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ARMY AND MARINE CORPS GROUND SYSTEM MODERNIZATION PROGRAMS

HEARING

BEFORE THE

SUBCOMMITTEE ON TACTICAL
AIR AND LAND FORCES

OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED TWELFTH CONGRESS

SECOND SESSION

HEARING HELD
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ARMY AND MARINE CORPS GROUND SYSTEM MODERNIZATION PROGRAMS

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES,
Washington, DC, Thursday, March 8, 2012.

The subcommittee met, pursuant to call, at 10:02 a.m. in room 2212, Rayburn House Office Building, Hon. Roscoe G. Bartlett (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. ROSCOE G. BARTLETT, A REPRESENTATIVE FROM MARYLAND, CHAIRMAN, SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

Mr. BARTLETT. Good morning. Because of the importance of today's hearing, I apologize that my opening statement will be a little longer than usual.

The Tactical Air and Land Forces Subcommittee meets today to receive testimony on the fiscal year 2013 budget request for the Army and Marine Corps ground system modernization programs.

We welcome our distinguished panel of witnesses: Lieutenant General Robert Lennox, Deputy Chief of Staff of the Army, G–8; Lieutenant General William Phillips, Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology; Lieutenant General Richard Mills, United States Marine Corps, Deputy Commandant for Combat Development and Integration; Brigadier General Frank Kelley, United States Marine Corps, Commander, Systems Command; and Mr. William Taylor, United States Marine Corps, Program Executive Officer for Land Systems.

Thank all of you for being here and for your service to our Nation.

Based on the fiscal year 2013 budget request, the subcommittee hopes to determine: one, the risk associated with the Army and Marine Corps' ability to meet the national security needs of this Nation; two, how this budget request impacts Army and Marine Corps ground systems modernization programs and their associated industrial bases; and, three, the best estimate of what program adjustments would have to be made and additional risk assumed if sequestration were to take effect.

We know that our witnesses support this budget as appropriate for the new defense guidance, but we need our witnesses to provide more detail on the modernization and investment risks and the critical assumptions behind these risks given the fact that the Nation is still engaged in major combat operations.

There are two significant concerns that I have that are associated with Army and Marine Corps ground systems modernization:

one, the quality and effectiveness of the equipment that will be relied upon by a smaller combat force as a result of reductions in force structure and end strength; and, two, the effect on the industrial base of ending major current programs and anticipating the ability to begin new production 3 to 5 years into the future.

I have concerns over the impact of this budget on the defense industrial base at the prime-contractor and vendor-base level. Based on this budget request, the industrial base that supports the Marine Corps at the battalion level and the Army at the brigade-combat-team level is going to have a 3- to 5-year production break. Both the Marine Corps and the Army plan on procuring major platforms into the 2017 or 2018 timeframe.

At the prime-contractor level, the ranking member and I have visited many of these facilities. The workers are well-trained, very qualified, and extremely patriotic. As you know, it can take many years to train a qualified machinist or welder. Many of them have served in the military and have families and friends that are currently in the military. However, if these production lines go completely cold for multiple years, these workers will have no choice but to switch career fields so that they can take care of their families.

So the question becomes, what workforce does the Marine Corps and the Army expect to have or need in 2017 and 2018 to produce these new platforms? What impact would this industrial-base policy have on the industrial base's ability to surge production in response to a future threat or conflict?

The vendor-base level is even more problematic. These are the companies that provide the transmissions, engines, and widgets to the prime contractors. In some cases, it can take over a year for a vendor to get qualified in order to supply critical parts to the prime contractors.

Once the production lines go cold, these companies will simply go away or be forced to increase prices for these components and parts. If they do, what will be the impact to current fielded ground modernization system programs? And in 2017, will the prime contractors be forced to go overseas to fill this void? Our prime contractors and vendors are trying to sustain themselves at a minimum economic quantity level. This may not be affordable given the current budget environment.

As I have stated before, major reductions in the Federal budget need to be a major element of correcting the Federal deficit. The Department of Defense must share in a fair and balanced way in these reductions, and that process is already taking place under the Budget Control Act of 2011, with nearly $500 billion in cuts planned for DOD [Department of Defense] over the next 10 years. But we must achieve a balance, to the degree that it is possible, if we hope to have a capable military in the future. Allowing certain major prime contractors and vendor production lines to go cold may not be in the best interest or economically prudent to our national defense.

Is a balance possible? What skilled workers and what vendor base do we need in order to produce the innovative weapons systems we will require in 2017? How do we incentivize the industrial base to promote innovation during this economic downturn?

There have been discussions of this issue, but I have not seen any substantive analysis to date that would help us with this problem. I agree that foreign military sales may help to mitigate some of this risk, but this will not be enough to fix this near-term issue.

We have lost over 6,300 Americans in Iraq and Afghanistan, and more than 47,000 have been wounded since September 11, 2001. In order to perform their missions, whether home or abroad, our military must be adequately equipped with the right equipment to maximize their combat effectiveness and provide for their protection.

Again, I thank all of you for your service to our country and for being here. I look forward to your testimony.

I would now like to turn to my good friend and colleague from Texas, Silvestre Reyes, for any comments he may like to make.

Mr. Reyes.

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

STATEMENT OF HON. SILVESTRE REYES, A REPRESENTATIVE FROM TEXAS, RANKING MEMBER, SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

Mr. REYES. Thank you, Mr. Chairman.

And let me add my thanks, gentlemen, for being here and also appreciation for your service and dedication to our country.

The Army and Marine Corps budget request for modernization comes at a significant transition time for both Services. At this time last year, the Army still had 40,000 troops in Iraq; today there are almost none. At this time last year, both the Army and Marine Corps were planning on very gradual reductions in end-strength, but today both Services are on a much steeper ramping-down and significant cutting in the end-strength and force structure. And, finally, at this time last year, there was no such thing as the Budget Control Act of 2011, so today both Services are living with major budget reductions mandated by this law.

For the Marine Corps, the budget request for ground equipment modernization is relatively small compared to recent years, and it follows a very conservative and very careful path. One clear trend is that the Marines intend to lighten up the force with a shift back to emphasizing expeditionary maritime-based forces. On that issue, it is important for the committee to understand how the Marines plan to continue to meet force-protection requirements as the equipment gets lighter in weight. Otherwise, aside from upgrades to Light Armored Vehicles and continued investment in JLTV [Join Light Tactical Vehicle], the Marine Corps ground vehicle plans remain unclear, and pending several ongoing studies on the future needs of the Marine Corps.

With regard to the Army's budget request, at this time last year, the Army had a plan to emphasize investments in network communications and aviation while accepting slight risk in other areas. At the time, I stated that the Army's plan was a solid path forward with perhaps only a few exceptions. Unfortunately, the fiscal year 2013 budget request shows a significantly different picture for Army modernization.

First, on the positive side, the Army's request continues strong investments in network communications and aviation. These are both areas of modernization critical to increasing the capability of our troops in Afghanistan, so I strongly support the Army's choice to protect this funding.

For example, while today's hearing is focused on ground equipment, the Army's helicopter production request for CH–47 Chinooks, UH–60 Black Hawks, and AH–64 Apaches continue at a very healthy level. Unmanned systems also see strong investments, with the Army continuing production of the Grey Eagle UAS [Unmanned Aerial System] and upgrades to the Shadow UAV [Unmanned Aerial Vehicle] fleet. In the area of network communications, there is substantial production funding for both the WIN–T [Warfighter Information Network–Tactical] and Joint Tactical Radio System.

On the other hand, while the Army last year was accepting some risk to the industrial base in a few select areas, in this year's budget this risk has spread across many more critical elements of the industrial base that the Nation needs to ensure modern, capable ground force equipment. For example, where last year only the M1 Abrams production line looked like it was on a definite plan to a long-term shutdown, it now appears that the Army plans to simultaneously shut down the production lines for Abrams tanks, Bradley Fighting Vehicles, Stryker vehicles, medium trucks, heavy trucks, and light wheeled vehicles.

While the Army plans to restart several of these production lines in the future, these multiyear line shutdowns could have a substantial impact on the future ability of the United States to build and maintain sophisticated military combat vehicles. As an example, there are only two producers of tracked combat vehicles left in the United States. If both of these lines are shut down for 3 or more years, who will be available to build the Army's Ground Combat Vehicle? If both of these lines are shut down, will the second-level suppliers for major components, such as transmissions and thermal imaging sights, be able to stay in business?

If they go out of business, where will the Army get these major components for the future? Perhaps foreign suppliers? A very dangerous proposition. While Secretary McHugh and General Odierno pointed to possible foreign military sales as a way to bridge these production line shutdowns, so far the committee has not received any solid information indicating that foreign military sales can truly be counted on to maintain these vital production lines.

Overall, while it is clear that the U.S. Army will get smaller, it is vitally important that this is done in a right and measured manner. In my view, the path forward must include a viable plan to maintain the critical elements of the U.S. industrial base necessary to design and build combat vehicles and other equipment that the Army of the future will require. While it is possible to outsource production of some items to our allies, it would be a major change in Department of Defense policy if the Army is forced to turn to foreign sources for our major ground combat vehicles, both wheeled and tracked.

If the Army and DOD have deliberately chosen to accept the risk of these line shutdowns, then the Congress needs a full and com-

plete explanation for the possible impacts to our economy and our future ability to produce the equipment that our ground forces will need. As of now, we don't have that information, but I look forward to getting some more information on this critical issue in today's hearing.

So, with that, Mr. Chairman, I yield back.

Mr. BARTLETT. Thank you very much.

[The prepared statement of Mr. Reyes can be found in the Appendix on page 40.]

Mr. BARTLETT. We will now proceed with the panel's testimony, and then we will go to questions. We expect votes at about a quarter after. It is my understanding that there will be a single testimony from each Service. Thank you all very much for being here. Your prepared testimony, all of it will—without objection, all of your prepared testimony will go into the record.

We will now begin with General Mills—I am sorry, with General Lennox, followed by General Mills.

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

General LENNOX. Well, good morning, Chairman Bartlett, Ranking Member Reyes. I will abbreviate my comments.

Members of the committee, first let me thank you for the opportunity to testify on behalf of acquisition and modernization for the United States Army. On behalf of the Chief of Staff of the Army and the Secretary of the Army, we want to thank you—sincerely thank the members of this committee for your steadfast support and shared commitment to our soldiers, both today and tomorrow. And you have demonstrated that time and again.

The really important aspects of the Army's modernization have to do with winning today's fight and then preparing for an uncertain future. And I would like to talk a little bit about each.

As far as winning today's fight, I want to assure the members of this committee that this is, first and foremost, our number-one priority in the United States Army.

General Phillips and I had the opportunity to get to Afghanistan last month. I found out that sometimes the testimony is broadcast on the Armed Forces Network. So, in the case that it is, I just want to reinforce to the soldiers and airmen and marines and sailors that are deployed the support of everyone on this panel, and I know Congress shares that support.

Our commitment is to give them the best possible equipment as efficiently and effectively as possible so that they can within today's fight. And there are many examples of that that we can share and talk to you about during the testimony if you would like.

Our second commitment it to be prepared for an uncertain tomorrow, and we do that really with three tenets. And the first one is to empower, protect, and unburden soldiers. And we have done that in a number of ways—by improvements to sniper weapons, our precision indirect fire systems, nine body-armor improvements over the years, improvements to the helmet, ballistic underwear, things like that—that help our soldiers today and tomorrow.

The second tenet is to network the force, and we do that with investments in WIN–T, our big pipe systems; in Nett Warrior, our

way to get the soldiers the tactical support they need; and several other programs, such as JTRS [Joint Tactical Radio System] and the Joint Battle Command-Platforms system.

And the third tenet is to deter and defeat hybrid threats in the future. And we do that by replacing, improving, transforming our combat vehicles, our aviation, and our light tactical vehicles. And we recognize the concerns to the industrial base that, Chairman, you mentioned and Ranking Member Reyes mentioned, and we are prepared to talk about those today.

One other point that I would like to make is that all of Army modernization is committed to every component in the United States Army—the Active Component, the United States Army National Guard, and the United States Army Reserve. And over the last 5 years, I think you will see that we have made dramatic improvements to achieve parity, really, not only in equipment on-hand in all COMPOs [components] but also in the level of modernization in all COMPOs. We have taken congressional advice and counsel on this in the past very, very seriously, and we have moved out in that direction.

We have some challenges for the future. General Phillips, in particular, is prepared to talk about acquisition transformation. One of the big successes we have had over the last year is our teamwork with the United States Marine Corps on the Joint Light Tactical Vehicle. By looking at the requirements, by getting the requirements under control, we think we have saved both time and substantial dollars in that program, and it is well on a path. Again, we will be happy to answer those questions.

In closing, the Army goal is really to ensure soldiers are equipped for the current fight and all future contingencies. Although we are a force in transition during a period of potentially declining resources, we must continue to provide our warfighters with modernized and capable equipment so that they can prevail on any battlefield, against any foe.

Mr. Chairman, members of the subcommittee, I thank you again for your steadfast and generous support for the outstanding men and women of the United States Army, our Army civilians, and their families. And I look forward to answering your questions.

Mr. BARTLETT. Thank you very much.

[The joint prepared statement of General Lennox and General Phillips can be found in the Appendix on page 42.]

Mr. BARTLETT. General Mills.

STATEMENT OF LTGEN RICHARD P. MILLS, USMC, DEPUTY COMMANDANT FOR COMBAT DEVELOPMENT AND INTEGRATION, U.S. MARINE CORPS

General MILLS. Chairman Bartlett, Ranking Member Reyes, distinguished members of the subcommittee, it is indeed an honor to be here this morning. First let me start by saying, on behalf of all marines, on behalf of their families, on behalf of this team, thank you for your extraordinary support of your Marine Corps.

As you know, the Marine Corps is the Nation's expeditionary force in readiness. As such, we are prepared for all manner of crises. We are prepared to ensure access to the joint force in the inter-

agency and, we believe, by being ready at all times, to mitigate national risk, especially during a period of fiscal retrenchment.

Over the past year, the forward presence and the crisis response of America's marines has created opportunities and provided decision space for our Nation's leaders. I would remind you that your marines were first on the scene to provide humanitarian assistance and disaster relief in the aftermath of last year's monumental disasters in that country. We were the first to fly air strikes over Libya. Marines evacuated noncombatants from Tunisia; reinforced embassies in Egypt, Yemen, and Bahrain. And while accomplishing all that, the Corps continues to sustain combat and counterinsurgency operations in Afghanistan.

This dynamic ability at a moment's notice to shape, deter, defeat, and deny our enemies sanctuary is emblematic of the crisis response capabilities that we will continue develop in our current force and our future force.

This year, our unequivocal top priority is supporting our 30,000 marines currently forward-deployed around the world defending our Nation's liberty, shaping our strategic environment, engaging with our partners and allies, ensuring freedom of the seas, and deterring aggression.

At the same time, here we will transition to our role as the post-OEF [Operation Enduring Freedom] expeditionary force in readiness. In doing so, we will accept risk in extended ground operations, and we will reshape the Corps for scalable crisis response missions such as counterterrorism, counterproliferation, disaster relief, security cooperation, and reinforcing our allies. It will be enhanced by our critical enablers, our special operators, and our cyberwarriors—all necessary on the modern battlefield. We will rebalance our force posture back to the Pacific, as well as remaining focused on the Middle East. The Marine Corps will also be ever-mindful of the traditional friction points in other regions and prepared to respond as directed by the President.

Our judicious modernization strategy supports this force while recognizing the current fiscal constraints. Our budget focuses only on what is good enough and what is absolutely required. The Marine Corps' entire budget, to include supporting Navy accounts, is only 8 percent of the DOD's. Our modernization priorities are the Joint Strike Fighter and the MV–22 and an affordable Amphibious Combat Vehicle and then a balanced ground combat and tactical vehicle portfolio, to include the JLTV and the MPC [Marine Personnel Carrier].

This testimony addresses ground force modernization, which is only 9 percent of our budget and only a fraction of the DOD's. Our ground procurement account is approximately $2 billion a year. Because of our relatively small ground procurement account, I would say that additional cuts would have a disproportionate impact on your Marine Corps.

As I said, our top ground priority is the Amphibious Combat Vehicle. Of more import to this committee, our second will be our shortfall for selected light combat vehicles, which, in fact, perform our most demanding missions. For our entire portfolio—the Amphibious Combat Vehicle, the JLTV, and the MPC—the Marine Corps has taken an aggressive and innovative approach, distin-

guished by integrating mature technologies; stressing affordability as a key performance parameter; conducting comprehensive system engineering and cost analysis; creating a transparent and open dialogue with industry, OSD [Office of the Secretary of Defense], and Congress; coordinating very carefully our requirements with the U.S. Army; employing a streamlined acquisition process with an emphasis on competition; and, perhaps most importantly, at the very inception of the programs, creating an integrated requirements and acquisition team that makes cost-informed trades when dealing with requirements.

The acquisition requirements team testifying before you on behalf of the Marine Corps works together on a daily basis and at every step along the process. We are completely integrated. We ensure best value for the Nation to ensure for our essential capabilities.

Thank you for the opportunity to testify, and I look forward to your questions.

Mr. BARTLETT. Thank you very much.

[The joint prepared statement of General Mills, General Kelley, and Mr. Taylor can be found in the Appendix on page 57.]

Mr. BARTLETT. As is my practice, I will defer my questions until the end, hoping that they will have been asked. If so, I will simply thank you for your testimony and adjourn the subcommittee hearing.

Mr. Reyes.

Mr. REYES. Thank you, Mr. Chairman.

My first question is on the Abrams tank production. The Chief of Staff of the Army, General Odierno, recently testified that the Army can't afford to keep the Abrams tank production going at 70 tanks a year. However, that statement seems to not address foreign military sales. In short, the United States may not have to pay the entire bill to maintain the Abrams production line.

So my question is, General Phillips, isn't it true that what is really needed is a combination of U.S. tank production and foreign military in the area of sales and production that reaches a minimum sustaining rate for Abrams tanks? And the second question is, does the United States have to pay all of the cost of keeping this program line open?

General PHILLIPS. Ranking Member Reyes, up front I must say that we have faced some really tough choices in this tough fiscal environment. The Army has had to make some tough choices, which is the budget that you see before you today. Some of those tough choices are looking at all our systems across all our portfolios and making tough decisions on what is necessary to make sure that this Army is prepared to fight, survive, and win on the field of battle.

In the case of the Abrams tank, we have the world's greatest tank. None better in the world today. If you look at the average life of a tank—and I completely agree with General Odierno, our Chief of Staff—if you look at the average age of the tank, it is about 2½ years. So the modernization that we have done over several years, with the great help from Congress, has helped us to get into the position that we are in today.

You mentioned foreign military sales, I believe, after your first question, sir. That certainly is what I perceive to be a key aspect of how to sustain the critical skills and capability that was mentioned in the opening statements. Certainly, it is not a complete fix, and you can't rely solely upon the FMS [Foreign Military Sales] buys. But I believe the Chief of Staff and the Secretary, Secretary McHugh, have mentioned that we are teamed with Saudi Arabia and Egypt, in particular, to be able to continue to pursue some production of tank capability at Lima, Ohio. There is the potential for others that have come in with cases. None of them—the other ones have not been finalized yet. Some of them look more promising than others.

But I guess I would go back to my experience with aviation, sir, having worked that for many years. In aviation, in every major platform that we have had over the last 20 years or so, foreign military sales has played a key role in sustaining the critical skills and the industrial base for aviation. I think the FMS, if you look back on the history of the Abrams tank, has certainly played a critical role in that, as well.

Mr. REYES. Is there any way that anyone can potentially guarantee that FMS will be sufficient in order to keep the production line open until, say, 2017?

General PHILLIPS. Sir, I don't think there is anyone who could guarantee that FMS would certainly do that. And I would not guarantee that.

But I think what is important is that, as we focus on the skills that are necessary, in particular Lima, Ohio, with General Dynamics as the facility operator for us, to operate the Government-owned, contractor-operated plant, that we retain the critical skills that are necessary for us to revamp production in fiscal year 2017 or 2018 after we have had a shutdown for a period of time to make sure that it is minimal to be able to restart. And we think that is somewhere around 18, 24 months to be able to accomplish that.

In particular skills, there are about 49 very important skilled workforce that work for General Dynamics that we have to retain. Beyond those 49, there are others that work in armor, looking at developing the next generation of armor that will help vehicles today, like Bradley and Abrams, as well as prepare for armor solutions for future vehicles, like GCV [Ground Combat Vehicle], maybe others. We have to retain those skills. Our plan is to make sure that we do that.

And beyond that, there are some highly skilled productions, assembly-line workers that also will help us accomplish this, as well.

But, sir, we have the world's greatest tank, and the average age of that tank is such that we believe that we have bought all the tanks that we need to buy, including the 42 that you funded for us in last year's budget, sir.

Mr. REYES. All right. Thank you.

I have more questions, Mr. Chairman, but I—in order to have Members ask questions, I will submit those for the record if we don't have time.

Thank you, General.

Mr. BARTLETT. Thank you very much.

As required by committee rules, the Members will be recognized, those who were here at gavel-fall by their seniority on the committee and those that come in after gavel-fall by the time of their appearance at the subcommittee hearing.

So we now recognize Mr. Turner.

Mr. TURNER. Very good. Thank you. Mr. Chairman, I appreciate that.

Well, I want to follow on the issues of—I appreciate your statement of the importance of the Lima tank plant. Being from Ohio and, of course, having toured it and toured it with the chairman, we know the importance of the facility and the specialized nature of the facility. And my question guess to, obviously, some of the policy decisionmaking with respect to being able to sustain that specialized capability that you just mentioned.

So I would like to spend some time exploring the idea of reversibility and the strange notion that we can just turn fundamental national security programs off and then turn them back on without assuming an unacceptable level of risk and incurring tremendous costs.

The President's strategic guidance states, quote, "The concept of reversibility—including the vectors on which we place our industrial base, our people"—I want to emphasize that word again—"our people, our Active/Reserve component balance, our posture, our partnership emphasis—is a key part of our decision calculus."

Secretary Panetta explained that this means reexamining the mix of elements in the Active and Reserve components; it means maintaining a strong National Guard and Reserve; it means retaining a healthy cadre of experienced NCOs, noncommissioned officers, and mid-grade officers; and preserving the health and viability of the Nation's industrial defense base.

As you are aware, this subcommittee has expressed concern about the Army's decision to shut down Abrams production only to ramp up production in 2016. This vital aspect of our national security industrial base is highly specialized and is not something that can just be turned off and then turned back on. We only have one facility with the capability to produce the Abrams tank. If production stopped, those highly skilled workers will leave, and the parts manufacturers that supply this capability could dry up. That is why we authorized, last year, funding for the program.

So please explain to me this concept. If a particular parts manufacturer goes out of business and they were the only producer of that part, how does reversibility take this into account? In some cases, depending upon the complexity of the part, it can take over a year for a prime contractor to get another qualified vendor. What is the risk of increasing our vulnerability from an industrial-base perspective? Will we be forcing our prime contractors to depend on foreign sources to supply critical parts? How does shutting down this production line preserve the health and viability of the Nation's defense industrial base?

And I want to put one more caveat on all of this. You know, the concept of us not needing any more of a particular item, where we are the sole customer of a facility that we are an integral part of, doesn't take into consideration the backwards management of supply and acquisition. I mean, someone ought to have a calculator

and a calendar and a piece of paper and a pencil and say, now, what is the level at which we need to sustain this level of manufacturing for its capability? To merely say, "We are done, and we will be back to you all in 2016," seems not only irresponsible but, as I described in my question, risky.

And who would like to comment on that? General?

General PHILLIPS. Sir, I will take that for about 1 minute and then turn it over to General Lennox for his comments.

Sir, up front, thank you for your question. Great question. We are working with OSD in terms of a sector-by-sector—for us, that means by portfolio, essentially—tier-by-tier analysis of the industrial base. And the one that is the biggest concern that we are talking about today is the combat vehicle industrial base. And we are looking at not just tier-one suppliers but tier-two and below, like, in the case of Abrams, Allison, who builds the transmissions for the Abrams.

Our program executive officers and their PMs are engaged with our industry partners, in this case General Dynamics, to make sure that we understand the concerns not just at the prime level but, more importantly, as you described, at the sub-tier level, so we understand the issues related to sub-tier vendors so we can take appropriate actions to seek resolution and keep those businesses viable that are necessary in case we restart that plant.

Again, sir, up front, I believe that we have the right analysis. RAND has validated——

Mr. TURNER. Did you just say "in case"? Because my understanding was that it was an expectation that of course it would restart.

General PHILLIPS. Actually, we haven't approved engineering. I should have said we will. We have an approved strategy to actually begin in fiscal year 2017, fiscal year 2018 to restart the line in terms of engineering change proposals, ECPs, that we would apply to the production line itself.

And, sir, I will turn it over to General Lennox for any comments he may have.

General LENNOX. I don't know if time permits, Congressman. I will give it a shot.

These are tough choices for the Army. And it is not that—so it is a choice, do you build more Abrams tanks when you have enough and where the Army size is coming down by 80,000 soldiers so there is a good chance you may, in fact, have extra tanks? Do you now go out and do that at the cost of buying some of the aviation and networking priorities that are essentially higher for us? And it is not only among modernization items; it is actually among choices of soldiers. We are coming down 80,000 soldiers. To put more into investment, do you give up more soldiers?

So these are some of the aspects that the Army took into account in making this decision. It was not done lightly. It is a very, very serious decision. We know that there are ramifications. And so it is a choice of where you want to take your risk, Congressman.

Mr. BARTLETT. Thank you very much.

Mr. Critz.

Mr. CRITZ. Thank you, Mr. Chairman.

Thank you, Generals, for being here and for your service to this country.

As you know, the Bradley Fighting Vehicle modernization line is going to go cold at the end of 2012. And last October I expressed my concern to you about the replacement vehicle for the heavy combat team for the M113, as well. And I asked if the Army could adopt a Stryker-type acquisition so that the Army could award a contract like they did for the Stryker 13 months after General Shinseki announced the Army's desire. I also asked if there was anything that we could do to be helpful in moving this program along more rapidly.

So the Armed Services conference report expressed concerns about the fact that many of the current tracked or wheeled vehicles currently in production are scheduled to end before 2016. Furthermore, the conference report expressed its support for AMPV [Armored Multi-Purpose Vehicle], stated concerns over the long timelines, and offered suggestions on how to accelerate the program. As such, I was very disappointed to learn that the Army now doesn't plan to reach Milestone C and LRIP [Low Rate Initial Production] until 2017—a full year later than was proposed last October.

So my question is, does the Army plan to replace the M113 and the heavy brigade combat team with a variant of a vehicle that is currently in the Army's inventory?

General LENNOX. Congressman Critz, thanks for your support of the facilities there and the production at York, Pennsylvania. We are committed to that, too.

What we have tried to do is to mitigate in our strategy this year some of the issues at York, Pennsylvania, by the building of more M88–A2 Hercules vehicles, the recovery vehicles. It is important for our future. That is something that we know we do need for the future, and that was our attempt to mitigate some of the production gap concerns. And I understand now that we perhaps didn't do it fully for fiscal year 2013, but I think we have done a pretty good effort at doing that.

We are seriously looking at how to accelerate the Armored Multipurpose Vehicle, as you said. We don't have a way ahead to use that, frankly, to completely close the production gap concerns there at York. But it is an area that we have looked at and we continue to look at.

General PHILLIPS. Sir, could I add one comment to that?

We have learned a lot in agile acquisition over the last couple years since I have been in this job—JLTV, GCV, and how we work Nett Warrior and others. We are applying the same principles to AMPV.

The Milestone C decision that you mentioned in fiscal year 2017, we are really looking to accelerate that. And we think we can really cut that time down by up to maybe 24 months by doing things in parallel reference instead of doing them in sequential activity. So, we are working on that strategy today with AMPV to try to accelerate it to get Milestone C much earlier that what you just described, sir.

Mr. CRITZ. Well, that is good to hear. And as I asked months ago, is there anything that Congress can do to direct the Army to accelerate the replacement of this 50-year-old vehicle?

General PHILLIPS. Sir, we thank Congress for what you have done to listen to the Department and listen to the Army and our concerns in the past. And as we have worked changes to statutory law and worked policy changes internal to the Department itself, I think Congress has been very helpful for us.

In my own opinion, in terms of the process itself, the acquisition process, I think sometimes we blame what I might call or some might call the bureaucracy for our failure to use the authorities that we have in the appropriate way to expedite the process. So what we are doing inside the Army is trying to change the paradigm on the way that we think so we can use the authorities that Congress has given us and our policies and regulations inside the Department to do things a little bit better. JLTV, we did that.

Mr. CRITZ. Yeah.

General PHILLIPS. And, sir, I think we will do the same on AMPV. So thank you for listening to us.

Mr. CRITZ. Well, good, good.

I have another question, and it involves a remote weapon station. And this is both for the Army and the Marine Corps.

What are the respective Services' strategies to support the acquisition, employment, and deployment of key ground systems survivability enablers, such as the remote weapon system, which have a proven history of injury reduction on the battlefield?

General MILLS. Sir, thank you for that question.

From the Marine Corps perspective, we have looked at it, and at this point we are not going adopt it. However, we are looking at our future vehicles, to be able to expand their capabilities in the future should the requirement arise and the money be available for those types of systems.

General LENNOX. Congressman, it is an option on things like the Ground Combat Vehicle. As we go to the future, we will sustain the ones that we have, but there is no separate program to develop that as a standalone capability.

Mr. CRITZ. Okay. All right.

General Mills and Kelley, as a survivability enabler, has the Marine Corps been successful in fielding the improved weapons loader station for the Marine Corps armored community?

General MILLS. Sir, if that question specifically regards the LAV [Light Armored Vehicle], the 25-millimeter issue that we had, we have taken several steps to resolve that issue.

One of them we found was simply a training issue, that the loading problems were a result of poor procedures by the gunners to make sure the individual round, for instance, the initial round was well-seated into the tray before it was fired.

We have also done some low-level modifications of the feeder system to overcome that problem. At this point, we think we have it well under control, and we don't believe it is a long-range problem for the system.

Mr. CRITZ. Good.

Thank you, Mr. Chairman. I yield back.

Mr. BARTLETT. Thank you very much.

Mr. Wilson.

Mr. WILSON. Thank you, Mr. Chairman. And thank you for your leadership and letting junior Members ask questions.

I am really honored to be here with all of you. Thank you for your service. I am very grateful to represent Fort Jackson and Parris Island, and I am right next-door to Fort Gordon. So, hey, I am in a good place.

General Mills, I understand the 25-millimeter cannon system may have feed problems that could lead to jamming. What is being done to address this?

General MILLS. Yes, sir, with the 25-millimeter chain gun system, there were some jamming problems. But we found it, again, to be a combination of two things. One was to improve TTPs [Tactics, Techniques, and Procedures] training, for the crew to ensure that the initial rounds were seated into the weapon correctly so they did not cause a jam when the weapon was engaged. The second was, we found that the tray feeder system itself needed some minor modifications to better allow the crew to properly seed the weapon, prepare it for shooting, and do it.

So, at this point, as I said, we don't think that is a long-range problem with the system. We are happy with it in combat. It is performing very well in the southern Helmand province, and we are satisfied with the condition of the weapon.

Mr. WILSON. Well, thank you very much. And we are aware of the Marines' success in southern Afghanistan, so this is terrific.

For General Lennox and General Mills, I am concerned about the consequences of sequestration. And I am very pleased that Secretary Panetta has been very clear, raising the alarm of the consequences.

I would like—and I believe the American people need to know what the consequences would be. And, sadly, just the term "sequestration" actually puts people to sleep. And so I would like to hear both of you comment on what you feel the consequences would be.

General LENNOX. You know, as Secretary Panetta said, sir, the Department hasn't done any detailed planning. I don't think you have to do a lot of detailed planning to know that this would have a devastating impact. We would not be able to reduce the number of soldiers in time to correspond with the requirements of sequestration, so there would be a bill in that sense. We would not be able to close installations in a very quick period of time, so there would be an added bill.

Those bills then would be borne somewhere else in the Department and would fall disproportionately—and it is just mathematics—on modernization and training. So it would have an immediate, I believe, my opinion, devastating impact on modernization and training of the force.

General MILLS. Sir, I concur with the General's comments. I would just add that, as the force in readiness, the Marines would be concerned about its immediate impact on our readiness. General Amos testified yesterday and talked about the potential for a hollowing out of the force. We would be very concerned about that.

Our intent now, even as we reduce the size of the Marine Corps, is to maintain our readiness at the very highest levels. Sequestration would have a dramatic impact on our ability to do that, both

from, I think, a training perspective, a maintenance perspective, and a manning perspective.

Mr. WILSON. Thank you both.

And, General Phillips, could you please elaborate on the Army's strategy for procuring a new carbine and for improving the current carbine? I understand it is a dual-path strategy. Are the strategies affordable? And is there adequate funding in fiscal year 2013 and out-years?

General PHILLIPS. Sir, up front, the funding is adequate for the strategy that we have in place. And, as you just described, it as a dual strategy.

The M4A1, the M4 carbine is a world-class weapon. Up front, what we are seeing, feedback from soldiers and commanders down range, we are seeing that it is five or six times the reliability that we originally put into the requirements for the M4 carbine itself. We are seeing reliability up to 3,500 rounds between failure, and the requirement is 600. So the weapon itself is performing very well.

Having said that, we have done over 60 improvements to the M4A1. Our strategy is to continue those improvements. We will implement an ambidextrous trigger. We will also implement a heavier barrel on the M4A1.

But along with that strategy, we want to make sure that we have the world's greatest carbine in the hands of our soldiers. So what we have done is implement the improved carbine strategy, and what that has allowed us to do is to go out and get feedback from industry. We have completed phase one of the strategy itself, and we are learning from industry in terms of what is available out there in terms of a potential new carbine.

What is most important is the business case analysis that we will do between now and fiscal year 2013 in terms of looking at, is the new, improved carbine right for the Army, or is the M4A1 carbine really good enough? And that analysis is going to lead us to the right decision, we think, on the path forward.

Mr. WILSON. Thank you very much.

Mr. BARTLETT. Thank you very much.

Ms. Tsongas.

Ms. TSONGAS. Thank you, Mr. Chairman.

And good morning to all of you.

I would like to raise the issue of body armor. I have noted in this subcommittee several times over the past few years how soldiers deployed in Afghanistan are outfitted with body armor that weighs as much as 40 pounds. When combined with the gear that troops must carry in the field, the total weight our soldiers carry can exceed 120 pounds. As we all know, this leads to long-term musculoskeletal injuries and creates a well-documented risk that service members may remove their armor in the field because of discomfort and a lack of mobility.

And I am not alone on this committee in my concern. I know that Chairman Bartlett shares this concern as well, as do other Members.

I would urge the Department to do everything in its modernization efforts to incentivize lighter-weight body armor in its acquisi-

tion process—lighter-weight while still matching the necessary threats.

In recent conversations I have had with experts on the issue, the consensus seems to be that in the short term it should be possible to develop Enhanced Small Arms Protective Inserts which are 10 percent lighter than existing models and still meet the existing threats.

But I want to raise a particular issue around this, as well. This issue poses particularly unique difficulties for women in uniform, who now make up around 14 percent of the Army and are estimated to grow substantially and, with their smaller frames, are even more susceptible to challenges from the excessive weight of the fielded body armor. And under the Department's recent review of the role of women in combat, which I support, an increasing percentage of women who are deployed during contingencies will need to wear body armor in theater in the years ahead.

So my question is, gentlemen, I understand that over the past couple of years the Services have been looking into the feasibility of developing body armor designed specifically for women. While I understand there have been issues with the science of conformal plates which better fit female soldiers but to date can't provide the same level of protection as the conventional plates, this is an issue I hope will continue to be researched.

So my question is, can you give me an update on what advances have been made on this over the past year?

General PHILLIPS. Ma'am, I will take the first cut at that and maybe ask General Mills to add his comments, as well.

We share your concern about the weight that soldiers are carrying down range, ma'am. We are working hard on lightening the soldier load. The key part of that is the body armor itself, which is a heavy piece of what soldiers certainly are carrying.

Most important is allowing commanders to have the option to be able to outfit soldiers in a way that meets the threat environment. So we have developed the Soldier Plate Carrier System that can reduce weight by, on the average, about 10 pounds for soldiers that are working in the mountains of Afghanistan, depending upon how the commander sees the threat and how he wants to outfit his soldiers.

And we are working hard on a new requirement that is coming forth from our TRADOC [U.S. Army Training and Doctrine Command] to be able to have the same level of protection for body armor, yet reduce it by about 10 or 15 percent in weight, as you just described, ma'am. So that work will continue.

And in reference to female soldiers, the best ideas really come from soldiers. So we have gone out and we have listened to a number of female soldiers. We engaged our Natick Labs in Massachusetts. And since May of 2009 through June of 2010, they actually went forth and started doing a lot of research into body armor for female soldiers and how to make it more adaptable for them.

And what they came up with was a Generation 2 Improved Outer Tactical Vest that they could wear. And the 101st soldiers, female soldiers, actually deployed into Afghanistan with this new outer tactical vest. We just did surveys of female soldiers in the 101st—very positive results. The vest itself allows them to relax—

the same body armor, but it allows them to relax it in a way that is more comfortable for them.

So we got very positive feedback on that. But that is step one. Step two, as you just described, is to continue research. Natick Labs is doing that. So I think there will be more to come on how we can do that better, ma'am.

Ms. TSONGAS. General Mills.

General MILLS. Yes, ma'am, I will echo what General Phillips just said.

The difficulty, of course, with body armor, with any protection, is to balance weight against protection. We are very, very concerned, obviously, about the protection of our marines in the field. We have worked to get a new helmet that would be better protection for them. We have worked on groin protection for our marines who are out on the front lines. And, overall, we were concerned about the weight and have given the individual commander on the ground the authority to remove plates, to lighten the load based on the mission he has and based on the threat that he is facing at the current time.

We have separated slightly from the Army in some of our body-armor requirements due to some mission differences.

Regarding the females, again, we are very concerned about that. As you know, there are no front lines in Afghanistan, so even women who are not assigned directly to combat often face an enemy threat, and we know we need to be—that they have to have the protection they require. And we are working some technical aspects of it.

I am going to turn this over to General Kelley here in a second. But, again, as women being more and more involved in the fighting, it is important that they receive the protection they have and that they wear armor that not only protects them but that they are able to function in, as well.

Ms. TSONGAS. You know, I think we have run out of time. But I just want to make this statement, that, as you all know, Congress has established an individual budgetary line item for body armor R&D [Research and Development] because we do want development of innovative, effective, lightweight body armor to remain a long-term priority of the Department. So I hope I can get your commitment to continue evaluating this, both in general for all our soldiers, in particular for our women, even as we begin to draw down from Afghanistan.

Mr. BARTLETT. Thank you.

General Kelley, we will have a second round. You will have an opportunity to contribute. Thank you very much.

Now Mr. Runyan.

Mr. RUNYAN. Thank you, Mr. Chairman.

And, gentlemen, thank you for your service and your testimony today.

I have one question relating to what Ms. Tsongas was talking about. Not only the body armor aspect—and this is for you, General Mills—I am talking about lightening the load for your marines overall and how committed you are to that. And is there enough funding to talk about not only body armor—you know, obviously, we have initiatives for new helmets, new head gear—and across

the load of the whole payload they are carrying, is there enough attention drawn to that and enough funds there to make sure that happens?

General MILLS. Sir, thank you for that question. Yes, and you really hit the nail on the head. It is a holistic approach to reducing the weight of the individual soldier or marine on the battlefield that is important. We are looking at ways to do that.

Probably the most effective is to reduce the load, for instance, in batteries. In today's world, where there is a tremendous number of radios and other systems on the ground that require batteries, the individual marine carries an awful lot of them. So we are looking at solar power, renewable resources that would enable us to drop the battery load, allow them to carry less weight in those kind of aspects.

Ammunition is another way in which, again, you can gain ounces off a marine's back and off the load that he is carrying. Water purification—again, water is probably one of the heavier things that a marine has to carry as he moves out on patrol. And his ability to use local water sources, to purify them, again, reduces that load that he has to step out the front gate of the FOB [Forward Operating Base] with.

So we are looking across the board at ways to reduce that individual load of the marine. We are also looking at way to reduce the overall weight of the Marine Corps, if you will, through things like the JLTV, which will give us a vehicle that will be very expeditionary in nature, one that we can fit on board the ships, one that will be helicopter-transportable, and will lighten the MAGTF [Marine Air-Ground Task Force] as it goes to war. So across the board we are looking for ways in which we can lighten the load of the individual soldier but also lighten the load of the unit as it goes to the point of crisis in the future.

Mr. RUNYAN. Obviously—you used the term "holistic." Are we pushing it or just throwing the ideas out there and seeing which one sticks?

General MILLS. No, I think we are pushing it in a structured way. We are looking at each piece, if you will, of MAGTF and also each piece of the individual marine's load and taking a look at it to lighten it.

Any marine coming back from combat, his first observation is that the individual load of the marine, as Congresswoman Tsongas pointed out, is simply getting too heavy. Reducing radios, for instance—and we have new radios on the shelf that we are using and experimenting with that will take three or four radio systems and combine it into one platform. That would reduce the load, again, of the individual marine. Some of the improvements to the M16 that we have done can lighten the load ounces, but all of that adds up to the heavy load that we expect the combat marine to carry.

Mr. RUNYAN. Well, thank you for that.

With that, Chairman, I yield back.

General KELLEY. Sir, if I could just add——

Mr. RUNYAN. Yes.

General KELLEY. You know, you asked if there was a commitment. So both General Mills and I had a chance to brief the NRAC, which is the Naval Research Advisory Committee, and we both em-

phasized the fact that we know how to target, if we are going to lighten the load, looking at an individual marine, how we are going to shave ounces off of certain pieces of equipment, but then look at the whole MAGTF, is how we are going to lighten the entire MAGTF and keep us expeditionary.

One of the things that we have learned is the logistics, the theater logistics, the maturity of that logistics system plays a huge part in how much we can lighten the load. And so we did some studies with two battalions—one in 2008, one in 2010. In 2008, ma'am, you mentioned 121 pounds is about what we saw back in 2008. As the logistics situation improved, we saw that average load of our marines drop down to about 51 pounds.

So the TTP—which is the tactics, techniques, and procedures—that our commanders in the field are employing are doing a huge part in helping us lighten the load as well.

Thank you.

Mr. RUNYAN. Thank you.

Chairman, I yield back.

Mr. BARTLETT. Thank you very much.

Mr. Kissell.

Mr. KISSELL. Thank you, Mr. Chairman.

And thank you, gentlemen, for being here today.

And just a quick thought on the Marines looking at new types of ways of lightening the load. I know that one situation, there is a solar panel that you guys have looked at that is non-glass, much lighter weight, non-reflective, very durable. And you were willing to take that forward and test it and move forward with that. And we appreciate that willingness to look at some ideas maybe from some different places. And thank you for that.

My question—and I am going to make this open-ended for anybody to answer this. Obviously, in the combat situations we have been in for the last 10 years, we have developed vehicles like the MRAP [Mine Resistant Ambush Protected Vehicle] because of the asymmetrical type of warfare, the IEDs [Improvised Explosive Device], where we have had to provide protection for our troops in stationary situations, where we are in certain parts of the world and we, therefore, have certain patterns and, therefore, are subject to IEDs and this type of asymmetric warfare. And so the vehicles we have come up with have been responsive to that and, quite honestly, have become some large vehicles, heavy-duty vehicles, but we are also talking about the JLTV.

And so I am looking for where are we going with the JLTV, in terms of what is the mission for the JLTV, and will it be a vehicle that would be protective in the asymmetrical-type warfare so that we don't develop a vehicle that we just simply can't use if we get into this type of situation again? Which, you know, this secret is out; this is a good way to combat forces—you know, the IED.

So I am just curious about where are we going with the JLTV, and will it be a vehicle that we will be protective of our troops? And what are we going to do with the MRAP to make sure we have that vehicle for these type of situations?

General LENNOX. Congressman, one of the key areas that we discussed with the Marine Corps as we were designing the requirements and refining the requirements for the Joint Light Tactical

Vehicle is that level of protection and its ability to have add-on capabilities—start with a base capability and then add on capabilities that protect against the very threat that you have talked about.

So we think the vehicle does have that capability. It is a tradeoff of light weight so it can be used aboard a ship or used for certain missions and then be reinforced for certain other missions. It will not be a cure-all; it won't replace everything on the battlefield. But we think in the area of a light vehicle we have made sure that the force-protection aspects of it are adequate to fight in today's battlefield.

General MILLS. I would just reinforce that the force-protection aspect has been a critical capability that we have looked at. We have balanced it carefully against the overall weight of that vehicle to ensure that, again, it is an expeditionary forward-deployable vehicle that can operate on enemy terrain safely. As you know, the MRAP, very well designed for the threat that we saw in Iraq, where there were hard-surface roads and hard-surface terrain; a little less effective, perhaps, if you went into softer areas.

The MRAPs themselves, the Marine Corps has a little over 4,000 of them. We intend, as we come out of Afghanistan, to retain about 2,500. Some of those will be put into a training status so that our marines remain familiar with them, are able to maintain them and operate from them. And some will be put into a status of bubble wrap, if you will, to be used if the need arises again for us to be able to use them, given the terrain, given the threat, et cetera. And I will have——

Mr. KISSELL. I am going to interrupt you for just 1 second——

General MILLS. Sure.

Mr. KISSELL [continuing]. Because you have answered my question, but I wanted to make one more point in the few seconds I have left.

General Mulholland with the Special Forces had recently signed—publicly signed with NASCAR [National Association for Stock Car Auto Racing] a joint understanding of developing vehicles for Special Forces with the expertise that NASCAR can bring to vehicles. When you can take a racecar and go into a wall at 180 miles per hour and walk away, they have some knowledge of how vehicles might could absorb energy.

I would encourage you all, as you move forward, to look at what is happening here and perhaps, you know, reach out to NASCAR also in your research and development, because no one knows more about vehicles than they do in terms of how to get speed and protect the people inside too.

So thank you so much.

And I yield back, Mr. Chairman.

Mr. BARTLETT. Thank you very much.

I would now like to welcome the newest member to our subcommittee, Ms. Jackie Speier. When she came to Congress in a special election, she was my neighbor for several months in the next office.

Thank you. Welcome to our subcommittee. And you are recognized.

Ms. SPEIER. Mr. Chairman, thank you. And I miss being your neighbor.

I am new to this committee, so forgive me for my ignorance. Hopefully, I will improve over the next few months.

Let me just ask a general question on body armor. I have been in conversations with many veterans who have commented to me that Dragon Skin, which is made available to Special Forces, is very lightweight, is more expensive, but not available to the general corps.

As I look at it, I don't know what the differential is in cost. Maybe you can provide us with that information. But the costs associated with muscular injuries for a lifetime through the VA [Veterans Affairs] system could clearly justify making Dragon Skin available, if, in fact, it is the optimal body armor.

So if any of you could respond to that, I would appreciate it.

General PHILLIPS. Ma'am, I will take the first shot at that.

Up front, I would tell you that we have the world's best body armor today on our soldiers and our marines downrange, hands down the world's best. It has been tested and retested—probably the most tested body armor. We have made nine improvements to the body armor since the war first started in Iraq.

I don't have the exact data, but what I would offer, ma'am, is we have the test data for the current body armor, and we would be glad to come and sit down with you, as it compares to Dragon Skin and what the results might be. And I don't have the cost either, but we could certainly lay out the cost.

But what I want to leave you with is this: The body armor that we have procured today that is in the hands of soldiers is the world's best body armor. And those soldiers and marines out there wearing that body armor is most critical. That will protect them from any threat that is designed to defeat on the battlefield——

Ms. SPEIER. No, I understand that. My issue is, if there is something that is better and lighter that we make available to Special Forces, maybe we should look at the costs associated with having it today versus dealing with the long-term costs of musculoskeletal problems for the next 30 years for these veterans.

So I think that is—I am not trying to dispute that you have quality body armor.

General LENNOX. Ma'am, if I could, cost has never been an issue for us in terms of body armor. It has always been about effectiveness. And when the test results—effectiveness and appropriateness for the missions has been primacy for us in the area of body armor for our soldiers. And I am sure that is the same for the Marine Corps

General MILLS. Before I turn this over to General Kelley for some technical data, I would just add that body armor is, of course, critical to everybody on the battlefield. And there are differences based on mission profiles. We have a slightly different configuration that we wear than the Army does, based on mission profile. Of course, Special Forces has a radically different mission profile than any of our forces do on the battlefield—all of which accounts for the slight variations that you see.

General KELLEY. Ma'am, I don't know specifically what the parameters are for Dragon Skin. But, if I can, I can't emphasize any more than what General Phillips talked about how good the body armor is and the fact that we are allowing commanders in the field

to tailor which vests—in our case, it is the Improved Modular Tactical Vest or the Plate Carrier, which will actually reduce the weight by about 7 to 8 pounds, depending on what the conditions are.

When we challenge industry, we have gone out to industry and said, hey, we want a 20-percent reduction in weight at comparable protection levels that we see today. So our short-term plan right now is to lower the weight, and we will accept some variability in the protection level. Long-term plan is to get it lighter-weight and achieve the same protection levels that General Phillips mentioned as being probably the best—no, definitely the best body armor that our soldiers, marines, sailors, and airmen have on the battlefield today.

Ms. SPEIER. All right. If I could just get that comparison. If someone could make it their job to get me that.

[The information referred to can be found in the Appendix on page 73.]

General PHILLIPS. Ma'am, we have the task. We will come back to you.

Ms. SPEIER. All right. Thank you.

In my remaining time, Lieutenant General Mills, are you located at the Marine Barracks? Is that where your offices are?

General MILLS. My headquarters is at Quantico, 30 miles south——

Ms. SPEIER. At Quantico.

General MILLS [continuing]. Of Washington, D.C.

Ms. SPEIER. Okay. All right.

Then I will yield back the remainder of my time.

Mr. BARTLETT. Thank you very much.

Mr. McIntyre.

Mr. MCINTYRE. Thank you, Mr. Chairman.

And thank you, each of you gentlemen, for your service and the opportunity I have had to meet with several of you.

General Lennox, the double-V Stryker vehicles the Army quickly manufactured and deployed to Afghanistan are, by all accounts, providing much better protection, as we know, than the rest of the flat-bottomed Stryker fleet. However, the budget request includes no additional funds for the double-V Strykers and shows all Stryker production coming to an end in early fiscal year 2014. At the same time, the committee has been informed that the Army has in access of $800 million in unobligated funds for Stryker vehicle production and upgrades from previous years' funding.

So the question that we are wanting to know is, if these new Strykers provide much better protection, why not use some of the almost $1 billion in funding already in hand to keep producing the double-V Strykers to replace some of the flat-bottomed Stryker vehicles that we have? And if not, then what is the money being used for?

General LENNOX. Congressman, thanks.

We are so proud of the teamwork between industry, Congress, and the testing community, and the United States Army in the production of these Stryker vehicles. They are saving lives today in combat. General Phillips has all the numbers up to the latest

strike, and the results have been dramatic. So you ask a very good question.

First, the prior uncommitted dollars are all committed toward this task of fielding the two brigades that we have requested that will both be employed in Afghanistan. We are actually building a few more so that we have some additional ones for training and a handful more for more thorough testing that will take place in the next couple years.

Mr. MCINTYRE. When you say "a few more," you mean of the double-V Stryker?

General LENNOX. Of the numbers for this brigade. It is about 760 that we are buying, all told, sir. You probably 660 or 670 for the 2 brigades. So we have some extra for training and a handful—18, 20—for testing as well.

So all that funding is going toward that purpose. We have a little bit of funding in 2013 to buy Stryker NBC [Nuclear, Biological, and Chemical] reconnaissance vehicles that are going to replace some really aged vehicles in our fleet.

Meanwhile, we want to see what the long-term plan is for Stryker. And we are basing that on the sizes of our forces overall, what is going to happen to the Army, what kind of formations we are going to have in the future, and whether or not we can afford to go further with the double-V hull. So we can't use those funds, but the jury is still out on where we are going to go in the future.

Mr. MCINTYRE. All right.

Did you want to add anything to that, General?

General PHILLIPS. Sir, I would just add that it has been truly remarkable. We have had 40 hits downrange in terms of encounters with IEDs, and in most of those cases, with just a few exceptions, soldiers walk away from the encounter.

And the other thing that I would share, sir, I just visited the Stryker reset and battle-damage repair facility in Qatar when General Lennox and I were in theater. Of those 40 that are damaged, we think we can return 38 of the 40 and only wash out 2 of them. So the survivability of the hull itself is really remarkable after it has been battle-damaged and then repaired and returned back in. So it is exceeding our expectations, sir.

Mr. MCINTYRE. Thank you.

Thank you, gentlemen. Thanks to all of you.

And thank you, Mr. Chairman.

Mr. BARTLETT. Thank you.

Mr. Taylor, what question would you like us to have asked that you might have answered?

Mr. TAYLOR. Sir, I will take anything you want to throw in my direction.

Mr. BARTLETT. Is there something that should be on the table that is not there that you would like to have on the record?

Mr. TAYLOR. Anything with respect to one of our big programs—JLTV, ACV [Armored Combat Vehicle].

Mr. BARTLETT. Thank you very much.

General MILLS. Mr. Chairman, if I could make a recommendation, Mr. Taylor could give you a quick update on our JLTV efforts and our coordination with the Army. It is a very, very important

program to us, very critical, and we want to ensure that the committee thoroughly understands both the requirement and the plan.

Mr. BARTLETT. Take a minute or 2 to do so, sir.

Mr. TAYLOR. Yes, sir.

Well, my view of the JLTV program is that the value of the program has been misinterpreted, beginning with the technology demonstration phase. Most individuals assumed that it was supposed to deliver a ready vehicle capable of satisfying 100 percent of the requirements. Quite the contrary. The purpose of the TD [technology demonstration] phase was to better inform the requirements communities by allowing them to get a glimpse of the realm of the possible with respect to those requirements and what those requirements costed.

So that led to the cost-informed trades process that has yielded where we are today, where we know where the trade space is with respect to requirements and how much it costs. So we have a firm handle on the program now by virtue of what we went through, the trials and tribulations of that technology demonstration phase.

This program has been a model in terms of doing everything Congress and OSD have asked it to do, including trying to streamline the timeline to get into production. Over the last year, we have reduced that timeline to get to production by half. And between the two services, we have cut the cost of the proposed EMD [Engineering and Manufacturing Development] phase in half. I believe the Marine Corps has reduced the cost of the envisioned EMD program by $108 million, and I believe the Army is in excess of $400 million.

So we have done everything that Congress and OSD have asked us to do in regards to posturing this program for success.

Mr. BARTLETT. Thank you very much.

With reference to the question line of Ms. Speier, I sat through the Dragon Skin hearings. There is no worse or better, depending upon where you are sitting, example of yellow journalism than there was with reference to Dragon Skin.

I will tell you that, from my many years on this committee and this subcommittee, there has never been a time when our marines and soldiers were not equipped with the best body armor available. There were some questions relative to testing, and I paid particular attention to that. As far as I know, there never was a deviation from protocol that resulted in an inferior product going to the fleet.

One of the examples was, if the first bullet that was shot did not have enough velocity, they shot a second one and did not remove the plate and put in a new plate. Wow, that was a tougher test. That meant the plate was always somewhat damaged by the first bullet of lower-than-expected velocity, so the second one now added additional threat to it.

As far as I know, there never was a moment in time when our troops ever had anything other than the best body armor out there. And there was a lot of very bad journalism relevant to this. I wanted to make sure that was on the record.

I have in front of me an article that was in today's clips, "U.S. Army to Congress: No New Tanks, Please." When was the last time we built a new tank? It was a long time ago, wasn't it?

General PHILLIPS. Sir, it was a long time ago. The Abrams started, I believe, in the 1970s, late 1970s, sir.

Mr. BARTLETT. When was the last new tank off the line? We aren't talking about new tanks today, are we? Aren't we simply talking about taking tanks that are analog and making them digital?

General LENNOX. You are exactly right, Congressman. It is a rebuild of old hulls and refurbishing and upgrading those.

Mr. BARTLETT. So why do we have titles like—articles like this, "No New Tanks"? We are not suggesting any new tanks. We are not building any new tanks. What we are doing is simply taking some tanks that are now analog that cannot be involved in the network when they are out there—and our Guard has those tanks—and we are now converting those to digital tanks so that they can fight with the rest.

What is wrong with a policy, going forward, that we use foreign military sales, to the extent that they can keep the lines warm, and that we simply supplement that with whatever number of tanks that the Guard now has that they cannot fight with—because they won't integrate with the network—and converting those tanks from analog to digital? Why isn't that a rational procedure, going forward?

General LENNOX. Well, first, if I could, Congressman Bartlett, the M1A1 AIMs tank, the one that the Guard has, is, I would say, the second-best tank in the world. It is——

Mr. BARTLETT. It is analog?

General LENNOX. It is analog.

Mr. BARTLETT. So, why wouldn't we want to make it digital so that when they go into combat they can be a part of the network?

General LENNOX. It can be—first of all, it can be part of the network and it is part of the network as an analog tank. But it is a question of dollar tradeoff and what other priorities would we not do in order to fund this.

Many of these tanks are very, very new. They are right off the line at Lima, Ohio, I think as you know, Congressman. So, we are not talking about older tanks. It is an older variant but not an old tank. It is refurbished, it is up to date, it is very, very effective.

So, the question is, what opportunity costs, what else will we not do? And does it improve our aviation? That is a tremendous demand. Or networking our soldiers, or the size of our forces in order to be able to afford building more of these that are replacing relatively new tanks that are there. These are hard choices, choices we didn't take very lightly, but I didn't think it was a choice, in the end, when we made our recommendations.

Mr. BARTLETT. I am not sure that we are convinced that shutting down the lines and restarting them saves money. There is only one brief, kind of quick and abbreviated analysis of what this effect would be. We are very much concerned about the industrial base. We no longer have the privilege in our country of riding on a huge commercial industrial base. The industrial base that is out there to do this kind of thing is our industrial base, and we can't just stop using it and expect it to be there when we want to use it again.

And so we hope that we can get additional studies, in addition to the RAND study, which was—they are doing a little bit more ex-

panded one now. But we hope GAO [Government Accountability Office] can look at it. We just need to know, in fact, will we save any dollars by shutting down the lines, letting them go cold, paying the cost of shutdown, paying the cost to start up again. And I don't know that there is any study out there that indicates that we will save money. And I don't know how we reached the conclusion in the budget process that we were going to save money when there is no study out there that indicates we will save money.

And we know that we are going to run some huge risks, particularly down the line with subcontractors and so forth, of their not being there when we need them, and then we are going to need to go—this year, the Chinese will graduate seven times as many engineers as we will graduate. Would you like to be going there for the parts for these vehicles in the future because we shut down the lines and they have gone cold and we have lost our second- and third-tier subcontractors?

We just don't know the answers to those questions yet, and we hope that we can get enough information so that we can intelligently decide what we need to do going forward.

I have just a couple of real quick questions. We are cutting 80,000 troops from the—soldiers from the Army by 2017. Did we factor this into what we are going to need for this new Army when we are looking at our modernization?

General LENNOX. Chairman Bartlett, in fact, that is one of the calculations that we went through. We don't yet know the final design of what the Army in 2017 will look like. We have some ideas. And each time we do it, we evaluate whether or not we are equipped to meet that target and, if not, what the costs would be. So it is a big consideration in the final decisions that the Secretary of the Army and the Chief of Staff of the Army will be making here in the near future.

Today we have 90 percent of our equipment on hand. So that is our projection. At the end fiscal year 2013, with what is programmed in fiscal year 2012 to be built, we will have about 90 percent of our equipment on hand in all COMPOs. So we are not in danger of overbuying in the near term.

Mr. BARTLETT. I have a general question relative to energy. Oil today is something over $100 a barrel. There is a bit of a fear factor in that. I think the legitimate price is about $100 a barrel.

There is nothing that we can do in our country, short term or really medium, long term, that is going to affect the price of oil. It is not determined by whether we build the Keystone pipeline—which I want to do, by the way. There is going to be an environmental impact wherever you build it. It is either going to be down the Mississippi Basin to give us oil in Houston, Texas, or it is going to go across Canada, through the Rocky Mountains. I don't know how you do that without really meaningful environmental impact. And then the oil is going to go to China.

But, you know, oil is oil, and the price is determined on a global basis. And so the price of oil will not be affected by whether it comes here or whether goes to China. But the availability of oil will be improved if it comes here, and so I am a big supporter of the Keystone pipeline. And if there will be environmental effects—it is not like they are not going to dig a pipeline. They are going to dig

one. It is either going to be down here or it is going to be across Canada, through the Rocky Mountains to the coast, and then they are going to ship it to China. So I would like it to come here.

With the reality that the price of oil is just going to probably go up in the future, what are we doing to accommodate that in our planning for our ground vehicles, which use, I think, about a third of all of the liquid fuels that we use?

General PHILLIPS. Congressman Bartlett, great question.

Operational energy is absolutely critical for our Army. And without energy, our soldiers wouldn't be able to fight, survive, and then win on the field of battle. So getting the energy to the point of the spear, to our soldiers, all the way down to the battery that is on the back of the soldier, is incredibly important.

And we are attacking this in a number of ways inside the Army. There are three key strategies. One is soldier power. General Mills mentioned some of the things that the Marines are doing. We are doing a number of things: using solar panels tied to a modular universal way that we can recharge any battery that the soldier has. Soldiers today might carry up to 20 pounds of batteries, and this will help them reduce the batteries that they carry.

Both the GCV—the second area is vehicle power, sir, that you mentioned. Both the Ground Combat Vehicle and the JLTV have requirements within the strategy that BAE [British Aerospace Engineering] and General Dynamics both have in terms of field efficiency.

When you look at what we are doing in Afghanistan and the number of convoys on the road, over half of those are associated with fuel or water. So when you can reduce fuel consumption, whether it is in a base or whether it is in a vehicle or whether it is in an aircraft, it is important that we pursue those strategies that reduce fuel so we can get convoys off the road.

Sir, you mentioned vehicles. I will talk about aircraft for a second. We have been pushing the Improved Turbine Engine Program for a number of years. And that is an engine that will go inside our Black Hawk and our Apache aircraft, and that is going to drive fuel efficiency, we think, by about 25 percent. They are heavy users of fuel in Afghanistan, and, as you know, they are a workhorse in that theater.

Along with 25 percent fuel reduction by the ITEP [U.S. Army Improved Turbine Engine Program] engine, it will also increase power by about 25 percent, which gives you additional lift capacity.

So we are attacking this in a number of ways, sir: base power, soldier power, vehicle power.

General MILLS. Sir, I would just add, from the Marine perspective, we have two experimental FOBs that we operate here in the States each year—one on the east coast, one on the west coast—that, again, encourages vendors to come and show us what their solar ideas are and their fuel-efficiency ideas are. And we take those ideas that we think are usable, get them out to the fleet so that we can get verification on them. And that has proven very successful.

Also, with our vehicles, we have used some onboard power-generation systems, which then eliminate the need to bring fuel-powered generators along behind.

So, as the general said, we are working together with the Army and working toward more fuel-efficient vehicles with our requirements that we are putting forward, but also other ways in which we can save on the margins significant amounts of fuel. Because fuel movement in combat is a very, very tough tactical problem you have to overcome.

Mr. BARTLETT. As the United States and the world faces a crisis in, not energy generally, but in liquid fuels, I want to commend the military, all of our services. You have been considerably more forward-looking than the rest of the entities in our country. Thank you very much for leading the way here.

Ms. Hartzler, you have joined us. Do you have a question or observation?

Mrs. HARTZLER. Thank you, Mr. Chairman.

I apologize. I missed the first part of hearing, so I hope I am not asking a double question. If I do, please let me know, and I will get it for the record.

But I had the opportunity to go—the Army presented over here in the Rayburn Building a demonstration on some of the robotics that are being employed. And that was very encouraging, I think—a way to help identify IEDs and clear the fields and that sort of thing. So I had a question about that, as well as the V hulls.

Does the Army and the Marine Corps—and this is for General Phillips or General Mills, I guess—do you see additional opportunities for robotic systems, such as the remote weapon systems or autonomous navigational systems, being incorporated into the design of larger ground vehicles?

And I say that as a farm girl that also sells farm equipment, and we have the, you know, systems now that run the tractors without, you know, the operator sitting there.

So, go ahead.

General MILLS. Yes, ma'am. Thank you for that question.

We have several other systems that we are looking at. Of course, robotics has been critical in the EOD [Explosive Ordinance Disposal] area, you know, to relieve the threat of the individual soldier or marine going forward, to take a look at what may or may not be an IED and to disarm it. That is proven technology which is useful on the battlefield.

We have expanded that in the area of the ground. We have a platoon-level vehicle, the GUSS [Ground Unmanned Support Surrogate], that we use to carry forward. It is unmanned. It can carry—takes some of that weight off the individual marine and help him on the battlefield.

Probably one of the more exciting systems is a robotic helicopter that we are using right now in theater. We have two of them that are operating. They have proven themselves, both day and night and under bad weather conditions, to move logistics, up to 6,000 pounds, from a FOB up to a location. That is a GPS [Global Positioning System]-guided system which has really, really proven its worth on the field.

So we think the—you know, robotics is exciting. It saves manpower and, of course, reduces the threat to the individual marine or soldier on the ground.

Mrs. HARTZLER. I am glad to hear that.

Did you want to add anything, General Phillips?

General PHILLIPS. Ma'am, just a couple of thoughts from a Tennessee farm boy, as well, in my background and my upbringing.

But we are excited about unmanned ground vehicles and unmanned aerial systems. We have seen exponential growth.

We have done very well at the Small Unmanned Ground Vehicle.

Mrs. HARTZLER. Uh-huh.

General PHILLIPS. You probably saw the SUGV [Small Ground Unmanned Vehicle], which we have a number of those in Afghanistan today. There are about 2,500 that are operating in Afghanistan right now, Small Ground Unmanned Vehicles.

Where we have probably challenged is more of the larger vehicles that would actually help support a squad or carry squad equipment. We do have one system that is in Afghanistan now—it is called the Workhorse—that is being fielded by—or experimented on, with soldiers using it, that will carry a squad amount of equipment.

I met with our testing team while I was in theater, who were doing a forward operational assessment on that vehicle, and we would certainly be glad to share that with you. But that is an area, I think, that we have to continue to focus on.

And one final comment. We are teamed with the Marines on this. There is the Robotics Systems Joint Program Office that works under an Army PEO [Program Executive Officer], but he is actually a Marine Corps officer, Colonel Dave Thompson, who actually runs that office for us. So our teaming with General Mills and our team partnership is pretty strong there.

Mrs. HARTZLER. That makes sense. So that is encouraging. I think there is a lot of potential there, not only to get things done but to save lives, as well, in doing it.

Just a quick——

General KELLEY. Ma'am, if I could?

Mrs. HARTZLER. Yes.

General KELLEY. I just wanted to let you know that Dave Thompson, just so you don't go there one day and find Dave not there, that job is getting ready to turn over. We are sending another colonel select up there.

And I just wanted to let you know that his previous job was in the unmanned aircraft system environment. So now we have a young Marine colonel who we have groomed in the unmanned aircraft system, now he is going to work on the unmanned ground systems. And this is really going to help us in terms of interoperability and ease the training burden on folks, marines and soldiers, that have to actually operate these systems out in theater.

Mrs. HARTZLER. Sounds good.

Well, my time is almost over, and I see that we are voting, so I will save my question for later. But thank you very much.

Thank you, Mr. Chairman.

Mr. BARTLETT. Mr. Critz has a question.

Mr. CRITZ. Thank you, Mr. Chairman, for the second round.

General Phillips, you mentioned that lessons learned, the acceleration of the AMPV program, that there is a possibility that you could accelerate it by 24 months. What I would ask is that, if you can keep my office updated maybe on a quarterly basis as to where

you are. Because I think we had this conversation about 6 months ago, and the budget request doesn't really reflect what I think is an accelerated program. So if you could just keep us updated.

And just one quick comment. As you have heard from the committee, there are a lot of us that are very concerned about the industrial base, the ramping-down of Bradley, the ramping-down of Abrams. And what we are hearing from you is that it is not going to be an issue if it goes cold. What we are hearing from industry is that there is a huge issue and a huge expense.

So, obviously, on your side of the equation, there have been some assumptions made on ramping back up. And I would be curious to see what those assumptions are, as well.

Thank you.

Mr. BARTLETT. Mr. Wilson, do you have a question?

Mr. WILSON. Yes, Chairman, very brief, one question.

And that is, I am delighted to see efforts at modernization of the tactical communications system—Handheld, Manpack, and Small Form Fit.

When I trained at Fort Irwin several years ago, the radio equipment we had was just not sufficient. We were told not to use our cell phones. And I need to let you know that the cell phones worked. So I am delighted to see change.

So how is that coming along?

General PHILLIPS. Sir, I would just say up front that we are incredibly excited about what we are doing in the network. The network is the most important program for the Army. And we teamed effectively with the requirements community, the acquisition community, the resourcing community that General Lennox has worked so hard to resource the programs that you just mentioned. And we have also brought our test community inside the circle with us. And it is all happening at White Sands Missile Range, where we are testing the network in an operationally relevant environment.

What we are doing today, which is what was different than you saw at Fort Irwin, is we are building a network that is based upon Government solutions and programs of record and asking industry to come and help us improve the network based upon a common operating environment and open standards and specifications, that we can bring those commercial solutions and integrate them inside.

Some of the key aspects of the network are WIN–T, which is our long-haul communications. General Lennox mentioned that up front. That is critical for connecting theater down to brigade battalion level. With WIN–T Inc. 3, it will connect down to company.

The JTRS radios, HMS [Handheld, Manpack, Small Form Fit] Rifleman radio that you mentioned, as well, sir, are critical inside the brigade, being our mid-tier and lower-tier level, connecting soldiers to platoon and company and battalion and higher.

So we are excited about how we are building network at White Sands. And in fiscal year 2013 we will deploy that network with about eight brigades downrange.

Mr. WILSON. Well, I am delighted to see the modernization.

General KELLEY. Sir, if I can, it is another great example of the Army and the Marine Corps working together. We participate in the Network Integrated Evaluation that General Phillips just men-

tioned. We were able to participate last year, this past fall, and we will continue our participation in the spring.

One of the great things for us is that we were actually able to set up a simulated battalion-and-below constructive force out at our Marine Corps Tactical Systems Support Activity out in Camp Pendleton, California. And we were able to, over the defense research network, we were able to link to Fort Bliss, Fort Hood, and White Sands Missile Test Range. And that participation is going to help influence the decisions that General Mills is going to have to make on where we go with the Joint Tactical Radio System.

Mr. WILSON. Well, thank you very much.

And I want to echo the concerns of our chairman about the reduction of the Army by 80,000 troops and the Marines by 20,000. I read in a report today that North Korea has called its troops into high alert. And I think that by reducing our forces we are actually putting our allies at risk, whether it be South Korea or Israel. And I am just hopeful that we can make some changes. And I appreciate the leadership of our chairman.

Thank you.

Mr. BARTLETT. Thank you very much.

I know that your leaders have not asked you to do any definitive planning for the eventuality of a sequester. It may be in a lame-duck Congress after the next election before we address that. Because we are irresponsible in the Congress doesn't mean that you have to be irresponsible, and so I would encourage you to look at the most rational way to draw down if you have to. If you are forced to do this in a panic, after the November elections, it will not be done anywhere near as efficiently as it could be done if you had forward-planned it.

So, we hope that, without the request from your superiors that, you will nevertheless do the rational thing, and that is the what-if planning, what if it occurs, what would you do to do the least harm to our Services in the eventuality of a sequester. The probability of sequester nowhere near approaches zero.

I want to thank you all very much for your service to your country and for your testimony today.

And unless there is another question from our Members, the subcommittee stands in adjournment.

Thank you.

[Whereupon, at 11:34 a.m., the subcommittee was adjourned.]

A P P E N D I X

March 8, 2012

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MARCH 8, 2012

Statement of Hon. Roscoe G. Bartlett

Chairman, House Committee on Tactical Air and Land Forces

Hearing on

Army and Marine Corps Ground System Modernization Programs

March 8, 2012

Good morning. The Tactical Air and Land Forces Subcommittee meets today to receive testimony on the fiscal year 2013 budget request for Army and Marine Corps ground system modernization programs.

We welcome our distinguished panel of witnesses:

- Lieutenant General Robert Lennox, Deputy Chief of Staff of the Army, G-8;
- Lieutenant General William Phillips, Military Deputy to the Assistant Secretary of the Army (Acquisition, Logistics and Technology);
- Lieutenant General Richard Mills, United States Marine Corps, Deputy Commandant for Combat Development and Integration;
- Brigadier General Frank Kelley, United States Marine Corps, Commander, Systems Command; and
- Mr. William Taylor, United States Marine Corps, Program Executive Officer for Land Systems.

Thank you all are for being here and for your service to our Nation.

Based on the fiscal year 2013 budget request, the subcommittee hopes to determine:

- The risk associated with the Army and Marine Corps' ability to meet the national security needs of this Nation;
- how this budget request impacts Army and Marine Corps ground system modernization programs and their associated industrial bases;
- and the best estimate of what program adjustments would have to be made and additional risks assumed, if sequestration were to take effect.

We know that our witnesses support this budget as appropriate for the new defense guidance. But we need our witnesses to provide more detail on the modernization and investment risks and the critical assumptions behind these risks, given the fact the Nation is still engaged in major combat operations.

There are two significant concerns that I have that are associated with Army and Marine Corps ground systems modernization: (1) the quality and effectiveness of the equipment that will be relied upon by a smaller combat force as a result of reductions in force structure and end strength and (2) the effect on the industrial base of ending major current programs, and anticipating the ability to begin new production, 3–5 years into the future.

I have concerns over the impact of this budget on the defense industrial base at the prime contractor and vendor base level. Based on this budget request, the industrial base that supports the Marine Corps at the battalion level and the Army at the brigade combat team level—is going to have a 3- to 5-year production break. Both the Marine Corps and the Army plan on procuring major platforms in the 2017 or 2018 timeframe.

At the prime-contractor level, the Ranking Member and I have visited many of these facilities. The workers are well trained, very qualified, and extremely patriotic. As you know it can take many years to train a qualified machinist or welder. Many of them have served in the military or have family and friends that are currently in the military. However, if these production lines go completely cold for multiple years, these workers will have no choice but to switch career fields so that they can take care of their families. So the question becomes what work force does the Marine Corps and the Army expect to have or need in 2017 or 2018 to produce these new platforms? What impact would this industrial base policy have on the industrial base's ability to "surge" production in response to a future threat or conflict?

The vendor-base level is even more problematic. These are the companies that provide the transmissions, engines, and widgets to the prime contractors. In some cases it can take over a year for a vendor to get qualified in order to supply critical parts to the prime contractors. Once the production lines go cold, these companies will simply go away or be forced to increase prices for these components and parts. If they do, what will be the impact to current fielded ground modernization system programs? And in 2017, will the prime contractors be forced to go overseas to fill this void?

Our prime contractors and vendors are trying to sustain themselves at a minimum economic quantity level. This may not be affordable given the current budget environment. As I have stated before, major reductions in the Federal budget need to be a major element of correcting the Federal deficit. The Department of Defense must share in a fair and balanced way in those reductions, and that process is already taking place under the Budget Control Act of 2011, with nearly $500 billion in cuts planned for DOD over the next 10 years. But we must achieve a balance to the degree that is possible, if we hope to have a capable military in the future. Allowing certain major prime contractors and vendor production lines to go cold may not be in the best interests or economically prudent to our national defense. Is a balance possible? What skilled workers and what vendor base do we need in order to produce the innovative weapon systems we will require in 2017? How do we incentivize the industrial base to promote innovation during this economic downturn? There have been discussions of this issue, but I have not seen any substantive analysis to date, that would help

us with this problem. I agree that Foreign Military Sales may help to mitigate some of this risk, but this will not be enough to fix this near-term issue.

We have lost over 6,300 Americans in Iraq and Afghanistan and more than 46,000 have been wounded, since September 11, 2001. In order to perform their missions, whether home or abroad, our military must be adequately equipped with the right equipment to maximize their combat effectiveness and provide for their protection.

Again, I thank all of you for your service to our country and for being here. I look forward to your testimony.

Statement of Hon. Silvestre Reyes

Ranking Member, House Committee on Tactical Air and Land Forces

Hearing on

Army and Marine Corps Ground System Modernization Programs

March 8, 2012

The Army and Marine Corps' budget requests for modernization come at a time of significant transition for both Services. At this time last year, the Army still had 40,000 troops in Iraq. Today there are almost none. At this time last year, both the Army and Marine Corps were planning on very gradual reductions in end-strength, but today both Services are on much steeper ramps down to significant cuts in end strength and force structure. And finally, at this time last year there was no such thing as the "Budget Control Act of 2011," and today both Services are living with major budget reductions mandated by this law.

For the Marine Corps, the budget request for ground equipment modernization is relatively small compared to recent years, and it follows a very conservative, careful path. One clear trend is that the Marines intend to "lighten up" the force, with a shift back to emphasizing expeditionary, maritime-based forces. On that issue, it is important for the committee to understand how the Marines plan to continue to meet force protection requirements as its equipment gets lighter in weight. Otherwise, aside from upgrades to Light Armored Vehicles and continued investment in JLTV, the Marine Corps' ground vehicle plans remain unclear pending several ongoing studies on the future needs of the Marine Corps.

With regard to the Army's budget request, at this time last year the Army had a plan to emphasize investments in network communications and aviation, while accepting slight risk in other areas. At the time, I stated that the Army's plan was a solid path forward, with only a few exceptions. Unfortunately, the fiscal year 2013 budget request shows a significantly different picture for Army modernization.

First, on the good side, the Army's request continues strong investments in network communications and aviation.These are both areas of modernization critical to increasing the capability of our troops in Afghanistan, so I strongly support the Army's choice to protect this funding.

For example, while today's hearing is focused on ground equipment, the Army's helicopter production request for CH-47 Chinooks, UH-60 Black Hawks, and AH-64 Apaches continue at very healthy levels. Unmanned systems also see strong investments, with the Army continuing production of the Grey Eagle UAS and upgrades to the Shadow UAS fleet. In the area of network communications, there is substantial production funding for both the WIN-T and Joint Tactical Radio System.

On the other hand, while the Army last year was accepting some risk to the industrial base in a few select areas, in this year's budg-

et this risk has spread across many more critical elements of the industrial base the nation needs to ensure modern, capable ground force equipment. For example, where last year only the M1 Abrams production line looked like it was on a definite plan to a long-term shutdown, it now appears that the Army plans to simultaneously shutdown the production lines for Abrams tank, Bradley Fighting Vehicles, Stryker Vehicles, Medium Trucks, Heavy Trucks, and light wheeled vehicles.

While the Army plans to restart several of these production lines in the future, these multiyear line shut downs could have a substantial impact on the future ability of the United States to build and maintain sophisticated military combat vehicles. For example, there are only two producers of tracked combat vehicles left in the United States. If both of these lines are shut down for 3 or more years, who will be available to build the Army's Ground Combat Vehicle? If both of these lines are shut down, will the 2nd-level suppliers for major components, such as transmissions and thermal imaging sights, be able to stay in business?

If they go out of business, where will the Army get these major components from in the future? Foreign suppliers? While Secretary McHugh and General Odierno pointed to possible foreign military sales as a way to "bridge" these production line shutdowns, so far the committee has not received any solid information indicating that foreign military sales can truly be counted on to maintain these vital production lines.

Overall, while it is clear the U.S. Army will get smaller, it is vitally important that this is done in the right way. In my view, that path forward must include a viable plan to maintain the critical elements of the U.S. industrial base necessary to design and build the combat vehicles and other equipment the Army of the future will require. While it is possible to "outsource" production of some items to our allies, it would be a major change in DOD policy if the Army is forced to turn to foreign sources in the future for our major ground combat vehicles, both wheeled and tracked.

If the Army and DOD have deliberately chosen to accept the risk of these line shutdowns, then the Congress needs a full explanation for the possible impacts to our economy and our future ability to produce the equipment our ground forces need.

As of now, we don't have that information, but I look forward to getting some more information on this critical issue in today's hearing.

RECORD VERSION

STATEMENT BY

LIEUTENANT GENERAL ROBERT P. LENNOX
DEPUTY CHIEF OF STAFF OF THE ARMY, G-8

AND

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

BEFORE THE

SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES
COMMITTEE ON ARMED SERVICES
UNITED STATES HOUSE OF REPRESENTATIVES

ON ARMY AND MARINE CORPS GROUND SYSTEMS MODERNIZATION AND
ACQUISITION PROGRAMS

SECOND SESSION, 112TH CONGRESS

MARCH 8, 2012

NOT FOR PUBLICATION UNTIL RELEASED BY THE
COMMITTEE ON ARMED SERVICES

Introduction

Chairman Bartlett, Congressman Reyes, distinguished Members of the Subcommittee on Air and Land Forces we thank you for this opportunity to discuss the Fiscal Year 2013 (FY13) budget request as it pertains to Army Acquisition and Modernization. We are pleased to represent U.S. Army leadership, members of the Army Acquisition workforce, and the more than one million courageous men and women in uniform who have deployed to combat over the past ten-plus years, and who have relied on us to provide them with world-class weapon systems and equipment to ensure mission success. On behalf of our Secretary, the Honorable John McHugh and our Chief of Staff, General Ray Odierno, we would like to take this opportunity to thank the members of this committee for your steadfast support and shared commitment in this endeavor.

Support to the Warfighter in Afghanistan

The FY13 President's Budget (PB 13) fully funds priority Warfighter equipment requirements and supports a successful conclusion of Army missions in Afghanistan. PB 13 Overseas Contingency Operations funding procures replacement aircraft, missiles, rockets and C4I equipment; specialized Distributed Common Ground System-Army (DCGS-A) equipment for Intelligence units; Carl Gustav Recoilless Rifles for selected units; Enhanced Combat Helmets, and OEF Camouflage Pattern clothing for deployers. PB 13 Base funding procures seismic/acoustic intrusion devices for deploying Military Police and Engineer Companies, Brigade Combat Teams (BCT) and Special Operations units; Command, Control, Communications and Intelligence equipment for Civil Affairs units; Enhanced AN/TPQ-36 (EQ-36) Radars and Lightweight Counter Mortar Radars; M2 and M240 Machine Gun modifications; and Precision Guided Artillery Fuzes for example.

Army Equipment Modernization Strategy

Today we are faced with uncertain strategic and operational environments coupled with declining resources. The Army's equipment modernization strategy reflects the need to

be able to support the current fight, respond to uncertainties and implement the emerging Army strategy for the force in 2020. The PB 13 Research and Development budget request reflects the Army's priority materiel programs and highlights the critical capabilities we need to give our Soldiers and units the decisive edge in the range of military operations. This strategy is focused on equipment needed to (1) empower, unburden, and protect our Soldiers; (2) network the force; and (3) replace, improve or transform our combat platforms in order to deter and defeat hybrid threats.

We must set priorities, make prudent choices, and modernize in ways that provide the best force for the Nation with the resources available. To meet the challenges of strategic, operational, and fiscal realities, the Army is scrutinizing its major equipping programs and their contributions to core competencies and required capabilities.

The Army aims to develop and field a versatile and affordable mix of equipment to enable Soldiers and units to succeed across a full range of missions today and tomorrow and to maintain our decisive advantage over any adversary we face. "Versatile" encompasses the characteristics of *adaptable* (to changing missions and environments); *expansible* (able to add, update or exchange capabilities in response to changed circumstances); and *networked* (to enable interoperability within our formations and with those of our partners). "Affordable" relates to making fiscally informed decisions that provide greatest capability value in accordance with senior leader priorities, within projected resources and within acceptable risk parameters.

Our Equipment Modernization Strategy is a balanced approach and features:

- Integrated Portfolios that align the modernization community to ensure integration across requirements, acquisition, resourcing and sustainment.
- Incremental Modernization to deliver improved capabilities as necessity clarifies, technology matures, or resources are available.
- Army Force Generation (ARFORGEN) Equipping to improve or maintain core capabilities and provide mission specific capabilities in accordance with ARFORGEN cycles.

We recognize we must shape the Army with an understanding of both our national security obligations and current fiscal constraints. The emerging strategy for the Army of 2020 describes strategic requirements and aligns the ends, ways, and means to develop and field a versatile and affordable mix of the best equipment available to enable Soldiers to succeed in current and future complex operational environments. This entails four lines of effort:

- Modernize. Develop and acquire new equipment or improve, upgrade or adapt existing equipment to meet identified capability gaps and to achieve dominance in core capabilities while evaluating modernization efforts for redundancy.
- Sustain. Close capability gaps or avoid creating them by extending the useful life of existing equipment and divest or store equipment providing less value.
- Mitigate. Procure mission-specific equipment for immediate capability needs.
- Distribute. Provide the appropriate quantity and type of equipment to Soldiers and units at the proper time in accordance with the ARFORGEN readiness model and Army priorities to enable training, preparation and employment for mission success.

Priority Army Programs in FY13

Based on the Equipping Modernization Strategy, the priority equipment modernization programs in our PB 13 request are:

Warfighter Information Network-Tactical (WIN-T). Provides the broadband backbone communications necessary for the tactical Army. It extends an Internet Protocol (IP) based satellite and line-of-sight communications network through the tactical force, supporting voice, data, and video. Increment 1 fielding is completed in FY12. Increment 2 extends the network to the Company and provides on-the-move IP communications for the first time. It begins fielding in FY 13. PB 13 will procure 7 new Brigade Combat Team (BCT) sets and fund fielding Increment 2 systems to 9 BCTs and procuring upgrades for 32 additional brigades to provide interoperability with Increment 2 systems.

Joint Tactical Radio System (JTRS). Provides the future deployable mobile communications family of tactical radios. It provides advanced joint tactical end-to-end networking data and voice communications to dismounted troops, aircraft and watercraft platforms. PB 13 procures Handheld / Manpack Small Form Fit (HMS) and Rifleman Radios to provide voice/data communications to 8 BCTs. These radios will link mounted and dismounted Soldiers and leaders into a robust network of sensors, platforms and command posts. The Ground Mobile Radio (GMR) was the primary JTRS vehicular radio. This program was re-structured in favor of a more competitive Non-Development Item (NDI) program called the Mid-Tier Networking Vehicle Radio (MNVR) using the government owned programmable waveforms developed as part of the JTRS program. This change in acquisition strategy will allow rapid delivery of capabilities (fielding in FY 14) at lower cost while meeting the mobility requirement of the restructured GMR program.

Joint Battle Command-Platforms (JBC-P). Provides a foundation for achieving information interoperability on current and future battlefields and will be the principal Command and Control/Situational Awareness system for the Army and Marine Corps at the brigade-and-below level. Leverages our investment in 88,000 Force XXI Battle Command Brigade and Below (FBCB2) systems (all maneuver formations) with improved situational awareness capabilities. JBC-P is the incremental improvement to the already fielded Blue Force Tracker (BFT) family of systems.

Nett Warrior. Provides an integrated situational awareness system to the dismounted leader which allows for fast and accurate decisions in the tactical fight. This program underwent a re-baselining of requirements and acquisition strategy to achieve a smaller, lighter handheld capability at reduced cost to the Army. PB 13 funds delivery of this capability to maneuver BCTs in support of next deployers.

Distributed Common Ground System-Army (DCGS-A). Provides integrated intelligence, surveillance, and reconnaissance processing, exploitation, and dissemination of data from airborne and ground sensor platforms. DCGS-A satisfies 100 percent of the Army

intelligence enterprise requirements by pulling data from over 300 DoD and National databases. No other system completely addresses the broad range of intelligence requirements satisfied by the DCGS-A program. PB 13 funds development of the Army Common Operating Environment and Command Post Environment and procures equipment for one Army Service Component Command, 10 theater commands, three division headquarters, 14 BCTs, one Special Forces Group, and 15 support brigades.

A major contributor to the successful development of new Network capabilities is the Network Integration Evaluations (NIE) we conduct at Fort Bliss, TX. FY 13 PB fully funds the semiannual NIE which provides an operational venue to evaluate new commercial technologies and network capabilities for possible inclusion into the Network. This provides the Army an opportunity to integrate Network equipment before it is fielded to operational units, thereby relieving those units of the integration burden. Previous NIEs have informed decisions that resulted in restructuring Army programs of record, such as Nett Warrior and JTRS, resulting in significant cost savings and improved capabilities. Resources have been added to the FY13 PB request to allow procurement of commercial products evaluated and recommended for fielding based on NIE results.

Ground Combat Vehicle (GCV). The Ground Combat Vehicle is the U.S. Army's replacement for Infantry Fighting Vehicles in Heavy Brigade Combat Teams (HBCTs). Modernization imperatives include improved protection, mobility and sustainment; built-in growth capacity; and network integration. PB 13 funds two competitive Technology Development (TD) contracts leading to a Milestone B decision in 1st Quarter 2014 and Engineering and Manufacturing Development (EMD) Phase. The Milestone B decision will be informed by a comprehensive analysis, an examination of non-developmental vehicles, and progress made during the current TD phase.

Joint Light Tactical Vehicle (JLTV). Provides Army and Marine Corps Warfighters more payload, protection and network capability than High Mobility Multipurpose Wheeled Vehicle (HMMWV), and more fuel efficiency than the HMMWV or Mine Resistant Ambush Protected (MRAP). PB 13 fully funds JLTV Engineering & Manufacturing

Development (EMD) using an acquisition strategy that maximizes full and open competition opportunities for interested companies and reduces EMD costs and schedule. The program is scheduled for a Milestone B decision in July 2012.

Paladin Integrated Management (PIM). The Paladin Integrated Management (PIM) program replaces the current M109A6 Paladin and M992A2 Field Artillery Ammunition Supply Vehicle by incorporating Bradley common drive train and suspension components. PIM addresses a long standing capability gap in the self-propelled artillery portfolio brought about by an aging fleet and the termination of prior modernization efforts. PB 13 funds continued development and integration of Bradley common components (Engine, Transmission, and Suspension System) into prototype vehicles for government testing. The program remains on schedule to meet a Milestone C in June 2013.

Armored Multi-Purpose Vehicle (AMPV). The AMPV program is an essential element of the Army's Combat Vehicle Modernization strategy to replace an aging M113 fleet that lacks protection, mobility, and the ability to accept future upgrades. The AMPV will provide required protection, mobility, and networking capabilities for critical enablers (mortars, medical evacuation and treatment, mission command, and company command and control) of the combined arms team. PB 13 funds competitive source selection preparation to include government-furnished material and technical data package. The AMPV program is an essential element of the Army's Combat Vehicle Modernization strategy.

Kiowa Warrior. PB 13 funds continued development of the Cockpit and Sensor Upgrade Program (CASUP) and procurement of fielded fleet upgrades and CASUP long lead items. A decision to pursue either the development of a new aircraft to replace Kiowa Warrior or a Service Life Extension Program (SLEP) of Kiowa Warrior will be made in FY13.

Major Program Changes in FY13

Fiscal realities caused us to make significant changes in almost 100 programs. Nevertheless, the Army is committed to maintaining the most capable Army in the world with the resources the American people provide us through Congress. In order to do so in an era of decreasing resources, we must make hard choices to maintain balance. To that end, we continuously examine programs to find where we may have overlapping or joint capabilities that meet the need, or where programs are simply unaffordable or where the resulting capability risk is acceptable. We believe that even with these changes, we still have balance in our equipping strategy and are on track to equip the Army of 2020. However, further reductions run the risk of upsetting that balance and force us to make very hard choices about where we sacrifice capabilities for the Army of 2020.

Among the changes in our PB 13 request is the restructure of over 20 programs, primarily due to honed requirements or availability of off-the-shelf items. These include Nett Warrior, JTRS, Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS), Joint Air-to-Ground Missile (JAGM) and JLTV. In more than 50 programs we accepted risk by slowing deliveries of systems based on the current operational environment. These include EQ-36 radars, Heavy Expanded Mobility Tactical Trucks (HEMTT), and Apache III Attack Helicopters. Finally, funding will cease for eight programs. These include: Mounted Soldier System; Long Range Advanced Surveillance Systems (LRAS3); Knight Targeting Under Armor; Liquid Logistics Storage and Distribution (Camel); HMMWV Recap; Family of Medium Tactical Vehicles (FMTV); Joint Precision Approach and Landing Systems (JPALS); and Airborne Common Sensor and Enhanced Medium Altitude Reconnaissance and Surveillance system (EMARSS).

We also accelerated 11 programs to provide new capabilities to our Warfighters faster. Examples include: Improved Target Acquisition System for Soldiers, Patriot PAC-3 Missiles, and Combat Communications for Casualty Care (MC4)

Acquisition Transformation

Over the past year, the Army has continued to make progress on changing the paradigm for acquisition. Overall, the Army is taking a fundamentally different approach to acquisition – one which emphasizes affordability throughout the acquisition cycle. We are challenging costly or unrealistic requirements, implementing smarter test and evaluation strategies, embracing commercial innovation and industry feedback, supporting increased competition and rewarding technological maturity.

This approach is evident in several programs, to include JLTV, Nett Warrior and GCV, where we have already shown success in revising military requirements to avoid unnecessary cost and to develop executable strategies. For instance, in the JLTV program, a thorough review enabled us to revise our Acquisition Strategy which reduced the schedule for the next development phase from 48 to 33 months while reducing the projected cost of the vehicle by $400 million, a 50 percent reduction.

The Stryker Double-V Hull (DVH) program is yet another example, In the DVH program, we partnered with the testing community to efficiently conduct simultaneous test and production on an expedited basis. By taking a more collaborative approach, we provided Soldiers with critical improvements and enhanced protection on a timely and effective basis. In a recent trip to Kandahar, Afghanistan, we saw and heard first-hand from Soldiers the remarkable capability the DVH provides.

Finally, during the Army's Network Integration Exercise (NIE) at Fort Bliss, Texas, Soldiers found the configuration of Nett Warrior cumbersome and recommended the system focus on the Rifleman Radio and a commercially available smart-phone type product. As a result of Soldier feedback the Army de-scoped the requirements and the Nett Warrior program has realized a significant savings: 70 percent reduction in weight for the Leader configuration and a 60.5 percent reduction in total procurement costs.

Equipping Strategy

The equipping strategy establishes goals and metrics for achieving a balance between requirements and resources. It addresses the rotational and non-rotational Operational Force and the Generating Force. The strategy is a dynamic and flexible document that addresses the divergent needs and requirements for the Total Army. The strategy's goals and objectives are achieved using three lines of operation: (1) unit-based equipping; (2) managing friction, and (3) building long-term readiness.

- Unit-Based Equipping. The Army's equipping goal is to ensure that Soldiers and units always have the equipment they require to execute assigned missions. It measures success in doing so using a series of equipping goals or Aim Points (AP). This line of operation also includes tailoring equipment distributions to better manage shortages and maximize capabilities, maintaining the Army National Guard's Critical Dual Use and Generating Force equipping levels to no less than 80 percent.

- Managing Friction. Friction is caused by a significant percentage of Army equipment that is unavailable to fill unit authorizations because it is in transit, reset, or filling other critical Army requirements such as equipment sets. Success in managing friction is measured by how well the Army can see its own equipment inventories and make informed management decisions about how to allocate that inventory to build Army readiness. The Army is committed to continuing to improve our ability to minimize friction and achieve equipment transparency.

- Building Long-term Readiness. The Army will continue to focus on management policies and structure to bring resources, resourcing processes, requirements validation, and priorities into better synchronization with cyclic equipping readiness requirements. Ensuring documents accurately reflect equipping status, updating the readiness reporting system, and examining the relevance of long-standing equipping programs and policies are some of the methods the Army is using to build long-term readiness.

The goal of our Equipping Strategy is to ensure Soldiers are equipped for the current fight and for future contingencies. Although we are a force in transition during a period of declining resources we must continue to provide the Army with the best equipped, most modernized and most highly capable units that will prevail on any battlefield against any foe.

Closing Comments

These continue to be challenging times for our Nation and for our military. We can assure the members of this committee – your Army's senior leaders remain focused and are working hard to address current challenges and the needs of the Army now and in the future. We will do this with affordability as our watchword as we endeavor to remain good stewards of our Nation's resources.

Mr. Chairman, members of the subcommittee, we thank you again for your steadfast and generous support of the outstanding men and women of the United States Army, Army Civilians and their Families. We look forward to your questions.

United States Army

Lieutenant General Robert P. Lennox

Deputy Chief of Staff, G-8
United States Army
700 Army Pentagon
Washington,DC20310-0700
Since: Nov 2009

SOURCE OF COMMISSIONED SERVICE USMA

EDUCATIONAL DEGREES
United States Military Academy – BS – No Major
Stanford University – MBA – Business Administration
National Defense University – MS – National Security and Strategic Studies

MILITARY SCHOOLS ATTENDED
Air Defense Artillery Officer Basic and Advanced Courses
National War College
United States Army Command and General Staff College

FOREIGN LANGUAGES None recorded

PROMOTIONS	DATE OF APPOINTMENT
2LT	8 Jun 77
1LT	8 Jun 79
CPT	4 Apr 81
MAJ	1 Apr 88
LTC	1 Sep 92
COL	1 May 98
BG	1 Feb 03
MG	19 Jul 06
LTG	2 Nov 09

FROM	TO	ASSIGNMENT
Nov 77	Oct 80	Platoon Leader, B Battery, later Executive Officer, C Battery, later S-1 (Adjutant), 1st Battalion, 62d Air Defense Artillery, 25th Infantry Division, Schofield Barracks, Hawaii
Nov 80	Jun 81	Student, Air Defense Artillery Officer Advanced Course, Army Air Defense School, Fort Bliss, Texas
Jun 81	Jun 82	S-1 (Adjutant), 1st Battalion, 67th Air Defense Artillery, Fort Lewis, Washington
Jun 82	Dec 83	Commander, C Battery, 1st Battalion, 67th Air Defense Artillery, Fort Lewis, Washington
Mar 84	Jun 84	Assistant Division Air Defense Officer, 9th Infantry Division, Fort Lewis, Washington
Jun 84	Aug 85	S-3 (Operations), 1st Battalion, 67th Air Defense Artillery, Fort Lewis, Washington
Sep 85	Jun 87	Student, Stanford University Graduate School of Business, Stanford, California
Jun 87	Jul 90	Instructor/Course Director, later Assistant Professor, later Associate Professor, Department of Social Sciences, United States Military Academy, West Point, New York
Aug 90	Jun 91	Student, United States Army Command and General Staff College, Fort Leavenworth, Kansas
Jun 91	May 92	Executive Officer, 4th Battalion, 43d Air Defense Artillery, 32d Army Air Defense Command, United States Army Europe and Seventh Army, Germany and OPERATION DETERMINED RESOLVE, Saudi Arabia
May 92	May 93	Chief, G-3 (Plans and Exercises), 32d Army Air Defense Artillery Command, United States Army Europe and Seventh Army, Germany
May 93	Jun 95	Commander, 1st Battalion, 2d Air Defense Artillery, 108th Air Defense Artillery Brigade, Fort Polk, Louisiana
Jun 95	Jun 96	Student, National War College, Fort Lesley J. McNair, Washington, DC

LTG Robert P. Lennox

Jun 96	Apr 98	Missile Defense Planner, Sea, Air and Space Superiority Assessment Division, J-8, The Joint Staff, Washington, DC
Apr 98	Apr 00	Commander, 108th Air Defense Artillery Brigade, Fort Bliss, Texas
Apr 00	Jul 01	Director, Army Staff Transition Coordination Team, Office of the Chief of Staff, Army, Washington, DC
Jul 01	Jun 03	Deputy Commanding General, United States Army Air Defense Artillery Center and Fort Bliss, Fort Bliss, Texas
Jun 03	Jun 04	Deputy Commanding General, United States Army Space Command/Deputy Commanding General for Operations, United States Army Space and Missile Defense Command, Peterson Air Force Base, Colorado
Jul 04	Jun 05	Deputy Commanding General/Chief of Staff, United States Army Accessions Command, Fort Monroe, Virginia
Jun 05	Jan 08	Commanding General, United States Army Air Defense Artillery Center and Fort Bliss, Fort Bliss, Texas
Jan 08	May 09	Assistant Deputy Chief of Staff, G-3/5/7, United States Army, Washington, DC
May 09	Nov 09	Director, Quadrennial Defense Review, Office of the Deputy Chief of Staff, G-8 United States Army, Washington, DC
Nov 09	Present	Deputy Chief of Staff, G-8, United States Army, Washington, DC

SUMMARY OF JOINT ASSIGNMENTS	DATE	GRADE
Missile Defense Planner, Sea, Air and Space Superiority Assessment Division, J-8, The Joint Staff, Washington, DC	Jun 96-Apr 98	Lieutenant Colonel

SUMMARY OF OPERATIONS ASSIGNMENTS	DATE	GRADE
Executive Officer, 4th Battalion, 43d Air Defense Artillery, 32d Army Air Defense Command, United States Army Europe and Seventh Army, Germany and OPERATION DETERMINED RESOLVE, Saudi Arabia	Jun 91-May 92	Major

US DECORATIONS AND BADGES

Distinguished Service Medal (with Oak Leaf Cluster)
Legion of Merit (with 4 Oak Leaf Clusters)
Defense Meritorious Service Medal
Meritorious Service Medal (with 5 Oak Leaf Clusters)
Joint Service Commendation Medal
Army Commendation Medal
Army Achievement Medal (with Oak Leaf Cluster)
Parachutist Badge
Senior Air Force Space and Missile Badge
Senior Air Force Space Badge
Air Force Space Badge
Joint Chiefs of Staff Identification Badge
Army Staff Identification Badge

United States Army

Lieutenant General William N. Phillips

Military Deputy/Director, Army Acquisition Corps
Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology)
103 Army Pentagon
Washington,DC20310-0103
Since: Jan 2010

SOURCE OF COMMISSIONED SERVICE ROTC

EDUCATIONAL DEGREES
Middle Tennessee State University – BS – Animal Science
Troy State University – MS – Personnel Management/Administration
Webster University – MA – Procurement and Contract Management
National Defense University – MS – National Resource Strategy

MILITARY SCHOOLS ATTENDED
Field Artillery Officer Basic and Advanced Courses
Industrial College of the Armed Forces
United States Army Command and General Staff College

FOREIGN LANGUAGES None recorded

PROMOTIONS	DATE OF APPOINTMENT
2LT	1 Jul 76
1LT	1 Jul 78
CPT	16 Aug 80
MAJ	1 Nov 87
LTC	1 May 93
COL	1 Feb 99
BG	1 Jan 05
MG	28 Oct 09
LTG	31 Jan 10

FROM	TO	ASSIGNMENT
Nov 76	Oct 78	Assistant Executive Officer, later Executive Officer, C Battery, 3d Battalion, 18th Field Artillery, Fort Sill, Oklahoma
Nov 78	Aug 79	Student, Officer Rotary Wing Aviator Course, United States Army Aviation Center, Fort Rucker, Alabama
Aug 79	Sep 82	Section Leader, 118th Aviation Company, later Platoon Leader, later Executive Officer, D Company, 25th Combat Aviation Battalion, 25th Infantry Division (Light), Schofield Barrack, Hawaii
Oct 82	May 83	Student, Field Artillery Officer Advanced Course, United States Army Field Artillery School, Fort Sill, Oklahoma
Jul 83	Aug 84	Instructional Systems Research Evaluator/Designer, United States Army Aviation Center, Fort Rucker, Alabama
Aug 84	Aug 85	Commander, Internal Instructional Systems Branch, Evaluation Division, Directorate of Evaluation and Standardization, United States Army Aviation Center, Fort Rucker, Alabama
Sep 85	Jul 86	Student, Training with Industry, AH-64 Apache Production, McDonnell Douglas Helicopter Company, Mesa, Arizona
Oct 86	Jul 90	Procurement Officer, later Chief, Maintenance and Overhaul Section, later Assistant Project Manager, Procurement/Acquisition, United States Army Aviation Systems Command, Saint Louis, Missouri
Aug 90	Jun 91	Student, United States Army Command and General Staff College, Fort Leavenworth, Kansas
Jun 91	Jun 92	S-1 (Personnel), Aviation Brigade, 2d Infantry Division, Eighth United States Army, Korea

LTG William N. Phillips

Sep 92	Jun 94	Flight Operations Officer, later Chief, Flight Operations, Defense Plant Representative Office, Boeing Helicopters, Philadelphia, Pennsylvania
Jul 94	Jun 96	Commander, Defense Plant Representative Office, McDonnell Douglas, Huntington Beach, California
Aug 96	Jun 97	Student, Industrial College of the Armed Forces, Fort Leslie J. McNair, Virginia
Jun 97	May 99	Director, Information Management and Assessment, Assistant Secretary of the Army (Research, Development, and Acquisition), Washington, DC
Aug 99	Jun 01	Commander, Defense Contract Management, Defense Contract Management Agency, San Francisco, Sunnyvale, CA
Jun 01	Aug 04	Chief, Unit Set Fielding Operations Division, later Acting Director of Integration, Office of the Deputy Chief of Staff, G-8, United States Army, Washington, DC
Sep 04	Jun 07	Deputy Program Executive Officer, Aviation, Redstone Arsenal, Alabama
Jun 07	Feb 09	Commanding General, Picatinny Arsenal/Commander, Joint Munitions and Lethality Life Cycle Management Command/Program Executive Officer, Ammunition, Picatinny Arsenal, New Jersey
Feb 09	Jan 10	Commander, Joint Contracting Command, United States Forces-Iraq, OPERATION IRAQI FREEDOM, Iraq
Jan 10	Present	Military Deputy/Director, Army Acquisition Corps, Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology), Washington, DC

SUMMARY OF JOINT ASSIGNMENTS	DATE	GRADE
Flight Operations Officer, later Chief, Flight Operations, Defense Plant Representative Office, Boeing Helicopters, Philadelphia, Pennsylvania	Sep 92-Jun 94	Major
Commander, Defense Plant Representative Office, McDonnell Douglas, Huntington Beach, California	Jul 94-Jun 96	Lieutenant Colonel
Commander, Defense Contract Management, Defense Contract Management Agency, San Francisco, Sunnyvale, CA	Aug 99-Jun 01	Colonel
Commander, Joint Contracting Command, United States Forces-Iraq, OPERATION IRAQI FREEDOM, Iraq	Feb 09-Jan 10	Brigadier General/Major General

SUMMARY OF OPERATIONS ASSIGNMENTS	DATE	GRADE
Commander, Joint Contracting Command, United States Forces-Iraq, OPERATION IRAQI FREEDOM, Iraq	Feb 09-Jan 10	Brigadier General/Major General

US DECORATIONS AND BADGES

Defense Superior Service Medal
Legion of Merit (with 3 Oak Leaf Clusters)
Bronze Star Medal
Defense Meritorious Service Medal (with Oak Leaf Cluster)
Meritorious Service Medal (with 2 Oak Leaf Clusters)
Army Commendation Medal (with 2 Oak Leaf Clusters)
Joint Service Achievement Medal
Air Assault Badge
Senior Army Aviator Badge
Army Staff Identification Badge

STATEMENT OF

LIEUTENANT GENERAL RICHARD P. MILLS
DEPUTY COMMANDANT OF THE MARINE CORPS
COMBAT DEVELOPMENT & INTEGRATION

AND

BRIGADIER GENERAL FRANK L. KELLEY
COMMANDER
MARINE CORPS SYSTEMS COMMAND

AND

MR. WILLIAM E. TAYLOR
PROGRAM EXECUTIVE OFFICER LAND SYSTEMS

BEFORE THE

HOUSE ARMED SERVICES COMMITTEE

SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

CONCERNING

GROUND MODERNIZATION

ON

MARCH 8, 2012

Not public until released by the
House Armed Services Committee
Subcommittee on Tactical Air and Land Forces

Introduction

Chairman Bartlett, Ranking Member Reyes, and distinguished members of the Subcommittee, it is an honor to appear before you today. On behalf of all Marines and their families, we thank you for your extraordinary support.

As America's Expeditionary Force in Readiness, our ground modernization investments support our ability to be prepared for all manner of crises and contingencies. As a "middleweight force," Marines do not seek to supplant any Service or "own" any domain. Rather, Marine forces transit in a "lane" that passes through all domains—land, sea, air, space and cyber—operating capably and freely throughout the spectrum of threats, whether they be conventional, irregular or the uncertain hybrid areas where they overlap. Key is the ability to deploy and employ from the sea in austere environments at a time and place of our choosing — a significant asymmetric, strategic and operational advantage that has been used more than 130 times in the past two decades.

Our ground investments allow us to develop and sustain a ready, middleweight force that is easily deployable, energy efficient, and highly expeditionary. Complementary to our ground investment, we require parallel investments in amphibious ships, amphibious combat vehicles, connectors such as the landing craft air cushion (LCAC) and landing craft utility (LCU), naval surface fire support assets, mine counter measures, radars, command and control, vertical lift, and fixed-wing, short take off and vertical landing (STOVL) aircraft, and many other programs critical to maintaining tactical and operational readiness. These investments are designed to provide a full range of complementary capabilities for our Nation's Expeditionary Force in Readiness.

The Marine Corps is fully aware of the fiscal challenges facing our Nation and has critically examined and streamlined our capabilities for the future. We leverage programs, technologies, technical skills and competencies of other Services to ensure we deliver the most effective and affordable combat capability to our Marines. We work closely and collaboratively with our Army counterparts in Program Executive Officer (PEO) Soldier, PEO Combat Support & Combat Service Support, and the Natick Soldier Research Development and Engineering Center, as well as our partners at the Office of Naval Research, and other science and technology (S&T) organizations. We also seek to capitalize on our industrial base to identify and pursue innovative and ground-breaking solutions to meeting the warfighter's needs and to reduce acquisition and sustainment costs of our systems.

We also collaborate with our international and coalition partners to share information; and, when appropriate, implement the good ideas from our partners. For example, the British provided us with the protective undergarment. We are committed to using every resource available to maximize the overall combat effectiveness and survivability of our Marines while ensuring we are addressing the affordability needs of our Corps.

Operating Environment

During the past year, Marines responded to a rapid succession of unpredicted political upheavals, natural disasters, social unrest, piracy and emerging threats in various unstable areas of the world's littoral regions. Marines were first on the scene to provide humanitarian assistance and disaster relief in Japan in the wake of a monumental tsunami; the first to fly air strikes over Libya; evacuated noncombatants from Tunisia; and reinforced our embassies in Egypt, Yemen and Bahrain. While accomplishing all of that, Marines continued sustained combat and counterinsurgency operations in Afghanistan.

History has shown that crises usually come with little or no warning; stemming from the same conditions of uncertainty, complexity and chaos we observe across the world today. Regardless of the financial pressures placed on governments and markets today, crises requiring military intervention undoubtedly will continue tomorrow. In this environment, physical presence and readiness matter significantly. As a maritime nation, dependant on the sea for the free exchange of ideas and trade, America requires security both at home and abroad. Since the 1990's, America has been reducing its foreign basing and presence, bringing forces back home. This trend is not likely to change in the face of the strategic and budget realities we currently face. There remains an enduring requirement to balance presence with cost. In the past, the Nation has chosen to depend on the Navy and Marine Corps to provide a lean and economical force of an expeditionary nature, operating forward and in close proximity to potential trouble spots. Investing in naval forces that can respond to a wide range of crisis situations creates options and decision space for our Nation's leaders.

Role of the Marine Corps

New strategic guidance issued by the President and the Secretary of Defense provides the framework by which the Marine Corps will balance the demands of the future security environment with the realities of our current budget. The guidance calls for a future force that will "remain capable across the spectrum of missions, fully prepared to deter and defeat aggression and to defend the homeland and our allies in a complex security environment." As the joint force-in-readiness, the Marine Corps provides efficient and effective insurance against the unexpected with an adaptive, multi-capable force that has the reach to defend American citizens, commerce and our vital national interests.

Bridging a seam in our Nation's defense between heavy conventional and special operations forces (SOF), the United States Marine Corps is light enough to arrive rapidly at the scene of a crisis, but heavy enough to carry the day and sustain itself upon arrival. Operating in a state of persistent forward presence aboard amphibious warships, your Marine Corps remains the most economical, agile and ready force immediately available to deter aggression and respond to crises. This flexible and multi-capable force maintains high readiness levels and can mitigate risk; satisfy the standing strategic need for crisis response; and, when necessary, spearhead entry and access for the Joint Force. Given likely future operations set forth in the new guidance - ranging from defeating rogue actors to responding to natural disasters - the Nation should invest in the small premium it pays for high readiness levels within its naval

amphibious forces. Because our Nation cannot afford to hold the entire Joint Force at such high rates of readiness, it has historically ensured that Marines remain ready; and has repeatedly relied on Marines to fill gaps, buy time for decision makers, ensure access, or respond when and where needed.

As a "middleweight force," Marines do not seek to supplant any Service or "own" any domain. Rather, Marine forces operate in a "lane" that passes through all domains—land, sea, air, space and cyber—operating capably and freely throughout the spectrum of threats, whether they be conventional, hybrid, irregular or the uncertain areas where they overlap. Whereas other forces are optimized for a particular mission and domain, the Marine Corps is optimized for rapid deployment, versatile employment, and self-sustainment via Marine Air-Ground Task Forces (MAGTF), which are balanced, combined-arms formations under a single commander. All MAGTFs consist of four core elements: a Command Element, Ground Combat Element, Aviation Combat Element, and Logistics Combat Element. MAGTFs are scalable in size and capability.

Today's testimony will focus on our plan for balanced modernization, with a focus on our vehicle portfolio. We will also highlight programs in which notable changes have been made -- to include our efforts with the Joint Light Tactical Vehicle (JLTV), force protection, command and control (C2), cyber, and expeditionary energy.

Reset

The Marine Corps is conducting a comprehensive review of its equipment inventory to validate reset strategies, future acquisition plans, and depot maintenance programming and modernization initiatives. In January 2012, the Commandant of the Marine Corps signed the *Marine Corps OEF Ground Equipment Reset Strategy*. This strategy, rooted in the lessons learned from our successful redeployment and retrograde from Iraq, is helping to identify the equipment we will reset and that which we will divest. It prioritizes investment and modernization decisions in accordance with the capabilities of our middleweight force construct. As well, it defines unit-level mission essential tasks and equipment requirements needed to support the range of military operations. Finally, it equips core capabilities for immediate crisis response deployment and builds strategic depth.

Modernization

In conjunction with our reset efforts, we are undertaking several initiatives to conduct only essential modernization of the Marine Corps Total Force. This will place us on a sustainable course to achieve institutional balance. We are doing so by judiciously developing and procuring the right equipment needed for success in the conflicts of tomorrow, especially in those areas that underpin our core competencies. As such, we ask for continued Congressional support to modernize equipment and maintain a high state of readiness that will place us on solid footing in a post-Afghanistan security environment. While budgetary pressures will likely constrain modernization initiatives, we will mitigate pressure by continuing to prioritize and sequence both our modernization and sustainment programs to ensure that our equipment is always ready and that we are proceeding in a fiscally responsible manner. Modernization

programs that require significant additional funding above current levels will be evaluated for continued operational requirement and capability/capacity modification.

Our ground modernization strategy is to sequentially modernize priority capabilities, reduce equipment requirements wherever possible, and judiciously sustain remaining equipment. The current baseline budget allows for equipment modernization on a reasonable timeline. Possible future reductions in the baseline budget will result in delay, modification or elimination of key modernization programs. Modernization in the following areas is critical to maintaining operational capabilities and readiness:

- Ground Combat and Tactical Vehicles;
- Aviation;
- Preparing for Future Battlefields;
- Amphibious and Pre-positioning Ships;
- Expeditionary Energy; and
- Intelligence, Surveillance and Reconnaissance.

Ground Combat and Tactical Vehicle Strategy

The programmatic priority for our ground forces is the seamless maneuver of Marines from the sea to conduct operations ashore whether for training, humanitarian assistance or combat. Our Ground Combat and Tactical Vehicle Strategy (GCTVS) is the basis for planning, programming and budgeting to provide balanced maneuver and mobility capabilities to the Marine Corps' operating forces. Our GCTVS Strategy is focused on achieving the right mix of assets, while balancing performance, payload, survivability, fuel efficiency, transportability and cost. Vehicles comprising our GCTVS include the entire inventory of wheeled and tracked vehicles, and planned future capabilities - including the Joint Light Tactical Vehicle (JLTV), Amphibious Combat Vehicle (ACV) and the Marine Personnel Carrier (MPC).

The current priorities within the GCTVS include the following:

- Develop a modern ACV;
- Develop and procure JLTV;
- Sustain High Mobility Multipurpose Wheeled Vehicles (HMMWVs) through 2030 by utilizing an Inspect and Repair Only As Necessary Depot Maintenance Program and a HMMWV Sustainment Modification[1];
- Initiate a legacy Assault Amphibious Vehicle upgrade as a bridge to ACV;
- Continue research and development in MPC through FY14 to identify the most effective portfolio mix of vehicles; and
- Limit procurement of vehicles to reduced Approved Acquisition Objective estimates as identified.

[1] HMMWV recapitalization does not meet Marine Corps requirements for those light vehicles with the most demanding missions. They cannot deliver reliability, payload, service life, mobility, the ability to fit on maritime prepositioned force shipping and growth potential. The JLTV is the most cost-effective program to meet capability gaps for those light combat vehicles with the most demanding missions.

Our top ground modernization priority is the Amphibious Combat Vehicle (ACV). Based on our 10-year investment plan, we intend to address our light combat vehicle shortfalls both before and after development of the ACV. Our JLTV strategy depends on procuring those vehicles with the most demanding mission profiles before we turn our focus to ACV. The biggest risk to sequential modernization is schedule—not program schedules but rather decision schedules. If JLTV is delayed, we lose an opportunity that we cannot readdress until after ACV procurement in the late 2020s.

Throughout 2011 and informed by cost, we conducted a comprehensive systems engineering review of amphibious vehicle operational requirements. The review evaluated the requirements for water mobility, land mobility, lethality and force protection of the future environment. The identification of essential requirements helped to drive down both the production and the sustainment costs for future amphibious vehicles.

We are conducting an Analysis of Alternatives to review six amphibious combat vehicle (ACV) options, the results of which will help to inform the direction and scope of the ACV program. The MPC program is maturing as a wheeled armored personnel carrier that is complementary to the ACV as a solution to the general support lift requirements of Marine Forces operating in the littorals.

We are firmly partnered with the U.S. Army in fielding a Joint Light Tactical Vehicle to replace a portion of our legacy light lift utility vehicles. Our long-term participation in this program remains predicated on development of a cost-effective vehicle, whose payload integrates seamlessly with our expeditionary operations and likely amphibious and strategic lift profiles. The Joint Requirements Oversight Council approved the JLTV Capability Development Document; and we at Combat Development Command in Quantico are leading the Marine Corps effort to establish a program of record at Milestone B in the third quarter of FY12. Our approach to JLTV is as an incremental acquisition, and our objective for Increment I currently stands at 5,500 vehicles.

We are focused on developing and procuring Multiple Mission Role Variants of the JLTV family of light vehicles to modernize for the most demanding missions, providing increased payload, performance and protection. The JLTV will replace thirty percent of the High Mobility Multipurpose Wheeled Vehicle (HMMWV) family. At this time, JLTV is on schedule, affordable, and performing to meet essential validated Marine Corps light combat capability gaps.

Last fall, the Marine Corps conducted an affordability review of the portfolio— which included the process of using Knowledge Points to tailor JLTV cost versus capability decisions. Our end-state is to develop a more relevant and affordable portfolio of combat and tactical vehicles. Through procurement and service-life extension, we will provide the capacity for Marine forces to respond to crises with up to a Marine Expeditionary Force-sized forcible entry operation, address irregular threats, and conduct sustained operations ashore when necessary.

Additional Modernization

To complement our future ground and amphibious vehicles, the Marine Corps is investing in other key support areas. For example, the Corps is leading the way to build a next generation medium-range radar system called the Ground/Air Task-Oriented Radar (G/ATOR). This system will replace five radars, and will be significantly more advanced in its capabilities. It will improve threat detection and be more deployable, able to be set up in a fraction of the time compared with current systems. In addition, we are investing in the Common Aviation Command and Control System (CAC2S), which will help better network our communications, radars, intelligence, and ultimately our forces. To better protect the Marine on patrol, we are also planning to replace electronic jamming equipment with the next-generation, open architecture JCREW 3.3 system. This system will ensure Marines are better able to counter future IED threats.

Command and Control: The irregular battlefields of today, and those of tomorrow, necessitate more distributed operations; more decentralized command and control; and greater dispersion among the forces. We continue to build the right capacity and capability to enable Marines to operate rapidly. Our command and control (C2) modernization efforts build upon lessons learned during combat operations in Afghanistan and Iraq. Recent operations have shown that moving data to lower levels (i.e. the digital divide) increases operational effectiveness. We are mitigating the decision to cancel the Ground Mobile Radio by building on investments already made in tactical communications modernization.

Cyber: The Defense Strategic Guidance affirms that "modern armed forces cannot conduct high-tempo, effective operations without reliable information and communications networks and assured access to cyberspace and space."[2] Marines have been conducting cyber operations for more than a decade, and we are in a multi-year effort to expand our capacity via U.S. Marine Corps Forces Cyber Command as we increase our cyber force by approximately 700 Marines through FY16. Given the fiscally constrained environment and complexity of cyberspace, our approach is strategically focused on ensuring efficiency in operations and quality of service. The Marine Corps will aggressively operate and defend its networks in order to enable critical command and control systems for Marines forward deployed around the world. As we transition to a Government Owned/Operated network environment, the Marine Corps will pursue efficiencies through automation, consolidation and standardization to ensure availability, reliability and security of cyber assets.

Expeditionary Energy: For Marines, the term "expeditionary" is a mindset that determines how we man, train and equip our force. We know that resource efficiency aids in combat effectiveness, and that our investments in reset and modernization will provide a force that operates lighter, faster and at reduced risk. Likewise, our force will be more energy efficient to support the type of operations expected of us in the future. To do this, we are changing the way we think about, and use energy.

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[2] *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, January 2012, pg 5.

Over the last 10 years of near continuous combat operations, our need for fuel and batteries on the battlefield has grown exponentially. Since 2001, we have increased the number of radios our infantry battalions use by 250 percent and the number of computers/information technology equipment by 300 percent. The number of vehicles has risen by 200 percent, with their associated weight increasing more than 75 percent as a result of force protection requirements. In the end, our force today is more lethal, but we have become critically dependent on fuel and batteries, which has increased the risk to our logistics trains. Moreover, a 2010 study found that one Marine is wounded for every 50 fuel and water convoys.
To reduce our risk and increase our combat effectiveness, in March 2011, the Commandant issued the *"Marine Corps Expeditionary Energy Strategy and Implementation Plan"* to change the way we think about and value energy. This is a "bases-to-battlefield" strategy, which means all Marines will be trained to understand the relationship between resource efficiency and combat effectiveness. We will consider energy performance in all our requirements and acquisitions decisions.

The Marine Corps acquisition community is committed to delivering required warfighting capabilities to our Marines in a timely and affordable manner. Additionally, we are closely examining technological maturity of potential components and solutions in order to achieve realistic program goals. The Marine Corps is mindful of the need to leverage programs, technologies, technical skills and competencies of other Services to ensure we deliver the most effective and affordable combat capability to our Marines. We strive to be efficient in our program acquisition efforts in order to achieve goals while yielding the best value for the taxpayers. In addition to the procurement of equipment and services, our Systems Command and PEO Land Systems conduct enterprise-level system engineering across product lines and product life cycles to ensure end-to-end integrated, interoperable, supportable, and certified warfighting capabilities. We are committed to using every resource available to maximize the overall combat effectiveness and survivability of our Marines within the current fiscal realities.

FY13 Budget Request

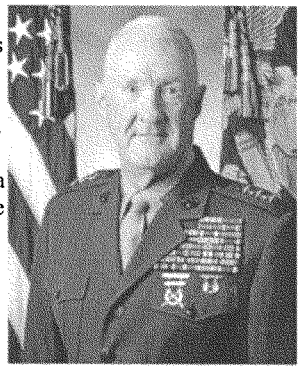
The Marine Corps is fully aware of the fiscal challenges facing our Nation and has critically examined and streamlined our force needs for the future. We continually strive to be good stewards of the public trust by maintaining the very best financial management practices. We are proud of our reputation for frugality and remain one of the best values for the defense dollar. As a force-in-readiness, the Marine Corps must judiciously preserve readiness, manning and modernization with only 8.2 percent[3] of DoD's budget—this amount includes all Marine and associated Navy accounts including amphibious ship construction and operation. Our ground forces modernization comprises only 9 percent of our total budget; and is only about $2 billion a year.[4]

[3] This percentage is based on the FY-12 Defense budget authorization and is slightly larger than the 7.8 percent sum cited in the past. The percentage includes $3 billion in FY-12 funding for amphibious warship new construction as well as Navy funding for chaplains, medical personnel, amphibious warships (operations and maintenance) and Marine Corps aircraft.
[4] The 9 percent figure in this sentence is based on the FY-12 Defense budget authorization. The percentage includes procurement Marine Corps and RDT&E, and totals $2.3 billion.

Conclusion

Through the support of Congress, our Marines and Sailors responding to crisis and in the fight have received everything necessary to ensure success over the past decade of near constant combat operations. As we begin to transition to the challenges and opportunities of the post-OEF world and re-orient to the Pacific under our new Defense Strategic Guidance, the Marine Corps must begin to rebalance and modernize for the future. We must also keep faith with and provide the right resources for those who have served and sacrificed so selflessly in our all-volunteer force since 9/11. With the continued support of the Congress and the American people, we will ensure amphibious forces are well prepared to secure our national interests in an uncertain future. Thank you for the opportunity to be here today and I look forward to answering your questions.

Lieutenant General Richard P. Mills
Deputy Commandant for Combat Development and Integration



A native of Huntington, New York, Lieutenant General Mills was commissioned via Officer Candidate School. As a Lieutenant he served at the battalion level in two Marine Divisions as a rifle platoon commander, weapons platoon commander, rifle company executive officer, and adjutant. As a Captain he attended Amphibious Warfare School, served at Parris Island as a series officer and commanded a recruit company before joining the 6th Marines, 2d Marine Division, as the Commanding Officer of Alpha Company and Regimental Assistant Operations Officer.

As a Major, he was assigned to the Officer Assignment Branch, Headquarters Marine Corps, attended the Marine Corps Command and Staff College, was a Military Observer with the United Nations Truce Supervision Organization in Palestine, and served as the Air/Ground Liaison Officer, Marine Air Group 29, 2d Marine Aircraft Wing.

Lieutenant Colonel Mills served as Operations Officer, 26th Marine Expeditionary Unit (Special Operations Capable) (MEU SOC) taking part in operations off Bosnia and Somalia, was assigned as the Amphibious Exercise/Operations Officer on the staff of the Commander, United States Sixth Fleet in Gaeta, Italy, and as Commanding Officer, 3d Battalion, 6th Marines (deploying as Battalion Landing Team 3/6, 24th MEU (SOC)).

While a Colonel, he studied at the Royal College of Defense Studies, London, England, was the Officer-In-Charge of the Special Operations Training Group, II MEF before commanding the 24th MEU (SOC). While under his command the 24th MEU (SOC) participated in Operations Joint Guardian in Kosovo, Enduring Freedom, and combat operations ashore in Iraq as part of Task Force Tarawa.

Next Colonel Mills went to Headquarters, United States European Command (EUCOM) in Stuttgart, Germany for duty as the Assistant Chief of Staff then, selected to Brigadier General, was the Deputy Director of Operations at EUCOM. Subsequently he was Director, Manpower Management Division at Headquarters Marine Corps before assuming command of the 1st Marine Division.

From 2007 to 2009 Brigadier General Mills served concurrently as Assistant Division Commander, 1st Marine Division and upon promotion to Major general as Commander,

Ground Combat Element, Multi-National Forces - West, Al Anbar Province, Iraq. Upon returning from Iraq he again assumed command of the 1st Marine Division and then was selected to command the I Marine Expeditionary Force (Forward) which deployed to Afghanistan as part of the International Security Assistance Force (ISAF). In June 2010, he assumed command of the newly-created Regional Command (Southwest) and in October 2010 he relinquished command of the 1st Marine Division. In March 2011 he relinquished his duties as the Commander, Regional Command (Southwest). Lieutenant General Mills is the first Marine Corps General Officer to command NATO forces in combat. In July 2011 and upon promotion Lieutenant General Mills assumed the duties as the Deputy Commandant for Combat Development and Integration.

Brigadier General Francis L. Kelley, Jr.
Commander, Marine Corps Systems Command

Brigadier General Kelley, a native of Philadelphia, Pa., graduated from the University of Notre Dame in 1983 with a degree in Aerospace Engineering and was the recipient of the Naval ROTC Donald R. Bertling Award. Upon completion of Officer Candidate School (OCS), he was commissioned a Second Lieutenant in the United States Marine Corps.

In February 1984 he completed The Basic School and received orders to Pensacola, Fla., for flight training. He then proceeded to the 453rd Flight Training Squadron (FTS) at Mather Air Force Base, Calif., for electronic warfare training where he was a distinguished graduate and the recipient of the Colonel Mike Gilroy Award for leadership and training excellence.

After completing EA-6B Prowler training at Whidbey Island, Wash., Brigadier General Kelley reported to Marine Tactical Electronic Warfare Squadron 2 (VMAQ-2), where he participated in the Unit Deployment Program, in addition to Operations Desert Shield and Desert Storm as the Contingency Plans and Tactics Officer.

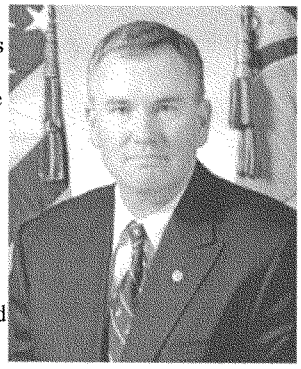
He received orders to Air Test and Evaluation Squadron (AIRTEVRON) FIVE (VX-5), where he was the Electronic Warfare Branch Head. He then reported to Naval Air Systems Command (NAVAIRSYSCOM) as the Avionics Systems Project Officer (ASPO) for the EA-6B.

He returned to the fleet as the Operations Officer for VMAQ-1 and then as the Assistant Operations Officer for Marine Aircraft Group 49 (MAG-49). He reported to the Pentagon as an action officer to the Deputy Assistant Secretary of the Navy(DASN) for Expeditionary Forces Program.

He attended the Marine Corps War College and taught at the Command and Staff College. He transferred to Marine Corps Systems Command (MCSC), Quantico, Va., where he was the Program Manager for Unmanned Systems. Brigadier General Kelley's next assignment was Military Assistant to Dr. Delores Etter, the Assistant Secretary of the Navy (ASN) for Research, Development and Acquisition (RDA).

In August 2007 Brigadier General Kelley was assigned to the position of MCSC's Program Manager for Training Systems (PM TRASYS) in Orlando, Fla. In August 2009 Brigadier General Kelley was reassigned as MCSC's Chief of Staff and became Commander in July 2010.

SES William E. Taylor,
Program Executive Officer for Land Systems Marine Corps



Mr. Taylor currently serves as the Program Executive Officer Land Systems Marine Corps (PEO LS). PEO LS is The Assistant Secretary of the Navy for Research Development & Acquisition's primary organization for the focus of Acquisition Management expertise on major Marine Corps Programs.

A veteran Marine helicopter pilot with nearly 5000 flight hours, Mr. Taylor's operational experiences include combat operations in Beirut, Lebanon, missions in Cambodia in support of Joint Task Force Full Accounting and presidential support while a Marine One Pilot assigned to Marine Helicopter Squadron One.

Among his numerous Acquisition assignments, while a program manager, he successfully led the CH-46 Sea Knight and V-22 Osprey programs prior to his selection as the Marine Corp's first-ever Program Executive Officer Land Systems in January 2007. Mr. Taylor retired from active duty on 1 September 2008 with 29 years of service, and returned to the helm of PEO LS upon his appointment to the Senior Executive Service in December 2008.

A native of Edison, New Jersey, Mr. Taylor graduated from Rutgers University and later earned a Master of Science Degree in Defense Systems Acquisition Management at the Naval Postgraduate School, Monterey, Calif.

His personal awards include the Defense Superior Service Medal, the Legion of Merit with two gold stars, the Meritorious Service Medal, two Strike Flight Air Medals, the Navy Commendation Medal and the Combat Action Ribbon.

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

March 8, 2012

RESPONSE TO QUESTION SUBMITTED BY MS. SPEIER

General PHILLIPS. Cost and affordability do not determine the items procured to protect Soldiers. Neither the Army nor Special Forces use Dragon Skin body armor. Testing has proven that Pinnacle's Dragon Skin body armor is not lighter and does not provide Soldiers with the level of protection necessary to defeat current small arms ballistic threats in theater. All body armor worn by Soldiers today is rigorously tested in accordance with a Department of Defense-wide test protocol. Dragon Skin body armor has been tested on several occasions by the United States Army. In May 2006, H.P. White Laboratory, an independent test facility certified by the National Institute of Justice (NIJ) for ballistics testing, conducted ballistic tests on Dragon Skin using the same test protocols that were used for the Interceptor Body Armor system at the time. Dragon Skin body armor suffered 13 of 48 first or second round shot complete penetrations and was deemed inadequate for Soldier protection. Additionally, in 2007, the Army conducted a Full and Open Competition for the next generation body armor. Two Dragon Skin designs were submitted and tested at Aberdeen Test Center as part of the competition. Both Dragon Skin submissions again suffered catastrophic ballistic failures. Lastly, the size large Dragon Skin system weighs 47.5 lbs. This is 40% heavier than the 33.95 lb size large IBA (Improved Outer Tactical Vest with plates and components) worn by Soldiers today. Due to these factors, the body armor currently worn by our military offers more effective protection than Pinnacle's Dragon Skin body armor. [See page 22.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

MARCH 8, 2012

QUESTIONS SUBMITTED BY MR. BARTLETT

Mr. BARTLETT. Regarding the industrial base, the current hope seems to be that foreign military sales can compensate at least in part for decreased U.S. demand. As often is the case there remains significant risk with the foreign military sales market. Is there a risk that loss of design and manufacturing capability and capacity in the industrial base could undermine the idea of "reversibility" emphasized by Secretary Panetta? If so, which areas of the industrial base are the greatest areas of concern? For example, at the vendor base level both the Army and the Marine Corps are dependent upon one Transmission Company for many of their platforms. If based on current funding profiles this company were to close down or leave the defense industry what would be the impact to current and future Army and Marine Corps vehicle programs?

General LENNOX. The concept of reversibility allows the Army to quickly change its course of action to focus on a new set of priorities. To meet the challenge of reversibility in a climate of declining budgets, the Army will continue to examine the capabilities and capacities in its organic base and among its suppliers in the commercial industrial base to ensure it can quickly adapt to changing priorities through periodic reviews, such as the Organic Industrial Base Capabilities Portfolio Reviews.

Loss of design and manufacturing capability and capacity in the industrial base would present a serious challenge to the Army's ability to quickly reverse its course of action. However, the Army is undertaking or participating in initiatives to help ensure that design and manufacturing capability and capacity in the industrial base remains strong. The Army is participating in a Department of Defense-wide effort to assess the health of and risk to the industrial base on a Sector-by-Sector, Tier-by-Tier (S2T2) basis. The S2T2 analysis seeks to identify critical areas that could constitute single points of failure and develop strategies to mitigate the risks identified. The Army is also incorporating mitigation strategies involving the Foreign Military Sales (FMS) program to address identified risks. The FMS program allows our vendors to diversify and balance military with commercial business so they can weather the lean years and be in position to compete when we start investing in the next generation of products or recapitalize current platforms. FMS sales also help sustain highly skilled jobs in the defense industrial base by maintaining and extending production lines, thereby strengthening reversibility.

The impact of a sole-source, commercial sector supplier leaving the Defense industry could be significant; however, as indicated above, the Army is taking measures to help ensure that the risk associated with such an occurrence would be minimal.

Mr. BARTLETT. The National Defense Authorization Act for Fiscal Year 2012 required that the GAO conduct a report on the health of the tactical wheeled vehicle industrial base, and upon further review of the tactical wheeled vehicle (TWV) budget accounts in the FY 2013 budget request, this report could not be more relevant. All new production will cease beginning in FY 2013 and FY 2014. The only major acquisition effort by DOD in the tactical wheeled vehicle sector for the foreseeable few years will be JLTV, which is designed to replace roughly ⅓ of the current HMMWV fleet. How then do you gauge the future health of this sector of the defense industrial base in light of these significant reductions?

General LENNOX. The Army gauges the future health of the Tactical Wheeled Vehicle sector of the defense industrial base as moderate; the reasons are several. This sector has suffered primarily because of lower production requirements for light/medium/heavy tactical trucks and the cessation of new vehicle production. Disruptions in the sub-tier supply chains for Oshkosh, AM General, and Textron may negatively affect overhaul/rebuild operations at Red River Army Depot. In particular, AM General's potential closing of its assembly facility for the High-Mobility Multipurpose Wheeled Vehicle (HMMWV) may cause significant supply chain disruptions for overhaul/rebuild operations at Red River Army Depot.

The Joint Light Tactical Vehicle (JLTV) is currently in the Technology Development phase of the Defense Acquisition Life Cycle and may alleviate some of the adverse impacts affecting the lightweight tactical vehicle industrial base (i.e., maintaining critical skill sets and critical OEMs/supply chain, etc.).

The Army will continue to assess OEM/critical component suppliers, their MSR levels, obsolescence issues, and cyclic production to identify adverse impacts and develop mitigation strategies to ensure continued life cycle sustainment is maintained.

The Army will continue establishing partnerships to improve the overall health of this sector. For example, ANAD has established key partnerships with BAE Systems for the M113 FOV Overhaul & Conversion, M88A1 Recap, M88 Repair Components, and Test Track Usage. Other partnership examples are: (1) Honeywell for the Tiger Engine, Recuperator, Egyptian AGT 1500 Engine, and PROSE; (2) General Dynamics for the MRAP—Cougar, AIM XXI, M1A2 SEP, Stryker—Reset and Combat & Battle Damage Repair, Fox Upgrade, Test Track Usage, Gunner's Primary Sight, Logistic Support Contract, and TUSK; and (3) Raytheon for the USMC M1 Support.

Mr. BARTLETT. I understand the Army has indicated that it intends to keep a higher amount of M939 5-ton medium tactical vehicles and similar medium weight trucks, to be reset at Army depots. The majority of the M939 fleet was produced in the 1980s and early 1990s. The newest vehicles are being produced as part of the Family of Medium Tactical Vehicle (FMTV) program. Could you describe how you allocate medium tactical vehicles to the Active and Guard/Reserve Components? Which component gets priority for the allocation of FMTVs?

General LENNOX. The Army attempts to address all component allocations equally based on requirements and levels of fill. We have, however, attempted to prioritize allocations over the last five years (FY 8–FY 12) to the Reserve Components with the intent to improve their modernization levels. Over the past five years (excluding National Guard & Reserve Equipment Appropriation) the Reserve Components have received 74% of the ~15,600 FMTV's (47% Army National Guard 27% United States Army Reserve) placed on contract. In addition, once these appropriations are placed on contract, they remain component specific and those allocations are provided to each component to be fielded based on either the Dynamic Army Resourcing Priority List or internal component specific priorities.

Mr. BARTLETT. The need to supply U.S. ground forces with immense volumes of fuel, in particular, imposes significant costs upon U.S. ground forces. Ground vehicles are responsible for approximately one-third of the fuel demand of ground forces engaged in combat. What do the Army and Marine Corps plan to do to reduce this demand as they modernize their vehicle portfolios?

General LENNOX and General PHILLIPS. The U.S. Army takes operational energy costs very seriously and is taking steps in our Fiscal Year 2013 Budget to reduce fuel costs and the logistical footprint that supports our ground vehicles. Both the U.S. Army and the U.S. Marine Corps expect the Joint Light Tactical Vehicle, which will replace a portion of our High Mobility Multi-purpose Wheeled Vehicle (HMMWV) fleets, to be more efficient in terms of payload-ton miles per gallon than the HMMWVs that they replace. In addition, the fleet managers for Heavy and Medium tactical vehicles have developed a detailed fuel efficiency cost model to assist in the evaluation of modifications to those fleets for fuel economy improvements. Moreover, the Army plans to improve our Abrams and Bradley fleets, with a goal to make these fleets about three percent more efficient though the incorporation of more efficient transmissions, cooling systems, alternators, and, in the case of the Abrams, an improved auxiliary power unit. The Army is also investing in next generation technologies to reduce overall fuel consumption by developing onboard vehicle electric power that provides increased electrical power generation, electrifies some vehicle loads and enables export power from the vehicle. Furthermore, the Army is evaluating technologies that provide energy efficiencies (such as lubricants, cooling systems, waste heat recovery, etc) for inclusion in future fleet upgrades.

Mr. BARTLETT. How comfortable are you with the current state of modernization for ground combat and tactical wheeled vehicles? What concerns do you have regarding the industrial base?

General LENNOX and General PHILLIPS. The Army has a relatively young combat vehicle fleet. While these vehicles are relatively young, they suffer from Space, Weight, and Power-Cooling (SWaP–C) deficiencies due to the protection, communication and detection devices we have added to these platforms over the past 10 years. The Army is continuing to invest in Abrams and Bradleys through Engineering Change Proposal (ECP) programs to overcome SWaP–C challenges. We are also investing in the replacement of our Bradley Infantry Fighting Vehicles (IFV) with the Ground Combat Vehicle (GCV) and the replacement of M113 Family of Vehicles (FOV) with a more protected and capable Armored Multi Purpose Vehicle (AMPV). To meet the Army's combat vehicle modernization strategy, the Army fully supports maintaining an industrial base. We are continuing to assess options to sustain crit-

ical industrial base capabilities short of procuring additional Abrams tanks and Bradley's that are not required.

The Sustainment (Transport) portfolio modernization efforts support the Tactical Wheeled Vehicle (TWV) strategic priorities to provide protected mobility for our Soldiers in all missions, and maintain an appropriately sized, high quality TWV fleet. The FY13 budget submission supports Army objectives to fund Joint Light Tactical Vehicle (JLTV) RDT&E requirements to support the Milestone B decision, completes funding for requirements of the Family of Medium Tactical Wheeled Vehicle (FMTV) fleet by the end of FY14 and continues to modernize the Heavy Tactical Wheeled Vehicle fleet through the recapitalization (RECAP) program. Mine Resistant Ambush Protected (MRAP) vehicles will rely on Overseas Contingency Operations (OCO) funds to upgrade until the program transitions to the Army. Additionally, the FY13 budget submission supports modernization of the service life extension program (SLEP) for the Logistics Support Vessels. The Army is aware that the industrial base will be affected through the loss of HMMWV RECAP and FMTV completion. We will continue to buy or RECAP vehicles into the future but at fewer quantities. Procurement will include multiple purchase cycles to reduce cost and allow technology to be integrated into the vehicle during production.

Mr. BARTLETT. What are the plans for the M113 replacement program, the AMPV? Is there an approved timeline and are wheeled vehicles being considered? Does the Analysis of Alternatives include using some of the MRAP fleet?

General LENNOX and General PHILLIPS. The AMPV program seeks to replace the aging Armored Personnel Carrier (M113) fleet within the Heavy Brigade Combat Team (HBCT). Planned vehicle capability is categorized within the framework of five mission roles: General Purpose, Mortar Carrier, Mission Command, Medical Evacuation, and Medical Treatment. On February 9, 2012, the Defense Acquisition Executive (DAE) approved the AMPV Materiel Development Decision (MDD) and authorized the program's entry into the Materiel Solution Analysis (MSA) Phase. The approval of the MDD and the MSA initiates the Analysis of Alternatives (AoA). These approvals were documented in the AMPV Acquisition Decision Memorandum, dated March 16, 2012.

An AoA is currently being conducted in accordance with the Weapon System Acquisition Reform Act of 2009. The Caiman Multi-Terrain Vehicle and the Stryker Double-V Hull vehicle are the two wheeled options being considered as part of the AMPV AoA. The Army anticipates the AoA will be complete in the Fourth Quarter of Fiscal Year 2012. The Army expects the Joint Requirements Oversight Council (JROC) to approve an AMPV requirements document in early Fiscal Year 2013. With a completed AoA and an approved requirement, the Army will be postured to request DAE's approval to release the AMPV Request for Proposal to industry.

Mr. BARTLETT. We appreciate the fact that the decision to cancel the MECV was due to budget constraints. Nonetheless, we recognize the limitations of the HMMWV. What do each of the services plan to do to improve the fuel efficiency and capabilities of their enduring HMMWV fleet?

General LENNOX and General PHILLIPS. The U.S. Army's priority efforts to improve the capability of our Light Tactical Vehicle fleet will be accomplished through investments in the Joint Light Tactical Vehicle. The overall health of the HMMWV fleet is excellent with roughly 100,000 vehicles of the U.S. Army's 160,000 HMMWV fleet having an average age of just under four and a half years due to the new procurement of the Up Armored HMMWVs (UAH) and our Depot Recapitalization programs.

The Army is continuously seeking new opportunities to improve fuel efficiency. Some of these efforts include a lightweight door developed for UAH variants to reduce vehicle weight and fuel consumption. We are considering many options to improve the existing HMMWV fleet with the $70 million added by the U.S. Congress in the Fiscal Year 2012 appropriation. We will continue to explore opportunities to identify better components and modernization through spares whenever feasible.

Mr. BARTLETT. Regarding the industrial base, the current hope seems to be that foreign military sales can compensate at least in part for decreased U.S. demand. As often is the case there remains significant risk with the foreign military sales market. Is there a risk that loss of design and manufacturing capability and capacity in the industrial base could undermine the idea of "reversibility" emphasized by Secretary Panetta? If so, which areas of the industrial base are the greatest areas of concern? For example, at the vendor base level both the Army and the Marine Corps are dependent upon one Transmission Company for many of their platforms. If based on current funding profiles this company were to close down or leave the defense industry what would be the impact to current and future Army and Marine Corps vehicle programs?

General PHILLIPS. The risks that loss of design and manufacturing capability and capacity in the industrial base could undermine the idea of "reversibility" are minimal. The Army is ensuring that industrial base reversibility is carefully assessed and managed by: (1) continuing on-going efforts to determine the health of Industrial Base sectors critical to support Army and Joint Services programs; (2) identifying and assessing current status of organic and commercial critical manufacturing and maintenance capabilities required to meet future Army contingency Reversibility & Expansibility requirements; and (3) identifying supply chain issues in design, manufacturing and sustainment that can present risk to critical Army capabilities.

The impact of a sole-source, commercial sector supplier leaving the Defense industry could be significant; however, as indicated above, the Army is taking measures to help ensure that the risk associated with such an occurrence would be minimal.

In the case of a single point failure in the transmission sector, the Army is currently working with the commercial sector of the industrial base to develop and implement mitigation plans to resolve this issue.

Mr. BARTLETT. The National Defense Authorization Act for Fiscal Year 2012 required that the GAO conduct a report on the health of the tactical wheeled vehicle industrial base, and upon further review of the tactical wheeled vehicle (TWV) budget accounts in the FY 2013 budget request, this report could not be more relevant. All new production will cease beginning in FY 2013 and FY 2014. The only major acquisition effort by DOD in the tactical wheeled vehicle sector for the foreseeable few years will be JLTV, which is designed to replace roughly ⅓ of the current HMMWV fleet. How then do you gauge the future health of this sector of the defense industrial base in light of these significant reductions?

General PHILLIPS. Shrinking budgets combined with the healthy state of readiness within the tactical vehicle fleet necessitate a reduction in the number and size of new orders for tactical wheeled vehicles over the next few years. Although demand for military vehicles will decline, commercial market heavy-duty truck sales are expected to continue their recovery from the past recession. The supply chains for on-road commercial trucks and off-road equipment are important because they provide vehicles and components to the military as well. Nevertheless, the Department of Defense will monitor the situation and take actions as necessary to preserve military-unique, single- or sole-source capabilities.

Mr. BARTLETT. Could you clarify the request for $271.0 million for HMMWV recapitalization in the Overseas Contingency Operations (OCO) account? Will this work be intended for Army depots or do you plan to compete this effort with private vendors?

General PHILLIPS. The $271M OCO request is intended to recapitalize approximately 2,128 Up-Armored HMMWV (UAH) returning from theater. The work is a continuation of an ongoing U.S. Army depot effort funded with Fiscal Year 2010 through 2012 dollars and serves to ramp down the workload. This recapitalization is consistent with the U.S. Army's Tactical Wheeled Vehicle Strategy and will serve to renew the service life for the remaining UAHs from theater that will remain in the inventory. The U.S. Army will not compete this effort which is currently ongoing.

Mr. BARTLETT. Last year the Marine Corps was aggressively pursuing an Up-Armor HMMWV survivability initiative program; a major component of this program was the structural blast channel design program. I understand the Marine Corps is no longer resourcing an Up-Armor HMMWV survivability program. Please walk us through your recapitalization and modernization strategy for the Up-Armor HMMWV fleet. What is the status of the structural blast channel design program?

General MILLS and General KELLEY. The USMC and our Army partners are aligned regarding JLTV as the preferred light fleet investment alternative. Based on the lessons learned and extensive analysis conducted as part of JLTVs 27 month Technology Demonstration phase and experimentation with novel HMMWV survivability designs, we know JLTV will provide superior force protection, mobility, transportability, and reliability compared to alternatives. Accordingly, by FY22, the Marine Corps will replace approximately ⅓ of our legacy HMMWV fleet with JLTVs. We intend to sustain our remaining legacy HMMWVs through a Sustainment Modification line that will provide safety and mobility related component level upgrades, estimated to cost approximately $60,000 per vehicle. In combination with our existing depot level maintenance program, the HMMWV Sustainment Modification line will keep our legacy HMMWV fleet viable through FY30 timeframe.

The Marine Corps does not have a structural blast channel (SBC) program and is not committing funding to explore its capabilities. As discussed above, our experi-

mentation testing conducted during Spring/Summer of 2011 informed the Marine Corps regarding SBC capabilities. We understand the physics and impacts the SBC, or "chimney," has on vehicle design, performance, survivability, and cost.

According to Limited User Testing using Marines, the 12" x 12" chimney located in the mid section of the modified HMMWV had negative impacts on crew visibility, communication, and immediate action drill response. Due to the increased vehicle weight to improve survivability, off road mobility and performance were severely degraded. Survivability improvements were due to fully integrated design, energy dissipating floors and seats, and structural rigidity as opposed to the chimney. Finally, in addition to a $70k-$100k for a SBC cab, a properly integrated vehicle would include a modified HMMWV frame, upgraded suspension, power train and brake modifications to account for a GVW over 16,000 lbs. $240k, or the base price for a JLTV, is the estimated cost for these modifications. Accordingly, the USMC and our Army partners agree that JLTV is the preferred Light Vehicle investment alternative.

Mr. BARTLETT. Regarding the industrial base, the current hope seems to be that foreign military sales can compensate at least in part for decreased U.S. demand. As often is the case there remains significant risk with the foreign military sales market. Is there a risk that loss of design and manufacturing capability and capacity in the industrial base could undermine the idea of "reversibility" emphasized by Secretary Panetta? If so, which areas of the industrial base are the greatest areas of concern? For example, at the vendor base level both the Army and the Marine Corps are dependent upon one Transmission Company for many of their platforms. If based on current funding profiles this company were to close down or leave the defense industry what would be the impact to current and future Army and Marine Corps vehicle programs?

General MILLS, General KELLEY, and Mr. TAYLOR. Marine Corps Programs do not impact the defense industrial base as much as the larger joint programs in which we are a small participant. Marine Corps programs do have an impact on many small business that perform work tailored toward more specific Marine Corps requirements. As with any level of budget reduction in our investment accounts, the new defense strategy and our associated reduced funding and force structure mean a smaller demand, proportionately, for the small business. We have tried very hard to work with our industry partners, demonstrated by our planned MV–22 MYP and our depots, during these challenging times.

In the case of the transmission manufacturer, the Marine Corps does its best to plan for possible major sub component obsolescence or a vendor that goes out of business in order to ensure parts support for our equipment during the sustainment phase. By procuring our vehicles using performance-based specifications vice rigid government military specifications, industry has greater flexibility for cost-effective technology insertion in the design and production of sub components. There will always be a big impact on an end item such as a truck if a major component like a transmission is no longer available. A replacement component which meets the performance standards has to be found, tested and eventually procured to replace the component that is no longer available.

Mr. BARTLETT. The need to supply U.S. ground forces with immense volumes of fuel, in particular, imposes significant costs upon U.S. ground forces. Ground vehicles are responsible for approximately one-third of the fuel demand of ground forces engaged in combat. What do the Army and Marine Corps plan to do to reduce this demand as they modernize their vehicle portfolios?

General MILLS, General KELLEY, and Mr. TAYLOR. The limited new vehicle platform program starts under way in the Marine Corps each specifically address the need for improved fuel efficiency, calling out in development documentation unprecedented demands for improvement, the exploration of hybrid and emerging technologies, and the consideration of lighter component materials.

Toward legacy fleets, multiple efforts are under way to improve platform performance. In conjunction with the Office of Naval Research, the Marine Corps is conducting an examination of the MTVR 7 ton truck (medium fleet), with the goal of improving fuel efficiency a minimum of 15%, constrained by a fiscal limitation per platform. It is hoped this improvement can be realized through the insertion of existing technologies within the transmission, drive train, and engine idle. Further the incorporation of an Auxiliary Power Unit is being tested, which would be used to energize several electronic components and systems on the truck while it is stationary, without requiring the engine to be idling and burning fuel. Based on the success of this effort, the finding would be applied to the LVSR (heavy fleet) vehicles. Toward the HMMWV (light fleet), while undergoing modifications to return

performance (payload/mobility) technology inserts will be examined to likewise improve HMMWV fuel efficiency.

To further impact a reduction in fuel demand, modernization of tactical trailers is under way, which will sustain the throughput requirement of cargo and supplies, while reducing the number of vehicle platforms required to provide the needed capacity. The MTVR cargo trailer will nearly double the amount of cargo a single MTVR can transport, and the PLS trailer will do the same for the LVSR, reducing the number of fuel burning platforms while moving the same volume of cargo.

The Onboard Vehicle Power System is being tested on the MTVR and HMMWV. This system provides a vehicle platform with essentially an integrated power generation capability, where the vehicle itself will provide exportable power, and in doing so eliminate a standalone generator and utility trailer, freeing the vehicle and its towing capacity to transport more cargo, while eliminating an additional fuel-burning piece of equipment.

Additionally, the extensive rebalancing of legacy fossil-fuel-burning generators and the introduction of an improved fuel-efficient generator family across the Marine Corps, coupled with the expanding introduction of renewable power generation systems in multiple roles, will tangibly reduce the overall number of these systems and amount of fossil fuel required to provide the required energy in the field. Though this action will not directly impact the fuel efficiency of transportation platforms, it will measureably decrease the amount of equipment requiring not only transportation, but refueled as well, and in doing so, reduce ground resupply requirements and overall force fossil-fuel demands.

The Marine Corps recognizes that the service enterprise solution to improved fuel efficiency rests not in a singular vehicle, but a culmination of legacy and future platform performance improvements, changes in tactics and procedures, and capitalization upon emerging technologies, as well as the education of current and future Marines.

Mr. BARTLETT. How comfortable are you with the current state of modernization for ground combat and tactical wheeled vehicles? What concerns do you have regarding the industrial base?

General MILLS, General KELLEY, and Mr. TAYLOR. The Marine Corps is beginning a series of long-term modernization efforts focused on replacement of the aging Amphibious Assault Vehicle (AAV) and a portion of the High Mobility Multi-Wheeled Vehicles (HMMWV). The Marine Corps' single tactical wheeled vehicle modernization program is the Joint Light Tactical Vehicle (JLTV). The JLTV's requirements are mature and stable. The program will begin the Engineering Manufacturing and Development phase this spring. The JLTV represents an effective collaboration between the Marine Corps and the Army to modernize a portion of the light tactical vehicle fleet. Our priority is to replace critical weapons, Command and Control, and utility variants of the HMMWV in order to restore payload and mobility to the fleet which has been degraded by ever-increasing armor loads and power consumption demands. The technology development phase of this program which is now complete demonstrated a strong and competitive U.S. industrial base well capable of developing and manufacturing a vehicle to meet our expeditionary requirements. We have sequenced procurement of the JLTV ahead of our AAV replacements because of the maturity of the program and our ability to complete the majority of procurement before we begin procuring the AAV's replacement.

Marine Corps modernization of combat vehicles will focus on infantry armored mobility to support both amphibious and landward combat missions. The modernization of our amphibious combat vehicle capability, currently the AAV, is critical to our ability to meet future operational demands. Our current plan calls for the replacement of the AAV with two complementary platforms to meet our expeditionary armored mobility requirements for Marine infantry forces. The initiatives are called Amphibious Combat Vehicle (ACV) and Marine Personnel Carrier (MPC). The ACV is intended to meet, at a minimum, basic amphibious operational capabilities and capacities through a self-deploying amphibious tracked vehicle and provide effective follow-on land mobility for a portion of infantry forces. The MPC, a multi-wheeled armored personnel carrier, is a complementary capability. It will be capable of entry into theater via Navy-provided connectors such as the LCAC as well as via strategic airlift and secured ports. Its foundational requirements will drive design (largely available on the current market) that is more suited to extended landward mobility in high-speed maneuver operations as well as in much more constrained maneuver but IED-threat-prone environments such as we faced in the later stages of operations in Iraq and in Afghanistan. We are continuing to assess the required capabilities, capacities of each platform and the affordability of any portfolio options. Through a disciplined MPC technology development effort we have a solid understanding of the industrial capacity to meet our requirements and do not have any

concerns. Similarly, our cost-informed systems engineering work on ACV requirements, together with industry interaction gives us confidence that the U.S. industrial base can support the unique requirements associated with the ACV.

Mr. BARTLETT. The National Defense Authorization Act for Fiscal Year 2012 required that the GAO conduct a report on the health of the tactical wheeled vehicle industrial base, and upon further review of the tactical wheeled vehicle (TWV) budget accounts in the FY 2013 budget request, this report could not be more relevant. All new production will cease beginning in FY 2013 and FY 2014. The only major acquisition effort by DOD in the tactical wheeled vehicle sector for the foreseeable few years will be JLTV, which is designed to replace roughly ⅓ of the current HMMWV fleet. How then do you gauge the future health of this sector of the defense industrial base in light of these significant reductions?

General MILLS, General KELLEY, and Mr. TAYLOR. The future health of the tactical wheeled vehicle industry will face some challenges in the coming years due to the significant reductions in new vehicle procurement by the Department of Defense. As identified, the JLTV program is the only new truck procurement on the horizon for DOD which promises intense competition amongst the vendors during both the EMD and production phases, and should translate into good production prices for the Army and Marine Corps. The Marine Corps' HMMWV Sustainment Modification effort will provide some rebuild work as well as the procurement of automotive kits in order to modernize and prolong the life of the fleet.

The prospects for subcontractors who provide the major subsystems for tactical wheeled vehicles should remain robust in the future as DOD will rely on these vendors to supply spares, and improved subsystems for modifications, SLEP and IROAN efforts. Additionally, the majority of these components are also used on commercial vehicles, therefore their business is not tied solely to the Defense Department. Those vendors and suppliers with the flexibility to serve both military and commercial customer bases are perhaps the best suited to thrive in the current acquisition climate. In contrast, those vendors and suppliers who focus solely on the military are the most at risk.

Mr. BARTLETT. In today's austere budget environment, how can the Marine Corps afford to procure the Joint Light Tactical Vehicle, the Amphibious Combat Vehicle, and Marine Personnel Carrier programs?

General MILLS and Mr. TAYLOR. Combat and tactical vehicle modernization is critical to maintaining responsive and relevant expeditionary and amphibious combat forces in the future. We have sequenced the mature Joint Light Tactical Vehicle (JLTV) program ahead of our amphibious vehicle modernization programs in order to reduce future procurement bow waves. Similarly, we have accelerated some ground programs so that procurement will be completed before we begin procurement of the ACV and MPC. We continue to conduct detailed cost-to-capability assessments and estimates in order to understand and to control program costs at the requirements level. We believe that investment in these important capabilities can be managed as an increased percentage of our future procurement account for a limited period of time without incurring significant risk in other warfighting areas.

QUESTION SUBMITTED BY MR. BARTLETT AND MR. SHUSTER

Mr. BARTLETT and Mr. SHUSTER. As the Army and the Marine Corps have ended combat operations in Iraq and will be looking to do so in Afghanistan in 2014, we will inevitably be left with the decision of what equipment will be donated or sold to the Afghan Government and what we bring home. Part of the most significant investment the Congress has made over the past years of combat operations is in the development of the Mine-Resistant Ambush Protected (MRAP) vehicle fleet. What are your Services' plans to sustain this fleet? Will they simply be passed into a new DOD "boneyard," and has the DOD conducted any internal analysis for sustaining or consolidating the separate supply chains that support each MRAP variant?

General LENNOX and General PHILLIPS. The initial task was to build and field MRAPs as fast as possible to address the Improvised Explosive Devices threat. Logistic sustainment, while important, was a secondary consideration. As a result, the DOD fielded vehicles from six manufacturers producing over 26 variants, which makes sustainment a challenge. However:

(1) The DOD plans upgrades to the MRAP capability in an effort to bring the earlier variants up to the latest/common configurations. This variant consolidation strategy, coupled with the Army's plan to divest about 1,200 MRAP vehicles with very low density and/or considered uneconomical to repair, will reduce the number of variants from 26-plus to 8 and the number of manufacturers will decline from

6 to 4, resulting in simplified and improved sustainment and training. Divested MRAPs not utilized by other United States Government entities could be made available to coalition partners via donation, loan, and/or Foreign Military Sales.

(2) The Army has conducted an extensive analysis regarding vehicle quantities, mission roles and sustainment for enduring force MRAPs. As Army MRAPs are no longer required in theater, the remaining quantity will be reset to a Full Mission Standard. The majority (about 60 percent) will be placed in augmentation sets (long-term storage) for use in future contingency operations, thereby significantly reducing the sustainment costs associated with parts and fuel. Sustainment cost efficiencies will also result from retrograding current MRAP repair parts in theater, when prudent to do so, to sustain enduring force MRAPs in peacetime.

(3) The remaining (about 40 percent) of the Army's MRAPs will be allocated on the Tables Of Equipment of specific units (Sustainment, Engineer, Explosive Ordnance Disposal, and the various Institutional Schools) to support unique training efforts.

General MILLS, General KELLEY, and Mr. TAYLOR. The Marine Corps has received 4045 MRAP vehicles. We plan to retain approximately 2600 MRAPs for their post-OEF role, specifically toward route clearance, combat engineer, EOD, and protected mobility based on the threat faced. Their value is unprecedented and no other asset presently available can match their performance toward protecting Marines in an environment similar to the one currently encountered in OEF.

QUESTION SUBMITTED BY MR. LOBIONDO AND MR. ROONEY

Mr. LOBIONDO and Mr. ROONEY. Of the Army's $79.4 million request for Abrams Engineering Change Proposals, does that amount include specific funding for Abrams Engine Technology Insertion to address fuel efficiency and improved reliability?

General LENNOX and General PHILLIPS. No, not at this time. However, the U.S. Army is considering an Engineering Change Proposal (ECP) effort beyond the current Abrams ECP I program. This power-train improvement ECP effort would potentially include improvements to both the engine and transmission focusing on fuel efficiency, reliability, durability, and maintainability. Initial analysis indicates that these improvements could result in a 14 percent fuel savings over a combat day. Specific engineering efforts would focus on designing a new dual centrifugal compressor that will be integrated within the existing Total InteGrated Engine Revitalization Allison Gas Turbine-1500, or TIGER AGT 1500, engine and changes to the transmission involving a two-stage main oil pump, evacuated torque converter, and modulated cooling fans. The engine/transmission effort will take approximately 5 years from project initiation to delivery of the prototype engines/transmissions available for test. Requirements and funding approval for this potential effort is subject to Army priorities and funding availability.

QUESTION SUBMITTED BY MR. TURNER

Mr. TURNER. I would like to spend some time exploring this idea of "reversibility" and the strange notion that we can just turn fundamental national security programs off and then turn them back on without assuming an unacceptable level of risk and incurring tremendous cost. The President's Strategic Guidance states, "the concept of 'reversibility'—including the vectors on which we place our industrial base, our people, our active-reserve component balance, our posture, and our partnership emphasis—is a key part of our decision calculus." Secretary Panetta explained that this "means reexamining the mix of elements in the active and reserve components; it means maintaining a strong National Guard and Reserve; it means retaining a healthy cadre of experienced NCOs [non-commissioned officers] and mid-grade officers, and preserving the health and viability of the nation's defense industrial base." So, please explain to me this concept. If a particular parts manufacturer goes out of business and they were the only producer of that part—how does "reversibility" take this into account? In some cases, depending on the complexity of the part, it can take over a year for a prime contractor to get another vendor qualified? What is the risk of increasing our vulnerability from an industrial base perspective where we will be forcing our prime contractors to depend on foreign sources to supply critical parts? How does shutting down this production line preserve "the health and viability of the nation's defense industrial base"?

General LENNOX. To keep the concept of reversibility a viable one, the Army continually works with the suppliers in the commercial industrial base to reduce the

chances of single points of failure. Reductions in the nation's forces will be structured and paced in a way to allow the Army to surge, regenerate, and mobilize the capabilities and materiel needed for any future contingency. To build in the ability to quickly mobilize requires that the Army continue to re-examine the mix of elements in its forces and work to preserve the health and viability of the nation's Defense Industrial Base.

Related strategies to support reversibility include a Department of Defense-wide effort to assess the health of and risk to the industrial base on a Sector-by-Sector, Tier-by-Tier (S2T2) basis. The S2T2 analysis seeks to identify critical areas that could constitute single points of failure and develop strategies to mitigate the risks identified. The Army is also incorporating mitigation strategies involving the Foreign Military Sales (FMS) program to address identified risks. The FMS program allows our vendors to diversify and balance military with commercial business so they can weather the lean years and be in position to compete when we start investing in the next generation of products or recapitalize current platforms. FMS sales also help sustain highly skilled jobs in the defense industrial base by maintaining and extending production lines, thereby strengthening reversibility. The Army would not recommend shutting down a production line if shutdown would jeopardize the Army's ability to meet surge requirements.

QUESTION SUBMITTED BY MR. SHUSTER

Mr. SHUSTER. Have Remote Weapons Systems been given a thorough capabilities review as a possible subcomponent for future combat vehicles such as the JLTV? What is the Army and Marines opinion on the possibility of utilizing remote weapons systems on future ground vehicle programs and could you talk about the benefits of utilizing weapons platforms like the RWS or CROW?

General LENNOX and General PHILLIPS. The RWS gives the Soldier the benefit of protection under armor while surveying, acquiring and engaging the enemy, both from stationary positions and while on the move RWS capability enhance combat operations in several ways. The day and thermal optics on the RWS provide a significant improvement over current weapon optics. The laser range finder, along with the ballistic fire control, provide the ability to put first burst on target with a high probability of hit resulting in faster, more effective engagements, and a reduction in the expenditure of ammunition, all while the Soldier remains protected under armor.

The JLTV program has a requirement for a RWS capability within the Heavy Gun Carrier Variant. The program expects to demonstrate the initial integration of their capability during the Engineering and Manufacturing Development phase during Fiscal Year 2013 (FY13) and FY14 in conjunction with Developmental Testing and Limited User Testing. The JLTV program will continue the evaluation of the RWS/CROWS integration within the Production Deployment phase as part of Production Qualification Testing and Multiservice Operational Testing and Evaluation during FY16 and FY17.

RWS has been successfully integrated on existing vehicles. The RWS/CROWS have been mounted on several thousand Mine Resistant Ambush Protected vehicles, half of the Stryker vehicles (5 of 10 variants), M1A1 Abrams tanks, and numerous other vehicles in support of operations in Iraq and Afghanistan. This combat proven capability has been useful to units exposed to improvised explosive devices, snipers and firefights with the enemy.

The Army has an approved Basis of Issue Plan committed to permanently mounting RWS on thousands of vehicles for the future force.

General MILLS, General KELLEY, and Mr. TAYLOR. CROWS is in use by the U.S. Army and a limited number (five) were fielded to Marines in Afghanistan as part of proof of concept and field user evaluation. CROWS represents the current generation of remotely operated weapon stations in what is likely to be a growth industry. As such, it is one system that the Marine Corps is considering for future applications on any of several combat and tactical vehicles in our inventory. For JLTV specifically, we do not have current plans to procure CROWS or any other remote weapon station due to the lack of warfighter demand and competing investment priorities. However, during JLTV requirements and technical development, we planned for and have designed in the weight, space and power requirements to enable a retrofit of remote weapon stations if necessary.

QUESTION SUBMITTED BY MS. TSONGAS

Ms. TSONGAS. Army leadership has acknowledged publicly that they are unsure if the Modernized Expanded Capacity Vehicle (MECV) program would be able to achieve the required levels of survivability and mobility necessary against today's threats. The Army leadership has also acknowledged that the requirement to improve the HMMWV's survivability and mobility still exists and that the reason for killing the program was a matter of affordability. Congress provided the Army $20M of FY12 RDT&E funding for you to conduct a competitive assessment of potential solutions for your MECV program. As a part of the Army's risk mitigation plan for the Light Wheeled Vehicle Fleet, can you explain to me why wouldn't it make sense to complete the MECV competitive assessment so that the Army can make informed decisions as necessary in the future?

General LENNOX and General PHILLIPS. Based on the Army and Marine Corps' commitment to Joint Light Tactical Vehicle and defense department fiscal constraints, the Army could not afford to initiate the MECV program. Additionally, the Army felt that it would not be in the best interest of industry to participate in a minimally funded research and development effort with no profitable procurement period.

QUESTIONS SUBMITTED BY MR. OWENS

Mr. OWENS. General Lennox, for FY 2013, the Army is requesting $116 million in RDT&E funding for the Joint Tactical Radio System (JTRS) Handheld, Manpack and Small Form Fit (HMS) to essentially complete HMS radio development and test and evaluation. This is significantly more than the $12.5 the Army projected would be necessary to close out the program this year. Can you explain the discrepancy between these figures, and give me your assessment of whether similar funding will be requested in future fiscal years?

General LENNOX. The FY13 HMS RDT&E ($116M) includes a FY13 increases to fund HMS development and testing caused by delays in MUOS waveform delivery and satellite on orbit capability ($45.0M); and funding to update the HMS Manpack to the Department of Defense Public Key Infrastructure standard ($10.0M); baseline program funding ($61M). The program is not expecting to request similar funding in future fiscal years unless requirements change.

Mr. OWENS. General Lennox, can you give us your assessment of whether the HMS product is meeting expectations in the Network Integration Evaluation, and is the program currently experiencing cost overruns or is it on track with the fiscal targets originally set forward?

General LENNOX. The HMS program is meeting expectations as defined in the Capability Production Documents for HMS Manpack and Rifleman Radios. These documents define the Joint Service requirements for the radios in the HMS program. The Rifleman Radio has successfully completed its Initial Operational Test & Evaluation and the HMS Manpack Radio is on track to conduct a Multi-Service Operational Test & Evaluation in May 2012. The program is executing to the Acquisition Program Baseline established at the Milestone C in May 2011. However, a funding reduction of $60M to the Fiscal Year 2012 Research, Development, Testing and Evaluation (RDT&E) funding and delays in Mobile User Objective System (MUOS) waveform have affected HMS cost baselines. The overall impact of these actions to the funding baseline is still being assessed. The Product Manager is exploring caps on the cost of the current RDT&E contract and/or reducing the number of Waveforms ported (based on Service requirements) in order to execute within current funding levels.

QUESTIONS SUBMITTED BY MR. ROONEY

Mr. ROONEY. Can you please describe the Army/Marine Corps plan for runflat tire systems procurement for the JLTV and GCV programs?

General LENNOX and General PHILLIPS. The current JLTV Capability Development Document kit allocation table calls for two percent of the U.S. Army's planned vehicles to receive run-flat kits, while the U.S. Marine Corps currently does not plan to purchase these kits. The GCV technology development effort is on fully-tracked vehicle solutions for which runflat standards do not apply.

Mr. ROONEY. Can you please provide the Committee with Army/Marine Corps policy on minimum standards for runflat tire systems for the JLTV and GCV programs?

General LENNOX and General PHILLIPS. The JLTV specifications require all JLTV's to be capable of accepting run-flat tire kits. The kit must be able to be applied with two man-hours of effort or less and the vehicle must be capable of traveling 18 miles at 20 miles per hour with complete loss of pressure in any two tires. These requirements can be found in the JLTV Purchase Description document v.3.0.2 under paragraph 3.4.5.8.10 Run-Flat Kit. The current Capability Development Document kit allocation table calls for two percent of the U.S. Army JLTVs to receive run-flat kits, while the U.S. Marine Corps currently does not plan to purchase these kits. The GCV technology development effort is based on fully-tracked vehicle solutions for which runflat standards do not apply.

Mr. ROONEY. Can you please describe the Army/Marine Corps plan for runflat tire systems procurement for the JLTV and GCV programs?

General MILLS, General KELLEY, and Mr. TAYLOR. The Marine Corps procurement strategy for runflat capability on the JLTV platform is to contract for runflat kits as an option on the production contract depending upon the results from EMD phase testing. If selected for use on the JLTV, the kits will be fully provisioned and available for procurement by individual units based on the unit commander's discretion and operational environment. This mirrors the strategy of other recently procured Marine Corps tactical wheeled vehicles such as the Medium Tactical Vehicle Replacement (MTVR) and Logistics Vehicle System Replacement (LVSR).

Mr. ROONEY. Can you please provide the Committee with Army/Marine Corps policy on minimum standards for runflat tire systems for the JLTV and GCV programs?

General MILLS, General KELLEY, and Mr. TAYLOR. The Marine Corps has no policy for minimum standards for run flat tire systems. Each vehicle is evaluated based on its mission profile with specifications to meet the unique requirements of that vehicle.

QUESTION SUBMITTED BY MR. CRITZ

Mr. CRITZ. As a survivability enabler, has the Marine Corps been successful in fielding the Improved Weapons' Loader Station (ILWS) for the Marine Corps' armor community?

General MILLS and General KELLEY. The Improved Loader's Weapon Station has not been fielded. It is currently on schedule for fielding to begin in the first quarter of FY13.

QUESTIONS SUBMITTED BY MRS. ROBY

Mrs. ROBY. Within the U.S. Army, have you assigned a program office to lead the effort to develop a universal controller? It appears that the equities/responsibilities are spread across several PEOs since we're dealing with small UAVs, UGVs and UGSs.

General LENNOX and General PHILLIPS. The universal controller, known as the Army "common controller," was originally established as part of the Future Combat Systems (FCS) Early-Infantry Brigade Combat Team (E–IBCT) effort under Program Executive Office, Integration (PEO–I). Following the cancellation of FCS in 2009, the programs under the E–IBCT were transferred from PEO–I to other Army PEO's. In Fiscal Year 2011, reprioritization of Army funds resulted in the disestablishment of the common controller program. Funding ceased for this program in FY11 and the program office was disestablished. Currently, the Army is re-evaluating the requirement for a common controller, which will guide the future plan for this type of system.

Mrs. ROBY. How long do you think it will take the USMC and the Army to develop a joint program for a soldier wearable, universal controller?

General LENNOX and General PHILLIPS. Currently, the Army is re-evaluating the requirement for a common controller, which will guide the future plan for this kind of system.

Mrs. ROBY. Recently, the Army published its list of critical research and development priorities—and one of the top priorities remains reducing soldier load. How do you plan to address and reduce the combat load?

General LENNOX and General PHILLIPS. Army Science and Technology (S&T) has commenced a new collaborative effort to significantly reduce the weight and volume of all items that individual Soldiers in a Small Unit must physically carry to accomplish their missions, while maintaining or increasing the ability of the Unit to perform tasks. This Technology Enabled Capability Demonstration (TECD) effort was

initiated in FY12 with planned transitions of mature technologies to equipment developed for Soldiers.

The TECD will demonstrate capabilities that reduce weight carried and improve operational mission effectiveness through a combination of materiel weight reduction, load management tools, off-loading, tactical resupply, and availability of load management aid tools. The technologies will be evaluated against the current baseline based on Afghanistan-like engagement conditions. The overall objective goal for SU is that no Solider carries more than 30 percent of their body weight. Specific program objectives include: reducing weight of weapons and ammunition, power and energy, clothing and equipment; developing Load Planning Tool & Decision Aids for SU commanders; evaluating and integrating off-loading and resupply-delivery technologies suitable for SU/squads in dismounted operations; and increasing scientific understanding of load on mission effectiveness (physical and cognitive effects) and long-term health effects.

Mrs. ROBY. To this end, today, both Services are operating dozens of squad level unmanned systems from Class 1 Unmanned Aerial Vehicles (UAV) to Unmanned Ground Vehicles (UGVs) and Unattended Ground Sensors (UGS), each with a proprietary controller. These systems have demonstrated over and over again their benefit by increasing situational awareness and saving lives. This being said, there are huge weight costs due to redundancies along with logistical and operational costs associated with maintaining many different control systems for these lifesavers.

The Army made great strides developing a Universal Common Ground Station for larger UAVs (Tier 2 and Tier 3). And, today this Universal Ground Control Station controls multiple unmanned aircraft systems for both the Army and USMC. It seems the next, logical step is to deploy a lightweight, wearable universal control system to operate the smaller UAVs, UGVs and UGSs, as well, as to receive remote video as a common architecture from other intelligence, surveillance, and reconnaissance assets in the area. In addition to reducing the operational/logistical burden on the force as a whole, providing control of this capability to the warfighters who are on the ground and engaged in the missions undoubtedly would reduce their load and increase their force protection through enhanced situational awareness while increasing the effectiveness of the unit.

I understand that the Army and the Marine Corps (through the Rapid Equipping Force (REF) and the USMC Warfighting Lab in conjunction with Naval Surface Warfare Center Dahlgren (MSWCDL)) are evaluating such lightweight systems (~10 lbs) with favorable results in Afghanistan that enable the squad by providing this capability to them for mission use.

Where do we stand in developing a joint acquisition program to broadly provide our warfighters with this capability?

General LENNOX and General PHILLIPS. The Army and the Marine Corps are jointly developing the Tactical Robotic Controller (TRC) Capability Development Document, which could provide a Warfighter wearable, universal controller for Battalion and below Unmanned Air/Ground Systems. Current systems in this category include: the Rucksack Portable UAS (Raven, Wasp, and Puma), Small UGV, Man Transportable Robotic System, Engineer Squad Robot (ESR), Micro UGV, and Squad Multi-Equipment Transport. The Army/Marine Corps Tactical Robotics Controller Capabilities Development Document draft will enter staffing in August 2012. A Materiel Development Decision to establish the TRC Joint Program of Record is expected in 4QFY12. A decision to assign a program office has not yet been made by the Army.

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Mrs. ROBY. How long do you think it will take the USMC and the Army to develop a joint program for a soldier-wearable, universal controller?

General MILLS, General KELLEY, and Mr. TAYLOR. We plan to field this capability in the FY–19 timeframe. The ability to field this system in a timely manner will largely depend on the funding available for completion of the development and procurement of systems in sufficient quantities. We, in collaboration with the Army and Navy, are developing requirements for a Tactical Robotic Controller (TRC) capability. The TRC will provide ground forces at the Battalion level and below with a single device that will effectively control all Group I Unmanned Aerial Systems (UAS), Unmanned Ground Systems (UGS), and Unattended Ground Sensors. This capability will be in the 8–10 lb range and will be wearable or have the ability to be attached to existing equipment worn on the Marine or Soldier. The TRC is envisioned to replace all of the individual proprietary Operator Control Units that are currently required to operate these systems. The Marine Corps Warfighting Lab developed a prototype Tactical Robotic Controller (TRC) architecture and hardware that has been tested in USMC Limited Objective Experiments (LOE) for the last three years. This prototype hardware has also been delivered as the controller for several systems that are undergoing Operational Assessments in theater. The prototype TRC hardware has also undergone limited testing as a wearable Remote Video Terminal and is assessed to be at a Technology Readiness Level of 7.

Mrs. ROBY. Recently, the Army published its list of critical research and development priorities—and one of the top priorities remains reducing soldier load. How do you plan to address and reduce the combat load?

General MILLS, General KELLEY, and Mr. TAYLOR. The Marine Corps is actively engaged with our Army counterparts at various levels to reduce the combat load on our Marines. We also seek and have partnered with our international and coalition partners in order to share the information we have learned and to harvest and implement the good ideas they may have. We are committed to using every resource available in order to integrate the squad as a system and manage the weight, ergonomic, thermal and volumetric burdens of the Marine.

The Marine Corps has established a Marine Expeditionary Rifle Squad (MERS) integration facility called Gruntworks to characterize how components of a Marine's equipment influence combat performance in terms of weight, bulk and flexibility. Gruntworks' activities seek to better integrate fielded equipment and soon-to-be fielded equipment on the individual Marine in a more ergonomic way. This effort also provides a metric for mobility in various equipment configurations for the evaluation of future systems.

MERS does not procure equipment but works instead with all of the Program Managers within Marine Corps Systems Command to ensure individual items are integrated into an effective combat fighting capability with a balanced redundancy within the squad. MERS is unique in that its performance metrics are not cost, schedule and performance, but rather the effectiveness of the Marine squad, user acceptance of the equipment provided and the increase in mobility of Marines in combat.

We plan to pursue a fully integrated infantry system of equipment that will be driven by an overarching requirement. This requirement will drive integration of capabilities more effectively at the requirements level instead of trying to engineer it during materiel development. The first increment of this capability will seek to better integrate the capabilities being fielded now or in the near future; the second increment will leverage emerging technologies to define attributes for the baseline load bearing, protection, and power systems and will require that all additional capabilities be fully integrated with those baseline systems. This will reduce or eliminate the need for additional capabilities to have their own power, cabling, and carrying pouches, thereby reducing the bulk and weight of the requisite combat load. The Army is taking a similar approach and the requirements and acquisition communities in both Services are sharing their ideas to collaborate where their interests coincide.

Mrs. ROBY. To this end, today, both Services are operating dozens of squad level unmanned systems from Class 1 Unmanned Aerial Vehicles (UAV) to Unmanned Ground Vehicles (UGVs) and Unattended Ground Sensors (UGS), each with a proprietary controller. These systems have demonstrated over and over again their benefit by increasing situational awareness and saving lives. This being said, there are huge weight costs due to redundancies along with logistical and operational costs associated with maintaining many different control systems for these lifesavers.

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