

**HEARING TO RECEIVE TESTIMONY ON ARMY
MODERNIZATION AND MANAGEMENT OF
THE FUTURE COMBAT SYSTEMS PROGRAM
IN REVIEW OF THE DEFENSE AUTHORIZA-
TION REQUEST FOR FISCAL YEAR 2010 AND
THE FUTURE YEARS DEFENSE PROGRAM**

TUESDAY, JUNE 16, 2009

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

The subcommittee met, pursuant to notice, at 2:34 p.m. in room SR-222, Russell Senate Office Building, Senator Joseph I. Lieberman (chairman of the subcommittee) presiding.

Committee members present: Senators Lieberman, Inhofe, and Thune.

Majority staff members present: Michael J. Kuiken, professional staff member; and William K. Sutey, professional staff member.

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

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

Committee members' assistants present: Christopher Griffin, assistant to Senator Lieberman; Gerald Thomas, assistant to Senator Burris; Lenwood Landrum, assistant to Senator Sessions; and Jason Van Beek, assistant to Senator Thune.

**OPENING STATEMENT OF SENATOR JOSEPH I. LIEBERMAN,
CHAIRMAN**

Senator LIEBERMAN. The subcommittee will come to order. Good afternoon. We particularly welcome General Chiarelli and General Thompson. We meet this afternoon for what is our final hearing prior to the markup by the Senate Armed Services Committee next week of the National Defense Authorization Act for Fiscal Year 2010.

Today's topic, which is army modernization, merits particular concern because of the many changes that are underway to reorient and restructure our national defenses. There are three particular challenges we face today as this subcommittee attempts to carry out our responsibility to conduct oversight.

First, Secretary Gates has announced and the fiscal year 2010 Army budget implements major program changes that restructure the Future Combat System, limit the Army's structural growth to

45 instead of 48 combat brigades, start a new ground combat vehicle program, and direct the integration of Mine-Resistant Ambush-Protected (MRAP) vehicles into the Army's force structure.

These changes are reflected in the fiscal year 2010 budget request, but in a manner that I would say is incomplete. The implementation of these decisions will require detailed analysis and planning, prioritization, and resource alignment, none of which has been done yet. That's why I hope our witnesses can help us understand the risks that are faced by the Army's modernization program in the absence of such analysis.

Second, the fiscal year 2010 Army budget request does not include long-range investment plans ordinarily provided in the future years defense program. This is not unusual, of course, in the first year of a new administration, but it does make our subcommittee's work in Army modernization oversight that much more difficult.

Finally, Secretary Gates has stated that additional major decisions for the fiscal year 2011 budget request are contingent upon the conclusions of the Quadrennial Defense Review (QDR). The QDR is not required until February 2010. However, we understand that initial insights, so-called, will be available to Army budget planners as early as the end of July, with final budget guidance by the end of September.

Even as they await this guidance, we hope that our witnesses this afternoon will discuss to the extent that they're able long-range modernization plans for the Army, especially for those programs that may be at risk of reduction or restructuring.

We have an excellent—two excellent panels of witnesses: the first, General Peter Chiarelli, Vice Chief of Staff of the Army, and Lieutenant General Ross Thompson, the Military Deputy to the assistant Secretary of the Army for Acquisition, Logistics, and Technology, and Director of Acquisition Career Management.

He's got a much longer title than you do, General Chiarelli. But I know you're Vice Chief.

The second panel, immediately following, will include witnesses from the Government Accountability Office and the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics. That panel we will ask to examine the management history of the Future Combat System program and the lessons that we may learn from it as we go forward with the Army to future modernization. I look forward to the hearing.

Senator Thune.

STATEMENT OF SENATOR JOHN THUNE

Senator THUNE. Thank you, Mr. Chairman. I want to join you in welcoming General Chiarelli and Lieutenant General Thompson back to the committee and thank them for their long and distinguished service to our Nation. Modernizing the Army is necessary to preserve our technological edge over potential adversaries, deliver better protection for our soldiers, and provide our men and women in uniform with improved capabilities to accomplish their mission.

The success or failure of our efforts to modernize and transform the force of the future rests on decisions proposed, discussed, and implemented today. There is concern among members of the com-

mittee, which you will hear, regarding the recent history of Army modernization efforts. The challenge of delivering capability amidst unrelenting technological change and shifting requirements is indeed a difficult one. We are eager to understand the Army's vision for the future and the strategy to achieve it.

Last month Secretary Geren and General Casey testified that, while the Army remains the best led, trained, and equipped army in the world, it is out of balance. General Casey outlined for us his plan to bring the Army into balance and he emphasized four imperatives: sustain, prepare, reset, and transform.

The committee has heard testimony from inside and outside the Army this year on each of General Casey's imperatives, and today we hope to explore more closely the Army's plan for transformation and modernization. An area of special interest is the uncertain future of the Army's recently restructured Future Combat System. This multi-year, multi-billion dollar program was at the core of the Army's weapons modernization efforts and its successor programs will comprise a significant portion of the Army's research, development, and acquisition program.

The witnesses will be asked about the way forward in light of restructuring, the implications to current and future planning, and continuing technical challenges associated with a networked battlefield.

Also, the witnesses will be asked how the modernization program will meet Army Reserve and National Guard requirements, about progress toward resetting all components of the Army, how Army transformation plans will impact future requirements for strategic and tactical mobility, about the Army's aviation requirement, the proper mix of vehicles in the tactical wheeled fleet, including Mine-Resistant Ambush-Protected Vehicles, and what type of future vehicle and weapons programs will meet the Army's needs to conduct full spectrum operations in hybrid warfare.

In closing, I'd like to emphasize that, while the focus of this hearing may be the weapons systems and processes that support the soldier, the center of gravity has and always will be the soldiers themselves. Our thanks and gratitude extends to all service members at home and overseas and the families that support them.

Mr. Chairman, thank you for convening the hearing. I look forward to hearing from our witnesses.

[The prepared statement of Senator Thune follows:]

[SUBCOMMITTEE INSERT]

Senator LIEBERMAN. Thanks very much, Senator Thune.

Without further ado, General Chiarelli, thank you for being here. Thank you for your extraordinary service to our country, and we would welcome your testimony now.

**STATEMENT OF GENERAL PETER W. CHIARELLI, USA, VICE
CHIEF OF STAFF OF THE ARMY**

General CHIARELLI. Mr. Chairman, Ranking Member Thune, distinguished members of the subcommittee: I thank you for the opportunity to appear here today to discuss Army modernization and the management of the Future Combat Systems program in view of the fiscal year 2010 budget request. This is my first occasion to appear before this esteemed subcommittee and I pledge to always

provide you with an honest and forthright assessment and my best military advice as requested. I have submitted a statement for the record and I look forward to answering your questions at the conclusion of opening remarks.

As all of you know, it's been a busy time for our Nation's military. We are at war, and we have been at war for the past 7-plus years. Since the very beginning, this conflict has been in many ways different and more complex than past wars. We are dealing with less clearly defined and highly savvy adversaries in two theaters. In fact, the only thing we can know for certain in this new strategic environment is that the enemy will purposely go where we are not.

Therefore, in order to stay ahead of the threat and to ensure there are forces prepared and capable to respond to any contingency, we have consistently made improvements and adjustments to our capabilities based upon lessons learned. In every aspect of the Army's modernization strategy, our purpose is to improve soldier survivability and ensure they're able to maintain a decisive advantage over whatever enemy they face. We are adamant, and I know the members of this esteemed committee are equally adamant, that we never want to send our soldiers into a fair fight.

The Army is currently transitioning to a brigade combat team modernization strategy focused on building a versatile mix of networked brigade combat teams and enablers so we can leverage mobility, protection, information, intelligence, and precision fires in order to more effectively operate across the full spectrum of conflict.

As you all are aware, on 6 April 2009 Secretary Gates recommended the cancellation of the Manned Ground Vehicle portion of the Future Combat System, or FCS. The Army now is moving forward to analyze operational requirements and lessons learned from 7-plus years of war to develop the Ground Combat Vehicle as a critical capability for the brigade combat team modernization.

Understandably, this platform has received much of the attention and focus in recent days following the Secretary's recommendation and the release of the President's fiscal year 2010 defense budget. Some are of the belief that a majority of the money previously allocated for FCS now should be reallocated elsewhere pending the cancellation of the Manned Ground Vehicle. With all due respect, I must strongly disagree with this position. While the platform was a key piece of FCS modernization strategy, I believe the most critical component of the new brigade combat team modernization strategy is the network, and I am concerned that cancellation of the MGV has been misunderstood to mean to some cancellation of all things FCS, to include the network.

Today the situation on the battlefield is increasingly complex. Information is collected and shared by various systems across the battle space, including platforms, sensors, computers, radios, transmitters, and satellites. In the Army's new BCT modernization strategy, the network will serve as the hub for all these separate nodes, connecting leaders and soldiers at all levels and at every echelon of command in every formation—infantry brigade combat team, heavy brigade combat team, Stryker brigade combat teams,

and ultimately even across the interagency—with the right information quickly and seamlessly.

Simply put, the network is the centerpiece of the Army's modernization efforts and any shortfall in funding will put that effort at risk. I assure the members of this subcommittee that the Army's senior leaders are focused on the Army's total modernization efforts and the management of the Future Combat System program, and we will continue to coordinate with senior DOD officials and Congress to identify the best possible solutions in order to ensure we never send our soldiers into a fair fight.

In conclusion, on behalf of over 1.1 million soldiers serving in the Army today, I respectfully request your support of the Department's fiscal year 2010 budget, a budget that in its entirety reflects the resources required to grow the network, field early spinout technologies to brigade combat team on the ground in Iraq and Afghanistan, and re-start our development of the next Ground Combat Vehicle.

Chairman, members of the subcommittee, I thank you again for your continued generous support and demonstrated commitment to the outstanding men and women of the United States Army and their families. I look forward to your questions.

[The prepared statement of General Chiarelli follows:]

Senator LIEBERMAN. Thank you, General Chiarelli.

General Thompson.

**STATEMENT OF LIEUTENANT GENERAL N. ROSS THOMPSON
III, USA, MILITARY DEPUTY TO THE ASSISTANT SECRETARY
OF THE ARMY FOR ACQUISITION, LOGISTICS, AND TECH-
NOLOGY, DIRECTOR, ACQUISITION CAREER MANAGEMENT**

General THOMPSON. Chairman Lieberman, Senator Thune, and distinguished members of the Subcommittee on Airland: I want to thank you for this opportunity to discuss Army modernization and management of the Future Combat Systems program in view of the fiscal year 2010 annual budget.

With all of our programs and our funding requests, the Army's highest priority remains the protection of our warfighters in an operational environment that is increasingly ambiguous, unpredictable, and dangerous. Force protection has taken on an even greater importance as we shift major operations from Iraq to Afghanistan. We are grateful to the members of this committee for your guidance and your steadfast support. We continue to meet the equipping demands of our soldiers in ongoing overseas contingency operations and in other operations worldwide because of the resources and guidance provided by this committee and the Congress. We constantly strive to be good stewards of those resources.

The Army's comprehensive modernization program is the key to ensuring that our soldiers maintain a decisive advantage over a diverse array of potential adversaries while continuously improving their survivability. In every aspect of our Army modernization programs, we leverage lessons learned from soldiers in the current fight, speed fielding of enhanced capabilities to the force, and concurrently develop capabilities soldiers will need both today and tomorrow.

As General Chiarelli stated, our modernization strategy is focused on building a versatile mix of networked brigade combat teams. The most critical component of the new BCT modernization strategy is the network. By growing the network in regular increments, we will provide our soldiers and their leaders with a continually enhanced common operating picture of the battle space, which is a significant advantage in combat.

The Army and the Department of Defense remain committed to the requirement for a manned armed scout helicopter capability and in the need to deliver this capability to our soldiers in a responsible and timely manner.

We are also committed to extending spinouts of our critical war-proven enablers to all of our brigade combat teams and working with the Office of the Secretary of Defense and Congress to field the new combat vehicle as expeditiously as possible, a capability that is long overdue.

In all areas of future commitments, we are planning for continued development of systems and technologies to ensure that our soldiers maintain a decisive advantage over potential adversaries.

Mr. Chairman and members of the Subcommittee on Airland, your deep and abiding commitment to our men and women in uniform is widely recognized throughout our ranks. We thank you for your continued support of the outstanding men and women of the United States Army and their families, as well as your support of the fiscal year 2010 budget.

This concludes my opening remarks, Mr. Chairman. I look forward to your questions.

[The prepared statement of General Thompson follows:]

Senator LIEBERMAN. Thanks, General Thompson.

We'll have 7-minute rounds of questions.

Let me say to both of you, who have graciously thanked the committee for our support of the men and women in uniform, in the Army in this case particularly, I'm sure I speak for my colleagues here in saying that really it's our honor, let alone our responsibility, to give whatever support we can to the men and women in our armed services, in this case particularly the Army; and to say that the service of the personnel of the Army has been extraordinary. Whatever the phrase is, it seems to me that this is the next greatest generation in service of our country, who have been drawn into a battle that in many ways—I don't want to say they were unprepared for, but in its details it was hard to foresee; and with extraordinary leadership, such as represented at the table before us, the Army has transformed itself and really by personal skill, courage, characteristically American goodwill and compassion, has succeeded, first in Iraq and are on the road to success, and now I think I'm confident we'll turn things around in Afghanistan in a way that's really historic and very consequential for our country.

So you evoked that by saying thank you. We don't deserve any thank you's when I think about what you all are doing.

I want to—speaking about that, about the service of our troops, General Chiarelli, this is about the Army modernization program, but you've really given great leadership in a host of areas, including as an advocate for Army personnel, which ultimately is what the Army is all about. There are a lot of us on this committee who

are concerned that the end strength of the Army now, the statutory end strength, is inadequate to the moment.

While we talk about a lot of different programs for reducing stress on our Army personnel, perhaps the best thing we can do is to make sure there are more of them, so that the dwell time they have between tours of active duty increases instead of decreases. I wanted you to know that there will be a serious effort in this committee, as there has been—I've been working with Senator Thune on this and others—as there has, I noticed, in the House this week, to increase the authorized end strength of the Army by 30,000.

Do you have a reaction to that?

General CHIARELLI. Well, first of all, Mr. Chairman, I'm in complete agreement with your analysis. As the ranking member said also, soldiers are at the heart of our formation. We have this constant balancing act between things like modernization and soldiers, because soldiers cost money. At the same time, I'm concerned with dwell time and I know that individual dwell is less than unit dwell. We have finally been able to model that and show that, and it has tremendous significance.

As I have worked with the Secretary of the Army on suicide prevention and realized this is more about the wellness of the entire force and its families, I have come to the point to believe the Army is stressed and there may be a requirement for us to have a temporary authorization of additional soldiers to fill some of the holes we have in our formations and to take the stress off the force in what is going to be a critical 12 to 18-month period.

Senator LIEBERMAN. Well, thank you for that statement. That's exactly the terms in which we're seeing it, which is as a temporary increase, because, as General Casey said to us when he testified I believe before the full committee, this dwell time and stress is really a matter of supply and demand. I mean, how many troops do we have to supply and what's the demand? We know for a fact that we're going to be increasing our presence in Afghanistan and not drawing down our presence in Iraq immediately. So that will mean in the short term there will actually be more people deployed, a higher demand.

To help you meet that and reduce the stress, increase the dwell time and reduce the stress on individual soldiers—as you said, very important distinction—we're going to work to increase the authorization by 30,000 and hope that together we can find the money for the chief and you to do that as circumstances require.

Let me go on to ask you an overall general question on our Army modernization. As you look back over the last decade or so, there have been a lot of changes in plans and investment priorities and even titles, names. We've gone from digitization to Force 21 to Army After Next, Interim Force to Objective Force to FCS, and modularity.

I understand that part of this is obviously a reflection of changes in the battle. I remember General Shinseki said at one point that his aim was to see us get to a stable modernization strategy in which there was irreversible momentum in favor of that strategy.

I wanted to ask you if you'd comment on, as you look back over the 10 years, whether there were too many changes in moderniza-

tion strategy of the Army and where you see this focus going in the chapter ahead of us.

General CHIARELLI. Well, as you know, a majority of the last 10 years for me have been spent in the operational Army, deployed with combat forces. I watched us over a period of time in Iraq, a 3-year period, move from soft-skinned Humvees up to Humvees with frag kit 5 and now today to the MRAP, and thought, thank goodness we were able to go ahead and make those kind of modernization leaps forward to protect our soldiers.

I have been in my current job—I'd just like to remind everyone that the Manned Ground Vehicle was a portion of the FCS program. FCS is spinouts, and we have now spinouts for 73 brigades. That's what we're looking at over time. It is that network, and that network is the key and critical piece that's going to pull this whole thing together and provide that soldier in combat the information he needs when he needs it to survive in the fight.

We are very pleased with the Secretary of Defense's commitment to an Army modernization plan and to a Ground Combat Vehicle. And the chief and the Secretary of the Army have charged us with moving ahead, moving ahead rapidly, and fielding something to our forces, fielding that vehicle within the next 5 to 7 years. We are well into the planning to do that right now.

We held a very successful blue ribbon symposium yesterday at National Defense University, where we brought in people from OSD, from the building, from the think tanks, to get their ideas on where we should go. But we are committed to this in a 5 to 7-year period.

Senator LIEBERMAN. So I appreciate your answer. I take from that that you support the changes in the FCS program as recommended by Secretary Gates and ultimately the President. And I take it that, based on your opening statement, that you feel that the most important part of FCS, which is the networking capability, is being preserved.

General CHIARELLI. We must preserve the network, and we must preserve what we need to move ourselves, too, a Ground Combat Vehicle, in a 5 to 7-year timeframe.

Senator LIEBERMAN. So we obviously need a new Ground Combat Vehicle, whether we call it MGCV or GCV. I know that there's been a pledge that the funding will be preserved to transition to the new Ground Combat Vehicle. Are you worried about that, that the money—I suppose, are you worried about us, the pots of money that are left unspent in short order tend to be very attractive to Members of Congress?

General CHIARELLI. I support the President's budget. The President's budget will get us to where we need to be, and we are hoping that we will not see that money taken away. That money is made available to move ahead. We think that's absolutely critical.

Senator LIEBERMAN. Let me ask one final question on this topic about ground vehicles. What's the—we've invested a lot of money, appropriately so, and bought a lot of MRAPs to deal with the situation our troops were facing in Iraq and now in Afghanistan. What's the role of that particular ground vehicle over the next 5 or 10 years or beyond?

General CHIARELLI. The Army is committed to integrating the MRAPs into our formation. General Dempsey is working that right now. The MRAP has saved arms, legs, and lives, and I hope one day to be able to show exactly how many it has. It's an absolutely amazing vehicle.

But it cannot be integrated everywhere in our formation. I know you know that there's 16,000 MRAPs, but 200,000 vehicles in the Army inventory. So MRAPs today represent 8 percent of the total vehicles in the United States Army. They will be integrated into our formations, but in places where that vehicle is in fact most suited.

One of the things that came out of our blue ribbon symposium yesterday was noncommissioned officers who told us that carrying infantry around in an MRAP is fine and it protects them, but they have to wait from the time somebody pushes the button to the ramp coming down 9 seconds. They feel very vulnerable in that vehicle as that ramp slowly comes down. So it's those kinds of things that make the MRAPs better suited for certain places in our formation, and I know General Dempsey and TRADOC are working to determine that now with our force and vehicle mix.

Senator LIEBERMAN. Of course, the MRAPs play a very different role or have a different function than either the Manned Ground Vehicle or the oncoming Ground Combat Vehicle, correct?

General CHIARELLI. That's correct.

Senator LIEBERMAN. Thank you.

Senator THUNE.

Senator THUNE. Thank you, Mr. Chairman.

I want to come back to the chairman's last question there. The DOD I understand is currently selecting a scaled-down Mine-Resistant Ambush-Protected Vehicle which by way of greater off-road mobility would be suited for use in Afghanistan. I understand that at least 4500 of these MRAP ATVs would be required for use in theater, mostly belonging to the Army.

The Army has not outlined whether or not or how they plan to institutionalize the capability of the thousands of already fielded MRAP vehicles. So General Chiarelli, I guess my question would be, what does the Army intend to do with the MRAPs that are ill suited for Afghanistan as troops are redeployed from Iraq?

General CHIARELLI. You know, Senator, we brought some home. We're using them in the training base. We, as I indicated before, we will in fact integrate those into our formations in the place they're best suited. We are very, very happy with the MATV. We think that is a great step forward. And we're also very happy that many of the MRAPs, the old MRAPs that don't have the independent off-road suspension, can be retrofitted for that off-road suspension. We expect to do some of that in theater, both the United States Army and the Marines.

I think, Ross, you've got some information on that.

General THOMPSON. Yes, sir. One of the things that we're doing with one of the variants of MRAPs that already exist today before we go forward with the source selection decision, which is within the next several weeks, on the MRAP All Terrain Vehicle is to take the suspension system that goes with the medium truck for the Marine Corps and retrofit some of the existing MRAPs so we get

that off-road capability to be able to use in Afghanistan and incorporate those vehicles, as well as the MRAP All Terrain Vehicles once we start to produce those by the end of the summer and begin fielding them in the fall, is the current plan.

Senator THUNE. Is the Army experiencing other shortfalls in other areas when it comes to equipment and trying to meet some of the changing dynamics of operations in Afghanistan relative to what we've been dealing with in Iraq? MRAP's a good example of how you have to adapt that vehicle, either through retrofitting it or coming up with a new model. Is the Army facing other of those types of issues with regard to the conditions in Afghanistan?

General CHIARELLI. In fact, what we're doing for the individual soldiers, one of our main efforts is lightening the load for the soldier. We have a brigade out of the 4th I.D. coming out of Fort Carson that'll be going into country I believe this month, that's going to be going with a set of gear that, depending on the position you hold within that unit, is 14 to 23 pounds lighter than what soldiers in country have today.

So this lighten the load effort, particularly up in MND East at the high altitudes, is absolutely critical. It's something that the field has asked us for, and we are constantly working to figure out ways that we can lighten the load for the individual soldiers. I think that is a real need.

Senator THUNE. Coming back to the Future Combat Vehicle, the Army has begun working groups to help define the concept for the next ground vehicle, which would likely be tracked and armored. The Army, as I think you mentioned already, has asserted the requirements and forward planning for that will be done by September.

Has the Army been given any further guidance by OSD pertaining to the cancellation of the FCS Manned Ground Vehicle?

General THOMPSON. Sir, I'll take that question. One of the things that we've been working with with the Office of Secretary of Defense since the fiscal year 2010 budget was submitted is the wording on the acquisition decision memorandum, which is the formal guidance from the Defense Acquisition Executive on that program. We are in the final stages of the wording on there to make sure it's exactly right, it captures the decisions of the Secretary of Defense, and it gives us the flexibility to be able to move forward to restructure the program, to cancel the FCS program as we know it today, to terminate the Manned Ground Vehicle portion of that existing FCS program, but to keep the other parts of that program that we want to move forward with, in particular the network and the spinouts to the infantry brigade combat teams, the spinouts, the modernization efforts beyond the first spinouts to the infantry brigade combat teams, and then to do the concept work with TRADOC through the summer, and then begin a new acquisition program for a replacement Ground Combat Vehicle.

Senator THUNE. Is there an operational urgency to develop a new ground system, General Chiarelli?

General CHIARELLI. We feel it's critical that we work to get something that we can begin fielding into our forces, understanding the amount of time that it's going to take to do this within 5 to 7 years. We've kind of taken on the Secretary's challenge to look at how we

can do that. I think you should take great solace in the fact that we are working very hard to pull all those things we learned in the FCS MGCV program, all those technologies that we brought from TR level 2, some to 6 and 7 right now. That is not money that has been wasted. Those are all things that we will use and look at for integration into the GCV or the Ground Combat Vehicle.

Senator THUNE. There's been some—in the 2010 budget request there were requests for hundreds of millions of dollars for FCS termination costs. General Thompson, can the Army say with certainty what those termination costs are going to be? Can you quantify that?

General THOMPSON. Sir, I can't say with certainty. I can give you a range, because the actual termination costs that go with this program are to be negotiated with the contractor, who is Boeing, and then the subcontractors, and there's 25 tier 2 contractors and around 600 contractors below the tier 2 contractors.

So that will be a negotiated settlement, because we are at the government's convenience restructuring this contract in a major way. So there are termination liabilities that are called out for in that contract, the guidance from the Federal Acquisition Regulation and the defense supplement to that. I don't know what that exact number is, but it's fair to say it's in the hundreds of millions of dollars.

The money that is in the fiscal year 2010 budget we think is needed to pay those termination liabilities. If that money is not there to pay those termination liabilities, then some piece of the work necessary to do the spinouts to the infantry brigades or to do the network development will have to be used to pay those termination liabilities, because they are mandatory. And that's work that won't get done and capability that won't be provided to the soldiers.

Senator THUNE. Are there lessons, General Thompson, that you've learned from the FCS experience and the acquisition process that can be applied to future developmental programs?

General THOMPSON. Yes, sir, there's many lessons to be learned. In addition to the blue ribbon panel that we had yesterday at the National Defense University, we conducted a full after-action review to look not just at the acquisition portion of the FCS program over time, but also look at the requirements process and the modeling and all the work that we've done.

One of the lessons that I take away—and this is a challenge not just for the Army, but for the Department of Defense—a systems of systems acquisition program and dealing with the challenge to look at an integrated acquisition approach is hard to do. I don't think either the Army or the Department of Defense is well positioned to be able to deal with complicated systems of systems acquisition approaches, which FCS is.

FCS was ground-breaking in that approach. To the program's credit, we just finished in May a systems of systems preliminary design review, which is one step on the way to begin to do the final integration and the testing and the prototypes. That systems of systems preliminary design review was built on 57 preliminary design reviews of all of the other pieces of the program leading up to that, and it shows fairly conclusively that we are where we need

to be at this point in the program, we have the technologies at the right point in the technology level to be able to integrate those and to produce the capability.

It's not just MGVs. It's not just network. It's making all parts of the material systems work together to give the soldier an integrated capability and doing that up front, instead of after the fact.

General CHIARELLI. Just one lesson learned I have from this entire experience of 2 years in Iraq. The deployability and ease of deployability, the expeditionary capability, is always more attractive on this side of the next war. But once you get into the next war and on the other side of that war, survivability and crew protection are key and critical elements. We've seen that happen in Iraq, and I think we always have to keep that in mind when

we're sitting here in Washington, D.C., as opposed to downrange.

Senator THUNE. Thank you very much.

Thank you, Mr. Chairman.

Senator LIEBERMAN. Thank you, Senator Thune.

Senator Inhofe.

Senator INHOFE. Thank you, Mr. Chairman.

Let me start by saying happy birthday, from one Army soldier to two others, and the rest of you back there.

General CHIARELLI. Happy birthday, sir.

Senator INHOFE. I never looked that good, though.

General CHIARELLI. Don't look a day over 233, sir.

Senator INHOFE. 234.

First of all, let me say, General Chiarelli, that during the years that you were the ground commander in Iraq, I have said publicly that there has never been anyone as capable as you are and the great job that you've done. I think on the other side, you probably would say that you saw more of me over there in Iraq during the time than you did any other member. So I'm very much concerned about some of the things, and I think you know one of my concerns.

Most of what I was going to ask has been covered by the chairman and the ranking member, except for the cannon. It just really bothers me that since 1995, Mr. Chairman, we've been trying to come up with—replace the Paladin with something that works. Right now—well, let's go back 15 years ago. Even then, four other countries had a better cannon than we had: Germany, Russia, South Africa of all places, and U.K.

Now, 15 years later, those four countries still have a better cannon than we do. Now, we can talk about the Abrams, 1970s technology. We can talk about the Bradley Fighting Vehicle, 1970s technology. But the Paladin is 1950s technology.

We've talked about it since 1995. We came up with the Crusader. We were going to do something with the Crusader. Then Bush came in in '02 and cancelled that program. I have to say that he did it rather abruptly. We were actually, if you'll remember, Mr. Chairman, we were in our markup at the time they did that. I don't think anyone on the committee had any warning.

So anyway, after that took place, then we started recognizing again that we're going to have to do something about the Paladin. That's when I think it was General Shinseki talked about the Future Combat System, that we need to have the first major transi-

tion in about—or transformation, I should say, of ground capability in quite a number of years, maybe 30 years.

So we thought there the lead vehicle was going to be that which we felt that we needed the most, and that is the most antiquated platform that we have for ground capability, I believe you would agree, is the Paladin.

So here we are, and now we're saying that, even though we've written it into the law—I believe the law, doesn't it say 2010 we're supposed to have that fielded and out there? That's still in the law, and that still has been the request and what we've done in the House and the Senate.

So I guess I'd just ask, why is it that we don't want to send our kids out to battle with the better cannon than prospective enemies?

General CHIARELLI. Senator, I know that you know we are totally committed to the Paladin Integrated Management program, the PIM program. We plan to correct many of the deficiencies we have in the Paladin with that program, spending \$181 million from fiscal year 2008 to '11, and when the program's completed in 2021, I believe is the final date, we will have converted over 600 Paladins.

I am a believer in indirect fire systems and I am pleased that the Army is committed in the way that it is to this program, which I think is absolutely critical, particularly given the loss of the MGVT program and the criticality of having that upgraded system in our HBCTs.

Senator INHOFE. Haven't we gone through about, what, four incarnations now of the Paladin, PIM programs, upgrades?

General THOMPSON. Sir, I can answer that question. Currently the Paladin system that's out there is version 6. So it has six major upgrades.

Senator INHOFE. Six major upgrades. So now we're going to do another one. It was my understanding that originally—right now it's my understanding that we have 900 of these vehicles. We were going to do the PIM program on 600 and then on the other 300 we were going to jump ahead in terms of rate of fire, in all the things that Paladin would still be deficient in, so that the way out we see at the end of that tunnel, that we're going to have better equipment than prospective enemies.

Wasn't that it, that 600 of the 900 would be upgraded, but the other 300 would be the new system?

General THOMPSON. Senator, that was the plan with the Manned Ground Vehicle portion and the non-line of sight cannon system as a subset of the Manned Ground Vehicle portion. So you'd have the new system of 300 and then the other 600. Eventually, when you've got a new modern system like we've done with a lot of other of our systems, you begin to replace the older ones.

So I don't know exactly what we would have done in 2025, but I suspect we probably would have made a decision to begin to replace the Paladins with the new system if it was a non-line of sight cannon.

Senator INHOFE. What do you propose to do if the law is not changed?

General THOMPSON. Sir, one of the things that the Office of the Secretary of Defense has got to do is work back with the Congress

to determine what do we need to do because of the law and adjust the law, because it is in statute right now. My professional opinion, though, is if we're going to terminate the Manned Ground Vehicle, the non-line of sight cannon program is highly leveraged and intertwined with the Manned Ground Vehicle program, and very, very difficult from an acquisition and contracting perspective for us to produce the non-line of sight cannon system that doesn't have the MGCV program wrapped around it. It would be prohibitively expensive for us to be able to do that.

Senator INHOFE. Well, that's when you look at it from what we're talking about doing now; I would agree with that. But when we went through this change that started when they stopped the Crusader, at that time it was all planned out in the future.

I guess I'd look at it—and I know I come from some—I'm a little bit prejudiced, in that Fort Sill is in my State of Oklahoma and that's where they do this stuff. I don't have a parochial interest in this other than that, other than wanting to have the best, because we would be doing the PIM work there anyway. In fact, we're the only place where you can have these capabilities right next to a live range, so it's a logical place to do it.

But I am concerned about not going forward with a—where we can see down the road a modernization program that would put us in a position where we are—you know, you talk about the fair fight. I read—I was coming back from the Air Show and I was reading your statement, and I agree with that. The adage that we never want to send our soldiers into a fair fight is at the core of the Army modernization strategy.

It seems to me that if we send our soldiers out with equipment that is not as good as the prospective enemy, then that's not a fair fight. What am I overlooking?

General CHIARELLI. You're not overlooking anything, Senator. We are working very, very hard to work the Ground Combat Vehicle, and that may be an individual vehicle, but it could be a series of vehicles. General Dempsey and the team is working, and I would not be surprised if we didn't see a family of vehicles that may include a vehicle that has an indirect fire capability.

Senator INHOFE. I would hope that's the case. Thank you very much.

Thank you, Mr. Chairman.

Senator LIEBERMAN. Thanks very much, Senator Inhofe.

We'll do a second round if the members want, up to 5 minutes, and then we'll go on to the second panel.

That was an interesting answer, General Chiarelli, about the follow-on to the Manned Ground Vehicle, the Ground Combat Vehicle, might be more than one vehicle.

Senator INHOFE. Mr. Chairman, would you do me a favor, because I can't be here for the second panel?

Senator LIEBERMAN. Yes.

Senator INHOFE. Would you mind asking a similar question to the DOD that's on the second? I've been pursuing this cannon thing. Just so we can get on the record some kind of an answer.

Senator LIEBERMAN. Of course, okay.

Senator INHOFE. Thank you so much.

Senator LIEBERMAN. Tell us a little more about that? We may have more than one vehicle coming out of that program?

General CHIARELLI. Well, it's entirely possible, sir. And I don't want to take away any of the options that General Dempsey and TRADOC are looking at right now. I haven't been able to have a readout of exactly what the blue ribbon symposium told us yesterday, but that's entirely a possibility, that it could make a recommendation of this vehicle morphing into more than one vehicle.

Senator LIEBERMAN. Well, we'll watch that and follow it with a lot of interest.

I know that the fielding target, time target, for the Ground Combat Vehicle is in the 2015 to 2017 range. I know it's early, but are you confident that we can do that, we can get it ready by then?

General CHIARELLI. I think we have to.

Senator LIEBERMAN. Yes.

General CHIARELLI. I just absolutely believe we have to.

Senator LIEBERMAN. The need is there.

General CHIARELLI. Well, the need is there. But plus, I just think that the technology is moving so quickly that we have got to find a way, like we have done with the MRAP ATV, to be quicker in our fielding of these systems, creating systems that over time may be modified, but provide that key base upon which we will build over time. I really believe that's where we have to go with this particular program.

Senator LIEBERMAN. I couldn't agree with you more that the timeframes for the development of some of the weapons systems are so long. It's part of I think why the costs escalate just over time. But obviously the relevance is diminished, as you said, because of advances in technology and even because of changes in the threat environment by the time they get ready.

We did show—I know it's a different kind of vehicle, maybe some would say a simpler challenge. But we did show with the MRAP that, under conditions of urgent necessity, the Pentagon, working with defense contractors, can turn out an awful lot of a particular piece of equipment that is critically necessary to protect our troops.

Obviously, we'll stay on top of that as we go along.

Let me ask you about the Stryker program, either one of you really. What can you tell us about the Army's thinking now with respect to the Stryker system and the potential growth in the number of combat brigades and plans to modernize and improve the capabilities of the current fleet?

General THOMPSON. Yes, sir. The Stryker program has been a very successful program for the United States Army. As you know, there's about 3600 Stryker vehicles are the requirement. Over 2700 of them have been fielded and are in the inventory to date, 7 Stryker brigades. One of the things that the Army is looking at from a force structure perspective is do we need more Stryker brigades to provide a balanced force with different capabilities across the spectrum of conflict.

Senator LIEBERMAN. What are the factors that you will consider in making that decision?

General THOMPSON. Part of that decision, sir, is going to be made as part of the Quadrennial Defense Review.

Senator LIEBERMAN. Right.

General THOMPSON. And it's looking at the force mix of Stryker brigades, heavy brigades, infantry brigades, the enabler brigades, and there's many other types of the brigade combat teams in the Army, what is the right force mix. As we look at a balanced force to handle things across the spectrum of conflict, it is a possibility that we would want to build more of the Stryker brigades than the seven that we have today.

Senator LIEBERMAN. What kind of reaction do you get from our troops to the Stryker system as compared to other systems that they're using? In other words, are the troops happy with the Stryker?

General CHIARELLI. They're very happy with them. If you run into a Stryker crewman, he's going to brag on his vehicle like any Army soldier brags on their vehicle. But they love the Stryker.

We have some concerns with the current Strykers right now in power and in some power and weight issues that we've got to work our way through. But the Stryker has proven to be an amazing addition and the Stryker brigade combat team an amazing addition to the United States Army. As you know, we're on our ninth deployment. We have Strykers in Afghanistan today and we'll have a brigade up and operational in Afghanistan this summer.

So we are looking hard at the Stryker, as General Dempsey again wraps his arms around this entire Army modernization piece as a force mix issue to determine whether or not we may need additional Stryker brigade combat teams.

Senator LIEBERMAN. So here, as well as in some other key decision areas, you're really waiting for the QDR to give some guidance about where we go from here? Is that correct?

General CHIARELLI. The QDR is a critical element, Mr. Chairman. But in addition to that, it's kind of stepping back and re-looking at this after cancellation of the Manned Ground Vehicle and looking at where we're going to go. We are working day in and day out now, between now and Labor Day, and we hope to come out with that plan soon after Labor Day that lays out where we're headed.

General THOMPSON. Chairman Lieberman, can I—

Senator LIEBERMAN. Go right ahead.

General THOMPSON. —if I could, just offer some context from my perspective as the senior military acquisition officer. But I was also the Army's programmer for a number of years, looking at the balanced investments across all the capabilities. There's roughly 16,000 combat vehicles in the Army's inventory. Abrams, Bradleys, 113s, Strykers dominate those numbers.

There is a need over time in a portfolio of capabilities to have a modernization program. I've been associated with armored systems modernization in the late 80s and early 90s. Then we had the Future Scout Cavalry System. We had the Armored Gun System. We had the Crusader, and now we've got the Manned Ground Vehicle. Five programs, and every one of those programs got to the point where they were pretty far along in the development, getting ready to go into testing and production of prototypes, and for various reasons all of those programs have been terminated or significantly restructured.

At some point in time, the existing vehicles, even the Strykers, as good as they are, will reach their design limits. The 113s we are not using at all today in theater because they're not survivable and they don't have the capabilities. But Bradleys, Strykers, tanks, the Abrams today, as capable as they are, eventually they reach their design limits. They reach their design limits in two key areas. One of them is survivability because, like the vice chief said, on the other side of the deployment you want your soldiers and systems that are as survivable as possible.

We need enough power margin and we need enough energy, electrical energy, to be able to put the networked systems on the combat platforms we put our soldiers in. So eventually we're going to need to modernize and replace some of those existing systems. The Army needs a stable set of funding across a number of years to be able to keep that portfolio of ground combat vehicles as capable as possible, so that our soldiers are as capable as possible and never in a fair fight.

We are not there today. It's been over 20 years since we started the armored systems modernization program and we're now going to start our sixth iteration of trying to modernize the ground combat vehicle capability in the Army. That bothers me greatly.

Senator LIEBERMAN. Me too. Thank you.

Senator Thune, do you have other questions?

Senator THUNE. Well, let me just ask, if I might, Mr. Chairman. As you all know, the President signaled his intention to move away from the use of supplemental spending bills to deal with overseas operations and instead to incorporate these costs into the regular budgeting process.

My question I guess, General Chiarelli, is what challenges does that create for the Army, that change?

General CHIARELLI. I believe we've been consistent in testimony, not only I have, the chief has, but those that went before us, indicating that reset is a critical piece that is going to continue in the Army. I believe we have \$11 billion in this particular budget, in this particular OCO, for reset. It will continue as long as we're fighting, and it will continue 2 years after we complete fighting.

So it's our hope that everybody will remember that and the need to reset this equipment that is going at OPTEMPO rates that are much higher than they would if they were back here in the United States.

General THOMPSON. Senator, if I could just add to that again, what I said earlier about having some responsibility for the Army's programming for a number of years. If supplementals decrease or go away, the requirements that are covered by the supplemental funding in most cases don't. So if the supplemental goes away and you don't increase the base program, there are things that won't get done. There are probably fewer soldiers. The modernization programs are the first things that people look at to be able to cut.

So if we just say there's no more supplementals and you don't increase the base program, then something's got to change. My analogy would be it's like a two-income family and one of the income earners no longer is employed. Your lifestyle's going to change significantly because you just can't do the same things that you were doing with one income instead of two. Not that the supplementals

and the base program are equal, but there's a lot of requirements that are covered with supplemental funding, and you just can't say they go away and just do it with the base program without increasing the base program.

General CHIARELLI. And so many of those are Army bills.

Senator THUNE. Let me ask, too—the Army is in sort of a financial hole, I guess. You say an estimated over \$2 billion in its personnel accounts. Is there a plan for closing that gap right now?

General CHIARELLI. Well, we have a plan. We're hoping to get all the help we possibly can, but we have a plan over the next couple of years to go ahead and do that. We will have to do that. As I indicated and you indicated, Senator, people are absolutely critical, and thank goodness we have those people. We were able to make 547,400 and a little bit more right now as we're kind of rolling that number back, because it's critical when I have almost 9,000 soldiers are in WTUs, another 10 to 11,000 that are currently nondeployable, and then individual augmentees. That adds up to a pretty sizable bill that I'm not able to put into my formations as they deploy on a dwell that's at 1.5 at unit dwell, less on individual dwell today.

Senator THUNE. Can we keep up with all those personnel costs and still ensure good recruiting and retention?

General CHIARELLI. Well, we are blessed right now, Senator. Recruiting and retention is as good as I've ever seen it in the time that I've been in the Army. We have to be concerned, though, and we all pray that the economy turns around, but for recruiters that'll make life difficult again, I'm sure. But we will have to continue to recruit the best for our Nation's Army and we are totally focused on doing that.

Senator THUNE. Thank you. Thank you, gentlemen, for your great service to our country, and be sure that you convey that same appreciation to your families, too, for the sacrifices that they make and for your service. Thanks.

Thank you, Mr. Chairman.

Senator LIEBERMAN. Thank you, Senator Thune.

That last exchange with Senator Thune, we're in a most unusual moment, which is, as you said, recruitment is going very well, a high level of recruits coming in. We understand part of it may be the economy, but there's a lot of other factors. Reenlistments are very high. So part of what originally drew our attention to trying to increase the Army end strength is not only the effect on dwell time, but this, as I understand it, most unusual and unacceptable phenomenon where you may actually have to, because you don't have adequate statutory authorized end strength, slow down on recruiting and reenlistment, in fact to let some people go, as it were, hoping that attrition brings you down. When the demand is so high for personnel in active deployment, we just ought not to let you—we ought to protect you from that kind of pressure.

But anyway, we're going to pursue that as we go to our markup next week.

I thank you very much for your testimony. You've been extremely responsive. You're two impressive people that our country is very fortunate and the Army is very fortunate to have in positions of leadership, and I'd really put you up against any group of people

in any field or corporation or anything else. You represent the best of our country. Thank you very much.

General CHIARELLI. Thank you, Senator.

General THOMPSON. Thank you, Senator.

Senator LIEBERMAN. We'll call the second panel: Mr. Ahern and Mr. Francis.

As I indicated, David Ahern is the Director of Portfolio Systems Acquisition in the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics. Paul Francis is the Managing Director, Acquisition and Sourcing Management, at the Government Accountability Office.

We thank both of you for being here. Mr. Ahern, I would now welcome your testimony.

STATEMENT OF DAVID G. AHERN, DIRECTOR, PORTFOLIO SYSTEMS ACQUISITION, OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY, AND LOGISTICS

Mr. AHERN. Good afternoon, Chairman Lieberman, Senator Thune, distinguished members of the committee. Thank you for the opportunity to appear before you to discuss Army modernization and the management of the Future Combat System program as you review the fiscal year 2010 budget. I'll be brief in order to move quickly to the panel's questions.

Senator LIEBERMAN. Good.

Mr. AHERN. In fiscal year 2010, FCS will remain the Army's largest research and development investment. However, we plan to transition from the FCS brigade combat team acquisition program to establish at least four acquisition programs that will leverage the FCS investment to date and deliver realistically defined, cost effective and timely capability to modernize the Army's ground forces. These new integrated Army modernization programs will include as a minimum: planned early infantry BCT acquisition, follow-on BCT modernization, ground combat vehicle modernization, and incremental ground tactical network capability.

The importance of meeting the Army's modernization needs and the magnitude of the investment dictate that we get these acquisitions right. We must do it expeditiously. By way of background, we established the FCS BCT in 2003. The Army contracted Boeing and SAIC to develop a system of systems design. While the system of systems umbrella for the FCS BCT acquisition provided a unique opportunity to optimize capabilities, the complexity involved in applying the system of systems approach offered many challenges for the acquisition community.

The FCS investment did, however, provide us with a far better understanding of the potential for integrated capability, with insights for early application of this integrated capability across the combat brigades. In addition, the technology coming from the FCS investment is a game-changer for the Army modernization effort in platforms such as unmanned ground and air systems, in sensors such as active protection and unattended ground sensors, in vehicles with hybrid electric power trains, and lightweight armor, and in the network, with integrated battle command, sensor fusion, and enhanced situational awareness.

All these will transition the Army modernization acquisition as we move forward. A key transition relative to knowledge-based acquisition was a decision in 2006 to capitalize on early increments of FCS capability for delivery to the current force. We term those spinouts.

We will continue this incremental acquisition philosophy as we transition to multiple Army modernization acquisitions in 2010.

Relative to our reporting requirements on FCS, while the Army recently completed the FCS system of systems preliminary design review, decisions leading up to the fiscal year 2010 President's budget have already addressed the issues identified for the DAB milestone review. However, in satisfaction of the fiscal year 2007 and '09 Authorization Act provisions, we will provide a report that reflects the Department's FCS decision to the Congressional defense committees.

Regarding the committee's interest in future contracting relationships, in the short term the FCS contract will be restructured to continue the integration and development efforts in network, spinouts, and BCT modernization until the new acquisitions are established. Changes in the FCS contract will address our concerns regarding fee structure to give the government leverage to promote cost efficiency. As acquisition plans for the future programs mature, we'll use contracting strategies that include competition, fee structures to incentivize performance, and fixed price contracts when appropriate, all leading to better control of contract costs.

We have learned much from the FCS acquisition program. Our acquisition and program management lessons learned are consistent with those learned from other Department acquisition programs. As we move forward with the new modernization program, we will seek to match requirements to mature technologies, to estimate program costs more realistically, to seek budget stability for the programs we initiate, staff government acquisition teams adequately, and provide disciplined and effective oversight.

In closing, the Department's fiscal year 2010 budget will facilitate a timely, in-stride transition from the previous plan to acquire 15 FCS brigade combat teams to multiple major modernization programs to deliver much-needed sensor, networking, and vehicle capability to the Army. We will leverage the FCS development efforts to date and deliver that capability.

We are grateful for the continued support of Congress, which has been critical to ensuring our soldiers are the best trained and best equipped in the world. Thank you for this opportunity to testify on the Department's plans to continue to equip them for today's wars and tomorrow's challenges. I look forward to answering any questions you may have.

[The prepared statement of Mr. Ahern follows.]

Senator LIEBERMAN. Thanks, Mr. Ahern. We look forward to the questions.

Mr. Francis.

STATEMENT OF PAUL L. FRANCIS, MANAGING DIRECTOR, ACQUISITION AND SOURCING MANAGEMENT, GOVERNMENT ACCOUNTABILITY OFFICE

Mr. FRANCIS. Thank you, Mr. Chairman, Mr. Thune. I appreciate your inviting me to participate in this discussion of Army's modernization in a post-FCS context. I'll say a few words about I think what are the positive aspects of FCS that are worth emulating as we go forward, and then talk about some of the difficulties with the program that I think we can learn from.

So, starting with the positive aspects, I think the Army really did break with tradition in thinking through FCS and came up with a holistic view of what it thought the future force ought to look like. It was able to translate that into a context and an architecture for a family of systems that it would field as an integrated force. I think this is a much better approach than developing individual systems and trying to integrate them after the fact.

I also think the Army was innovative in its managerial approach. It wanted to break down its stovepiped organizations and cut across organizational lines to field an integrated force. I think it was very candid about what its abilities were to manage that and contracted with a lead system integrator to try to fill in some of its own shortfalls. So I think that was a courageous approach on the Army's part.

We do have some concerns with the lead system integrator, but I do think the approach the Army used in that approach did give it I think unprecedented insight into subcontractor selection and gave it more competition at the subcontractor level. I think that was a good idea.

We heard testimony from the first panel about the network. I think it was discerning on the Army's part to observe that it needed to deliberately develop an information network rather than wait for after the fact and try to cobble it together with systems that had already been developed.

I think a final thing I would say from a positive standpoint on FCS is the decision to spin out or harvest technologies and give them to the current forces was a really good idea, and I think made even better when the Army developed the evaluation task force to vet these technologies before they went into the field. So again, a good idea worth continuing as we go forward.

I think in terms of some problematic aspects with FCS, I think the first thing I would say is I believe that the program—and we've reported on this—was not really executable within realistic resource bounds. The technology, the software, the network, the requirements, the costs, were all on a grand scale and we knew very little about them when we got started.

I think, for example, the Manned Ground Vehicles were being developed and their performance and their survivability depended on the network, at the same time we were inventing the network. So that concurrent development was I think a bit too much for a single program.

FCS I think was moving too fast. Originally it was going to be a 5-1/2 year program. It eventually stretched out to 10, but still faster than any single revolutionary program had proceeded before, and on FCS we were looking at 14 to 18 programs in one. I think

if the program did continue on its existing path it would have put you in a difficult position, because I think at least 3 years of production funds would have been requested before we had a really meaningful demonstration of FCS capabilities. So it was on a really fast pace.

I think the take-away from that is these risks were knowable and I think understood at the beginning, but accepted. So I think going forward we have to be very careful about accepting those kinds of risks. These were not unexpected discoveries that occurred along the way, and I would make that distinction.

I think from an oversight standpoint the challenges were too great. The scope of the program was such that the visibility over cost changes and schedule changes were not visible. They were very hard to discern. I think the scope of the program was such that it overwhelmed some of our key oversight mechanisms. Selected acquisition reports, the earned value management system, and even our budget requests I think weren't a good fit for a program of the size of FCS.

The Army's close relationship with the lead system integrator, while it had some advantages, we saw some long-term oversight concerns with that, in that we thought there was a risk that over time the Army would find it difficult to distance itself from the lead system integrator and in fact the program itself. We looked to the Office of the Secretary of Defense to provide that oversight.

In the early years, OSD didn't provide that oversight and basically allowed the Army to proceed with the program as planned. So it proceeded through the start point with significant immature technologies, significantly I think far afield of OSD's own policies. OSD had independent cost estimates that were much higher than the Army's. Yet they let the Army's estimate prevail. I think even though costs and schedules doubled over these years, there were no Nunn-McCurdy breaches reported on the program.

Now, we've seen an improvement in OSD's oversight in the last 2 years and maybe Dave Ahern here has a large part in that. So we've seen that occur, but again OSD oversight early, really important.

So, going forward, I think we'll see the Army with at least three efforts: spinouts in some form, a network program, and manned ground vehicles. I think each of these will require some different types of management approaches, but they need to share some common principles. That is, they need to be anchored in knowledge and they must adhere to DOD's current acquisition policy. We have to have realistic cost estimates that are informed by independent estimates and we need to budget to most realistic cost. I think that we have to have programs that are transparent and accountable for oversight.

I think we have to realize that a unique contractual arrangement or a bold managerial approach are not a substitute for knowledge or sound systems engineering.

So I would say in conclusion, I think there's no question that the Army needs to be well equipped. I don't think there's any debate about that. I think the Army needs to be innovative about its approach, but needs to be pragmatic and knowledge-based when it comes to individual systems.

I would ask a broader question. If we accept the Army's vision of the future and how it wants to equip, I think we can all point out things that could be done differently than FCS. But I think a real challenging question is, how would we do that differently today? I think the burden there is a lot more what would have to be done prior to the acquisition phase. The question becomes, do we have the people, the organizations, the facilities, the transition mechanisms, and so forth in place to do that kind of work up front? I don't know that there's a good answer for that.

So I'll conclude with that and be available for any questions.

[The prepared statement of Mr. Francis follows:]

Senator LIEBERMAN. Thanks, Mr. Francis. That was very interesting testimony.

I guess the beginning—we're at a point where significant changes are being made in the Future Combat System program. Now, one explanation of that is that it is totally the result of budgetary constraints. But I would take it the neither of you would agree with that. Am I right? It's not totally because of budget pressure?

Mr. AHERN. No, sir, I would not agree with that. No, sir, I don't think that that was the issue at all.

Senator LIEBERMAN. So—right, Mr. Francis?

Mr. FRANCIS. Yes, Mr. Chairman. The Congress had mandated that go-no go decision in 2009, and I don't think FCS was going to measure up to that.

Senator LIEBERMAN. Yes. So this leads us to the conclusion that if it wasn't just the shortage of money that something was wrong with the program, at least as it was going forward. And now the Secretary has come in, and the President, with a restructuring of it.

Mr. Francis gave us some negatives. You know, it's an interesting question—I made notes on your positives and negatives from the FCS experience—whether the negatives were inherent and unavoidable in the positives or whether they were avoidable. In other words, if you have, on the positive side, a holistic program that's a breakthrough, where you have an innovative managerial approach, were the shortcomings that you then see about the program not being executable within resources available, oversight challenges too great, etcetera, were those inevitable or were they really—was it possible to achieve the positives here without incurring the negatives?

Mr. FRANCIS. I think it was, Mr. Chairman. If we kind of look at where the program is now, after I think an extraordinary effort to develop the requirements, the software, the technologies, and so forth, the program's at the point where the Army could now start a manned ground vehicle program based on a solid basis of technology where it knows what it can and can't do.

So I think if you took an approach like this—and we have to be careful of scale. I think I agree we have to be thinking in terms of systems of systems, but there are different sizes and perhaps that was a bit too large to manage. But I think if you took that managerial approach and took a system of systems perspective and pushed very hard in the pre-acquisition phases, then I think when you came up for a decision on whether to start an acquisition pro-

gram you would then allow the requirements to be tempered by what you can do technically, be technically realistic.

So I think the start point was really the problem.

Senator LIEBERMAN. Mr. Ahern, let me ask you to respond to some of Mr. Francis's comments, just in terms of lessons learned and where we go from here. You made an interesting, I thought significant, statement that at different times OSD actually had higher cost estimates for the FCS system than the Army did, but essentially let the Army go ahead. I think I've heard it correctly.

How do you respond to that?

Mr. AHERN. Yes, sir, that's what Mr. Francis said. I was not aware of that. There are always program office estimates and OSD or CAIG estimates. Typically, we look, try to reconcile the differences between them, get the right cost estimate going forward. I would have to go back in history and ask a question about that specifically. I don't have that.

Senator LIEBERMAN. Okay, good enough. Why did that happen, do you think? Why did OSD yield to the Army?

Mr. AHERN. Well, Mr. Chairman, I don't think there's a requirement that the OSD estimate be adhered to. But I think the big difference was over software and the OSD estimate forecast a much larger software effort than the Army had programmed. I'm not sure why they deferred to the Army, but I do know that was the main difference between the two estimates.

Senator LIEBERMAN. How about, Mr. Ahern, the conclusion that Mr. Francis presented that the Army had in some senses or cases too close a relationship with the lead systems integrator?

Mr. AHERN. Yes, sir. The relationship between Boeing, SAIC, and the Army—the Army depended upon Boeing to a greater degree going forward. I'm not sure of the characterization as too close a relationship with them. It is a government-contracted, FAR-contracted relationship with them, with the standard clauses and structure to it. So I'm not sure where he's referring to.

I do understand, initially anyway, there may have been a perception, there was a perception, that Boeing was undertaking some of what had been government jobs or government—normal government positions. But of late, at least to my knowledge, it's a standard government and prime relationship between Boeing and the government.

Senator LIEBERMAN. Do you want to flesh out that conclusion just a bit, about why did you conclude that in some cases the Army was too close to the lead systems integrator? In other words, what was the basis of that conclusion?

Mr. FRANCIS. A few things, Mr. Chairman. One was the immaturity of the program when it started. So requirements were very soft, technologies weren't well defined. So the lead system integrator was involved in decisions both on what was required as well as what the solution was.

I think a second thing is the level. In this case, the lead system integrator, rather than in a traditional prime arrangement, where you have, say, a contractor who's developing a platform and integrating subsystems, in this case you had a contractor developing a system of systems where the subcontractors had major platforms.

The third thing was, the lead system integrator was to act as the Army's agent in a lot of these decisions. Initially when the contract was set up, the Army was careful and this subcommittee in particular made it emphatic that the lead system integrator was to focus on development. There was a pretty high fee on development and there was an attempt to keep the lead system integrator financially disinterested in production, so it could focus on the Army's interests.

Over time that focus was lost and in 2007 the Army decided it would allow the lead system integrator to be the prime for the spinout production and low rate initial production of FCS core systems. So it did develop a financial interest in production. Given the size of the FCS program and it being almost synonymous with the future Army, we could see that developing naturally. I'm not saying it was necessarily improper, but you did then need another layer of oversight to make good decisions about the program, which is where we are looking to OSD.

Senator LIEBERMAN. That was not there?

Mr. FRANCIS. That was not there, yes.

Senator LIEBERMAN. You listed the innovation in the managerial approach, which is to say the lead system integrator, as one of the positive take-aways as well. So am I correct in putting these two together and saying that you would go with something like that again with the lead system integrator, but provide the greater oversight that was not there this time?

Mr. FRANCIS. I guess I wouldn't rule it out. So I would think—

Senator LIEBERMAN. But you apparently don't favor it, really, on balance?

Mr. FRANCIS. Well, there are a number of risks with it, and it hasn't worked out in other programs. The Coast Guard has tried it with the Deep Water Project. There was an attempt in missile defense, and I think there are some problems with it on SBINET. So it's unproven. So if we're going to try it, maybe it needs to be tried on a smaller scale.

Senator LIEBERMAN. Thank you very much.

Senator Thune.

Senator THUNE. Thank you, Mr. Chairman.

The FCS as a system of systems was an enormously complicated develop and acquire. What steps has the Army taken to increase the capacity of its acquisition work force to develop and buy these complicated systems?

Mr. AHERN. The Secretary of Defense has articulated the grow the acquisition community over the next couple of years, the next fiscal yearDP period of, I believe it's, 20,000 individuals, of which 5400 are intended to go to the Army. There's a split in that. I believe 10,000 are actually growth in strength and the other 10,000 in round numbers are transition from contractor to government individuals. Again, the Army will be growing 5400 of those.

Senator THUNE. In recent years the Army has had difficulty both in developing a holistic modernization strategy and in executing particular modernization programs. I would use the Comanche, the Crusader, Armed Reconnaissance Helicopter, and of course the FCS probably come to mind as the most notable examples of programs

that were cancelled or restructured after large investments of time and money.

You've touched on this, Mr. Francis, in your testimony and in response to questions from the chairman. But just if you could again, sort of lay out what your—in your view, what are the key principles to improving the force modernization programs?

Mr. FRANCIS. Sure. I think, Mr. Thune, as you look back on those you can identify flaws in what we would call the business case at the start. I think in the case of Comanche the requirements—and I worked on that program back in 1983 when it was called the Light Helicopter Experimental, when the original concept was for it to be like the Humvee, just a universal air frame that you could equip to perform different missions.

When it exited the requirements process, it became the Next Generation Reconnaissance Helicopter Tank Killer. It was actually more capable in many ways than the Apache. At that point then, the requirements outstripped the technology. So we had to go through a significant technology development effort to meet the requirements.

By the time the program really got on a sound footing, the threat had changed, and I think that's the reason the helicopter was cancelled. So again, I'd look at the business case there.

I think on ARH, it was a little bit different scenario in that most of the technologies were mature. So the idea was to take different technologies off the shelf and bundle them together in a single airframe. But in that case the Army didn't allow enough time for the integration and presented a program that was going to move really fast. For those of us who were around when the OH-58D was equipped with a mast-mounted sight, we knew how long that integration effort took. So again, I think the business case for ARH wasn't a technology issue, but a schedule issue.

I think in FCS, I think we've seen both. I think on the one hand why you can be a bit frustrated with that, I think these are all take-aways. I think really tightening down on what we need to know about requirements and technology and costs and schedule when we launch a new system is somewhere where the Army can get real payoff here and some real help from OSD.

Senator THUNE. Mr. Ahern, the Office of the Secretary of Defense is charged with overseeing major defense acquisition programs, including FCS. Yet with all that oversight, the recommendation to restructure FCS came very abruptly. I guess my question is, should the challenges that were noted by Secretary Gates in his recommendation have been addressed sooner by the Office of the Secretary?

Mr. AHERN. I think that we were—as I noted in my statement, sir, we were beginning to move toward the spinouts and focusing on the early spinouts as early as 2007 and 2008, and breaking them out with an entire set of documentation, the capability production document, an acquisition strategy, a test and evaluation master plan. So I think we were moving in that direction.

In regards to the networking and the additional BCT modernization the Secretary called for, I think we were on top of that and working in that direction. The Secretary's work on the Manned Ground Vehicle, his concern that it did not address some of the les-

sons learned and that perhaps it needed to, as Mr. Francis indicated a couple of minutes ago, look at it again, were areas that—were other areas that he looked at, I think is the way for me to say it.

It wasn't a question of the need, and the Secretary's been very clear about that. It was whether the Army program was the right program at the time going forward, recognizing lessons learned out of Iraq and the incorporation of some of the other vehicles, as the MRAP, that had been put into the field.

Senator THUNE. Mr. Francis, how would you characterize OSD's oversight of FCS?

Mr. FRANCIS. Well, Mr. Thune, I think that early on OSD was rather passive about FCS and the program proceeded in 2003 even though it was I think by any measure of DOD's acquisition policy not ready for a start. Yet it did go ahead. And there have been a number of occasions, I think, where OSD could have stepped in and taken some action.

So for example, after that initial decision in 2003 OSD said in 18 months it was going to have a second milestone decision to kind of clean up the issues that it hadn't covered in the first one, and then never held that milestone decision. So I think early on OSD could have done a lot more. We talked about cost estimates before. I was thinking about the question that you just asked, about the Secretary of Defense's intervention. I know this committee had a leadership in the acquisition reform legislation that just went through. I think it's a question that I think a taxpayer would ask or anyone here, which is, with all the processes that were in place at the time and all the policies, why did it take an extraordinary action on the part of the Secretary of Defense to kind of right-size the modernization? Why didn't all the things, all the standards work?

I think going forward we have to think in terms of acquisition reform, if we don't stay true to those standards and those reforms and allow programs to go through that, say, don't abide, then we're actually rewarding programs with money that fly in the face of all the hard work on policy. So I think it's a really good question to ask and something that will provide some I think instruction for going forward.

Senator THUNE. Mr. Ahern, would you agree that the requirements that FCS was developing toward were unrealistic?

Mr. AHERN. No, sir. Holistically, the requirements they're working for, no, sir. I think in terms of the system of systems, of the networking of the sensors that they intend to have, of the vehicles that they're going to be utilizing, the incorporation of those is valid, and I think that the recently completed preliminary design review, as I understand—I haven't gotten a full debrief on it—indicates that the requirements are stable for the individual capabilities and that as a system of systems that they've taken it under configuration management and that it is a valid set of requirements going forward.

Senator THUNE. Mr. Francis, do you agree?

Mr. FRANCIS. I don't think we know if they're realistic yet. I think the requirements were set before we knew what was technically feasible. So I think there's been a lot of work to rationalize

or reconcile the requirements and technologies. I would agree on the Manned Ground Vehicles a lot is understood now, but, for example with the network, the network is quite a revolutionary network. There's nothing like it today. It's mobile, it's ad hoc. It'll handle a huge volume. There are requirements for it that we don't know whether it will meet yet.

So I think a lot of the feasibility of the requirements is to be determined yet.

Senator THUNE. Thank you. Thank you, gentlemen, very much for your testimony.

Mr. Chairman, thank you.

Senator LIEBERMAN. Thanks, Senator Thune.

Just sort of one more wrap-up question and then one on behalf of Senator Inhofe. Bottom line, can we say that we or, to put it another way, that the taxpayers have gotten or will get their money's worth out of what we've invested in the FCS system?

Mr. AHERN. Yes, sir. I think that the payoff, what we've learned, the technologies that have been developed, matured, in the 5-year period of time that the program has been under way, that will be implemented initially in the spinouts and then in the generation to follow of the vehicles, there isn't any question in my mind that, with the right discipline in the system, the acquisition system—and that's what I think we've been talking about for the last few minutes, the discipline that's needed as we go forward with the four or five separate programs, whether it's the network or the vehicles or the sensors—yes, sir, I am sure that we will achieve that capability.

We're going to be working to modernize the Army for a number of years holistically across it, but doing it in a realistic way, using the mature technologies to begin the spinouts in 2011, decision some time next year to move forward in that direction. Yes, sir, I think it was the right approach, the discipline. We will realize the investment that's been made in the Future Combat System, as evidenced by the preliminary design review, which I take it was quite successful.

Senator LIEBERMAN. Mr. Francis, how would you answer that?

Mr. FRANCIS. Well, Mr. Chairman, I'd say the FCS program has been very productive. I think what has been accomplished has been phenomenal in terms of understanding the software, the requirements, moving all the technologies, developing the concepts for employment, and so forth.

But the question of value I think is a very good one, and I don't know quite how to answer that, because I would hypothesize that had we attempted to do this, say, in a pre-acquisition phase with a smaller work force, perhaps focusing first on the network to see what we could do there and then allow that work to inform what we could do on the vehicles, it's possible we could have been nearly as productive for a smaller investment. I'm hypothesizing there, but I think that's the question.

Senator LIEBERMAN. Well, I hope we've all learned. I agree with you, we're going to get a lot out of it, we've already gotten a lot out of it, some of it quite amazing really in technological advances. But clearly—and hopefully, we've learned a lot about how to better

manage a program like this. Your word, Mr. Ahern, is a good one: discipline.

Let me finally, on Senator Inhofe's behalf, ask you the question. I think you were here, but I gather that he wanted me to ask, to follow on, that he has asked Secretary Gates for his comments on the Department's plan or recommendation for accommodating existing law on the cannon, on the line of sight cannon, but has not yet received a reply. What is your reply? What is DOD's plan there?

Mr. AHERN. Yes, sir. As we're working through, as General Thompson said, working through the language, the precision to ensure that we get it right, to represent the direction that we have as well as the statutory requirements, we will be communicating with the Congress—I am confident of that—in order to get it right, straight across the board.

Senator LIEBERMAN. One thing I'm confident of is that Senator Inhofe will stay on this until he gets that answer.

Mr. AHERN. Yes, sir.

Senator LIEBERMAN. So the sooner the better.

Mr. AHERN. Yes, sir.

Senator LIEBERMAN. I thank you both. It's been a very constructive panel and it helps to guide us as we go forward to our markup next week, but really more to the point, to guide you and us, the Department and Congress, about how better to oversee the expenditure of large sums of taxpayer money to achieve the result that we want for our soldiers.

Thank you very much. The record of the hearing will stay open until Thursday at 5:00 p.m. for additional statements or questions, and if you get additional questions we hope that you'll answer them as soon as possible.

Senator Thune, do you want to add anything?

Senator THUNE. No, thank you, Mr. Chairman.

Senator LIEBERMAN. Thank you both for your service.

The hearing is adjourned.

[Whereupon, at 4:06 p.m., the subcommittee adjourned.]