THUNE. And if that testing and it is successful will all the future Strykers have it?

General LENNOX. Senator, our plan is to build one brigade aimed at Afghanistan. The brigade that is in Afghanistan, put that in theater provided equipment and then rotate, have enough for soldiers to train on back here and then rotate in on that one brigade set of equipment as of right now. Because as General Phillips mentioned, this is a complete new build. It's not something that you retroactively fit to our existing Strykers.

Senator THUNE. Right.

General LENNOX. And it will be something that we're going to have to make our decision on in the future.

If I could go back to one of the testing comments. Our key concern of those soldiers in Afghanistan today and getting the right amount of testing to make sure we're not harming soldiers in any way, but at the same time not testing until every question is answered so that you can get it in the hands of those soldiers. And our goal, our goal, I think is to put it in the hands of the soldiers that will be rotating in in the summer of 2011.

So I think there's going to have to be some really good planning and team work here between the testing community and to have the soldiers in the hands or the equipment in the hands of soldiers so they can train with it sufficiently. Maybe go through evaluations before they deploy.

Senator THUNE. Ok. I think everybody probably on the panel today is aware that body armor is one of the most closely watched budget items on Capitol Hill. And the Army's interceptor system has been thoroughly tested and upgraded and has saved countless lives I think to the credit of the program officer, Brigadier General Fuller and the DOT&E for their good work which I think has ensured that the best products have been delivered to our troops.

The question I have has to do with Section 141 of the 2010 National Defense Authorization Act which requires that body armor be budgeted for in discreet research and procurement accounts so that Congress can ensure that sufficient resources are being put toward improving body armor. That being said, the President's 2011

budget request contains funding for body armor in a lump sum operations and maintenance account which effectively limits the ability of Congress to conduct oversight. And I guess my question for either of you Generals is to—are we reading that 2011 budget material correctly? And could you explain or add some perspective to that?

General LENNOX. Yes, Senator. We took the direction very clearly that we need to do that. That came out after the Army had finished their program for 2011. We submitted ours, our program to OSD in the June/July time frame last year. And the law came out afterward.

we're taking that very seriously. I think you'll see that in the submission for 2012.

Senator THUNE. Ok. Thank you, Mr. Chairman.

Senator LIEBERMAN. Thank you, Senator Thune.

Senator Begich?

Senator BEGICH. I think I just have one general question but first—I'll just stick to my one question. There is a couple I wanted to follow up with. But I just want to understand maybe just an update or kind of where we're at. We have a, my understanding is that the Army has received at least from the 125 Stryker brigade in Alaska in kind of a urgent operation need for the land warrior or some additional equipment.

So I guess if you could kind of give me an update on what's happening with the land warrior and the ground soldier system, kind of where we're at in this transition or not transitioning. We got folks going to be deployed in June who are now nervous a little bit. That's my words. So help me understand where we're at.

General LENNOX. Thank you, Senator. The land warrior system is a program that was killed several years ago.

Senator BEGICH. Correct.

General LENNOX. Because of operational needs statements we fielded it with several brigades and the intent really is to assess it and see how it informs our program of record, the ground soldier system. And we have fielded it with a number of units. We fielded it with 5-two Stryker in Afghanistan right now.

I can't tell you the—and I'll take for the record the brigade that's in Alaska right now what the status of it is. I believe it's getting fielded with a retrofitted set, not a complete brand new one. Frankly we've probably bought all the land warrior systems that we need today in order to assess it and give us guidance for the future as of this time.

Senator BEGICH. I would like to get, if you could, just for the record, kind of what's going to happen. They're planning to deploy I think it's in June of this year. So if you could get that that would be fantastic.

[The information previously referred to follows:]

Senator BEGICH. Mr. Chairman, that's all I really have except one kind of general question. It seems like as we've walked through today there's been some good discussion on some of the systems that have gone through testing as well as some that have had some problems in the testing process. What do you do in the organizational structure when you have a system that has had cost over

runs or questionable testing that's not working as well as you thought?

What happens to the people who are managing those programs that are under your folk's command or whose ever command? I don't hear ever much about—I know in the private sector what would happen, but tell me how it works in your system?

General PHILLIPS. Sir, you have to do the—the first thing that we would do is do the forensics on the program itself. And we would probably bring in a team to take a look at why is that program in the status that it is today. We have a number of venues where we continue to look at programs, Army systems acquisition review councils or ASARCs.

We have milestone decision sessions with the OSDATL and we have configuration steering boards. Much of that comes out of the Acquisition Weapon Systems Acquisition Reform Act that we do today. We have capability portfolio reviews that continues to look at the performance of our programs. And it relates to three areas, cost, schedule and performance.

So we have to do the forensics to figure out what happened because the individual that's in charge of that program it may have been completely out of their control. It may have been something related to technology that never could have been developed. So the system was never able to reach its milestone.

So it's difficult to say what would happen to the people inside the program. They may be managing that program to the best extent that they possibly could. And they were not able to execute the program.

And I would also argue that part of the paradigm that we need to look at inside the Army is some of the most successful people that are program managers are those that are managing the most challenging programs that may have cost, schedule and performance issues. So I'm going to work on my time in the Army as a part of acquisition reform. How do we manage that inside our Army related to those three things, cost, schedule and performance and how are our people inside our programs executing along that strategy.

I hope that answers your question.

Senator BEGICH. It does in a general. I guess the last question/comment. Do you feel if you see personnel need that is needs in the sense of change that the support is there within the system to do that in a rapid pace?

An example I give only because every time I come to this room we're dealing with Airland and some other things and F35s, I think, was yesterday. I can't remember what day it was. But well that was a dramatic change in personnel in order to move forward.

So I guess I want to hear from you that when it's necessary to make those changes you can do them and you get the support to do it because if you don't make those changes it just perpetuates the problem into the future if it's a personnel issue.

General PHILLIPS. Sir, very good question. I want to say this before I answer your question. There are extraordinary people that are managing our programs. Our acquisition workforce I would put up against anybody in any service because they are doing extraor-

dinary work. And I've been a part of this acquisition work since 1985. And I'm proud to lead them.

The second part to answer your question we have made changes. And when it is quite evident that we have people that aren't executing their programs and I won't give examples.

Senator BEGICH. No, I'm not asking that.

General PHILLIPS. But I've been in the job for 75 days and we have made a number of changes in personnel related to program execution. And we take that very seriously because that's our contract with the Army and with our soldiers to deliver that equipment.

Senator BEGICH. Very good. Thank you very much. Thank you, Mr. Chairman.

Senator LIEBERMAN. Thank you, Senator Begich. Thanks for bringing up the land warrior program. I'm proud to say that I believe it was this Subcommittee that brought the program back from the dead. And we really believed in it in a totally bipartisan basis. And I'm glad you're using it and continuing to test its utility. It's really a remarkable combination of capabilities for the individual soldier.

Thanks to all of you. It's been a very useful hearing. I appreciate the dialogue between you in good spirit maybe you set an example for the Senators here. You can disagree without having partisan attacks against one another.

[Laughter.]

Senator LIEBERMAN. The record of this hearing shall be held open until Tuesday the 20th of April at 5PM to allow Senators to submit additional statements or questions for our witnesses.

[The information previously referred to follows:]

Senator LIEBERMAN. And I would ask our witnesses to respond in as timely a way as they can about a month from now maybe a little bit more. I know that Chairman Levin and Senator McCain intend to go to full Committee markup. So the sooner the better.

Senator Thune?

Senator THUNE. Mr. Chairman, I think that Senator Begich in a very diplomatic way was asking if anybody ever gets fired. [Laughter.]

So, but thank you all very much for being here today.

Senator LIEBERMAN. Thank you. Hearing is adjourned.

[Whereupon, at 3:32 p.m., the hearing was adjourned.]