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THE CURRENT AND FUTURE ROLES, MISSIONS, AND CAPABILITIES OF U.S. MILITARY LAND POWER

HEARING

BEFORE THE

SUBCOMMITTEE ON AIRLAND

OF THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

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CONTENTS

CHRONOLOGICAL LIST OF WITNESSES

THE CURRENT AND FUTURE ROLES, MISSIONS, AND CAPABILITIES OF U.S. MILITARY LAND POWER

MARCH 26, 2009

THE CURRENT AND FUTURE ROLES, MISSIONS, AND CAPABILITIES OF U.S. MILITARY LAND POWER

THURSDAY, MARCH 26, 2009

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

The subcommittee met, pursuant to notice, at 2:01 p.m. in room SR–222, Russell Senate Office Building, Senator Joseph I. Lieberman (chairman of the subcommittee) presiding.

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

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

Minority staff members present: William M. Caniano, professional staff member; Paul C. Hutton IV, professional staff member; and David M. Morriss, minority counsel.

Staff assistants present: Ali Z. Pasha, Brian F. Sebold, and Breon N. Wells.

Committee members' assistants present: Todd M. Stein, assistant to Senator Lieberman; Jon Davey, assistant to Senator Bayh; Gordon I. Peterson, assistant to Senator Webb; Julie Holzhuenter, assistant to Senator Hagan; David Ramseur, assistant to Senator Begich; Brady King, 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 Airland Subcommittee will come to order. Good afternoon. Let me first say, since this is our first subcommittee hearing this year, how much I look forward to working with my colleague and friend, Senator John Thune, in his capacity as ranking member of the subcommittee. We've had a very good line of partners in this subcommittee. I guess I go back to Senator Santorum, Senator McCain, and Senator Cornyn; they always worked in a bipartisan way on behalf of our military, and I know we will here as well.

The Airland Subcommittee meets this afternoon in the first of two hearings intended to broadly explore the Nation's current and future roles and requirements for military land and air power. This

afternoon we focus on land power. We're going to follow with an additional hearing next month on air power.

It's the intent of these hearings to identify requirements for our land and air power as part of our primary responsibility to authorize funding for the programs for air and land power that we conclude are necessary to provide for the common defense. But we also do so this year to anticipate the administration's reassessment of the National Security Strategy, the National Military Strategy, and the Quadrennial Defense Review.

Over nearly 8 years of war in Iraq and Afghanistan, we've watched with pride and gratitude the magnificent performance of America's land forces, our soldiers and our marines. They have repeatedly shown that they can rise to the challenge on battlefields on which they have not fought before. They have adapted through major combat operations, counterinsurgency, and irregular warfare in response to evolving challenges that they have faced in battle.

But I believe that we have not done enough to support our ground forces' transformation or to prepare them to meet future threats. That's why at today's hearing I hope our witnesses will help us answer three basic questions: What threats are American ground forces likely to face in the foreseeable future? Is American land power now sized, organized, and equipped to defeat those threats? If not, what changes do we need to make in the size, organization, and equipping of American land power?

It is encouraging that the Army and Marine Corps have achieved the targets for end strength growth that members on both sides of this committee and in the Senate worked hard to set 3 years ago. But I don't believe that this growth is sufficient to meet current and future land power requirements. I'm concerned that in the near term the Army will not be able to finish building all of its remaining 48 Active Duty brigade combat teams or the critically necessary enablers that they require; and that this growth will be insufficient in the long run for the Army to stand up any additional specialized units that it needs. We have to organize the force to do the missions we ask of it and provide the force with the personnel it requires.

The Obama administration is also reassessing the Department of Defense's (DOD) previous strategy for modernizing our land forces. Although the fiscal year 2010 defense budget request has not been delivered yet in detail to Congress, there are reports that defense procurement funds will probably be redirected from the Army's most technologically sophisticated programs toward capabilities that target counterinsurgency or irregular warfare.

I'm very interested and concerned about the administration's plans for the Army's major modernization program, the Future Combat Systems (FCS) program. We've invested a lot of money into FCS and some of the results are already helping our warfighters. But we have to ask now in this particular environment what is the future of the FCS program? Should it be modified, terminated, or continued on its present course?

The defense budget will also face pressure because of the need to reset the equipment that has been used in our ongoing wars while also shifting new resources to support the fight in Afghanistan.

In short, this is a time when we really have a responsibility to conduct an examination of our Nation's land power and its needs. To help us with that examination today we're fortunate to welcome a panel of really extraordinary witnesses whose testimony will provide I think a range of views with respect to the current state and future roles and requirements for our ground forces and help us answer the questions that I have posed.

With that, Senator Thune, I would welcome an opening statement.

STATEMENT OF SENATOR JOHN THUNE

Senator THUNE. Thank you, Mr. Chairman, and I too look forward to working with you. You've outlasted a number of our colleagues on this subcommittee, but you've been a great leader on these issues and I'm certainly honored to have the opportunity to work with you on what are going to be important national security issues to come before this subcommittee and the full committee in the days ahead.

I think this is an important hearing. I want to join you in welcoming our witnesses. In the next few months this subcommittee may be called upon to make some very consequential budget decisions on a number of major defense acquisition programs. None of these decisions are going to be easy. These decisions will require this subcommittee and the entire Congress to make careful assessments of the risks and tradeoffs associated with each program.

This hearing will help inform those assessments and sharpen our thoughts about the character of future land warfare. Specifically, I want to hear the witnesses' views on whether or not land forces acquisition programs, along with the roles and missions assigned to our land forces and the forces' size, organization, and training, are suitable or at least sufficiently agile.

I believe it's reasonable to assess that the precise requirements for land forces will continue to evolve through the first quarter of this century and that the geopolitical implications of the current economic crisis on our national security and the security of our allies have not been fully realized. This makes the future character of land power all the more complex. The range of diverse threats and trends that our land forces must be prepared to address will likely escalate.

While some have called this an era of persistent conflict, I submit it may certainly be persistent, but I'm concerned that the future will be more uncertain and more unstable. Accordingly, I sense the character of the era of persistent conflict will be more irregular than conventional.

The subcommittee will want to hear and learn the witnesses' views on the difficult threats and rising trends we will face in the decades to come and the implications for our land forces.

In January, DOD released the 2009 Quadrennial Roles and Missions (QRM) review report. Within the 2009 QRM review, DOD defined its core missions as missions for which DOD is uniquely responsible, provides the preponderance of capabilities, or is the U.S. Government lead as established by national policy. The QRM review found that DOD's core mission areas are: homeland defense and civilian support; deterrence operations; major combat oper-

ations; irregular warfare; military support to stabilization; security, transition, and reconstruction operations; and military contribution to cooperative security.

This is clearly a full spectrum of operations and each has a sizable land force component. Do we have land forces that are designed and organized to rapidly adapt across the entire spectrum of operations? Do the Army's modular organizations give us versatile capability? Is the size and projected growth of our land forces sufficient? Is the education of our military leaders adequate? The subcommittee will want to learn the witnesses' thoughts on these important issues.

Our soldiers and marines have been deployed almost continually since 2001, performing courageously against adaptive enemies. The strain on our forces and their families has been significant. The state of the Army is, as General Casey testified, out of balance. General Casey has also said we're not able to build depth for other things; we're running the All-Volunteer Force at a pace that is not sustainable.

The subcommittee will want to hear the witnesses' opinions on the principle of balancing our force, the future of the All-Volunteer Force, the utility of the Army force generation (ARFORGEN) model that is used to build readiness, and the future roles and missions of the Reserve component land forces.

In closing, the subcommittee will benefit from the witnesses' opinions on the utility of some major acquisition programs. Specifically, we'll ask their views on the Army's FCS program. FCS is the centerpiece of the Army's modernization effort and it's intended to make the Army a lighter, more agile, and more capable combat force.

In recent weeks the Government Accountability Office (GAO) cast doubt about FCS. GAO found the FCS critical technologies are not currently at a minimum acceptable level of maturity and that the FCS acquisition strategy is unlikely to be executed within the current $159 billion cost estimate. Our witnesses will be asked their views on the FCS program and whether or not there are other modernization routes for the Army.

Mr. Chairman, I thank you and I look forward to hearing the testimony of our witnesses today.

Senator LIEBERMAN. Thank you, Senator Thune, for that very thoughtful statement.

I want to welcome Senator Hagan, Senator Begich, and Senator Burris to the subcommittee. We're honored to have you here, and I don't want to not welcome back Senator Inhofe.

We have three really great witnesses today. I asked the staff how they decided on the order and the good news/bad news for you, Andy, is that you're first because they've decided you're most senior. [Laughter.]

Andrew Krepinevich is President of the Center for Strategic and Budgetary Assessments (CSBA) here in Washington. He's appeared before the Senate Armed Services Committee on many occasions before. His most recent study is "An Army at the Crossroads," one of the CSBA's studies intended to contribute to the new administration's defense strategy review.

I just finished reading—and I really did read it—his "Seven Deadly Scenarios" book, which is really riveting and thought-provoking reading, and I'd recommend it to all my colleagues. I don't get any commissions on the sales, so that's really said from the bottom of my head. [Laughter.]

Dr. Krepinevich, please proceed.

STATEMENT OF ANDREW F. KREPINEVICH, JR., PH.D., PRESIDENT, CENTER FOR STRATEGIC AND BUDGETARY ASSESSMENTS

Dr. KREPINEVICH. Thank you, Mr. Chairman. I will summarize the remarks in my testimony.

Senator LIEBERMAN. We'll include your testimony and all the others, as if read in full. You each did a lot of work on them. I appreciate it.

Dr. KREPINEVICH. I think the question of what kind of an Army do we need was a question that was fairly easily answered for much of the 20th century. The first half of the 20th century, the answer was we need an Army to beat the German army; World War I, World War II. The second half of the 20th century, we needed an Army to beat the Soviet army. These were armies that looked a lot like ours.

When you ask that question today, what kind of an Army do we need, there is no other army out there like our own. Both General Casey and the Secretary of Defense have said we are in an era of persistent conflict. I would insert one word into that phrase: We are in an era of persistent irregular conflict. The wars we have been waging for the last 8 years, what we're engaged in now and what we are likely to be engaged in for the foreseeable future, are irregular wars.

When you begin to address the question of what kind of an Army we need, I think you need to take that fundamental shift into account. We need an army that is expert at irregular warfare, a business in a sense we got out of after the Vietnam war and have recently gotten back into.

But we also need an Army that can hedge against other kinds of conflicts, specifically conventional conflict. The problem that the Army has had is that the Army has a limit on its size, both in terms of the human resources it can reasonably attract at an acceptable cost and the force that it can modernize over time. As a consequence of that, the Army has said, "look, because we can only be so large and because the number of contingencies are great both at the high end and the low end, we need to have a full-spectrum Army. We need an Army where our brigades are fully capable of operating both at the high end of the conflict spectrum and at the low end, with high levels of proficiency and on short notice."

The question that concerns me is, while this may be desirable, it's not at all clear that it's possible. It's not clear that you can rapidly switch from the skill set that is required, as Lieutenant General William B. Caldwell, USA, Combined Army Center, said, of strategic corporals in irregular warfare to then participate in what I call the FCS ballet, the highly networked aggregation of 14 different systems waging high-intensity warfare.

The point I think also is that not only are we asking more of our soldiers, but if you look at the quality in terms of the way the Army measures quality of the officer corps, the noncommissioned officer (NCO) corps, and the enlisted force, that quality has gone down, which I think is another reason why it's really a bit risky to say that we can have a full-spectrum Army, an Army that can seamlessly shift gears from one form of war to another.

Moreover, even if we have an Army that is 48 brigades, that can handle these kinds of missions, even if you grant the Army that assumption, the problem is a lot of the contingencies that we anticipate today or concern ourselves with today; what happens if there is a conflict in Iran and you have post-conflict operations, what happens if Pakistan comes apart at the seams, Nigeria or Indonesia?

There are any one of a number of planning scenarios that by themselves would overwhelm even a 48-brigade Army with a 28-brigade Reserve component.

You see the wisdom in the strategy that was developed in 2006, but which really hasn't been embraced. The strategy is the strategy of the indirect approach or building partner capacity. The source of our advantage isn't in a large quantity of manpower; it's in the quality of manpower that we have, the skills of the relatively small numbers of soldiers that are in the Army. So the idea is to leverage that quality by over time building up indigenous forces in other countries that are threatened by instability and state failure.

My point of view has been that as a consequence of that when the Chief of Staff of the Army talks about rebalancing the force, what you really need is a force that's balanced between conventional high-end operations and irregular warfare or stability operations. Essentially, we need an Army that has two wings to it, not an Army with divisions that only fight conventional war and brigades that only wage irregular warfare, but an Army that has brigades that are oriented, although not optimized, for irregular warfare and an Army that also has brigades that are oriented but not optimized for conventional warfare.

Right now we have an Active Force where the plan is to have 19 of 48 Active brigades be heavy brigades. Forty percent of the Active Force is going to be oriented on conventional war. There are zero brigades that are oriented specifically on stability-cooperation operations.

Also, what I find ironic is that, while 40 percent of the Active Force is oriented on high intensity warfare, only 25 percent of the Reserve Force is, this despite the fact that the Active Force can be deployed more frequently in protracted irregular warfare operations. So I do believe that there is this imbalance, and I do believe that when the Secretary of Defense worries about the Army not institutionalizing what it's learned in the wars in Afghanistan and in Iraq and the global war on terrorism, he is concerned that the center of gravity is going to pull the Army back toward its traditional comfort zone, which is high-end conventional conflict.

So if you had a balanced force you'd be looking at brigade combat teams that were oriented on irregular warfare, a more formal training and advisory capacity, and also a governance capacity, because the Army has signed up to the task of showing up and pro-

viding governance support in the event that the interagency team fails to show up.

This has significant implications for modernization. FCS was originally designed with a vision toward open battle and conventional warfare operations. Having said that, I think there are four areas of risk associated with FCS. First is fiscal risk, as the chairman pointed out. A second is technical risk, as the GAO study pointed out. A third is temporal risk, and a fourth is operational risk.

To the extent that we overweight our investments toward FCS and accept these kinds of risks, I think we jeopardize our ability to properly reset the force, and also we ignore the issue of the need prospectively for what I would call war reserve stocks. If we are going to be in the business of building partner capacity and if we are going to be in the business of doing that rapidly, we are going to have to have stockpiles of equipment so that we can in the future help build up military forces that can provide for their own security or, as the case indicates now, building up the Afghan National Army, for example, and equipping them in ways that will enable them to take on more of the responsibility from our forces there.

I'll mention one final thing and that's what I would call the guided rockets, artillery, mortars, and missiles (GRAMM) threat. Some people call it hybrid warfare. I think the clear example here is the second Lebanon war in 2006, where Hezbollah fired roughly 4,000 projectiles into Israel, and several hundred thousand Israeli citizens had to be evacuated. The Israelis had to shut down their oil refining and distribution system for fear that a lucky hit would cause untold damage.

I think the Army has a real mission here in terms of looking at how air and missile defenses, counterbattery fires, and things like hunter-killer teams can begin to deal with this nascent threat that I think over the next decade will become a more direct threat to us.

So in summary, what I see is a fundamental shift, a very difficult question that was an easy question to answer in the 20th century, and an important question to address at this time, not just because the threat has changed, but also because you can only reset the force once. Congress has generously offered to write that big check, but once you write that big check for that equipment that's supposed to be in the field for 10, 20, or 25 years, particularly in this fiscal year, it becomes a very difficult task to accept a response 5 years down the road: "Gee, we made a mistake; please, we need to reset again."

So again, my belief is that the chief is right, what we need is a rebalanced Army, but the kind of Army that we're looking at right now is in my estimation far too rebalanced and oriented on traditional or conventional military operations.

Thank you, Mr. Chairman.

[The prepared statement of Dr. Krepinevich follows:]

PREPARED STATEMENT BY DR. ANDREW F. KREPINEVICH

INTRODUCTION

Thank you, Mr. Chairman, for the opportunity to appear before you today, and to share my views on the future of U.S. Ground Forces. As we begin a new administration, we are sobered by the security challenges that have emerged in recent years: the attacks of September 11; the deployment of U.S. troops to Iraq and Afghanistan; the erosion of barriers to nuclear proliferation; and the rapid rise of China and resurgence of Russia. Not surprisingly, there is considerable interest in what this portends for the U.S. military in general and our ground forces in particular.

Of course, any detailed discussion of how our ground forces might best be organized, structured, trained, and equipped to meet the challenges of a rapidly changing security environment should be informed by a sound national security strategy. Anything less would be putting the cart before the horse. The Obama administration has a strategy review underway. This review stands to be the most important review since the Cold War's end.

My testimony is focused primarily on the Army, given the dominant position it holds in providing ground forces for our country.[1]

THE NATIONAL SECURITY CHALLENGES FACING THE ARMY

The three challenges confronting the U.S. military today—the war against Islamist terrorist elements, the prospect of nuclear-armed rogue states, and the potential rise of China as a military rival—differ greatly from those confronted during the Cold War era. Nor do they resemble the threats planned for in the immediate post-Cold War era, when minor powers like Iran, Iraq, and North Korea which lacked weapons of mass destruction and were assumed to present challenges not all that different from Iraq during the first Gulf War. Nevertheless, this assumption led the U.S. military to focus its attention on waging two such conflicts in overlapping timeframes from 1991 until the September 11 attacks.[2]

For the Army, these new challenges all suggest the onset of an era of persistent, irregular conflict. The wars in Afghanistan and Iraq show no signs of ending soon. The same can be said regarding the war against Islamist terrorist groups operating around the globe. Moreover, the rising youth bulge in Africa, the Middle East, Central and South Asia, and in parts of Latin America only promises to increase the strain on governments in these regions, increasing the prospect for further instability and even state failure. As unprecedented numbers of young people in these parts of the world come of age, they will find themselves competing in a global economy in which they are hampered by a lack of education and burdened by corrupt and incompetent governments. The communications revolution will enable radical groups to influence large numbers of these young adults, and attempt to recruit them. Even if radical elements succeed in winning over only 1 percent of the young as they rise to adulthood, they will have recruited millions to their cause. For much of history, large numbers of people were required to cause disruption and destruction. Yet as groups like Aum Shinrikyo,[3] al Qaeda, and Hezbollah have shown, thanks to the advent and spread of highly destructive technologies even small groups can create widespread disorder.

It does not end there. Should minor powers hostile to the United States, such as Iran, acquire nuclear weapons, they will likely feel emboldened to take greater risks in backing groups pursuing ambiguous forms of aggression. In Iran's case, this could lead to greater support for radical groups like Hamas, Hezbollah, and the Mahdi Army, as well as others. If the United States is unable to convince China to abandon its attempts to exclude the U.S. military from East Asia and to threaten America's access to the global commons, the competition could spill over into irregular

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[1] My testimony is essentially a summary of my monograph on the Army. See Andrew F. Krepinevich, An Army at the Crossroads (Washington, DC: CSBA, 2008).

[2] The two major regional conflict posture was succeeded by the two major theater war and major combat operations (MCO) postures, which essentially represented variations on the same theme: regional wars against minor powers in the Persian Gulf and Northeast Asia. The U.S. force posture did not begin to change significantly until after the September 11 attacks and the onset of the wars in Afghanistan and Iraq.

[3] On March 20, 1995, members of a Japanese cult, Aum Shinrikyo, released sarin nerve gas in a coordinated attack on five trains in the Tokyo subway system. Although the attack was botched, 12 commuters were killed and 54 seriously injured, while nearly 1,000 more people suffered some ill effects. Kyle B. Olson, "Aum Shinrikyo: Once and Future Threat?" Centers for Disease Control, accessed at http://www.cdc.gov/ncidod/eid/vol5no4/olson.htm, on March 21. 2009.

proxy wars in developing nations. China could pursue this path both in an attempt to tie the United States down in costly, protracted conflicts, and to position itself to secure access to important or scarce raw materials.

A FULL-SPECTRUM FORCE

Given the advent of an era of persistent irregular conflict, with its emphasis on manpower-intensive operations on land, the Army is destined to play a central role in U.S. defense strategy. The Service will need to build on its hard-won expertise in conducting these kinds of operations, whether they go by the name of stability operations; foreign internal defense; internal defense and development; stability, security, transition and reconstruction operations; counterinsurgency; or irregular warfare.[4] At the same time, the Army must also hedge against a resurrection of rivals who look to challenge its dominance in more traditional, or conventional, forms of warfare.

These disparate missions argue for an Army that can operate effectively across the entire conflict spectrum. However, because the range of missions is so broad, and the skill sets required sufficiently different, attempting to field forces that can move quickly and seamlessly from irregular warfare to conventional warfare seems destined to produce an Army that is barely a jack-of-all-trades, and clearly a master of none. This approach becomes all the more problematic when one considers the ongoing erosion of quality in the officer and noncommissioned officer (NCO) corps, and in the Service's recruiting standards.[5] Yet this is what the Army is attempting to accomplish through its full-spectrum force.

The Army has understandably felt compelled to pursue the "full-spectrum" approach owing to the need to cover a range of missions within the limitations on its size imposed by fiscal constraints and its all-volunteer character. Yet even if this approach were viable, the Army remains too small for larger irregular warfare contingencies, let alone those that occur simultaneously.

Fortunately, the authors of the U.S. defense strategy have wisely chosen to address the gap between the scale of the challenges confronting the Nation and the forces available to address them by focusing on building up the military capabilities of threatened states, and of America's allies and partners. The Army must give greater attention to supporting this strategy, especially with regard to stability operations, as the best means of addressing the challenge of preparing to conduct operations at high levels of effectiveness across the conflict spectrum.

The Army has specialized forces. It will need more.

The Service has for decades fielded forces specialized for airborne operations and air assault operations. Of course, the Army also has its Special Forces, expert in a range of irregular warfare operations. It has forces specially designed for high-end warfare, and plans to continue in this vein with the Future Combat Systems Brigade Combat Teams (FCS BCTs), which the Army properly recognized are optimized for conventional warfare. These kinds of forces are designed to surge on short notice to address conventional contingencies. While it was once argued that such general-purpose forces could readily shift gears to handle contingencies at the lower end of the conflict spectrum, the evidence of Vietnam, Afghanistan and Iraq suggests the contrary. Moreover, the Army's new doctrine confirms the triumph of real-world experience over wishful thinking. Thus what the Army lacks are forces designed to surge in the event of a major contingency at the lower end of the conflict spectrum, as well as forces designed to prevent such a contingency from arising in the first place.

The Army needs to field two surge forces, one for conventional operations, the other for irregular warfare. Should either form of conflict prove protracted, the other wing of the force could, over the course of the initial 12- to 15-month surge, undergo training and the appropriate force structure modifications to enable it to swing in behind the surge force to sustain operations.

This approach might be termed the dual-surge Army, comprising two wings, one oriented (but not uniquely specialized in) operations along the lower end of the conflict spectrum, while the other wing would be oriented on operations along the high end of the conflict spectrum. Structured in this manner, the Army could rightfully claim to be a truly capable full-spectrum force.

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[4] While the U.S. Armed Forces appear to have little need to segment conventional warfare into discrete types, the same cannot be said of warfare at the lower end of the conflict spectrum. In addition to the various "flavors" of this form of warfare mentioned above, one might add peacekeeeping and peace enforcement operations, operations other than war, among others.

[5] Bill Sasser, "Strained by War, U.S. Army Promotes Unqualified Soldiers," July 30, 2008, accessed at http://www.salon.com/news/feature/2008/07/30/sergeants/index.html?source=rss&aim=/news/feature, on August 29, 2008.

THE NEED FOR IRREGULAR WARFARE CAPABILITIES

The Army's most immediate and pressing missions are those related to irregular warfare. The Department of Defense (DOD) is pursuing an indirect strategy with regard to the challenges posed by this form of conflict. This makes sense, both as a means of avoiding having U.S. forces tied down in protracted conflicts, and because internal threats are typically best handled by indigenous forces. It is also necessary, as the U.S. military simply lacks the capability to create the security conditions necessary to enable stability on the scale that might be required. Consider that the Army is fully engaged in Afghanistan and Iraq, countries whose combined populations are under 60 million. Yet countries of significant concern to the United States, like Iran (70 million), Nigeria (150 million) and Pakistan (165 million) have far greater populations. Hence the need to "build partner capacity" in the security forces of friendly countries threatened by instability, and in allied and partner countries which could assist in restoring order should the regime of a hostile state (e.g., Iran) collapse.

With respect to friendly States the best strategy is to build partner capacity and engage in other preventive measures before a friendly country is at risk. The Army must be prepared to engage in substantial steady-state peacetime training and advising of indigenous security forces, when requested by the host nation. These efforts should be undertaken on a scale appropriate to the situation, and within the host nation's comfort level. In an era of persistent irregular conflict, the Army will need to conduct persistent training and advising operations, much as maritime forces over the years have conducted peacetime forward-presence operations as a means of maintaining stability by reassuring partners and demonstrating resolve to rivals.

In the event preventive measures fail, the Army must have the ability to build partner capacity rapidly, creating an indigenous/allied surge capability that can begin to restore stability to the threatened area. In circumstances where U.S. vital interests are at stake, the Army must also be able to surge its own forces into the gap while partner capacity is being created. The effort to build partner capacity will typically find the Special Operations Forces (SOF) in the lead. However, given their relatively small size, the large demands placed on SOF by the protracted war against Islamist terrorist groups, and the prospective scale of the contingencies involved, the Army and its sister Services must be prepared to conduct training and advising of host-nation and, where necessary, allied and partner militaries. Moreover, if the Army's partners in the U.S. Government's interagency element—e.g., the State Department, the Intelligence Community, United States Agency for International Development, etc.—prove unable to meet their obligations as partners in restoring stability, the Army must also be prepared to engage in operations to help restore the threatened state's governance and infrastructure, and the rule of law.

Consequently, the Army must maintain a significant standing training and advisory capability that can be deployed on short notice, when necessary. This capability can reside within the institutional Army, in the form of officers and noncommissioned officers assigned to Army schools as instructors or students; at Army headquarters (e.g., the Training and Doctrine Command); or as staff, faculty and students at a school where instruction is given on how to serve as a trainer or advisor. Rather than stripping existing brigade combat teams of their officers and NCOs to support the training and advisory mission, thereby eroding their effectiveness, the institutional Army can provide a surge capability while the Service leverages its existing school-house facilities to generate additional trainers and advisors.

Since the Army may need to fill gaps in the U.S. interagency effort to restore governance and enable economic reconstruction and sustained growth, it must remain capable of responding quickly as part of any surge effort. Given this requirement, the Army should strongly consider maintaining the ability to field, on short notice, Civil Operations, Reconstruction and Development Support (CORDS) groups capable of providing advice, mentoring, and support to the host nation's nonsecurity institutions (including its civil administration and its legal, economic, and healthcare sectors). The CORDS groups should be capable of creating parallel advisory offices to host-nation ministries at the national, regional, provincial, and (on a rotating basis) local levels. They must also have the ability to undertake quick impact projects immediately upon deployment; develop annual plans for civil operations, reconstruction, and economic development; and engage in longer-term capacity-building efforts. The Army's CORDS groups would vary in size depending on the circumstances, but they should include military personnel (including personnel from the other Services), civilians made available from other executive departments and agencies, and expert personal services contractors.

MAINTAINING DOMINANCE IN CONVENTIONAL WARFARE

The Army also needs to maintain a dominant capability for high-end conventional warfare, of which the most demanding form is likely to be major combat operations (MCOs) whose objective is to effect regime change of a minor nuclear power. The Army must preserve its dominant position in this form of warfare to dissuade rivals from contemplating threatening U.S. security interests by employing conventional forces. It is important to remember, however, that modern conventional operations are inherently joint, and U.S. dominance in air power provides the Army with a priceless advantage in conducting conventional operations, as we have seen in both Gulf Wars, the 1999 Balkan War, and during Operation Enduring Freedom in Afghanistan in 2001–2002. While these factors may enable the Army to take more risk in the area of conventional capabilities, it does not obviate the need to sustain the Service's dominant position. The focal point of this effort should be creating a combined-arms battle network land force linked to the U.S. military's overarching joint battle network.

DEFENDING THE U.S. HOMELAND

The Army must also meet its obligations to defend the U.S. homeland. Most of the skills and capabilities required to support this mission are also required to conduct the two basic missions described above. Stability operations involve Army units engaged in providing population security, securing key infrastructure, enabling reconstruction, restoring governance, and numerous other tasks associated with defending the homeland and supporting post-attack recovery. The same can be said of Army capabilities at the other end of the conflict spectrum, which may involve defense against a weapon of mass destruction attack, damage limitation in the event of an attack, and consequence management following an attack. The same can be said of the skill sets and capabilities required to deal with the so-called hybrid threat, such as that confronted by the Israelis in combating Hezbollah in the 2006 Second Lebanon War.

SECURITY COOPERATION BRIGADE TEAMS

A requirement also exists for an Army surge capability for stability operations in the form of Security Cooperation Brigade Combat Teams (SCBCTs). These brigades should also serve as the Army's Phase O forward-presence forces, designed to keep weak states from becoming failed or ungoverned states. The SCBCTs, while similar to Infantry Brigade Combat Teams (IBCTs) in many respects, would incorporate some significant differences. They would have one artillery battery instead of two in their fires battalion. Relative to IBCTs, SCBCTs would have an augmented Special Troops Battalion, while their military intelligence company would be increased in size and accord greater emphasis on human intelligence and expertise in operating on complex human terrain. The SCBCT's military police contingent would have two companies, not one, as in the IBCT. Strong consideration should be given to increasing the SCBCT's battalion's engineer component relative to the IBCT, and to embedding civil affairs and psychological operations units. If necessary, the SCBCT could also be augmented with (or supported by) quick-reaction-force squadrons, which could be drawn from Stryker Brigade Combat Teams (SBCTs) or Heavy Brigade Combat Teams (HBCTs). Depending upon the contingency, SCBCTs could also be augmented by weapons of mass destruction rapid-response forces, military advisory teams, and air and missile defense units. Soldiers serving in SCBCTs would also be expected to spend most of their troop time in these brigades, although they should serve at least one and perhaps two tours in other units (e.g., IBCTs, HBCTs, SBCTs, Airborne or Air Assault Brigades, or SOF units) oriented more heavily on traditional, or conventional operations. This will enable these soldiers to reorient their SCBCT units more effectively should they be needed to support a surge at the high end of the conflict spectrum as a follow-on force behind the HBCTs.

THE DECLINE IN QUALITY OF THE NCO AND OFFICER CORPS

Irregular warfare demands will require a higher density of officers and noncommissioned officers than exists in the current force to support training and advisory missions, and to fill out CORDS units, and perhaps SCBCTs as well. Yet the Army has been experiencing a decline in quality of its officer and noncommissioned officer corps. NCOs mentor junior enlisted soldiers in soldier skills and leadership, setting an example for them and providing an indispensable link between officers and their troops. For this reason the NCOs are often referred to as the "backbone" of the Army. The NCOs' importance is clearly seen in the institutional crisis that

confronted the Army during the Vietnam War when the Service found itself compelled to adopt accelerated promotions to fill shortages in the NCO ranks. The widespread promotion of enlisted soldiers (often referred to as shake-and-bake sergeants) unprepared to handle NCO responsibilities played a major role in the breakdown in order, discipline, and unit effectiveness during that war.

There are signs of the same phenomenon today. In 2005 the Army began automatically promoting enlisted personnel in the rank of E–4 to E–5 (sergeant), based solely on the soldiers' time in service, without requiring them to appear before a promotion board. In April 2008 the policy was extended to include promotions from E–5 to E–6 (staff sergeant). Although a soldier's name can be removed from consideration by his or her commander, each month the soldier's name is automatically placed back on the promotion list.[6] The Army was short over 1,500 sergeants when the policy went into effect. Since then, the shortage has been reduced by over 70 percent; but numbers do not reveal quality—or lack thereof.[7]

The shortage also finds the Army increasing the number of involuntary extensions of duty—the "stop-loss" policy. The number of soldiers affected by the stop-loss increased by 43 percent between 2007 and 2008. Revealingly, nearly half of those affected by the stop-loss are NCOs. Army leaders believe the program will have to be extended at least through 2009.[8] Fortunately, this practice seems to be coming to an end. However, as the Army suffers from a shortage of junior officers as well, many enlisted personnel with high potential are being diverted into Office Candidate School, further diluting enlisted leadership quality. This situation will only be exacerbated by the planned 65,000 increase in the Army's end strength.

Nor is the problem limited to junior NCOs. An Army study of soldiers' mental health found that 27 percent of NCOs on their third or fourth combat tour exhibited post-traumatic stress disorder symptoms, vice 18.5 percent of those who had completed their second tour, and 12 percent of those who finished their first tour. The Army study found that NCOs who had served multiple deployments reported "low morale, more mental health problems and more stress-related work problems."[9]

The Army's problems extend to the officer corps as well. In 2003, roughly 8 percent of the Army's officers with between 4 and 9 years of experience left the Service. Three years later, the attrition rate had jumped to 13 percent. Of the nearly 1,000 cadets from the West Point class of 2002, 58 percent are no longer on active duty.[10] An effort in the fall of 2007 to entice 14,000 captains to extend their commissions fell short by roughly 1,300.[11] Making matters worse, the Army will need another 6,000 captains as it expands by 65,000 soldiers and 6 new BCTs and their associated supporting elements.[12] There is a projected shortfall of roughly 3,000 captains and majors until at least 2013, with the Army counting only about half the senior captains that it needs.[13]

An increasing percentage of the Army's new officers, however, are not being commissioned from the traditional sources of West Point and Reserve Officers Training Corps programs, which supply recruits fresh from college. Rather, the Army has been increasingly compelled to pull soldiers, most of whom have not graduated college, from the ranks and send them to Officer Candidate School (OCS). The number of OCS graduates has grown dramatically since the late 1990s, rising from roughly 400 a year to over 1,500 a year, or more than the graduating class at West Point.[14]

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[6] While a soldier's commanding officer can remove his or her name from the promotion list, there are pressures at work that discourage this. Failure to advance a soldier to NCO rank could make the soldier less willing to re-enlist. It could also hurt unit morale if other units in the same organization (e.g., other companies in a battalion) are promoting soldiers as they hit their time-in-service points, but one unit is not. Failure to promote, which results not only in an increase in rank but in pay and status, can also be seen by soldiers as a social issue, in terms of how a soldier is viewed in his or her community, and the level of support they can provide to their family.

[7] Bill Sasser, "Strained by War, U.S. Army Promotes Unqualified Soldiers," July 30, 2008, accessed at http://www.salon.com/news/feature/2008/07/30/sergeants/index.html?source=rss&aim=/news/feature, on August 29, 2008.

[8] Tom Vanden Brook, "More Forced to Stay in Army," USA Today, April 22, 2008, p. 1; and Pauline Jelinek, "General: Army Will Need 'Stop-Loss' Through 2009," Houston Chronicle, April 22, 2008.

[9] Thom Shanker, "Army Worried By Rising Stress of Return Tours to Iraq," New York Times, April 6, 2008, p. A1.

[10] Andrew Tilghman, "The Army's Other Crisis," Crisis," Washington Monthly, accessed at http://www2.washingtonmonthly.com/features/2007/0712.tilghman.html, on September 8, 2008.

[11] Tom Vanden Brook, "Deployments Strain Army Recruiting, Retention," USA Today, p. 6.

[12] Bryan Bender, "Military Scrambles to Retain Troops," Boston Globe, March 7, 2008.

[13] Andrew Tilghman, "The Army's Other Crisis," Crisis," Washington Monthly, accessed at http://www2.washingtonmonthly.com/features/2007/0712.tilghman.html, on September 8, 2008.

[14] Idem.

Again, as with the NCO corps, as officer quality has declined, promotion rates have increased. Instead of the traditional promotion rates of 70 to 80 percent of eligible officers to major, now over 98 percent of eligible captains are promoted to major.[15]

These trends are worrisome, especially for an Army that intends to place greater demands on its soldiers and their leaders to be highly proficient at irregular warfare while also mastering the complex battle networks and advanced equipment that comprises its Future Combat Systems.

REBALANCING THE FORCE STRUCTURE

What changes in the Army's force structure and program would be necessary to field the "Two-Surge" Force? The following recommendations are provided for consideration. While these recommendations might be further refined through more detailed analysis than is practical here, I am confident that they represent a significant improvement over the Army's current approach. It is assumed that force structure modifications will be completed at the same time as the Army's planned completion date for the Modular Force, in fiscal year 2013. At that time, it is also assumed that overall Army requirements for Afghanistan and Iraq will be significantly reduced from the levels reached during the Surge in Iraq, perhaps by half.

The Army must rebalance its force structure to enable persistent support for Phase O stability operations, to include building partner capacity where needed. This requires converting 15 Army IBCTs to the SCBCT configuration described above, as well as 15 Army National Guard (ARNG) IBCTs to an SCBCT configuration. Given a 3:1 rotation rate for the Active component, and a 6:1 rate for the Reserve component the force generation process should be capable of fielding 7½ SCBCTs on a sustained basis. In Phase O operations, these BCTs would typically operate in small force packages conducting a range of stability operations missions, to include building partner capacity. In the event of a major stability operations contingency, the Army would have a force of 30 brigades to draw upon for surge operations for up to 12 to 15 months, to enable the Army's other wing to reorient itself to sustain the initial surge and to build up partner capacity within the threatened State and among allies and partners, as necessary.

The Full-Spectrum Force and Dual-Surge Force

AC/RC	Modular "Full-Spectrum" Force	Modular "Dual-Surge" Force
HBCTs	19/7	13/9
SBCTs	6/1	6/1
IBCTs	23/20	8/0
SC BCTs	0/0	15/15
Total	48/28	42/25

Source: Department of the Army, CSBA.

Should the Army be confronted with an irregular force capable of posing a hybrid warfare threat, HBCT elements (and, perhaps eventually, FCS BCTs) might be deployed as part of the initial surge force. The stability operations surge force could also be supported by the 4 Army airborne brigades of the 82nd Airborne Division, as well as the 4 brigades of the 101st Airborne Division (Air Assault) and the 6 middle-weight Stryker brigades, for a total of 14 BCTs. To this might be added the ARNG's single Stryker BCT.

The Army's heavy force oriented primarily on conventional operations would comprise 12 HBCTs, perhaps eventually migrating to 12 FCS BCTS, and an armored cavalry regiment, along with 9 National Guard HBCTs (an increase of 2 HBCTs over the current force). This would provide the Army with a heavy surge force of up to 22 HBCTs, with 6 AC SBCTs and 1 ARNG SBCT available if needed, along with the 4 brigades of the 101st, for a total of 33 heavy or middle-weight brigades, far in excess of what is likely to be required for the MCO portion of regime change operations against a nuclear rogue state like Iran, assuming its anti-access/area-denial (A2/AD)[16] defenses can be reduced to a level that would permit the introduction of large U.S. ground combat forces.

[15] Idem.

[16] "Anti-access/area-denial" (A2/AD) capabilities are those designed to delay the arrival of U.S. forces, to keep them beyond their effective range, and to defeat them if they try to penetrate the denial zone. While many military forces and capabilities can contribute to the A2/AD mis-

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The above recommendations result in an overall force structure of 42 BCTs in the Active component (AC), and 25 BCTs in the Reserve component (RC), for a total of 67 BCTs. This represents a reduction in the Army's Modular Force goal of 48 AC BCTs and 28 RC BCTs. This reduction in the level of BCTs (which would be matched by a corresponding reduction in support brigades) offers several important benefits.

First, by reducing the need to generate large numbers of new officers and NCOs, it stems the highly corrosive decline in the quality of the Army's leadership. At the same time, it enables the Army to restock the "institutional Army"—the Services schools, staffs, etc.—that enable officers and NCOs to receive the training and education needed to enable a surge of trainers and advisors when needed, as opposed to pulling from deployed brigades to fill the need. Along these lines, doctrine for advisors and trainers needs to be developed, along with a school to ensure they receive the proper training.

Second, reduction of six AC BCTs and two RC BCTs along with programmed new support brigades also mitigates the erosion in the quality of the officer and NCO corps stemming from the decision to increase dramatically the size of the U.S. military's Special Operations Forces. This has created a whipsaw effect within the Army, as it sees the quality of its recruits declining while the best of those who remain in the Service are being recruited by the Special Forces.

Third, a smaller force structure also reduces the pressure on manpower that has led the Army to lower its recruiting standards. Finally, it also has a beneficial effect on the Army's budget: fewer soldiers reduces strain on the personnel accounts, while fewer brigades takes some of the stress of the procurement accounts, since there are not as many of them requiring updated equipment.[17]

The revised force structure is also more evenly weighted between the Active and Reserve components. Current plans call for an Active component of 19 HBCTs out of a total of 48 BCTs, or approximately 40 percent of the force. Yet the Reserve component would field only 7 HBCTs out of its planned 28, or 25 percent of the force. For an Army waging persistent irregular conflict, it makes little sense to have the Active component, whose BCTs can be deployed on a much more frequent basis than the Reserve component, be the principal hedge force for conventional warfare. In the Dual-Surge Army proposed here, roughly a third of the RC force would be comprised of heavy brigades, while HBCTs represent slightly less than a third of the AC.

To be sure, there are risks involved in reducing the Army's projected force structure. However, the risks of continuing the decline in officer and NCO quality; accepting a lack of capacity to support the defense strategy's focus on building up the capabilities of allies and partners; and promoting the flawed assumption that a general purpose Army that remains overly weighted toward conventional warfare can quickly and effectively shift to conduct irregular warfare operations far outweigh the risks associated with the Dual-Surge Army recommended here.

EQUIPPING THE FORCE—RETHINKING THE FCS

There is also the matter of equipping the force. The Army's centerpiece modernization program, the Future Combat Systems, is really a cluster of 14 systems of various types. These systems will rely heavily on being linked as part of an overarching battle network that ties them together with individual soldiers and the U.S. military's joint battle network. While revolutionary in its concept, the FCS program may not be executable at an acceptable cost, given the many technical challenges confronting the program. Moreover, it may not be possible to create the battle network as currently envisioned by the Army, or to create it within the timeframe projected. If this proves to be the case, the Army needs to have a plan to harvest as many FCS capabilities as possible while identifying an alternative modernization path. Thus far the Army is moving FCS components into the current force as they become available. However, to date these capabilities are relatively modest compared to the program's stated goals and the level of resources being invested. A thorough program review is warranted before making a commitment to continuing the FCS program in its current form.

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sion, those most closely associated with it include: ballistic and cruise missiles that can strike forward air bases and massed troop concentrations; submarines; anti-ship cruise missiles (ASCMs); land-based anti-ship systems (e.g., strike aircraft, ASCMs, and ballistic missiles that target carrier strike groups); and counter-command, control, communications, computers, intelligence, surveillance and reconnaissance (C^4ISR) capabilities, such as anti-satellite weapons, cyber weapons, and electromagnetic pulse generators designed to fracture U.S. battle networks.

[17] It is estimated that the addition of 65,000 AC soldiers and 27,000 marines will incur an annual sustained cost of $13–14 billion per year.

What might an alternative modernization path look like? In addition to harvesting as much of the FCS program as possible, such as the unmanned aerial systems, unattended ground sensors, and ground robotics, the Army would need to experiment with various options for building a battle network that is feasible, affordable, and that enables a major boost in military effectiveness across the entire conflict spectrum. Since the effectiveness of the combat systems associated with the network is heavily dependent upon the network, final decisions on the major combat systems' designs should be held off until the network's form and capability are well understood. In the interim, the Army needs to continue recapitalizing the existing force, while engaging in selective modernization only when necessary.

ADDRESSING THE GUIDED ROCKETS, ARTILLERY, MORTORS, AND MISSILES THREAT

The Army also needs to move energetically in developing air and missile defense capabilities to address the nascent Guided Rockets, Artillery, Mortors, and Missiles (G–RAMM)[18] threat before it matures and the Service finds itself engaged in another round of reactive transformation, as it has experienced in Afghanistan and Iraq. The challenge here is not only to develop effective capabilities, but capabilities that are cost-effective. At present, given the high cost of kinetic interceptors, the most promising developments in this area are in the field of solid-state lasers (SSLs). A substantially greater effort should be devoted to translating this rapidly-progressing potential into fielded military capability.

MAINTAINING AN EQUIPMENT AND PRODUCTION BASE

The era of persistent irregular warfare presents the Army with the challenge of training and equipping indigenous and partner forces engaged in stability operations on a major scale. The Army must also be prepared to replenish damaged or destroyed equipment of Army units engaged in stability operations. Given the importance of preventive action and exploiting the opportunities presented by the "golden hour,"[19] the equipment to support a sustained surge in stability operations must be available to the combatant commands on short notice, and not cobbled together on the fly. Thus equipment stocks to outfit host-nation forces being trained should be stockpiled, similar to the Prepositioning of Materiel Configured in Unit Sets (POMCUS)[20] equipment that was positioned to support U.S. forces during the Cold War. A warm production base must be capable of surging equipment to replace those items lost during operations.

CONCLUDING OBSERVATIONS

The Army's leadership has rightly concluded that it needs a force capable of performing across the full spectrum of conflict at a high level of effectiveness. But in its attempts to become equally effective across a range of conflict types, it risks becoming marginally competent in many tasks, and highly effective at none. In attempting to increase the size of the Army to field forces large enough to deal with a range of contingencies, the Service risks becoming incapable of creating the needed scale by building up the capabilities of America's allies and partners, a key part

[18] G–RAMM refers to guided rockets, artillery, mortars and missiles. In the Second Lebanon War, Hezbollah fired some 4,000 RAMM projectiles into Israel, causing several hundred thousand Israelis to be evacuated from their homes. The Israelis also shut down their oil refineries and distribution system for a time, out of concern that a lucky hit would cause untold damage. The problem will only become more acute as irregular forces gain access to guided weaponry. (Hezbollah fired guided antiship cruise missiles at an Israeli patrol boat, damaging it. Hezbollah also employed several unmanned aerial vehicles during the conflict.)

[19] The "golden hour" is the brief period after the introduction of U.S. troops "in which we enjoy the forbearance of the host-nation populace. The military instrument, with its unique expeditionary capabilities, is the sole U.S. agency with the ability to affect the golden hour before the hourglass tips" and the local populace becomes disaffected. An Army called upon to surge BCTs to exploit the golden hour is not likely to have months to restructure and train them to a high level of expertise in stability operations. James Stephenson, Losing the Golden Hour, (Washington, DC: Potomac Press, 2007), p. 98.

[20] The term "POMCUS" stands for Prepositioning of Materiel Configured in Unit Sets. During the Cold War large quantities of equipment were prepositioned in Europe to facilitate the rapid reinforcement of U.S. forces there. By having a unit's equipment prepositioned, and thus not having to transport it from the United States, the Army's airlift and sealift requirements were greatly reduced. The Army eventually prepositioned roughly 4 divisions' (or 12 brigades') worth of equipment in Western Europe. Colonel (Ret.) Gregory Fontenot, LTC E.J. Degen, and LTC David Tohn, On Point: The United States Army in Operation Iraqi Freedom, p. 40, accessed at http://books.google.com/books?id=7x8U4t-oJvcC&pg=PA40&lpg=PA40&dq=POMCUS+Cold+War&source=web&ots=ERAs40Gn8o&sig=f3YuMfJ4OujYdk2gRJFAPmgfqbg&hl=en&sa=X&oi=book—result&resnum=10&ct=result#PPR16, M1, on September 29, 2008.

of the defense strategy. It also risks a catastrophic leadership failure of a kind not seen since the late stages of the Vietnam War, a failure that took the Army over a decade to repair.

Squaring this difficult circle will require the Army to put more faith in the joint force's ability to dominate conflict at the higher end of the conflict spectrum, and resisting the temptation to return to a general-purpose force posture by another name (i.e., the full-spectrum force). The Dual-Surge force will allow the Army to truly orient itself on fielding forces that are highly competent across the spectrum of conflict by fielding forces focused on irregular warfare on a scale and level of effectiveness comparable to its world-class conventional forces.

Senator LIEBERMAN. Thank you, Dr. Krepinevich. You got us off to a good start.

Our next witness is Tom Donnelly, who I will describe as a recovering journalist. He was a professional staff member of the House Armed Services Committee, editor of the Armed Forces Journal, and now is a resident fellow at the American Enterprise Institute for Public Policy Research here in Washington.

Mr. Donnelly and co-author Fred Kagan recently published the study, "Ground Truth, the Future of U.S. Land Power." So he is again ready to be a helpful witness today. Thanks for being here.

STATEMENT OF THOMAS DONNELLY, RESIDENT FELLOW, AMERICAN ENTERPRISE INSTITUTE FOR PUBLIC POLICY RESEARCH

Mr. DONNELLY. Thank you, Mr. Chairman. At least you didn't describe me as a recovering House guy. I have a lot of persistent diseases. [Laughter.]

Senator LIEBERMAN. I'm going to hold my tongue at this point. [Laughter.]

Mr. DONNELLY. I see very much a similar world to the world that Andy sees. It's always the case in these circumstances where the opening testimony becomes the standard and everything else becomes a commentary upon it.

So I see very much a similar world to the world that Andy sees, but I think Andy goes wrong, in general terms and in crude terms, by trying to fit the strategic requirement to land forces, to the size of the force and the shape of the force, rather than sizing the force and shaping the force based upon America's strategic goals in the world.

I would also say that those strategic goals have been remarkably consistent and are much clearer than people have almost been willing to accept over the last decade, in this regard. Administrations of both parties have wanted to preserve American leadership in a global sense and have taken the necessary steps, not often with perfect foresight or with perfect understanding, to maintain that position.

So I think we can see in that regard that the future for American land forces is not all that dissimilar from our recent post-Cold War experience or particularly from our post-September 11 experience. The so-called long war that we are now engaged in in the Middle East, meaning the attempt to build a greater Middle East, an Islamic world that we and the rest of the world can live with, is a mission that's been ongoing since the establishment of U.S. Central Command a generation ago. If we look at the operation of U.S. forces in that region over the course of time it's been very much

a growth industry, and it's transitioned from a maritime and aerospace presence to an onshore land presence.

So we may not be able to tell precisely where our forces will be operating and what the tactical nature of the engagement will be for the future, but I think we delude ourselves if we don't think that the outcome of this war is critical to us and that the primary instrument that we have to achieve that success is our land forces, our Army and Marine Corps. We have come ashore, so to speak, in the region and if we withdraw that will be a huge setback for the United States.

Therefore, we do have enough information to conduct intelligent force planning and in particular land force planning going forward. Now, my testimony describes the general characteristics of the land force that we need, but in the interest of brevity and in response to some of the subjects that have been raised, I just want to make a couple of more precise remarks.

I think it's worth beginning first of all with the size of the force. Numbers really matter. If you want to have a force that's versatile, that's flexible, that's genuinely expansible, where the Reserve components are a Strategic Reserve, not just a part of the operational conveyor belt, not just a substitute for the Active Force that we already have, the key to solving that puzzle is expanding the size of the Active Force and particularly the size of the Army, because the Army is America's long war force, meaning conducting sustained operations.

The fact that we have an insufficient Army not only has consequences for the Reserve components, but it has consequences for the Marine Corps. We have transformed, particularly in the last 5 years, the Marine Corps from being an expeditionary force, a force in readiness, as they would say, to yet another link in this conveyor belt of deployments to Iraq and Afghanistan. If we want the Marines to do the things that are uniquely Marine, again the answer in my mind is to have enough Army to be able to do what we need to do on a day-in, day-out basis.

So 547,000 Active Duty soldiers is not enough. We've been mobilizing more than 100,000 Reserve and National Guardsmen every day since September 11 and so we have a pretty good idea of what the requirement going forward to operate at this pace is. I for one think it's a rebuttable proposition that we will not continue to operate at this pace going forward.

So when you put really ballpark numbers on it or do the kind of troop-to-task analysis that force planners do, the answer should be to have an Active Duty Army that's somewhere about the size that it was at the end of the Cold War, that is about 780,000. That was the size of the Active Duty Army in 1991, before the post-Cold War drawdown. We had maintained a force of that size ever since the early 1980s, when the Army chose, rather than expanding itself when the Reagan buildup began, to do accelerated modernization, resulting in the big five programs that are still the main front-line fighting systems of the U.S. Army today.

So we ought to return to something like that level, which we maintained for a generation back then. That would essentially make the size of America's land forces in total, meaning Active Army and Marine Corps, something like a million people. That

would be one-third of 1 percent of the American population, not something that's not sustainable, but a force of an adequate size to maintain the kind of pace of operations that we have seen persistently since September 11.

A couple of quick final points because I know we're pressed for time. I regard our experience as not being just simply one of irregular warfare. But the term hybrid warfare, and particularly when you take the experience as a whole and add in things like the Israeli experience in southern Lebanon in 2006, essentially means that all aspects of land forces have been stressed, I would say to the maximum extent that it's reasonable to imagine.

So the need for mounted forces, be they middleweight forces like Stryker brigades or Marine mounted forces, and even heavy forces have performed remarkably well in a variety of roles. So as we go forward I would certainly agree with Andy that as the Army grows I would prefer to buy lighter forces and more middleweight, Stryker-like forces, although FCS would make for lighter units.

So in the shape of the correct size land force, I would agree that the balance between very heavy and lighter forces needs to be adjusted. But again, I think the first question is whether the force is large enough.

A final point about size is that we expect our land forces, as Andy suggested, to do many more non-combat kinds of missions and tasks than we thought they were going to be required to do a decade ago. That means that we do have to have people who are trained advisers to do the partnership role. It also means that we need our leaders to go to school, our NCOs to go to basic, advanced, and sergeant major academy courses, and our officers to continue to go to staff college and war college, and in fact to make the rigor of our professional military education even higher than it has been.

So we need to have a force that's as well-educated, if not better educated, that has time to participate in the kind of quality of American life that all American citizens expect. That means they can't be getting off a plane for Iraq and then boarding another one for Afghanistan or wherever else they're going to go.

So all these things, all the qualities that we want to inculcate and maintain in the force, are dependent on having a force that's of adequate size. What we have done over the last 5 years is use a too small force too often, and we are not going to walk away from the mission without paying a huge price. So the question becomes are we willing to pay the price to execute the mission successfully.

I want to conclude with a few remarks about FCS because I regard that as a program that is profoundly misunderstood, in no small measure because the Army doesn't do a very good job of explaining what the requirement is. I believe that this will bring much greater flexibility to the force. We will have smaller, tracked combat vehicles that are more applicable to a wider variety of missions. They will be much more capable and adaptable to the kind of environment that we find ourselves in.

That means they will have not only lighter chassis, but chassis that are ballistically better protected against improvised explosive devices and threats that attack them not only from the direct front, the way the M–1 and Bradley are designed to do, but from under-

neath, from the top, and from the sides, as modern weapons suggest.

Networking is an essential feature of a small force in an irregular warfare environment or a hybrid warfare environment.

Finally, there's a whole host of things that are just necessary to do because simply extending the life of our current vehicles wouldn't solve some of the problems that we face. Just to take one final example, FCS will have an engine that generates much more electricity than the current fleet of vehicles does. Soldiers now have to turn off the many computers and widgets and electronic devices that are part of their world, that are part of the way that they fight and operate, because they don't have enough electricity to keep them on all the time.

So a vehicle that not only generates more electrical power on board, but can power many other kinds of devices, particularly the individual soldier devices that will be so essential to maintaining the effectiveness of dismounted infantrymen and other individual soldiers in a complex irregular warfare environment, is absolutely essential.

I could certainly continue in this vein. I look forward to answering your questions. But in my mind the question is both simpler and harder than many people are willing to acknowledge. I don't believe that we can reform or find a clever solution to our problems that will be sufficient. We simply need to have a larger and more modern land force, and FCS is probably the best alternative. To go back to a different form of modernization that modernizes in a stovepiped, individual platform way would be to repeat the mistakes of the past.

[The prepared statement of Mr. Donnelly follows:]

PREPARED STATEMENT BY THOMAS DONNELLY

I am grateful for the opportunity to appear before the subcommittee today to discuss the topic I would regard as the central issue in American defense planning: the requirements for U.S. land forces. Our soldiers, marines, and Special Operations Forces have borne the brunt of the fighting and suffered the majority of the casualties during the post-September 11 era. They have also won remarkable victories. But, as Defense Secretary Donald Rumsfeld once ruefully remarked, we went to war with the Army we had, not the Army we would have liked to have. Six years after the invasion of Iraq and more than seven after the invasion of Afghanistan, we still do not have the land forces we need. My testimony is intended to provide the committee with a clear view of what those needs are and will be for the foreseeable future. My arguments have been developed more fully in the book Ground Truth: The Future of U.S. Land Power, written with my American Enterprise Institute colleague Fred Kagan and published last year.

Further, we need to arrive at such an understanding very rapidly. President Obama has proposed a budget plan that will profoundly alter the size and, even more critically, the purposes of American government. In particular, both by reducing the level of defense spending and increasing the amounts devoted to social entitlements, domestic discretionary spending, and to servicing the national debt, it will reduce that nation's ability to meet our defense needs. Even though we have yet to see the full programmatic implications of this budget, it is obvious that there will be significant cuts. We can also see a new set of force-planning constructs on the horizon, in the form of an expedited Quadrennial Defense Review, which the administration has announced it intends to complete by the end of this summer. To make the decision before us, we need to think our way through four basic questions: What are the needs for land forces in American strategy? What kind of wars will our land forces fight? How should we size and shape our land forces to conduct these operations? What are the costs of fielding the land forces we need?

THE STRATEGIC REQUIREMENT FOR LAND POWER

Force planning without a large understanding of American geopolitical purposes and strategy is an empty exercise. Without this measuring stick, there is no way to tell what kinds of forces are more useful than others. So before outlining our land force requirements, let me quickly review the consistent ends and ways of U.S. strategy in recent decades, through administrations of both parties. Throughout the post-Cold War period, U.S. Presidents have made a strong commitment to preserving American global leadership: that is, the maintenance of a liberal international order that has proven, all things considered, to be a framework that has permitted growing stability, liberty and prosperity. President Obama has reaffirmed this commitment, and further has rightly observed that the continued centrality of the United States in the international system will be a key factor in any economic recovery.

Beyond rhetoric, American international leadership has a number of geopolitical, economic, and security corollaries. Indeed, our security role is the bedrock of today's global order; conversely, absent the organizing function played by the United States, the world would most likely devolve into a competition between various blocs of states, and non-state actors—terror groups, criminal syndicates and the like—would find themselves in constant conflict. The dangers of failing states, or, as John Quincy Adams called them, derelict states, would be exponentially greater and the world's ability to address these dangers so much weaker.

In summary terms, America's ability to maintain the current global order depends upon fulfilling two essential tasks: preserving a favorable balance of power among nation-states, and preserving the integrity of the state system from the challenges of non-state actors. In an era where nuclear proliferation and other forms of technological diffusion are providing non-state groups with destructive capabilities and reach heretofore reserved to only the greatest powers, preserving the international political order is no small task.

Correspondingly, there are two prime directives for U.S. military forces. First, we must develop the situation with regard to the increasing strength and capabilities of the Chinese People's Liberation Army (PLA). I use the term "develop the situation" intentionally, to make it clear that we must act, and exercise some initiative, to ensure that the PLA does not become a strategic threat to U.S. interests. This mission is the first order of business for American naval, air, and space forces, as well as those military capabilities designed to operate in the electromagnetic spectrum, but is hardly the primary shaper of U.S. land forces. Second, and this is most critical for U.S. land forces, is the need to continue to prosecute the long war in the greater Middle East. To be sure, there are a variety of scenarios across these two broad mission sets that might call for highly integrated joint forces, but the greater likelihood is that the U.S. military will continue to develop a new, looser kind of jointness in response to emerging battlefield realities.

A LONG-WAR FORCE

America's interests in the Muslim world are as old as the republic, and from the first—on the shores of Tripoli—U.S. land forces have been an important element in defense of those interests. But it was not until the promulgation of the Carter Doctrine in 1979 and the formation of the Rapid Deployment Joint Task Force, the precursor of today's U.S. Central Command (CENTCOM), that we saw for ourselves a permanent mission in the region. If one were to plot the deployments of American military forces to the CENTCOM region since that time, what would become apparent is that we have moved generally from a maritime posture of "offshore balancing" to an on-shore, land-based posture intended not simply to work through local potentates and autocrats but to encourage a more stable and representative order throughout the region. While our engagement still is centered on the Persian Gulf region—the strategic epicenter—it extends from West Africa to Southeast Asia. This is, truly, America's "continental commitment" in the 21st century.

The range of missions conducted by U.S. land forces has varied immensely over time and promises to be equally varied in the future. Even in the hectic years since the September 11 attacks, the number and kind of land forces operations have run the gamut from conventional blitzkrieg—and we should never forget how remarkably and surprisingly successful the initial invasions of Afghanistan and Iraq proved to be—to persistent irregular warfare, partner-building operations of all sorts, and a panoply of reconstruction and stabilization efforts. Indeed, it would be harder to invent a wider diversity of missions. In Ground Truth, we considered a number of "case studies" that catalogued the spectrum of these operations, looking also at the Israeli army's experience in southern Lebanon in the summer of 2006. Suffice it to say that modern land warfare is a thoroughly exacting art and science. It is a source

of wonder that American soldiers and marines have conducted these missions as well as they have; in retrospect and taken altogether, what is remarkable is not that there have been moments of confusion and near-defeat, but that the United States should find itself in such an advantageous strategic position today.

Alas, this surprisingly good result is not the product of intentional force-planning, but the residue of past, Cold War investments; of improvised procurements in emergency, supplemental appropriations; and, most tellingly, of nick-of-time innovations by soldiers and Marines on the battlefield. The heroism of Americans at war is a very reliable constant, but it is not a plan.

Nor is it a plan to pretend that the pace of operations in the post-September 11 world is an extraordinary anomaly or simply the product of Bush administration folly; again, the larger pattern of commitments and operations during the years since CENTCOM was established reflect the continuity of American strategy. While numbers of troops deployed or the organization of forces in the field may fluctuate with the conduct of particular campaigns, we must accept the plain fact that the posture of U.S. forces in this part of the world has reached a new plateau, and that plateau stretches a long way into the future—certainly far beyond the planning horizons of the Department of Defense, the U.S. Army and Marine Corps. At this point, to repeat the mistakes of the Bush administration, to delude ourselves that we will return to a more comfortable status quo, would be to transform the unintentional failures of strategic imagination into an intentional, potentially catastrophic failure of strategic planning.

We now know, within experimental error, the answer to the timeless question of force-planning: how much is enough? For the past 5 years—every minute, every hour, every day—we have fully an employed an active Army (that is, the baseline active Army plus national guardsmen and reservists called to active duty) of about 650,000 (of which 100,000 or more are the mobilized reservists) and the entire U.S. Marine Corps of about 200,000, or a total land force of about 850,000. That is a fact. There are two other facts: one is that this force is too small to eternally sustain the demands of the deployments; dwell times between rotations are too brief to fully reconstitute or train units and individuals or to fulfill the social and moral contract between the Nation and people in uniform. A second is that this force is also too small to mitigate the many risks of other long war missions, let alone the secondary land-force missions elsewhere across the globe.

WHAT KIND OF FORCE?

Given the number and variety of missions confronting the U.S. military and the emerging nature of land war, it is apparent that U.S. land forces need not only to be more numerous but must also possess qualities other than the timely and devastating delivery of firepower. Recent realities have underscored the shortcomings of the movement for military transformation, with its imagining of "rapid, decisive operations" characterized by long-range, precision strikes. Indeed, history provides very few examples of a one-battle war. Conversely, we have only lately begun to apply our most advanced technologies to the problems of irregular warfare. Lethality is just one of a half dozen required attributes for future U.S. land forces—and it's not even the primary one.

As might be expected, the primary attribute for victory in a long war will be sustainability. Presence matters. As David Galula, the French military officer and scholar whose writings have so helped American soldiers and Marines adapt to challenges in Iraq and Afghanistan wrote in his 1964 classic Counterinurgency Warfare: Theory and Practice: "The static units are obviously those who know best the local population, the local problems. . , . It follows that when a mobile unit is sent to operate temporarily in an area, it must come under local command." Thus, the enthusiasm of recent years for strategic deployability has been misplaced. That is, we need The force-generation models for both the Army and Marine Corps are not well suited to the demands of sustained presence.

A second attribute required for U.S. land forces is the ability to gather, analyze, share, and act upon a flood of information; at its heart, the long war is largely about the struggle for and about information. The force-transformation ideal imagined that U.S. forces would automatically enjoy perfect situational awareness and dominant battlespace knowledge; by contrast, recent experience suggest that the fog of war is even thicker in the information realm than on the simply kinetic battlefield. Organizing, training and equipping our land forces to operate in opaque situations—where seemingly small-scale, tactical decisions can have great strategic consequences—is a necessity demanding more robust and flexible forces rather than the perfectly tailored forces previously thought desirable. In complex operations, perfectly designed forces are most likely to be designed perfectly wrongly.

Firepower does still count for a lot, and arguably precision firepower is an even greater benefit in irregular than in conventional warfare. At the same time, firepower, like forces more generally, must be constantly present or available. The coordination of joint fires with land maneuver units is an incredible advantage to U.S. forces, but in thinking about future fire support requirements it is necessary to consider the global strategic requirements for the forces that supply that fire support, particularly air support and naval fire support. The presumption of the recent past—that joint fires will be everywhere and plentifully on call—is an uncertain proposition for the future, and it is worth reconsidering force-structure savings assumed in organic Marine and, especially, Army fire support.

A fourth quality to stress in future land forces is leadership, beginning at the small-unit level but also including the quality of generalship. Dispersed and irregular operations demand quicker and better decisionmaking. As one veteran cavalry officer recently put it:

> The environment we faced required junior leaders to make hundreds of independent decisions every day. The sheer volume of information generated daily was staggering. Moreover, the operations tempo was very high, requiring the execution of dozens of missions simultaneously across the spectrum of operations.

The Marine Corps' idea of the strategic corporal is perhaps an exaggeration, but the underlying notion—that soldiers and marines are asked not simply to be competent tacticians but to exercise their judgments in many situations that are only vaguely military—has merit. In sum, military leaders must be more fully educated at a younger age, not simply trained.

A fifth quality that should describe U.S. land forces for the future is partnership, as in the Pentagon's initiative, articulated in the last defense review, for building partnership capacity. As necessary as U.S. forces are for the many Long War missions they have been assigned, they are not sufficient; they must undertake a variety of efforts to build the capacity of the indigenous or allied forces with which we are fighting. While most attention in the recent past has been devoted to building the Iraqi and Afghan armies, there is a huge opportunity to improve the professionalism and effectiveness of other partners, not simply to react to new crises and conflicts, but to anticipate or prevent problems. The section in Ground Truth describing the recent U.S. role in the Philippines provides a snapshot about how this can be done well with very small forces, and the new U.S. Africa Command will have this partnership-building mission as its initial task. Moreover, figuring out how to do this without so disrupting the unit design, cohesion or effectiveness of U.S. ground combat units will be a challenge; creating a large-scale, standing advisory corps runs that risk.

Finally, U.S. land forces must be genuinely expansible. We must understand that, while we can now better predict the future requirement for land power, there may well be situations where the demand exceeds the supply. Expanding the current Active-Duty Force would have the added benefit of returning the Reserve component into the truly strategic Reserve for which it, and particularly the National Guard, was designed. The Bush administration's decision to mobilize the Guard as an Operational Reserve—just a lesser cog in the deployment machine that so consumes today's force—was yet another penny-wise-but-pound-foolish choice. The quality of expansibility, a traditional tenet of American force planning, has been sacrificed by default and without serious discussion as a result of the decision to fight the long war with a too small force.

THE COSTS: TIME, PEOPLE, MONEY

Building the land forces we need will take the better part of a decade. The belated Bush administration plan for increasing the size of the Active Army and Marine Corps, just recently achieved, brings the total active land force to about 750,000, or still about 100,000 short of the day-to-day requirement; hence the continuing need to mobilize large numbers of guardsman and reservists. My recommendation would be to return the active land services to about the same size they were at the end of the Cold War: a little bit less than 800,000 soldiers and a little bit more than 200,000 marines, for a total of about 1 million. In a nation of 300 million Americans, that's a very and certainly achievable modest goal, and would return economic benefits at a time of relatively high unemployment. This ought to have been a provision in the recent stimulus legislation.

Sizing the field force—the kid of force-sizing construct that has been the hallmark of recent defense reviews—should likewise be a relatively straightforward exercise. The first principle of land-force planning should be the need to conduct a sustained, large-scale stability campaign, as Iraq has been since the initial invasion and as Af-

ghanistan, as the Obama administration shifts its strategic focus, is becoming. Such efforts routinely require on the order of 150,000 U.S. forces, up to 22 brigade-equivalents. The requirement in Afghanistan will be somewhat lower as long as significant European North Atlantic Treaty Organization (NATO) forces continue to at least patrol and occupy the Tajik and Uzbek provinces. This is neither a prediction that another such mission is on the horizon or an expression of any desire to undertake a new project of regime change, but it is a recognition that circumstances might make this necessary, and is a sound basis for force planning. A second force building-block would be a requirement to conduct at least two other economy-of-force stability operations, sized roughly as the U.S. element of the NATO Afghanistan mission has been—that is, about 25,000 to 30,000 troops—during the years of maximum effort in Iraq. With a "post-combat" American posture in Iraq of 35,000 to 50,000, it appears that the relative roles of the two mission of the recent past are about to flip; for planning purposes, the ability to do two economy-of-force missions—and at least one conducted entirely by Marine forces—at the same time makes sense. Finally, another simultaneous requirement is for multiple partnership missions. These can be quite substantial and long-running, as the story of Combined Joint Task Force-Horn of Africa reveals: it's employed almost 1,000 troops form all Services under a two-star headquarters.

A second field-force question is that of unit force structure and design. In general terms, the combination of budget shortfalls and transformation enthusiasm has resulted in a significant reduction in land force structures, most evident in the Army's design for modular brigades. In short, the Army has shrunk the size of its core ground maneuver unit from about 5,000 to about 3,500, and also dramatically cut back on the size of its divisions. The price has been paid in fire support, logistics and other forms of support, and each brigade has one fewer ground battalion. The result is that each brigade is less sustainable and less capable, with the further inevitable result that, when deployed, each brigade requires many additional enablers—though these are often different kinds of units than those that were previously eliminated—that return its strength to 5,000 or more. As we shall see when the details of the Afghanistan "surge" are made clear, the challenges of operating in austere and undeveloped environments require even more support troops. The shortage of support forces puts a correspondingly larger burden on Reserve component soldiers, who provide a disproportionate share of the support capabilities in the Army. Because the Army provides higher-level support to the Marines and, indeed, the Air Force, these support requirements are in fact much greater than they immediately appear. It makes no force-planning sense to continue to ignore these requirements.

But perhaps the most willfully ignorant land-force planning assumption of the past decade has been the shortchanging of the services' institutional base, that part of the Army and Marine Corps that prepares the field force to fight. Again, the full story is a complex one, but suffice it to say that, in zealous pursuit of the highest possible tooth-to-tail ratio and a belief, especially strong during the Rumsfeld years, that the institutional base was unproductive overhead, that the long-term health of the U.S. land force establishment has been put at risk. Even with the recent growth in force size, the Army has just 11,400 soldiers on active duty for each one its brigade combat teams. A better-balanced force would be manned at a total of 13,500 troops per brigade or more; these extra people would allow for improved leadership development, better training, and a greater capacity to execute partnership-building missions. Finally, the post-Cold War years have seen an increasing imbalance between the Army—the main long war service designed for sustained land operations—and the Marine Corps—self-described as the expeditionary force in readiness for contingencies and crises. At the end of the Cold War, there were about four active-duty soldiers for every marine; today the ratio is 3-to-1. If the main mission of U.S. land forces is the long war, then we are building the wrong sort of force.

Then there is the question of force modernization, weapons research, and procurement. While the Defense Department has been on an extended "procurement holiday" through the post-Cold War period, the reductions have been felt most keenly in land force modernization. Indeed, the two cardinal program cuts of the Rumsfeld years were the Army's Crusader howitzer and Comanche scout helicopter; my point is not a post-mortem justification of these projects, but to indicate that land systems have been the lowest procurement priority. The state of land force equipment is likewise reflected in the tens of billions spent for reset in emergency supplemental appropriations. Nor does it make sense, in my judgment, to terminate or yet again restructure the Army's Future Combat Systems (FCS) program; indeed, it is hard to find a less well-understood procurement project than FCS. Program critics seem intent on fighting the last war—that is, in describing the program as it was originally conceived rather than the program being executed today. To be sure, there are

reasonable questions to be raised about FCS, the structure of the project and the program priorities, such as whether there is sufficient value, in an irregular warfare world, in the FCS network. But many of the other aspects of the program—such as the utility in common vehicle chassis, or in new material that promise improved ballistic protection from a wider variety of threats, or engine designs that can generate the required amounts of electricity to run the proliferation of electronic gadgets that are soldiers' everyday appliances—ought not to be controversial. Nor can I see any purpose in returning to the old stovepiped version of land-force modernization that allowed the Army's various branches to develop the tank, or the infantry fighting vehicle, or the attack helicopter of its dreams but equipped them all with different radios so that modifications were needed to allow one platform to talk or exchange information with another.

Creating an adequate land force will not be cheap. But it's a price we're already paying now: when adding the Army's baseline budget to the constant and predictable cost of mobilizing Reserve personnel and doing back-door procurements in the supplementals, the United States is paying about $200 billion per year for Army land forces. The costs of the Marines, which include weapons systems and other items included in the Navy budget is harder to estimate. In fact, Marine costs can and should remain relatively constant; the difference is and should remain in Army expansion. But it would be far better to continue to grow and modernize the Army under a long-term plan rather than on an annual, ad hoc basis through supplemental appropriations and unending Reserve call-ups. In very rough terms, I would estimate the cost of a large-enough Army to be about $240 billion per year. By 2016—the time it would take to expand, equip and configure the force we need, and if President Obama's economic projections are correct—that would account for just 1.2 percent of U.S. gross domestic product. A million-man land force would be a third of 1 percent of the U.S. population.

Without doubt, this is a force we can afford. Conversely, the strategic costs of not rebuilding America's land forces would be very great indeed. We cannot expect to exercise leadership in the international community if we are unable to guarantee the stability of the greater Middle East; in addition to the economic value of the region's resources, the political volatility of the Islamic world, and the prospects for jihadi terrorism, make it a cockpit for many conflicts—not just regional, but potentially between global great powers. Nor can we expect, at this juncture, to stabilize the region by offshore balancing. That moment has passed, both militarily and geostrategically; the clock cannot be turned back. Land power is not the answer to every problem, but it is an essential answer to this problem.

I wish to thank Senator Lieberman, Senator Thune, and the members and staff of the subcommittee for this opportunity and your attention. I look forward to any questions you may have.

Senator LIEBERMAN. Thanks very much, Tom. Very interesting. It strikes me as we're talking today that we are assuming the centrality of our land forces in persistent irregular conflict, and of course we should. But it seemed not so long ago that there was some feeling, certainly during the 90s, that maybe we could deal with an irregular conflict from the air. Obviously, air power is very important, but I think everybody now agrees from our experience that land power is the key.

Our final witness, Dr. Pete Mansoor, has really been at the heart of the transformation of our land forces, a real scholar-soldier. He is the General Raymond Mason, Jr., Chair in Military History at Ohio State University. Last year he retired from the Army after commanding a brigade of the First Armored Division in Iraq, and later served as a Special Adviser to General David Petraeus at Multi-National Force-Iraq in Baghdad, in which capacity many of us had the pleasure to meet him.

Dr. Mansoor's experiences, I think, will add a valuable perspective on today's discussion, and for that reason and many others I thank you for being here.

STATEMENT OF PETER R. MANSOOR, PH.D., GENERAL RAYMOND E. MASON, JR., CHAIR OF MILITARY HISTORY, THE OHIO STATE UNIVERSITY

Dr. MANSOOR. Thank you, Mr. Chairman, Senator Thune, members of the subcommittee. I appreciate the opportunity to appear today to discuss the ongoing development of our Nation's land power.

Due in no small measure to the remarkable capabilities of the other components of our Armed Forces, I believe that land power will be the deciding factor in our Nation's wars in the early 21st century. The United States remains the preeminent global power in conventional warfare, a fact well-understood by our opponents. It is far easier for the enemy to challenge the capabilities of American forces in an asymmetric fashion. In short, our enemies will most likely avoid fighting the type of wars the United States has organized and trained its Armed Forces to fight.

In the 1990s, various military officers and defense analysts posited a coming revolution in military affairs based on information dominance coupled with precision-guided munitions. Concepts such as networkcentric warfare envisioned near-perfect intelligence from manned and unmanned sensors, satellites, and other intelligence, surveillance, and reconnaissance assets. Accurate and timely information would lead to battle space dominance, prompt attacks on targets from extended ranges, and the execution of rapid, decisive operations that would quickly and precisely collapse an enemy armed force or regime at its center of gravity.

Advanced sensors and precision guided munitions, however, are tactical and operational capabilities. They are not a strategy. Those leaders who staked the outcome of the Iraq war on rapid, decisive operations misread the nature of war, and not just the nature of war in the post Cold War era, but the nature of warfare in any era. Despite our high-tech capabilities, uncertainty and the interplay of friction and chance on military operations will remain integral to war for the indefinite future.

There is a larger point here. The emphasis on technology over an understanding of the realities of war and conflict reflects the historicism not only of too much of the officer corps, but the American educational system as well. Our mistakes in Iraq and Afghanistan have come through a pervasive failure to understand the historical framework within which insurgencies take place, to appreciate the cultural and political factors of other nations and peoples, and to encourage the learning of other languages. In other words, we managed to repeat many of the mistakes that we made in Vietnam because America's political and military leaders managed to forget nearly every lesson of that conflict.

As appealing as high-tech warfare with standoff weapons may seem, those who advocate it in the current environment are guilty of mirror imaging our opponents. State and non-state actors are using proxy forces and insurgencies in Iraq, Afghanistan, and elsewhere to advance their political goals along with their social and religious agendas. We cannot rely on high-tech weaponry to check these groups. High-tech weapons designed for combat at stand-off ranges are ill-suited for combating insurgents in urban strongholds. Sensors are a poor substitute for personal interaction.

Therefore, we must closely examine expensive high tech programs such as the Army's FCS to determine if they are useful in the current operational environment, where the typical engagement range is less than 500 meters and the need to engage the population is the paramount priority.

History has underlined again and again that counterinsurgency warfare can only be won on the ground, as you noted, Mr. Chairman, and only by applying all elements of national power to the struggle. These struggles are troop-intensive, for the counterinsurgent must secure and control the population, deliver essential services, and provide a basic quality of life. These requirements take energy, resources, and above all, time.

Although the requirement to sustain counterinsurgency forces for extended periods suggests the need for considerable expansion of the U.S. Army and Marine Corps, as my colleague has noted, the best way to provide more ground forces is to procure them from the host nation. This realization mandates a significant focus on advisory duty and foreign internal defense, along with the creation of an institutional home for these activities in the Armed Forces.

We must design our military forces with a balanced set of capabilities, but it is essential that they be capable of operating effectively in a counterinsurgency environment. During the 1990s U.S. Army leaders believed that units trained for major combat operations could easily adjust to take on other missions such as peacekeeping or humanitarian assistance. In Iraq and Afghanistan we have learned that counterinsurgency warfare actually requires a long list of added capabilities that training for conventional high end combat does not address. In short, counterinsurgency is a thinking soldier's war.

Military intelligence must also change or risk irrelevance. High-tech intelligence capabilities are no substitute for human intelligence and cultural understanding. One cannot divine tribal structures, insurgent networks, sectarian divisions, and ethnic mosaics through technological means.

As the United States ramped up its math and science education following the Soviet launch of Sputnik in 1957, so must it now pursue excellence in humanities programs such as history, cultural anthropology, regional studies, and languages. Our Nation's universities, to include my home at the Ohio State University, stand ready to assist in this endeavor.

The transformation of American land power for the wars of the 21st century remains incomplete. Although bulky divisions have given way to smaller, modular, more easily deployable brigade combat teams, these units remain largely configured for conventional combat, and imperfectly at that. Brigades that are tailored for counterinsurgency operations would include more infantry, a full engineer battalion, augmented staff capabilities, and intelligence, surveillance, and reconnaissance assets, particularly armed reconnaissance units that can engage the people and fight for information.

The need for more infantry and engineers is especially critical, so much so that the Army should forgo the creation of additional brigade combat teams until existing units are reconfigured with the addition of a third maneuver battalion. If this seems like a small

matter, if you did that across the force it would take about 45,000 soldiers to add another maneuver battalion and a full-up engineer battalion. The paucity of the current brigade combat team structure has forced brigade commanders to attach armor and infantry companies to the reconnaissance squadron, which is otherwise too lightly armed to act as a combat force.

A triangular organization would be more effective not just in counterinsurgency warfare, but would give our maneuver commanders the resources they need to fight more effectively in conventional conflicts as well.

Finally, the culture of the U.S. Army must continue to change or the organization will be unprepared to fight and win the wars of the 21st century. While retaining the capability to conduct major combat operations, the Army must continue to embrace missions other than conventional land force combat. We must adapt the current personnel system, with its emphasis on rewarding technical and tactical expertise at the expense of intellectual understanding and a broader, deeper grasp of the world in which we live, to promote those leaders with the skill sets and education needed for the wars America will fight in the decades ahead.

In other words, to win the fight against 21st century opponents we must first adapt the organizational culture of our military forces to the realities of 21st century warfare.

Thank you and I look forward to your questions.

[The prepared statement of Dr. Mansoor follows:]

PREPARED STATEMENT BY DR. PETER R. MANSOOR, COLONEL, USA (RET.), GENERAL RAYMOND E. MASON, JR., CHAIR OF MILITARY HISTORY, THE OHIO STATE UNIVERSITY

Senator Lieberman, Senator Thune, and members of the committee, thank you for the opportunity to appear today to discuss the ongoing development of our Nation's land power. Due in no small measure to the remarkable capabilities of the other components of our Armed Forces, I believe that land power will be the deciding factor in our Nation's wars in the early decades of the 21st century. The United States remains the pre-eminent global power in conventional warfare, a fact well-understood by our opponents. It is far easier for an enemy to challenge the capabilities of American forces in an asymmetric fashion. Some opponents will seek to neutralize our technological advantages through terrorism and insurgencies; others may produce nuclear weapons that threaten massive destruction. In short, our enemies will most likely avoid fighting the type of wars the United States has organized and trained its armed forces to fight.

In the 1990s, various military officers and defense analysts posited a coming revolution in military affairs based on information dominance coupled with precision weapons. Concepts such as network-centric warfare envisioned near-perfect intelligence from manned and unmanned sensors, satellites, and other intelligence, surveillance, and reconnaissance assets. Accurate and timely information would lead to battlespace dominance, prompt attacks on targets from extended ranges, and the execution of rapid, decisive operations that would quickly and precisely collapse an enemy armed force or regime at its center of gravity. Advanced sensors and precision guided munitions, however, are tactical and operational capabilities—they are not a strategy. Those leaders who staked the outcome of the Iraq War on rapid, decisive operations misread the nature of war—and not just the nature of war in the post-Cold War era, but the nature of war in any era. Despite our high-tech capabilities, uncertainty and the interplay of friction and chance on military operations will remain integral to war for the indefinite future.

There is a larger point here. The emphasis on technology over an understanding of the realities of war and conflict reflect the ahistoricism not only of too much of the officer corps but of the American educational system as well. Our mistakes in Iraq and Afghanistan have come through a pervasive failure to understand the historical framework within which insurgencies take place, to appreciate the cultural and political factors of other nations and people, and to encourage the learning of other languages. In other words, we managed to repeat many of the mistakes that

we made in Vietnam, because America's political and military leaders managed to forget nearly every lesson of that conflict.

Accordingly, the United States must understand and apply the strategic, operational, tactical, and doctrinal lessons of the wars we are now waging in Iraq and Afghanistan. The U.S. military has already learned a great deal, but there is much more work to be done in developing and inculcating counterinsurgency doctrine, refining professional military education, revamping promotion systems, and establishing relevant tactical and operational capabilities in our Armed Forces.

As appealing as high-tech warfare with standoff weapons may seem, those who advocate it in the current environment are guilty of mirror-imaging our opponents. State and non-state actors are using proxy forces and insurgencies in Iraq, Afghanistan, and elsewhere to advance their political goals along with their social and religious agendas. We cannot rely on high-tech weaponry to check these groups. Strikes with unmanned aerial systems across national borders inflame local opinion and often serve to create more terrorists than they destroy. High-tech weapons designed for combat at stand-off ranges are ill-suited for combating insurgents in urban strongholds. Sensors are a poor substitute for personal interaction. Therefore, we must closely examine expensive, high-tech programs such as the Army's Future Combat System to determine if they are useful in the current operational environment, where the typical engagement range is less than 500 meters and the need to engage the population is the paramount priority.

History has underlined again and again that counterinsurgency warfare can only be won on the ground, and only by applying all elements of national power to the struggle. Insurgency and counterinsurgency are struggles for legitimacy and for competing visions of governance and the future. The side will win that can gain the people's trust and confidence or, failing that, to control their movements and actions. These struggles are troop intensive, for the counterinsurgent must secure and control the population, deliver essential services, and provide a basic quality of life. These requirements take energy, resources, and above all, time.

Requirements vary by location and circumstances, but a historically based rule of thumb is that successful counterinsurgencies require 20 to 25 security force personnel for every 1,000 people. Although the requirement to sustain such forces for extended periods suggests the need for considerable expansion of the U.S. Army and Marine Corps, the best way to provide more ground forces is to procure them from the host nation. This realization mandates a significant focus on advisory duty and foreign internal defense, along with the creation of an institutional home for these activities in the armed forces.

We must design our military forces with a balanced set of capabilities, but it is essential that they be capable of operating effectively in a counterinsurgency environment. During the 1990s, U.S. Army leaders believed that units trained for major combat operations could easily adjust to take on other missions, such as peacekeeping or humanitarian assistance. In Iraq and Afghanistan we have learned that counterinsurgency warfare requires a long list of added capabilities that training for conventional, high-end combat does not address. Indeed, the conflicts in Iraq and Afghanistan are really four types of security operations lumped together—a counterinsurgency campaign to protect the population and subdue insurgents, a counterterrorism fight to destroy terrorist operatives, a peacekeeping operation to separate hostile factions, and a law enforcement operation to fight organized crime and corruption. Each of them requires unique competencies not normally found in military organizations designed for conventional warfighting. Nation-building tasks add even more complexity to this mixture. In short, counterinsurgency is a thinking soldier's war.

Military intelligence structures must also change or risk irrelevance. The most effective intelligence system in these conflicts combines human intelligence with technical intelligence. Insurgents can hide in plain sight, but our forces can target them when they move, shoot, or communicate. This happens when conventional military and police forces dominate an area and force the insurgents and terrorists to reposition, at which point they become vulnerable. The use of signals intelligence, persistent sensors, biometric identity systems, and armed unmanned aerial vehicles are vital capabilities that we must continue to expand. These capabilities, however, are no substitute for human intelligence and cultural understanding. One cannot divine tribal structures, insurgent networks, sectarian divisions, and ethnic mosaics through technological means. As the United States ramped up its math and science education following the Soviet launch of Sputnik in 1957, so must it now pursue excellence in humanities programs such as history, cultural anthropology, regional studies, and languages. Our nation's universities, to include my home at the Ohio State University, stand ready to assist in this endeavor.

The transformation of American land power for the wars of the 21st century remains incomplete. In Military Innovation in the Interwar Period, Allan Millett lays out three prerequisites for effective military innovation: revised doctrine, changes in professional military education, and the creation of operational units that meet real strategic needs. The U.S. Army has met the first two fundamentals, but not yet the third. Although bulky divisions have given way to smaller, modular, more easily deployable brigade combat teams, these units remain largely configured for conventional combat—and imperfectly at that. Brigades that are tailored for counterinsurgency operations would include more infantry; a full engineer battalion; a large intelligence section built mainly around human and signals intelligence, with significant analytical capability; military police, engineer, civil affairs, information operations, and psychological operations cells; a contracting section; adviser and liaison sections, with requisite language capabilities; human terrain teams, with the capability to map tribal and social networks; explosive ordnance demolition teams; and intelligence, surveillance, and reconnaissance assets—particularly armed reconnaissance units that can engage the people and fight for information, along with armed unmanned aerial vehicles and ground sensors. The need for more infantry and engineers is especially critical, so much so that the Army should forgo the creation of additional brigade combat teams until existing units are reconfigured with the addition of a third maneuver battalion. The paucity of the current brigade combat team structure has forced brigade commanders to attach armor and infantry companies to the reconnaissance, surveillance, and target acquisition squadron, which is otherwise too lightly armed to act as a combat force. A triangular organization would be more effective not just in counterinsurgency warfare, but would give our maneuver commanders the resources they need to fight more effectively in conventional conflicts as well.

The culture of the U.S. Army must continue to change, or the organization will be unprepared to fight and win the wars of the 21st century. While retaining the capability to conduct major combat operations, the Army must continue to embrace missions other than conventional land force combat. We must adapt the current personnel system, with its emphasis on rewarding technical and tactical competence at the expense of intellectual understanding and a broader, deeper grasp of the world in which we live, to promote those leaders with the skill sets and education needed for the wars America will fight in the decades ahead. In other words, to win the fight against 21st century opponents, we must first adapt the organizational culture of our military forces to the realities of 21st century warfare.

Thank you.

Senator LIEBERMAN. That was excellent. Thank you.

Unfortunately, a series of three votes went off at around 2:30 p.m. So if we hustle over now we'll get to the end of the first vote. We'll try to get back as soon after 3 o'clock as we can, but I'm glad we got the opening statements in. So please stand at ease for a while. The hearing will be recessed.

[Recessed at 2:44 p.m., reconvened at 3:05 p.m.]

Senator LIEBERMAN. Thanks for your patience in this. I thought, rather than just linger and schmooze with my colleagues, as enjoyable as that is, between the votes, it was good to come back. Senator Thune will follow. He has an amendment on the floor now, so he may take a while. We'll take turns going back for the last of the three votes.

Your opening statements were really excellent and responsive to what we were talking about. Let me focus for a minute on FCS and just try to draw you out in a little more detail, and then I'll come back to the Army personnel questions, which are very important, and some provocative ideas were presented.

FCS, as you all know, features a tactical network, eight manned ground vehicles, two classes of unmanned aerial vehicles, and other robotic ground vehicles. The Army says it plans to build 15 FCS brigade teams and also plans to spin out certain FCS technologies and systems to the modular infantry brigades of the current force as they become available.

It's obvious that, pursuant to what the President and the Secretary of Defense have said, that FCS is under review now. Each of you touched on the program in some ways. I suppose in the most direct way, and probably too simplistic, I want to ask you what you think. If you were advising the President on FCS, generally speaking to frame three options, would you recommend that it continue on the course it's on now, be modified, or be terminated?

Pete, why don't we start with you.

Dr. MANSOOR. Thank you, Mr. Chairman. I'd like to go back to military innovation in general, so that we understand why FCS exists or if we can get the Army to tell us exactly what its aimed at. If you go back to military innovation in the interwar period between World War I and World War II, for instance, what you see is that the best innovation, such as carrier aviation, armored warfare, the British integrated air defense system that won the Battle of Britain, are focused tactical, technical, and operational solutions to specific problems and specific challenges. Unfocused modernization, that looks out at creating a kind of capability that has no historical antecedent, usually creates the wrong type of capabilities and ends up being not a viable capability in the next war.

This is the issue with FCS. It's a system that's been built around unproven theories that are aimed at creating a kind of capability that really doesn't meet a specific strategic challenge. If you look out over the range of possible enemies the United States faces today, the number of possibilities of the United States engaging in mobile armored warfare on the ground with massed armies is pretty limited. On the other hand, if you look at the possibilities for irregular warfare, we're already fighting two, Iraq and Afghanistan. If you look at the possibilities in Pakistan or Mexico or any number of other areas of the world today, I would argue that the Army should be creating capabilities to meet those specific strategic challenges that exist. Therefore, with FCS you should look at it with a view to modifying it to make sure that it meets those current challenges.

My issue with the system is it's really intended to fight at long ranges with a very networked sensor-heavy system, where you see first, act first, and hit targets very precisely. But when you look at targets in counterinsurgency warfare, they wear civilian clothes, they hide among the people, and they're in dense urban areas. I don't think FCS is really configured to fight that kind of war. Therefore, if we're going to equip 19 Active Army brigades and maybe a number of other Reserve brigades with this system, you're creating the kind of capability that really isn't tuned to the kind of war that we're going to be facing for the next 2, 3 decades at a minimum. So I would think that the system would have to be modified.

Senator LIEBERMAN. I want to hear the other two, but I'll come back and ask you some questions. That was very helpful.

Andy, what would you say?

Dr. KREPINEVICH. I'd say major modification, for four reasons. One, I think there's a lot of, as I said, fiscal risk. The program is at about $160 billion. Independent estimates put it closer to $200 billion. It originally started out as 18 systems. To keep the costs under control, they had to reduce it down to 14 systems. Now

there's discussion they're going to reduce it down to 10 new systems.

Technical risk. According to the GAO report, only 3 of the 44 critical technologies have reached the point where best business practices would say yes, this is an acceptable risk in terms of moving forward with an entire program.

You have an F–35 that has 20 million lines of code. The FCS network is now up to 95 million lines of code. The Army has told me that about 70 million lines of this code are code that's already been written for other purposes, that we're going to pull together. My one concern is that you could also say that Windows Vista was built on a lot of established lines of code and we were just adding code to it. I just think when you're adding as much code as is going to be in the F–35 that's a real significant issue.

There's temporal risk. General Shinseki when FCS started said: "If we don't field this system by 2010, the Army risks becoming strategically irrelevant." Obviously we're not going to get there. It's not going to be 2012, it's not going to be 2015. Now we're talking 2017. At some point the assumptions you make about getting rid of our oldest equipment because this is coming on; if that stuff doesn't come on at a certain point, then you incur another risk. You either have to start paying much higher operations and maintenance costs for the stuff that you can't get rid of or you have to start recapitalizing the stuff that you already have. I don't think that's been given sufficient weight.

Finally, as Dr. Mansoor points out, this system was revolutionary for a form of warfare that I fear is passing into history: see first, understand first, act first, and finish decisively. The idea was that, unlike the Army I grew up in, where you closed with and destroyed the enemy, you maneuvered, then closed with him in close combat and then defeated him, the idea here was you would see enemy armored forces at a distance and the decisive battle would occur at a distance.

First of all, we can already do that if the Army and the Air Force work together. We showed that in the second Gulf War. But second, as Dr. Mansoor pointed out, our enemies don't fight that way any more and they have almost no incentive to go back to fighting that way.

I'm also concerned in terms of operational effectiveness about a system whose effectiveness in terms of public pronouncements is very much a product of simulations. Simulations about what's very effective in this environment, that's if everything works as assumed, because a simulation in many respects is only as good as the assumptions you put into it.

My feeling is that the big advantage that was supposed to be offered by FCS was the network that would enable you to violate the military principle of mass and disperse your forces, making them far less vulnerable. In an irregular warfare environment that kind of network may be highly useful. But we should build the network, number one. We should determine what kind of network we need, and I think principally it's a network for irregular warfare primarily.

Third, we should see whether it's possible to build that kind of network, before we really take big steps in terms of these are the

kinds of ground combat vehicles that best suit this particular modernization program for the Army.

Senator LIEBERMAN. Thanks. That's very interesting. Good discussion.

My time is up. I wonder if you want to try a short answer, Mr. Donnelly, or wait until the second round.

Mr. DONNELLY. I'll try to be quick and then if it's inadequate you'll tell me so.

Senator LIEBERMAN. Okay, good.

Mr. DONNELLY. I would accelerate the program actually. I think Pete's historical example is inapropos to the current moment. That was a period of strategic pause between two global conflicts. We are now, as everybody agrees, in an era of persistent conflict and we have a need to continue to field a force on a day-in and day-out basis.

I would agree with Andy that the value of the network is really the key to the system, but we shouldn't measure it by the old outdated transformation rhetoric of 2000 and previous. The value of a network in an irregular warfare environment is something that we should test, and that's what the Army is doing at Fort Bliss. I think we should have an open mind about whether it's going to work or whether it is worth the money.

The other part of the network or part of the program that I think is critical is the radio part of it. The value of a network is, I think, particularly in a dispersed operational environment, one that's self-generating. There are a lot of questions about the Joint Tactical Radio System (JTRS). I'm not an engineer, but I think it's really an engineering question as to whether it can be solved. We need a network that doesn't go blind or become useless when satellites are not available or when other nodes outside the ground network are unavailable.

Finally, the individual soldier gear, the revival of what used to be called the Land Warrior Program, particularly in the irregular warfare environment, and the rifleman radio, as it was called, those kinds of little things that don't get the headlines. We're going to need some new vehicles. The ones that we have are old and have reached the point where they can't really be modified to do what they need to do, and Stryker is only a little bit better than Bradley and Abrams in that regard.

Senator LIEBERMAN. So bottom line, you would continue on the current course and really try to accelerate it?

Mr. DONNELLY. Particularly the individual soldier gear, the radio, and making the network work, which again I think are software engineering things, challenges that are solvable.

Senator LIEBERMAN. Thank you.

Senator Thune.

Senator THUNE. Thank you, Mr. Chairman.

Thank you all very much for your testimony. Mr. Donnelly, you had mentioned that the force isn't large enough. You mentioned 780,000 in 1991. I'm just curious, perhaps from each of you, what you might think the optimal force size is for the modern Army.

Mr. DONNELLY. Again, in order to maintain the pace of operations that I think is reasonable to expect, to be able to give people time to train, to be educated the way we want them to be, and to

have a decent quality of family life so they stay in the Army, so the contract between America and its soldiers is not violated, plus or minus, I would say somewhere in the 750,000 to 800,000 ballpark for the Army, is what I would keep coming back to.

Senator THUNE. Dr. Krepinevich?

Dr. KREPINEVICH. I guess in an ideal world I would like Tom Donnelly's Army. In the real world what I see is an Army leadership that is asking more of its soldiers and its officers. General Craddock says it's not strategic corporals any more; I need strategic privates. I need even the most junior soldiers to be able to operate at a very high level of competence, and across the full spectrum of conflict, high-end and low-end, almost seamlessly.

What we're also seeing, though, is despite the fact that we keep demanding more, the quality is going down in terms of the enlistees and the NCOs. It's now automatic promotion to E–5 and E–6. That brings back memories of the Vietnam era Army that I served in, the shake-and-bake NCOs. These are people some of whom should not be junior NCOs. The increased stress on senior NCOs, and the accelerated promotion rates for officers.

So what we have is a situation where the demands go up, the quality goes down, and oh, by the way, the cost per soldier has increased nearly 50 percent in real terms since September 11. We can say we want a 781,000-soldier Army. The fact of the matter is we can't afford it. If we tried to get it, I think the quality would go down even further.

Strategy is about playing to your advantages. Our advantage is not large quantities of manpower. Our advantage is technology and high-quality manpower. I think DOD has it right. The way we leverage technology and our quality manpower is to train, organize, advise, and equip the indigenous forces of other countries, both to prevent from descending into instability and becoming failed states, and also to be able to have a sufficient force. I think we can do this with roughly the numbers we have now, to be able to plug the gap in cases where we haven't been successful and where the failure of a state or the loss of a region would be unacceptable to us in terms of our interests.

So again, our advantages, quality personnel, technology, equipment, and also allies. We have more allies than any other country in the world. Leverage them, train them, equip them to the extent that we can, and rely on diplomacy to help them get more in the game.

I think the notion that somehow you can have a much bigger Army and retain quality and not suffer unacceptable costs in terms of trying to pay and equip that Army is an illusion.

Dr. MANSOOR. Thank you, Senator. I think with 48 Active brigade combat teams, if you want to be able to deploy one third of them on a continual basis, we're able to deploy 16 at any given time, if you add the capabilities that I called for in my testimony, I think you get up to a figure somewhere short of 600,000.

But I'd like to add on to what Dr. Krepinevich had to say because I think it goes to something that's really crucial. That is, it's just not total numbers of soldiers. We need to substantially increase the number of officers that we have, and for several reasons. The abil-

ity of this Nation to provide advisers to foreign militaries is a crucial component, I think, of our military strategy going forward.

Those advisers cannot be trained quickly. They have to be officers and even senior NCOs with years of experience in the force. Where the Army used to get these officers and NCOs during the Cold War was from the U.S. Training and Doctrine Command (TRADOC). But what we've done in the 1990s is we've gutted TRADOC, moved those Active officers into Active units, and instead staffed those positions with contractors. So we've taken out all the fat in the system, if you will, but we've made it almost impossible to find the number of advisers that we need for the kind of requirements that we have.

The other thing I'd say about increasing the officer corps is it would give our officers time for increased professional military education in future years, because this is what is going to be really, really crucial to our Army and Marine Corps and the other Services as well going forward. We have to have officers who understand the way the world works well beyond just the kind of professional military education they get at Fort Leavenworth or the war college. I think it calls for additional years of education in the mid-grade period, but that's going to require a bigger officer corps to make sure that we can provide the time for them to do that.

Senator THUNE. Thank you.

Mr. Chairman, I think I'm going to run over and vote and try to come back. Do you want to keep going?

Senator LIEBERMAN. Yes. Senator Burris, are you prepared to come back or do you want to go forward a little bit?

Senator BURRIS. Mr. Chairman, mine are quick.

Senator LIEBERMAN. Go right ahead Senator Burris, thanks for being here.

Senator BURRIS. My pleasure, Mr. Chairman.

Let me just present this to especially Dr. Krepinevich.

In your statement you say that the Army has understandably felt compelled to pursue the full spectrum approach owing to the need to cover a range of missions within the limitations on its size imposed by fiscal constraints and its all-volunteer character. You then go on to imply that this approach is not viable, but to counter the Army's shortcomings the U.S. defense strategy is based upon the Army's focusing on building up the military capabilities of threatened states. Then you state that the Army must give greater attention to supporting this strategy.

Recently we have been briefed by the 10 unified combatant commands. I noted that each mentioned their military-to-military activities, and that they desire to increase these activities.

Dr. Krepinevich, are the military-to-military activities specifically what you are addressing in your statement?

Dr. KREPINEVICH. In part. Military-to-military activities might be joint exercises or combined exercises with other militaries. They might be officers attending our staff colleges and war colleges, or our officers going and attending theirs. But it might also extend in my estimation to things like training, organizing, equipping, and operating with their military units, depending upon the situation in the field and in combat, if it's a state that's threatened by disorder, terrorism, or insurgents.

So it's much more expansive than just formal meetings and exchanges of students at staff and war colleges. I would see certain Army brigades that are oriented in this way as being available to support requests from other countries for that kind of support, for support in enabling them to defend themselves from internal insurrection or external subversion.

Senator BURRIS. Do you have evidence or instances where the combatant commanders are not supporting current U.S. defense strategies, and could you please help me put this into context if those combatant commanders are not?

Dr. KREPINEVICH. I don't have any evidence that they're not supporting U.S. strategy. In the case of the Army as an institution, not a combatant commander, my concern is that their approach in supporting the strategy places too much emphasis on dealing with the risk of conventional war, which I think is relatively low compared to irregular war, and not enough attention on creating the capability and the capacity to execute what is the DOD strategy, which emphasizes not deploying our forces to fight their wars for them, but helping these people build up their own forces, train their own forces, and advise them when they go into military operations until they learn to stand on their own two feet.

That is where we have the advantage. We don't have a huge Army. We don't have a large population that we can draw upon. We have a relatively small Army for the tasks that it's been asked to address. Our advantages are we have very high-quality soldiers that can train and advise. We have a large defense budget that can help us buy equipment to equip others, so we don't have to do the fighting ourselves. We do have allies that, if we engage properly, we can help get them to help participate in this kind of endeavor.

At the end of the day, the best force to impose security in a country and a society are the indigenous forces, not external forces.

Senator BURRIS. Mr. Donnelly?

Mr. DONNELLY. Oh, I'm sorry. On the same question?

Senator BURRIS. No, this is another question for you, because I'm trying to deal with your 800,000-soldier force. Now, given the fact that we don't have a draft, how do you think we can get that number up, when it's all volunteer?

Mr. DONNELLY. First of all, the original All-Volunteer Force that we raised, trained, and equipped for the Cold War was that size, 780,000 men. It was all volunteer. It was highly professional. Senator Lieberman noted at the beginning of this hearing that the Army had already reached the increased size of 547,000 that originated with the plan that originated with the Bush administration, that President Obama has indicated his support for. The Army has reached that number early, before it was planned to reach that number.

I lament to say this in some ways, but in difficult economic times the task of recruiting is going to be a little bit easier. Also, one of the big failings of President Bush was his failure to appeal to Americans to serve their country in uniform specifically. I would certainly think that President Obama has unique moral authority to make that kind of appeal to Americans.

So I think actually getting the force size up is quite an achievable goal, and maintaining the quality is also quite achievable. We

shouldn't measure quality by inputs per se, but rather by the performance of the force in the field. All of us have said, including the committee has noted, really the quite remarkable performance of soldiers and marines over the last couple years in responding to challenges that they did not anticipate and in fighting a different kind of war than they were originally organized, trained, and equipped for.

So actually I feel quite confident in the Army's and the Marine Corps's ability as institutions to shape young Americans to perform superbly under very stressful conditions. I just think we need to give them the means to execute the range of tasks that we have asked for.

Senator BURRIS. Is there any conflict between you and Dr. Krepinevich? Because he just said that the quality of the soldiers when you expand is going down.

Mr. DONNELLY. First of all, the measures that we're referring to are things like scores on Army aptitude tests and high school graduates and things like that. There has been a marginal diminution in that quality in the last couple years. On the other hand, when we again look at the performance of the force in the field we haven't seen much repeat of things like the Abu Ghraib scandal or the Haditha killings, for example.

So in my judgment, the performance of the force as we see it and how it operates on a day-in and day-out basis really exceeds what I think any of us would have guessed on September 10. If you had told us on September 10, 2001, what was coming down the pike, we would all have said: "Oh my gosh, this is really probably going to break the Army." For all the stress the Army and the Marine Corps have taken on, they've performed remarkably well, in my judgment. So when we measure quality as output, I'm quite impressed.

Senator BURRIS. I see my time has expired. I better go vote.

Senator INHOFE. Gentlemen, thank you very much for your testimony. It's kind of good that you don't all agree with each other and that helps me out a little bit. We can always find someone who agrees with me and then I can concentrate on them. [Laughter.]

Senator Burris was pursuing this force strength and the capabilities and whether we could sustain those numbers. I have to tell you, I was dead wrong. I was a product of the draft before most of these guys were born, and I never believed prior to September 11, seeing the performance that I saw, that we would have the quality that we have.

The retention has been very good. The recruitment's been good. Generally that helps a little bit when you're in combat, to have those results. Do you think we can sustain that kind of retention and recruitment that we've been enjoying here recently?

Mr. DONNELLY. I'll volunteer. I would never take that for granted.

Senator INHOFE. No, I know that.

Mr. DONNELLY. The thing that really worries me is that we don't know where the cliff is until we've taken one step too far. I think the force has responded in ways that far exceed what our expectations would have been. We're continuing to put it under a huge amount of stress, and a lot of that just goes to the fundamental

question of asking a small amount of people to do a whole lot of work, and we have to spread the load a little bit more by having a larger force.

Senator INHOFE. I agree with that. I think I have probably made more trips over there than any other member has and I do take it very seriously. But let me just go on another line of questioning.

Dr. Krepinevich, I heard your testimony and I know that a lot of the decisions that are made today in terms of force strength and modernization are made in conjunction with expectations of what our needs are going to be. I think that you guys are smart and we have a lot of smart generals, and if you're asked what we're going to have to have 10 years from now you're going to come out with some real good answers and you're probably going to be wrong.

I mentioned several times that in my last year in the House and on the House Armed Services Committee, we had someone testifying that said 10 years from now we won't need ground troops. So as needs change and times change, I've come to the conclusion that, even though I know that others are in different positions than I am, that we really should have the best of everything for all possible contingencies. We don't know the asymmetric threats that are out there, or maybe the conventional threats.

But in terms of strike vehicles, for example, I was very proud of General John Jumper—this was before he was Chief of the Air Force—back in the late 1990s talking about the fact that other countries, and he was referring to Russia at that time, the SU series fighter aircraft, were cranking out strike vehicles better than the best that we had, which at that time was F–15s and F–16s.

To me, I find that just unacceptable. We've had quite a bit of discussion here about FCS. My feeling there is that if you take any element that's on the ground that our troops are using in the defense of themselves and of America, I think they should be the best of everything. When you see some elements of FCS, of what we're using right now like the Paladin and the Non-Line of Sight Cannon. We went through this thing where we were going to get to the Crusader and correct that thing, and then that was axed. I'm a Republican and of course George Bush was a Republican. He did that with almost no warning.

Then I thought that was a blessing in disguise as the months and the years went by because that led us into the FCS mentality of just doing something where we can be superior in every way. I can remember telling this committee that the Paladin was our best cannon at that time. You had to actually get out and swab the breach after every shot, World War II technology. Five countries, including South Africa, had a better cannon than we did. So I found that to be unacceptable.

I think it was the first confirmation hearing of Donald Rumsfeld when I said the same thing. I think our kids should have the best of everything. I said, "how do you get there if you would agree with me?" He said: "Well, it has to do with the overall funding," and we went through the entire 20th century with 5.7 percent of the gross domestic product (GDP) to support the military, and we went down to as low as just under 3 percent at the end of the 1990s, and where should we be?

Well, he gave me his opinion of where we should be. Let me just ask you all. You've given a lot of thought to this. Where do you think we should be in terms of overall funding to defend America?

Mr. DONNELLY. I will always step to a quiet microphone, but I'd defer to Andy or Pete to go first.

Senator INHOFE. I think I'm going to like your answer better than I get from the rest of them. [Laughter.]

Mr. DONNELLY. Andy I think has rightly suggested that the United States should employ its competitive advantages, the things that we have that our adversaries or potential adversaries don't have. One of the things that we have is money. Even allowing for our current economic distress, we're a very rich society. You are quite right, we were able to sustain during the Cold War on a 50-year basis 5, 6, or 7 percent of GDP on defense.

So I think we are quite capable of paying at a level of 4.5 or 5 percent absolutely indefinitely until the end of time. So we can afford the military power that we need, and to constrain our strategy to a budget number rather than build a force that will support our strategic requirements seems to me to be looking through the telescope from the wrong end.

Senator INHOFE. I agree with that.

Any thoughts on that?

Dr. KREPINEVICH. A couple, Senator. I think perhaps even more than money, the best thing we can do right now, particularly at the beginning of a new administration, the first new administration since September 11, is to engage in some detailed in-depth strategic thinking. We don't have an unlimited amount of resources, so whatever we choose to spend, we want to ensure that we spend it the most effective way possible.

President Eisenhower, in conducting probably the best strategic review of any President since the end of World War II, gave three pieces of guidance to the people who would be conducting his review for him, and he actively participated in it. The three pieces were: first, I will not support any strategy that undermines the economic foundation of this country, because he saw that as the way of preserving what Tom Donnelly says is an enduring source of American competitive advantage, the ability to in a sense compete on a scale that is impossible for others. Repairing our economic foundation, I think, needs to be a major consideration. We talk about tradeoffs and where are we going to allocate resources.

Second, he said: I will not support any strategy that cannot be supported by those countries we deem to be key allies of the United States. Here again, an important part of strategy. You can outsource certain things. Cultivating allies, I realize, it's not easy to do. But the point is, to the extent that we can do that we create an advantage for ourselves and we have resources either to build a bigger army that Tom Donnelly wants or to do other things that are important to us in terms of national priorities.

The third piece of guidance was that the President said: You should not assume that we will be in an improved situation after a general war. Essentially, he was ruling out a preventive war against the Soviet Union that had a small nuclear capacity at the time.

So I think the ability to craft a strategy that plays to your advantages is important. For example, what I have been talking about is our advantages do not lie in building an ever bigger Army, at ever greater expense. Manpower is not an advantage for us in so many ways. What is an advantage is the manpower we have is very technically capable and very well-educated relative to most of the rest of the world.

As Tom said, we still can compete in terms of scale. We still have a lot of equipment and we can buy a lot of equipment. If Pakistan were to fail tomorrow, stabilizing Pakistan according to the levels of forces that we have deployed to Iraq, for example, would require over 100 American brigades on a consistent basis. That is a real problem, but that is not a real solution.

I do think the solution that was developed in the latter part of the Bush administration, that I hope will be sustained by the Obama administration, is we can provide the trainers, we can provide the advisers, we can equip these people with combat vehicles, artillery, and helicopters, whatever is needed. That's our strong suit. We should play to our strong suit. We should get the manpower of other countries engaged, not our own. Our manpower can be used far more productively in other ways.

Senator INHOFE. I understand that and I agree with that, and I know that probably all three of you would be very strong supporters of 1206, 1207, the Commanders' Emergency Response Program, the Combatant Commanders Initiative Fund, International Military Education and Training, and all of those. We want to do that and we want to be prepared to do that.

My only point is this, and I find there's something in my own mind, perhaps my narrow mind, that it is almost un-American that we would have a soldier on the battlefield or in the air or in the water that would be up against something that is better than what we have. That's my goal. I'd like to get there some time during my lifetime where we wouldn't have that problem.

Dr. KREPINEVICH. I think that certainly was a major concern, as you pointed out, during the Cold War. We were in a race with the Soviets. We built a tank, they tried to build a better tank. We built a plane, they'd try and build a better plane.

There really isn't anyone out there right now that's trying to build a better version of the Abrams tank or the F–22 fighter.

Senator INHOFE. No, no. But if you take the clock back 10 or 15 years, there was somebody out there. Russia was actually making something that would be competitive. I can go into the details and you already know those as to how that would compare to our strike vehicles when I first started talking about this.

My own opinion is that we don't know what our needs are going to be in the future. It could be that we're not going to have the ground capability or the need for it. But I don't want to take that risk. The only way I see to make this happen is to have the best of everything.

I agree with you, they're not out there right now. I think that's because we have gotten beyond that point and we are talking about the F–22, we are talking about the Joint Strike Fighter. But for a while that was impaired.

Dr. KREPINEVICH. The way I've always tried to look at these situations is from the point of view of what are the major problems that the U.S. military has to be able to solve. I'm getting a little bit off track, but I think right now we have a problem in that we are being progressively locked out of our ability to project power to the Far East and to the Persian Gulf. With the advent of the kind of capability that Hezbollah showed in the second Lebanon war, we are going to be progressively finding it difficult when we can project power to defend those things that we seize forward because of the growth of these extended range rockets, artillery, missiles, and mortars.

We are going to be confronted with irregular warfare on a persistent basis, and we are already being challenged in what the military calls the global commons, which is space and cyber space, by the Chinese, and progressively the seas and the undersea, most likely by the Chinese as well. That is a wide array of problems that I think are clear, they're unambiguous. There may be others that surprise us, but I think these are definite.

I think when Secretary Gates talks about a balanced defense he means you have to cover all these bases. When I talk about a balanced Army, I talk about an Army that I think is overly balanced in favor of traditional conventional war and not sufficiently focused on irregular war.

Senator INHOFE. I don't have the faith in the accuracy of our crystal ball right now, and that's my major concern.

But thank you all for your testimony and for your comments.

I've abused the time a little bit, but you guys weren't here.

Senator LIEBERMAN [presiding]. That was interesting. Thanks, Senator Inhofe.

Let me come back to Dr. Mansoor and ask you a question about FCS. Based on what you said and to put it maybe more simply than I should, the choice here is between developing or investing in systems, equipment, and hardware that is responsive to actual strategic challenges that the Army faces, and on the other hand, and I'm going to spin it a little bit, modernizing for the sake of modernizing. I understand that's generally a critical comment about FCS.

So let me ask you, if you had your druthers, what would you be investing in now in terms of better equipping the Army to face the challenges that it will face in the future? As part of that answer, are there any components of FCS that you particularly would continue to develop?

Dr. MANSOOR. Thank you, Senator. Actually, I think that we're on the right track in terms of equipping our force for counterinsurgency operations. We've spent about $20 billion equipping our Army with the Mine-Resistant Ambush-Protected vehicles that have proven very, very valuable. The Stryker vehicle has also proven very valuable.

Abrams tanks and Bradley Infantry Fighting Vehicles, when properly modernized and added with added applique armor and so forth, have been proven very effective. These are the kinds of things that we can continue to provide our forces with as they reset and continue to fight these kinds of wars. Meanwhile, we can continue to conduct the research and development to reduce that tac-

tical and technical risk that Dr. Krepinevich talked about, rather than pushing FCS quickly into the hands of our forces, because it is designed really for high-end combat that no one at this table, I think, believes is going to happen in the next decade or two. Therefore, we have some time to get it right.

In terms of the pieces of the system, because it is being spiraled out bit by bit into the field, there are pieces of the system that are really useful. I think the network once it's proved viable is a very valuable tool, no matter what platforms it's used on. The unmanned aerial vehicles, especially if they're armed, have been proven very useful both in counterinsurgency warfare and in high-end combat. So those are two examples of systems that I would continue to push forward into the hands of our troops. There are undoubtedly others. As Senator Inhofe said, we definitely need to replace our artillery systems because they're aging beyond the useful life of the system.

So pieces of FCS are really crucial, but we don't necessarily need the entire system of systems all at the same time.

Senator LIEBERMAN. Okay, that's very helpful.

Tom, did you want to add something?

Mr. DONNELLY. Yes. It's going to be really hard to pick FCS apart. That's both the blessing and the curse of the system. The network, which I think all of us think is probably the signal attribute of the FCS system, is not going to be as valuable absent the JTRS or on an M–1, M–2 platform.

So it would be really difficult to go back to the old system of Army modernization, where you did it in a piecemeal fashion, and retain the value of the network. The network will be limited by the most constraining aspect of the things that plug into it. So you can do it and if you're in a budget constrained situation you may have to do it. But you're going to end up getting less return on your investment if you start taking FCS apart in that way.

Senator LIEBERMAN. Thanks. Thanks for that addition.

Let me turn the discussion quickly to the question of the size of the Army. Mr. Donnelly has put out a number, but basically a concept, too. He has said go back to the 780,000 we were at before. I took you mean to meet both the conflicts we're going to face, but also to go back to a rotation which allowed more time here or at base, and also to allow for more time for individual members of the Army to go to the kind of educational opportunities that you talked about and have better training.

Dr. Krepinevich and Dr. Mansoor, please give us your thoughts about the ideal size of the Army and whether, if you reject Mr. Donnelly, you do for reasons of what you consider to be reality, which is we're not going to pay for that size Army, or whether you think really it's more than we need. To some extent I hear you, Andy, saying maybe it is more than we need; even if we could afford it, we'd be better with a smaller force than that, but one that's highly trained, high quality.

Dr. KREPINEVICH. Mr. Chairman, Tom spoke about the Army that I served in, the 781,000-soldier Army. That was a garrison army. The working environment was very different from the working environment of soldiers today. That's one of the reasons why the cost of a soldier has gone up 45 percent in real terms over the

last decade. Even soldiers that according to the Army's own metrics are of lower quality, that cost has gone up substantially.

The costs on an annual basis for the 92,000 Army and Marine Corps plus-up is estimated at somewhere around $13 to $15 billion. That's $13 to $15 billion every year. That's on a defense budget that is already, according to Congressional Budget Office estimates, short an average of $25 to $50 billion a year as far as the eye can see. Adding another 200,000 plus soldiers to the Army, just doing a linear extrapolation, is going to cost you about $30 billion on top of the $14 or $15 billion we're already paying.

So that's $45 billion a year every year. Now, would I like to have a larger, high quality Army? Yes. But I think we've all had a wake-up call in recent months of just how difficult our financial situation is. Once we get done spending however many trillion dollars we're going to spend, we're going to be working like the devil, according to rosy estimates, to get deficits down to what only a year or 2 ago, we considered entirely intolerable.

My thinking is that this is not a realistic option, however desirable it might be. Again, even if you could create that Army, there are contingencies that can happen before we go home this evening; if Pakistan unravels for example. Pakistan's population is about 180 million. The population of Iraq is about 27 million. The equivalent number of brigades we would have to send in to try and begin to stabilize Pakistan is well over 100. You can't build an Army big enough to deal with some of these contingencies, and that's why I keep going back to the path to salvation, if you will, is using our strengths—training, advising, and equipping indigenous and allied forces. We do have allies. They do realize they live in tough neighborhoods.

I would gladly give back a good portion of that 65,000 increase if I could thicken up the officer and NCO corps, because I want those people to be available to do that training and advising while I keep my current brigade force as a surge emergency force, and again not orient more of the Active brigades on being able to do that well, as opposed to being deployed and having to play Mr. Potatohead, pulling all this off and plugging all that in to see if we can get a unit that can operate at a fairly high level of effectiveness in that environment.

Senator LIEBERMAN. Would you give us a number? Would you go up some if you could from the 547,000?

Dr. KREPINEVICH. If it was a no-cost option, I suspect I would go up. My emphasis wouldn't be on adding six additional brigade combat teams. It would be on thickening up the institutional Army with officers and NCOs and creating the kinds of support elements that Dr. Mansoor was talking about in terms of engineers, in terms of intelligence elements and so on, to make those brigade combat teams much more effective in an irregular warfare environment.

Senator LIEBERMAN. Dr. Mansoor, I'm way over my time and I want to give Senator Thune the opportunity. Can you give me a quick answer to the question, or do you want to wait until the next round?

Dr. MANSOOR. I can do it real quick, Mr. Chairman. In my testimony I called for restructuring our brigade combat teams to make them more capable in both a counterinsurgency and in a conven-

tional warfare environment, which would include additional infantry, engineers, and staff elements. That would cost, I think, about 45,000 troops.

We also need to increase our officer corps to provide the kind of advisory capability that is really crucial to our national security, and we need to create an institutional home for this advisory effort as well.

I think when you add all that to the current Army end strength you get somewhere around 600,000.

Senator LIEBERMAN. Great. Thank you.

Senator Thune.

Senator THUNE. Thank you, Mr. Chairman.

Gentlemen, the Army maintains sets of prepositioned stocks of combat support vehicles for contingency use. My question is, given the threats that we face in the 21st century, are these stocks still important? If so, should DOD ensure that these stocks are maintained at high levels and expand the program?

Mr. DONNELLY. Anybody in particular?

Senator THUNE. Nobody in particular. Fire away.

Mr. DONNELLY. I think they are less, the environment has changed. I think those were hedges made against uncertainty and particularly uncertainty in the Persian Gulf and the Middle East when you come to land force sets. Again, my view would be that we pretty clearly see, at least for planning purposes, the road ahead in the Middle East. That doesn't mean that I don't think that land force equipment sets don't need to be flushed out. I just don't think that they need to be in prepositioning sets sitting in Diego Garcia or in warehouses in Kuwait.

Andy has suggested that one of our strengths could be equipping new allies like the Iraqi army or the Afghan National Army. So there would be needs to again build up equipment stocks to do that, and also to replenish our own equipment stocks.

But as to the narrow question of the prepositioning sets of the kind that we used to have, if you gave me more vehicles and more stuff, I'd use them for other things first.

Dr. KREPINEVICH. Senator, I think that's a very good question. One of the things I think that our experience in the 1990s led us to believe is that we don't suffer any attrition in combat. We lost very little in the Gulf War, very little in the contingencies in the Balkans, Somalia, and other places. Yet the Army has really been confronted with a lot of attrition of its equipment in these wars in Afghanistan and in Iraq, to the point where we have brigades coming back to the United States that essentially have to leave a lot of their equipment overseas, and they remain generally underequipped as they begin to train up for the next deployment.

So I would say, whether you want to call them war reserve stocks or something along those lines, we need to build up that kind of an inventory because our industrial base can't surge the way it did during World War II, cranking out enormous quantities of equipment.

I would also say that we need to think about how we would equip indigenous forces, because I agree with Senator Inhofe, while we might take the approach of wanting the best for our young soldiers and marines, limits on resources and just other hard factors may

say we don't have to give the best of everything to indigenous forces or to our allies. We can give them equipment that is good enough because we do have resource constraints.

I've spoken to a few Army generals who privately admit that this makes a lot of sense if you're going to have a strategy that says the sooner we equip the Afghan National Army, the sooner we can train them, the sooner we can get them in the field, the sooner we can begin to draw down our commitment there and release our forces for other commitments.

So I think the issue of war reserve stocks makes a lot of sense, both in terms of our own forces suffering attrition, but also in terms of rapidly being able to equip indigenous and allied forces.

Dr. MANSOOR. Senator, the prepositioned stocks tend to be heavy brigade combat team sets. The issue with the Army is it has so many different types of equipment that it's almost impossible to find a unit that can fall into that set of specific equipment and use it off the shelf. In addition, the sets being arrayed in the Middle East and Korea and elsewhere are very vulnerable to first strikes.

So if I had to make a choice I would save the money by getting rid of the stocks and putting more money into fast sealift.

Senator THUNE. Let me ask you a little bit about the Army. It maintains that by organizing around brigade combat teams and supporting brigades it'll be better able to meet the challenges of the 21st century security environment, specifically to jointly fight and to win the global war on terrorism. How do each of you think that modularity is progressing and what changes, if any, would you recommend?

Mr. DONNELLY. My view would be that I think modularity has gone too far. As Dr. Mansoor suggested, we redesigned a brigade that's a heck of a lot smaller and took the manpower savings from FCS being able to perfectly see the battlefield before we had the technological capabilities to do so. It's not surprising that every time a brigade combat team deploys to a theater of operations now they get plussed up a lot with a lot of the same things, although some very different things that we took away, such as military intelligence, engineers, military police, et cetera, et cetera.

So the brigade organization that we currently have is a very fragile organization, and in a long war environment you have to ask yourself, at least above the brigade echelon, whether we are well-configured for long-term sustainment operations. In Afghanistan, for example, we're going to require a lot more support forces just because of the nature of the dispersed and the immature, undeveloped nature of the country.

So we have designed a perfect little brigade that's a big risk.

Senator THUNE. Anybody else?

Dr. KREPINEVICH. Just two quick observations. First, I think the idea of having brigades that are independently deployable certainly has been a benefit to us and allowed us a certain amount of flexibility.

Second, the Army is planning to have 19 heavy brigade combat teams, and 0 brigades that are oriented on irregular warfare. There was some discussion in the Army G–8 staff element about security cooperation brigade combat teams, and I thought, while the Army hasn't followed through on that, some of the ideas in there fall

along the lines that Dr. Mansoor was talking about. I would like to see about 15 brigades in the Active Force and 15 brigades in the National Guard that are oriented on those kinds of missions. The fact that they would be independently deployable, I think, would enable them not necessarily even to have to deploy as a brigade. They might be able to send a battalion to the Philippines to deal with a specific request, a company to Kenya, and so on. To have brigades that in a sense can help keep the lid on things and build partner capacity, as opposed to letting things get out of control and us having to do it ourselves and deal with a much more threatening environment.

Dr. MANSOOR. Senator, I would have to agree with my colleagues here at the table. The modular brigades as currently organized and equipped have insufficient staff for the missions they're being called upon to execute. They lack engineers and military police. Most importantly from both conventional and irregular warfare standpoints, they don't have enough troops. They lack a third maneuver unit, which almost every historical study would indicate is needed both in conventional warfare and would add additional infantry as well for counterinsurgency warfare.

So I think the Army made a good decision going to modular brigades and then designed them incorrectly.

Senator THUNE. Thank you, Mr. Chairman.

Thank you all very much. I appreciated very much your testimony and your very candid observations.

Senator LIEBERMAN. Thanks, Senator Thune. I agree, it's been a very productive afternoon. As we mentioned earlier, we have to go over to a briefing with Ambassador Holbrooke on Afghanistan and Pakistan. But I want to thank you.

We have some big decisions to make. It may be that we will ultimately not make a big decision about the size of the Army, although I think we should. Maybe we'll be forced to do that by amendment on the floor. But there's no question that the administration's budget will confront us with some big decisions about how to equip the Army. I could be mistaken, but I don't think I am. I think there's going to be some recommendations for change.

Really, what you've said today and what you've written in your very thoughtful prepared statements is very helpful to us. As a matter of fact, I'm going to give you a request right now, that when the President's budget does come in in detail, I invite each of you to respond, particularly on what it does about equipment and systems, and offer us some alternatives if you think there are some better ones beyond what we've talked about today.

Thank you very much. You've done a real service to the committee and we hope in turn to the country.

The hearing is adjourned.

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR EVAN BAYH

SUPPLEMENTAL BUDGET REQUESTS

1. Senator BAYH. Dr. Krepinevich and Mr. Donnelly, according to the recently signed Status of Forces Agreement with Iraq, American combat troops will begin leaving Iraq very soon. How do you believe the administration should address the significant need for equipment recapitalization and reset while also weaning the Department off of supplemental budget requests?

Dr. KREPINEVICH. The Army has estimated the reset cost at $12 to $13 billion per year, and the Marine Corps has estimated its costs at $5 billion per year. Funding in previous supplemental appropriations has been more than sufficient to meet these costs. The budget request for fiscal year 2010 for Overseas Contingency Operations includes $17.6 billion for this purpose, which also appears to be adequate given the Services' previous statements. Since we have many years of experience in the current conflicts, the costs of maintaining and repairing equipment should be more predictable. Thus, assuming the conflicts in Afghanistan and Iraq remain roughly at their current levels of intensity, the Services should now be able to accurately forecast these costs in their annual budget requests.

Mr. Donnelly declined to respond in time for printing. When received, answer will be retained in committee files.

2. Senator BAYH. Dr. Krepinevich and Mr. Donnelly, what risks does the Department of Defense face by continuing to rely so heavily on the supplemental process?

Dr. KREPINEVICH. Supplemental appropriations are a useful tool for dealing with unforeseeable costs that cannot be accommodated through the regular appropriations process. Supplemental appropriations have been used to fund previous wars, especially at the onset of conflict, though not to the extent that they have been used in the current wars in Iraq and Afghanistan. In Vietnam, for example, supplemental appropriations were used almost exclusively in the beginning (fiscal years 1965–1966) when the costs and duration of the conflict were uncertain. In later years, the Department gradually transitioned funding of the war to the base budget. By fiscal year 1970, nearly all of the war costs were funded through the base budget.

Some of the disadvantages of continuing to fund the wars through supplemental appropriations are that the funding process lacks strategic planning and erodes discipline in the DOD budgeting process. The usual process of planning and programming for future years forces the Services to prioritize needs and to think more strategically about where to make investments. The use of supplemental has undermined that process by allowing items that are not funded in the base budget to be added to a supplemental request—thereby short-circuiting the prioritization process. Without strategic planning and prioritization, the risk is that these funds will be spent on misplaced priorities and weapon systems that do not fit into a long-range strategy. Furthermore, many of the items in the supplemental appropriations are not one-time costs. They incur ongoing operations and maintenance expenses that can tie the Services' hands when it comes to funding future modernization efforts.

Mr. Donnelly declined to respond in time for printing. When received, answer will be retained in committee files.

PROCUREMENT AND RESOURCING

3. Senator BAYH. Dr. Krepinevich, Mr. Donnelly, and Dr. Mansoor, how do you believe the administration should resource forces deployed to Iraq and Afghanistan? Specifically, how would you advise they balance the need for counterinsurgency capabilities of today with the conventional deterrence capabilities that may be needed for tomorrow?

Dr. KREPINEVICH. For a variety of reasons, including the difficulty of preparing for both irregular and conventional conflicts, the Army has continued to place its institutional center of gravity squarely in the area of conventional warfare. This is true both for the Army's core modernization program, the Future Combat Systems (FCS), and its overall force structure. While the FCS program is "optimized" for conventional operations, and while the Army, in the interim, plans to field an Active component that arguably is overly weighted toward conventional operations, the Service has also decided against fielding brigades oriented on irregular warfare missions such as stability operations, counterinsurgency, and foreign internal defense.

What, then, should the Army do differently? How can it best prepare for irregular conflicts while still maintaining a dominant capability for high-end conventional warfare? The answer lies in developing and fielding a force fully capable of conducting and, if need be, surging for irregular warfare operations, in addition to its capability to conduct and surge for large-scale conventional operations. Should either form of conflict prove protracted, the other wing of the force could, over the course of the initial 12- to 15-month surge, undergo training and the appropriate force structure modifications to enable it to "swing in" behind the surge force to sustain operations.

What would this dual surge force look like? First, 15 Army Infantry Brigade Combat Teams (IBCTs) and 15 Army National Guard IBCTs would be converted to Security Cooperation Brigade Combat Teams (SC BCTs), oriented primarily for irregular

warfare operations. With a 3:1 rotation base in the Active component and a 6:1 rotation base for the Reserve component, this would allow for seven and a half SC BCTs to be fielded on a sustained basis, serving as the Army's phase 0 forward presence forces. It would also provide a pool of 30 brigades to draw upon in the event that a major stability operations contingency requires a surge of forces.

Second, because the best strategy when addressing the threat of irregular warfare is to build partner capacity and engage in other preventive measures before a friendly country is at risk, the Army should also develop and maintain a significant training and advisory capability that can be deployed on short notice when necessary. The officers and noncommissioned officers for this mission can be sourced from the institutional Army—the Army's staffs and education facilities, which should be either fully staffed or slightly overstaffed in anticipation of the demand for trainers and advisors.

Third, since the Army may need to fill any gaps in the U.S. interagency effort to restore governance and enable economic reconstruction, it should strongly consider maintaining the ability to field Civil Operations, Reconstruction and Development Support (CORDS) groups capable of providing advice, mentoring, and support to the host nation's non-security institutions (including its civil administration and its legal, economic, and healthcare sectors).

Finally, for high-end conventional operations, the Army's primary capability should consist of 12 heavy BCTs (HBCTs), an armored cavalry regiment, and 9 National Guard HBCTs. This would give the Army a surge force of up to 21 HBCTs, in addition to the 6 Stryker BCTs in the Active component, 1 Stryker BCT in the Reserve component, and 4 brigades of the 101st Airborne Division (Air Assault)—a total of 32 heavy or "middle-weight" brigades, far in excess of what is likely to be required for a conventional major combat operation.

The Army's centerpiece modernization program, the FCS, is really a cluster of 14 systems of various types. These systems will rely heavily on being linked to an overarching battle network that also ties them together with individual soldiers and the U.S. military's joint battle network. While revolutionary in its concept, given the many technical challenges confronting it, the FCS program may not be executable at an acceptable cost. Furthermore, it may not be technically possible to create the battle network, as currently envisioned by the Army, or to create it within the timeframe projected. Finally, as the FCS is optimized for conventional warfare, it is not clear it represents the best use of resources in this era of protracted irregular warfare confronting the Army. Given these considerations, Secretary of Defense Robert Gates made the right decision to cancel the FCS ground combat systems, while looking to harvest as many FCS capabilities as possible.

At the same time, the Army should strongly consider establishing war reserve stocks of equipment to support irregular warfare operations, both to enable the rapid buildup of indigenous forces as necessary, and to replace the equipment of Army BCTs damaged or destroyed in the course of conducting irregular warfare operations.

Ultimately, this approach would yield a force more balanced between the demands of irregular and conventional operations.

Mr. Donnelly declined to respond in time for printing. When received, answer will be retained in committee files.

Dr. MANSOOR. Our land forces clearly need a set of balanced capabilities to fight the wars we are engaged in today while hedging against the risk of a much more dangerous conventional conflict in the future. I do not see these requirements as mutually exclusive. Designing effective formations that can operate effectively in both conventional and irregular wars is the most important issue facing the Army today.

The current BCT organization is fatally flawed. Fixing the structure will give the Service added capabilities in both conventional and irregular wars. Brigades that are tailored for counterinsurgency operations would include a third maneuver battalion (primarily infantry), a full engineer battalion, more military police, added staff capabilities, and additional intelligence, surveillance, and reconnaissance assets—particularly armed reconnaissance units that can engage the people and fight for information. The need for more infantry and engineers is especially critical. Reconfiguring the Army's BCTs will make them more capable not just in counterinsurgency warfare, but across the spectrum of conflict. I estimate these added capabilities, when applied across the force, would require an additional 45,000 to 50,000 soldiers to the Army's end strength.

Another important issue is the size of the officer and noncommissioned officer corps. The officer and noncommissioned officer corps are too small to provide the numbers of advisers that are required to meet our national security needs. Advisers help to organize and train foreign military forces so that they can defend their own

states, rather than having U.S. forces continually engaged on foreign soil. In an environment where a number of key strategic allies are threatened with insurgencies, advisers are increasingly critical to our national security. Advisers are taken mainly from the pool of mid-career officers and noncommissioned officers. Due to human resource decisions made in the 1990s, the Army and Marine Corps do not have enough slack in their personnel systems to provide the increasing numbers of advisers called for by our combatant commanders. To meet this need, we should create an institutional home for advisers in the Armed Forces, along with increasing the size of the officer and noncommissioned officer corps to enable the armed services to provide the numbers of advisers necessary to meet the growing need.

4. Senator BAYH. Dr. Krepinevich, Mr. Donnelly, and Dr. Mansoor, if you were rebaselining the defense budget by taking into account lessons learned from Iraq, Afghanistan, and war on terror needs, what weapons systems and training competencies would be your highest procurement priorities?

Dr. KREPINEVICH. One of the most important missions our forces carry out today is training and advising indigenous forces in Iraq, Afghanistan, and other nations so that they can provide adequate security for their own people. The Army maintains that the advise-and-assist mission should be one of the core capabilities in which all soldiers are trained. To date, the soldiers used in this capacity have been rotated into this mission area for durations of a few months to a year. Yet it takes time for soldiers to develop a high degree of competency in the advise-and-assist mission. Given the lessons learned in Iraq and Afghanistan, the Army should consider establishing a cadre of trained officers and noncommissioned officers that are specialized in this mission.

If we are to pursue a strategy of the "indirect approach" to irregular warfare, whereby we build up the ability of indigenous forces to provide for their own country's security, and deploy large numbers of our own ground combat forces only in extremis, then we will need to establish stocks of unit sets of equipment for these indigenous forces. It does little good to train and advise host nation forces if they cannot be properly equipped. These "war reserve stocks" would comprise equipment more suited to irregular warfare and to the skills of local forces. This equipment would be less sophisticated—and far less expensive—than comparable equipment provided to U.S. troops.

As for equipping U.S. troops, I believe the next big thing in irregular warfare will be the enemy's use of guided rockets, artillery, mortars, and missiles (G–RAMM). This follows logically from Hezbollah's use of unguided RAMM during the Second Lebanon War. In that conflict over 4,000 RAMM projectiles were fired into Israel. Defenses need to be established against this threat. Among the priorities for investigation and potential procurement are directed-energy interceptors (especially solid-state laser systems), and equipment that would assist "hunter-killer" teams to suppress G–RAMM launch sites, suppress attacks, and intercept projectiles in their early (or boost) phases. Among the systems that might play a useful role in addressing this challenge are long endurance aircraft (manned and unmanned) equipped with kinetic or directed-energy interceptors, and advanced unattended ground sensors.

Mr. Donnelly declined to respond in time for printing. When received, answer will be retained in committee files.

Dr. MANSOOR. History suggests that the most effective modernization programs are those aimed at meeting real strategic needs against specific enemy threats. Our Armed Forces must therefore examine carefully the battlefields of Iraq and Afghanistan, along with the wide range of potential threats in other areas of the world, to determine what capabilities they need. Modernizing our forces based on historical military theories focusing on imagined or mirror-imaged enemies would most likely lead to the creation of equipment ill-suited to the wars our Nation will fight, now and in the future.

High on the list of required capabilities today is the development of a wheeled combat vehicle with adequate combat capabilities and armor protection for use in both irregular and conventional conflicts. Abrams tanks and Bradley infantry fighting vehicles are too heavy and their tracks cannot withstand movement over extended distances. The Stryker wheeled vehicle has proven its value in Iraq, but is too lightly armed and armored. The Army and Marine Corps need to find a happy medium between these two existing capabilities.

In Iraq and Afghanistan the distances covered by our combat forces is vast, but most engagements are fought at ranges of less than 500 meters. The roadside bomb threat is substantial and growing. Mines and underbelly improvised explosive devices are an increasing danger to our forces. The Army and Marine Corps, therefore,

should develop a capable wheeled combat vehicle that can operate successfully against these growing threats.

Our forces cannot simply rely on better information to protect themselves and engage the enemy at extended distances. The fog, friction, and uncertainty of war will ensure that our troops will require the capability to engage in close-in combat in the future. Provision of lightweight armor that can withstand roadside bomb and mine blasts and rocket propelled grenade fire is therefore essential. Our Nation should energize the scientific and industrial base to meet this need. Advances in titanium refining technology, along with new composite materials, suggest that finding a technological solution to this need is not beyond our reach.

The Army and Marine Corps can increase the effectiveness of our forces by networking them together with satellite or wireless command and control systems. Work should be continued on the FCS network (now divorced from the FCS ground platforms) to meet this need.

Aerial reconnaissance and fires are critical to the success of our forces in Iraq and Afghanistan. Armed unmanned aerial vehicles in particular have proven critical and the production of these systems should be increased. Although unmanned aerial vehicles have proven their worth, capable manned helicopters are also essential as they meet a variety of needs that unmanned systems cannot. The top priority in this regard is the provision of an armed reconnaissance helicopter to replace the aging OH–58D Kiowa Warrior.

The Army and the Marine Corps have already taken steps to increase the training of their forces in counterinsurgency warfare, but more can be done. Counterinsurgency warfare requires a host of added competencies that preparation for conventional war does not address. In particular, professional military education needs to be expanded to ensure America's military leaders are intellectually prepared with a broader, deeper grasp of the world in which we live to cope with the requirements needed for the wars America will fight in the decades ahead. In this vein, increased educational opportunities should be provided to send the very best mid-grade officers for graduate schooling at America's universities. Doing so will not only help them prepare for the murky irregular wars of the 21st century, but will help to bridge the divide between the military and American civil society as well.

[Whereupon, at 4:05 p.m., the subcommittee adjourned.]