HEARING TO RECEIVE TESTIMONY ON ARMY MODERNIZATION IN
REVIEW OF THE DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR
2017 AND THE FUTURE YEARS DEFENSE PROGRAM

Tuesday, April 5, 2016

U.S. Senate
Subcommittee on Airland
Committee on Armed Services
Washington, D.C.

The subcommittee met, pursuant to notice, at 2:30 p.m. in Room SR-232A, Russell Senate Office Building, Hon. Tom Cotton, chairman of the subcommittee, presiding.

Subcommittee Members Present: Senators Cotton [presiding], Inhofe, Wicker, Rounds, Ernst, Sullivan, Manchin, Gillibrand, Blumenthal, Donnelly, and Heinrich.
OPENING STATEMENT OF HON. TOM COTTON, U.S. SENATOR
FROM ARKANSAS

Senator Cotton: The Airland Subcommittee convenes today to hear testimony about Army modernization to review the defense authorization request for fiscal year 2017 and the Future Years Defense Program.

I welcome our witnesses, Lieutenant General Mike Williamson, principal military assistant for acquisitions; Lieutenant General John Murray, deputy chief of staff for Army programs; Lieutenant General Joseph Anderson, deputy chief of staff for operations, plans, and training; Lieutenant General H.R. McMaster, director of the Army Capabilities Integration Center.

Thank you each for your dedicated service to our nation.

In many hearings, the full committee has heard about some of the most diverse, complex, and dangerous threats to our national security since the end of World War II. Russia occupies land in three countries and routinely probes NATO allies, China is building and militarizing islands out of the sea, North Korea is testing nuclear weapons and missiles, and Iran is running wild across the Middle East. But instead of strengthening our forces against these threats, we have seen sustained cuts to our military's force structure, modernization, and readiness.
Army Chief of Staff General Mark Milley often states that readiness is his number-one priority. It is hard for anyone who has led soldiers in combat to disagree, just as the moms and dads of more than 186,000 soldiers deployed in over 140 countries could never disagree. But we cannot afford to shortchange modernization. Today's modernization is tomorrow's readiness.

As we explore the Army's modernization strategy today, I am particularly interested to explore how the Army is using its new acquisition authorities in the creation of a Rapid Acquisition office. In its understandable focus on technological breakthrough, I wonder if the Army has moved quickly enough to adopt proven technology already possessed by our allies and adversaries alike. In many cases, the desired technology may already exist in the private sector and may be within the Army's grasp. I will offer three examples.

First, active protection systems to protect vehicles from close-in threats like rocket-propelled grenades are near completion in Israel, fielded in Germany and Russia, but the U.S. is still in the science-and-technology phase. Second, the Distributed Common Ground System, or DCGS, remains beset by problems. Last year, Lieutenant General Williamson testified before this subcommittee that the completeness of the DCGS program is what makes it so
valuable and predicted that as we go into the May time frame where we go through our next set of evaluations, I think you will see a completely different perception of how that tool is provided.

Unfortunately, a year later a report by the Director, Operational Test and Evaluation indicates that DCGS is not a functional mission command or intelligence analysis tool, and that even under laboratory conditions, soldiers and commanders "did not consider DCGS to be very helpful for the fight" and sought PowerPoint and pencil-and-paper workarounds even when commercial, off-the-shelf solutions are potentially available.

Third, the global response force typically housed in the 82nd Airborne needs an enhanced tactical mobility program. In plain English, they need four-wheelers and other all-terrain vehicles to get from the drop zone to the front lines. This requirement was demonstrated in 2012 and approved in 2014. Here we are in 2016 when any farmer or deer hunter in Arkansas could have gone and bought one at a local dealer.

In addition, some issues sit at the intersection of modernization and readiness. I am concerned, for example, about the maintenance and modernization of theater activity sets and the Army's pre-positioned stocks to be used by rotating units or to support contingencies.
Likewise, the subcommittee is curious about the Army's plans to implement the Associated Unit pilot program in which active Guard and Reserve units will be paired up to train and potentially fight together. In both cases, modernization could be disjointed and readiness may suffer without a well-considered plan.

Finally, I am sure committee members will want to examine the recommendations of the National Commission on the Future of the Army. The Army has suggested that about 50 of the 63 Commission recommendations are very easy to implement at no cost or some of which the Army has already begun implementation. That is good news.

But, according to Army, another 15 significant recommendations will require a detailed analysis and are expensive to implement. For instance, the Army's FY '17 unfinanced requirements list includes nearly $1.2 billion in funding to implement recommendations on aviation modernization, retain an 11th Combat Aviation Brigade, and retain four National Guard AH-64 attack battalions. That is not such good news.

Again, I thank our witnesses for their service and for their appearance today. I look forward to the discussion.

Senator Manchin?
STATEMENT OF HON. JOE MANCHIN, U.S. SENATOR FROM WEST VIRGINIA

Senator Manchin: Thank you, Mr. Chairman, and thank all of you for your service and for helping us navigate this difficult, challenging time.

I want to thank the chairman for holding this important hearing on Army modernization. I would also like to welcome your witnesses to today's hearing and thank them for their testimony and their service to our country.

The U.S. military remains the most ready and capable fighting force in the world. However, after nearly 15 years of constant military operations, it is important that we take a step back and assess the current state of our military force and the threats that we face at home and abroad.

While the focus of today's hearing is on the Army's strategy for modernization, I think it is also imperative that we acknowledge the other challenges facing the Army, including the importance of rebuilding readiness in the regular Army, the Army National Guard, and the Army Reserve.

The Army has made rebuilding readiness their number-one priority in fiscal year budget '17 request. The high operational tempo for the past decade-and-a-half has consumed readiness levels as quickly as they could be
reconstituted. And the demands on our military force will not diminish any time in the near future.

Coupled with the devastating impact sequestration has had on readiness accounts, I commend the Army for prioritizing readiness in this year's budget and ensuring that our military are trained and ready to respond to any contingency at a moment's notice. And as the committee begins their consideration of FY '17 National Defense Authorization Act, it is important that we protect these investments in the readiness accounts from any misguided cuts.

While the readiness of the force is vitally important, we cannot shortchange our investments in modernization. However, in order to meet the top-line funding levels set by the 2015 bipartisan budget agreement, the Army had to reduce funding for some procurement and modernization efforts. As General Daniel Allyn, vice chief of staff of the Army, testified last month before the Senate Armed Services Subcommittee on Readiness, this year's budget request is insufficient to simultaneously rebuild decisive action readiness and modernize. To ensure sufficient readiness for the demands of today's operating environment, the Army must assume risk by reducing end strength, delaying modernization, and deferring infrastructure recapitalization and investment.
The Army's fiscal year 2017 budget request included $22.6 billion for the Army's modernization efforts. Of this amount, $15.1 billion was requested for procurement and $7.5 billion for research, development, test, and evaluation activities. However, the total funding for procurement in FY '17 request is $1.3 billion less than enacted the amount in fiscal year '16.

In particular, the Army's aviation portfolio was hard-hit by these reductions. The aviation portfolio accounts for approximately 25 percent of the Army's entire procurement budget, and the FY '17 budget request reduced procurement quantities for the AH-64 Apache, the UH-60 Black Hawk, and the CH-47 Chinooks. I would like to know if our witnesses feel confident that the reduction in these procurement accounts will not adversely impact these programs by adding substantial cost to the overall program or have an unintended consequence of reducing the readiness of our aviation units.

At the same time, the Army has had a poor track record with their modernization efforts. Many programs have been truncated or canceled, usually after billions of dollars had already been invested. Last year, this committee gave new acquisition authority to the service chiefs with the intent that this would improve the acquisition process. And I look forward to hearing from our witnesses on their
thoughts on this new authority and what further actions the Army needs to take to improve its acquisition processes.

Earlier this year, the National Commission on the Future of the Army released their comprehensive study on the roles and structure of the Army. I was pleased with the Commission's report and believe it was thorough and thoughtful.

With regards to the Army's Aviation Restructure Initiative, the Commission recommended that the active component retain 20 battalions of Apache helicopters, each equipped with 24 aircraft, while providing the Army National Guard with four battalions of Apache helicopters, each equipped with 18 aircraft.

While the Commission struck a balanced compromise, the fact remains that in order to execute the Commission's recommendations for ARI, it will require substantial funding. According to the Army's unfunded requirements list, the Army would need approximately $1.2 billion in additional funding to implement the Commission's recommendation of fiscal year '17, as well as additional funding above that amount over the next several years. While it is my understanding that General Milley is still reviewing the Commission's proposal, I would welcome any comments from our witnesses on this issue.

Finally, we must ensure our men and women in uniform
remain the best trained, the best-equipped fighting force in the world. In light of the Budget Control Act and the Army's constrained top-line funding levels, it becomes even more imperative that every dollar we spend on the military is spent efficiently and effectively so that our soldiers can complete their mission, win our nation's wars, and return home safely.

Again, thank you, Mr. Chairman, for holding this hearing, and I look forward to hearing from our witnesses.

Senator Cotton: Thank you, Senator Manchin.

We will turn to our witness now, General Williamson.
STATEMENT OF LIEUTENANT GENERAL MICHAEL E. WILLIAMSON, USA MILITARY DEPUTY AND DIRECTOR, ARMY ACQUISITION CORPS, OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY FOR ACQUISITION, LOGISTICS, AND TECHNOLOGY

General Williamson: Chairman Cotton, Ranking Member Manchin, and distinguished members of the subcommittee on Airland. Thank you for the invitation to discuss the FY '17 budget request and Army equipment modernization. I respectfully request that our written statement be made part of today's record.

Senator Cotton: Without objection.

General Williamson: Mr. Chairman, today's Army prioritizes readiness while continuing to assume risk and modernization. Due to resource constraints, we simply cannot modernize the entire force with the most modern equipment. Therefore, we must do so selectively. Our resources are focused on protecting science and technology so the next generation of breakthrough technologies can be rapidly applied and exploited with our existing and our new systems.

We are also investing in targeted new systems to fill critical operation requirements and capability shortfalls. These systems include the armored multi-purpose vehicle, the joint light tactical vehicle, and fixed-wing aviation. We are incrementally modifying and modernizing existing
systems to increase capabilities and to extend service life. These systems include the Paladin, the Black Hawk, the Apache and Chinook helicopters, as well as our unmanned aviation.

We also have a requirement to reset and sustain and return our existing Army equipment to the required level of combat capability so that we will be prepared to fight in any immediate contingencies.

And then finally, we are divesting excess equipment across the entire Army to reduce and eliminate sustainment costs. Systems currently being divested include the M113 armored personnel carrier, the TH-67 training helicopters, as well as the Kiowa, the Kiowa Warrior, and the UH-60 Alpha Black Hawk fleets.

Equipping is and will always remain a critical component of readiness. We cannot put our soldiers at risk by not providing them with the right equipment at the right time and at the right place to accomplish their assigned missions.

Mr. Chairman, with your permission I would like to address just two other areas. First, reduction in the Army's modernization account continues to present significant challenges for the defense industrial base, including our own organic industrial base. In developing our equipment modernization strategy, we carefully assessed
risk across all portfolios to protect ongoing production
and to sustain the industrial base and to include the
preservation of key workforce skills.

Secondly, I want to take this opportunity to express
my appreciation to the members of the subcommittee for your
continued efforts to strengthen and enhance the acquisition
workforce. Our acquisition professionals are experienced,
well-educated, and well-trained. They are critical assets
in the Army's ability to design, develop, and deliver
needed capability to our soldiers.

Mr. Chairman and distinguished members of the
subcommittee, thank you for your steadfast and strong
support of the outstanding men and women of the United
States Army, our Army civilians, and their families. This
concludes my opening remarks.

[The prepared statement of General Williamson
follows:]
Senator Cotton: General McMaster?
STATEMENT OF LIEUTENANT GENERAL HERBERT R. MCMASTER,
JR., USA DIRECTOR, ARMY CAPABILITIES INTEGRATION CENTER;
DEPUTY COMMANDING GENERAL, FUTURES, UNITED STATES ARMY
TRAINING AND DOCTRINE COMMAND

General McMaster: Thank you, sir. Chairman Cotton, Ranking Member Manchin, distinguished members of this subcommittee, thank you for the opportunity to speak with you today about the importance of ready land forces and the enduring need to maintain a ready Army with sufficient capacity and capabilities to secure our nation.

As Senator Cotton mentioned already, threats and enemies are becoming increasingly capable, and our competitive advantages that we have banked on over recent years are narrowing. Due to reductions in the size of the Army and decreased investments in modernization, as well as the improved capabilities of potential enemies, the Army risks losing qualitative overmatch in future conflicts.

With a 74 percent decrease in Army modernization total obligation authority since 2008, risk to mission and soldiers is increasing. All of today's conflicts are over the control of territory, people, and resources. Because the Army is foundational to the joint force, the increased risk applies as well to joint operations, as well as to soldiers and Army units. In particular, we must ensure that combined arms units in our Army possess the mobility,
the firepower, and the protection to defeat the enemy and establish control of land, resources, and populations.

Over the last 15 years of combat operations, our Army has focused on winning against enemies in Afghanistan and Iraq. We are behind, though, in modernization against current as well as future threats. We have no current major ground combat vehicle development program underway. With current funding levels, the Bradley Fighting Vehicle and the Abrams tank will soon be obsolete, but they will remain in the Army inventory for the next 50 to 70 years.

Meanwhile, threats, enemies, and adversaries have been modernizing rapidly. To mitigate mounting risk, our Army is particularly concerned about developing future capabilities in the following areas: combat vehicles, future vertical lift, expeditionary mission command or command-and-control capability, cross-domain fires, cyber and electromagnetic activities, robotic and autonomous systems, advanced protection as was already mentioned, and soldier and team performance and overmatch in close combat.

The stakes are high. The combination of increasingly dangerous security environment, reductions in the size of the Army, decreasing investment in Army modernization, and fiscal uncertainty have increased risk to the joint force and to national security.

Mr. Chairman and distinguished members of the
subcommittee, thank you for the opportunity to speak with you today. I look forward to your questions.

[The prepared statement of General McMaster follows:]
Senator Cotton: General Anderson?
STATEMENT OF LIEUTENANT GENERAL JOSEPH ANDERSON, USA

Deputy Chief of Staff of the Army (G-3/5/7)

General Anderson: Thanks, Mr. Chairman. Chairman Cotton, Ranking Member Manchin, and distinguished members of this committee, thanks for the opportunity to talk to you about the Army's fiscal year '17 PBR as it pertains to Army modernization. And thanks to all of you for your continued support of our soldiers, our families, our civilians, and our veterans.

As you know, the Army remains the world's decisive land force. We are currently globally engaged with 187,000 soldiers in over 140 countries, while participating in seven named operations and rotating forces through Europe, the Pacific, and the Middle East. The Army remains the foundation of the joint force, and we conduct diverse and enduring missions. We will continue to invest in training, equipping, and leader development while balancing resources between readiness and strength and modernization.

We require long-term, sustained, and predictable funding to meet our demands in today's security environment. The 2015 BBA did provide some short-term relief. While the budget provides some predictability, it is insufficient to build full-spectrum readiness and modernize our equipment at the same time. We assume risk by reducing end strength, delaying modernization, and
deferring infrastructure enhancements to build readiness for today's operating environment. These tradeoffs mortgage our future readiness and increase the risk of sending undertrained and poorly equipped soldiers into harm's way.

I look forward to working with you to ensure that our Army remains the premier land force in the world, and I look forward to taking your questions. Thank you.

[The prepared statement of General Anderson follows:]
Senator Cotton: General Murray?
STATEMENT OF LIEUTENANT GENERAL JOHN M. MURRAY,
DEPUTY CHIEF OF STAFF OF THE ARMY, G-8

General Murray: Chairman Cotton, Ranking Member Manchin, distinguished members of this committee, once again, thank you very much for allowing me to testify today on the Army's FY '17 budget request.

I would simply amplify a couple things that my colleagues have already said and the chairman and ranking member have mentioned several times, and that is the fundamental issue the Army faces each and every time we build a budget, and we are facing it right now as we build a team budget, and that is how do you balance really the three legs of the stool that we deal with when we talk about how we apply our resources. That is near-term readiness, that is really manpower or structure, and it is modernization/capital investments. And it is the balancing act between those three that we deal with every time we build a budget.

This budget request in FY '17 clearly prioritizes readiness. It is about a 5 percent increase in what we have asked for in readiness over the '16 request. And at the same time we are maintaining end-strength ramp on our way down to 450, as directed, and so you pay for that with modernization, capital investments in our installation. So that is where the bill-payers are.
If you ask me if I am concerned about risk in this budget, I would tell you no. I am more concerned about the cumulative risk over the last 5 or 6 years because this is exactly the way we have built budgets for the last 5 or 6 years. So I am more concerned about the cumulative effect of the impact on the modernization accounts in our installations than I am in particular one budget.

Once again, thank you for your steadfast support for our soldiers, our families, our civilians, and our veterans, and I very much look forward to taking your questions.

[The prepared statement of General Murray follows:]
Senator Cotton: Thank you all.

I want to return to a concept you all raised in various ways. General Williamson, you talked about assuming risk on modernization, selectively modernizing targeted investments. General McMaster, you talked about the future of the Army and the risk we face there. General Anderson, you said we are assuming risk in modernization. General Murray, you said that you are more worried about the cumulative risk not just of this budget but 5 years of budgets.

When we prioritize readiness, we are prioritizing the training and the safety of the soldiers that we have in the Army today downrange, which means that we are putting at greater risk the soldiers that we are going to be sending downrange in 5, 10, 15 years just to put it in the most concrete terms. Is that fair?

General Anderson: It might be fair, Senator, but I think the issue is as we watch the cycle, our job is to -- how we make sure from home station training, that is some of the money you are seeing pulled for readiness out of some of these programs to make sure they get better opportunity at home. So before they go to one of the training centers, be it at Fort Irwin, be it Fort Polk for their validation exercises before they out from a training perspective we are okay. The issue is going to be -- and
so far, as we keep doing that for all things Korea, for all
things Afghanistan, all things Iraq, elsewhere, we are okay
on a three-to-one cycle rotation.

The issue is going to be, though, as you allude to, is
what kit do they bring, as we watch in Europe and
elsewhere. And that is where, as H.R. mentioned, the
overmatch piece. That is the larger concern of the two.

Senator Cotton: General McMaster used the term
qualitative overmatch. Could you explain what you mean by
that?

General McMaster: Yes, sir. We are losing
qualitative overmatch over our enemies, and that has a lot
to do with increased enemy lethality and our inability to
keep pace in protection. You mentioned active protective
systems in that connection.

Also, we are seeing some disruptive technologies as
our enemies really are doing four things that we have to
keep up with. The first is they are evading our long-range
detection. Our ability to project power onto land from the
aerospace and maritime domains obviously is limited based
on enemy counter actions.

They are also, though, disrupting what they see as our
differential advantages, so evading us, disrupting our
capabilities. And we see that with cyber electromagnetic
capabilities that go after our networks in such a way that
we cannot rely on the precision strike capabilities that we have been able to rely on over the years.

The other thing that we are seeing disrupted from an enemy perspective, disruptive threats are tiered enemy air defense capabilities. Russia has established air supremacy over Ukraine from the ground, and so how do we contend with that sort of environment but then also how do we develop Army capabilities that have similar capabilities to those?

Other capabilities we see emerging are enemy unmanned aerial systems, and we do not have an easy fix, a quick fix for that now, and we need to develop countermeasures to enemy UAS and swarm unmanned or remotely piloted aircraft capabilities.

And what we see Russia put on display in eastern Ukraine is the ability to combine these capabilities, to skim social media with the cyber capability, to identify a general target area then with UAS, and then to use massed artillery fires. So we are outranged and outgunned by many potential adversaries in the future in winning that sort of deep fight against an enemy who has long-range capabilities.

So those are some of the things that we are concerned about, sir, and of course with the modernization budget going down and we are trying to manage, you know, the programs that are vital to Army modernization and we do not
have the flexibility really to invest in some of these key
areas where we see some new vulnerabilities or areas that
we have to go after with some urgency.

Senator Cotton: General Williamson, did you want to
respond?

General Williamson: I did, sir. I wanted to give an
example. So when General McMaster talks about competitive
advantage -- so I am a product of the '80s. I came in the
Army in the '80s. But one of the things I distinctly
remember was that we wanted to own the night. And so the
investment that we made in night vision capability and
laser capability gave us a competitive edge on the
battlefield.

But what has happened now, separate from a state
directing investment in something, what has happened now is
that access to technology, so your ability to go on the Web
and order something that in the '80s we spent lots of money
developing, our adversaries now have more access to things
like night vision, to communications equipment, and so the
investment for us is to always be one step ahead of them.

And the agility that you alluded to, the ability to
react quickly to new threats, to exploit new technologies,
that is the type of thing that we are looking for because
now the access to technology is so great.

Senator Cotton: I just think it is important that we
be very frank here and that we are not engaged in political
spin or military jargon. We are prioritizing readiness. I
do not disagree with that priority. We cannot send our
sons and daughters into combat today without 100 percent
confidence in their readiness. If you have a child in our
Army who is 20 years old, they are going to be prepared for
the battle downrange.

If you have a child who is 10 years old who is going
to be in the Army in 10 years, right now, their lives are
going to be a greater risk because we have systematically
underfunded our military and specifically Army
modernization programs, as General Murray said, for the
last 5 years.

Senator Manchin?

Senator Manchin: The definition of insanity is pretty
well defined, I think, and a lot of people back home in
West Virginia ask and they wonder why we are cutting our
military back when they see a lot of bad things happening
around the world, more challenges than ever before. Matter
of fact, I think it is more challenging now than it was
when we had a full-fledged cold war going on. I have a
hard time explaining why we do this, and it seems to me
with a rapidly changing world that our military is not
changing with it.

So I guess I would ask, can you tell the subcommittee
what exactly are we sacrificing by now focusing more on
readiness than Army modernization? And does the Army have
the capability and force structure to confront our modern-
day threats? And can you discuss some of the differences
in force structure and capability between today's Army
considering today's challenges, Russian aggression, Syria,
et cetera, and the Army at the end of the Cold War? So,
you know, I guess hindsight being 20/20, what would we
change? What should we be doing different? So --

General McMaster: Sir, I thought I would maybe talk
about our projections in the future and then turn it over
to Joe and Mike who can talk more about --

Senator Manchin: Okay.

General McMaster: -- today and the demands on the
force today.

What we see is -- our organization is charged with
thinking about future conflict, learning in a focused,
sustained, and collaborative manner about the future under
our Force 2025 Maneuvers, analyzing what we are learning,
and then implementing changes. To exactly your point, we
cannot remain static --

Senator Manchin: Right.

General McMaster: -- if the risks are increasing and
the security environment is changing. And so what we have
determined and what we believe is that the trend that has
allowed smaller and smaller forces to have a greater and
greater impact over larger areas on land is reversing. And
so what allowed us to do that was air supremacy, the
ability to project power onto land. That is increasingly
challenged now.

Our enemies are becoming more and more capable based
on the technology transfer that General Williamson
mentioned. They are moving into restrictive and urban
terrain, and so it is very difficult to solve these complex
land-based political human problems from standoff range or
from offshore.

And so we believe that the demand for capacity, scale
of land forces is not only going up today, which Joe
Anderson will talk to you about, but in the future is going
to continue to go up. And so what we see, sir, are trends
that indicate that our Army in the future risk being too
small to secure the Nation.

You asked for a couple historical examples. One
eexample is after the end of the Cold War, 1994, we did the
bottom-up review --

Senator Manchin: Right.

General McMaster: -- to see what size the Army should
be. And remember, the world at the time -- I mean, the
Soviet Union had broken apart, was not a military threat,
the Chinese military was not modernized, North Korea was
not a nuclear power, there was no terrorist proto-state in
the greater Middle East, Iran was not the threat that it is
today, and the bottom line number for the active Army at
the time was 484,000. Now, the active force is going down
to 450,000.

Another example is during the height of the wars in
Afghanistan and Iraq our Army had 170,000 soldiers deployed
to both those conflicts. Of those, 53,000 were Reserve
components, so 117,000 in an active Army of 570,000. And
you will recall that some of the statements made at the
time were the Army is straining to the point of breaking.
Now, to go down to an Army of 450 with increasing
commitments that Joe is going to talk about, could we
sustain 170,000 soldiers overseas for contingency, which is
not really a historically high number for armed conflict?
I think we could not do it, sir.

And so I do believe that we are increasing risk for
modernization as we are talking about here, but to your
question, also, as we look to the future, increasing risk
in terms of the size of the total Army going down to the
980 number.

And Joe can talk to you about how today we are having
a harder and harder time for the smaller force to keep pace
with increasing demand to deter conflict and to respond to
and resolve crises overseas.
General Anderson: So the challenge, sir, as H.R. talks about, is how do you fill all the requirements? The COCOM demand is filled 64 percent by the Army, the emergent demand is 46 percent of the Army, and that is on the rise, while the COCOM demand is plateauing. But the problem with the emergent demand in Iraq, Europe, they become enduring. They do not become one-time-in like Liberia and out. They become enduring requirements.

In an unclassified mode, though, here as we talk BCTs is the simplest formation to use for comparison. The bottom line --

General McMaster: Brigade Combat Team

General Anderson: -- Brigade Combat Team between North Korea, between Russia, between the homeland and the counterterrorism fight, that adds up to a 56 BCT requirement, and that is exactly what is in the inventory. I am talking that is both AC and Guard. So every single piece, every particular unit under the Defense Planning Guidance, deny, defeat, homeland, counterterrorism, there is the math.

So all that simultaneity, you have to assume that is the case, which is what the DPG tells you, the Defense Planning Guidance tells you. There is the inventory. So that is the challenge we have just in sheer end strength, as H.R. gave you the 450 number, 335 in the Guard, 195 in
the Reserves. That is the math.

Senator Manchin: General Murray, I know you wanted to --

General Murray: No, sir, I was just going to try to answer the question you asked up front, and that is what do we sacrifice to pay for readiness in FY '17, and it is simple math. So it is the aviation modernization that one of you talked about upfront, it is we will continue to delay repair of critical infrastructure on installations, which we have been doing for years, and our MILCON budget is as low as it has been for a very, very long time. So that is how we are paying for the upfront readiness. It is really in the aviation portfolio, it is the sustainment of facilities, and the MILCON account.

Senator Manchin: I am sorry, my time is up.

General Anderson: Senator, if I could just pile on real quick, the readiness of installation affects the training, one-station training, and that is also being underfunded.

Senator Cotton: Senator Inhofe.

Senator Inhofe: You know, I just wish that the general public could hear what you have been saying. You know, one of the problems that we have is we have a lot of politicians out there talking about how we have the best-funded and the best-prepared talking about -- the general
public does not know the problem that we are having right now. We know. Everyone around this table knows, and it is disturbing.

And again, I point the finger at a lot of people are just not -- a lot of people do not realize -- I often say I looked wistfully back at the days of the Cold War, you know. Things were predictable in those days. Now, we have people, crazy people, North Korea, with capabilities that I think are greater than our intelligence tells us they are. So, yes, we are in the greatest and most threatened position we have ever been in, in my view.

General Williamson, you and I have talked before about this disastrous history of our ground fighting vehicles. And remember, going back -- and I was actually in the House when this first -- and speaking of how sometimes things are not projected properly, the last year I was in the House on the House Armed Services Committee, we had someone testifying before our committee saying that in 10 years we would no longer need ground troops.

Now, you do not know what you are going to have to have in the future, but the chairman is right when he says we have got to prepare right now for those kids who are 10 years old because this is what -- they are the ones who are going to be paying for what we are not doing right.

But you remember very well, General Williamson, when
we went into -- they canceled the program after -- I think it was an $11 billion program, the Crusader program, but they actually spent $2 billion on it. And in 2002 they cut it. And normally, I like to blame Democrats but this was not the Democrats. This was -- and in fact, it was so serious that J.C. Watts, a Congressman from Oklahoma, actually retired as a result of that he was so upset with that.

Then, along came the Future Combat System, you know, the FCS. And, yes, this is going to replace it and they started spending money on that, and we all know what happened. They stopped that program in '09. Now, the closest thing we have is going along well now called the Paladin PIM, the PIM program.

Now, what I would like to extract from you, not that you could control uncontrollable things in the future, but that you would do everything in your power not to let that program have the same fate as the other two programs before that.

As this happens, we are now dealing with things -- sure, you have modernized some of these things. Some of these are World War II vehicles we are fighting with now. So I would like to have you tell this committee, General Williamson, your evaluation of the PIM program, is it on track now, and your thoughts on that program.
General Williamson: Senator, absolutely. So my starting point would be some immediate history. I would tell you there are two programs on the combat vehicle side that I would tell you I think are outstanding programs. The first one would be Paladin PIM, and I would like to talk about that for a second. And the other one would be JLTV.

So on Paladin PIM, as you alluded to, we made some decisions in terms of reprioritization, which left us with a critical gap, and what we were facing was really when you canceled the non-line-of-sight cannon, you ended up not having an ability to deliver fives. And so the investment that was made in the Paladin PIM program, I think, was significant because we were not only going to face that gap but we were really pushed up against obsolescence of existing systems.

And so today, that program, which went into production, low rate, we have produced 18 of those systems, both the support vehicle and the Paladin itself. We have delivered 12 of those, and we have six awaiting delivery. That program right now is in production qualification, and all that means is that they are being produced on the line and all we are doing is guaranteeing the performance, the reliability, the repeatable processes. And to date, it has gone so well that we are now looking at awarding the full
rate production contract so that that can take effect in '17 where we will buy out the remainder, which is roughly 500 plus systems.

So, sir, if you remember in the beginning of my opening statement we talked about some systems we buy new, some we have to modernized and modify, and this is an example where we have been successful in modernizing a system, bringing additional capability, and filling a gap for the Army.

Senator Inhofe: Okay. That is a very optimistic answer. I appreciate that very much. And I think you go on to say that you will continue to make sure that within your power nothing is going to come and deliver a fate to the PIM system.

General Williamson: Yes, sir. In fact, what I would offer -- and it goes back to Senator Manchin's comment. So what I would argue today is that the Army is modernized. We are modern, and as you look at our '17 budget request, it includes modernization. What really affects us is that we have to slow down modernization, so as priorities come up, whether it is readiness or something else, we end up stretching out or delaying modernization, which adds cost in the long run. And so our goal is to never let that happen --

Senator Inhofe: Good. Good.
General Williamson: -- deliver to a schedule and to reduce cost and find efficiencies where possible.

Senator Inhofe: Well, good. I appreciate that. I know my time is expired, but let me just ask General Anderson if he would, for the record, respond. The reports show that some 250 vehicles are going to be needed for this European program over there, and I would kind of like to see a breakdown as to what they are for the record.

General Anderson: Sure. The breakdown --

Senator Inhofe: Oh, I mean, you could answer in the record if you want to. I do not want to use up all the time.

General Anderson: Okay. Okay.

Senator Inhofe: Good.

[The information referred to follows:]

[SUBCOMMITTEE INSERT]
Senator Cotton: Senator Heinrich?

Senator Heinrich: Thank you, Chairman Cotton.

General Anderson and General Murray, I want to sort of return to some of these tradeoffs that are being made between modernization and readiness and sort of tell the story of one particular facility and then talk more broadly and ask you about just how far we are taking those tradeoffs.

Last year, our 47-year-old communications center and network hub that was built actually in 1962 at White Sands Missile Range caught fire, and the facility is still relied upon to provide critical support for modern missile testing. The near meltdown and fire on July 2 of 2015 nearly cascaded into a full of electrical fire. And it is symptomatic of the stress that we are seeing on aging facilities and shortfalls in the Army's larger modernization efforts that go with these funding levels.

Despite the urgency to replace that particular facility, a MILCON project -- and you talked a little bit about how we have been underfunding MILCON -- was not in this year's budget, nor is it planned to be requested by the Department until fiscal year 2019.

So more broadly, I want to ask you, how are we making sure that Army test ranges are appropriately funded or at least not pushed, you know, beyond what we can bear and
that modern infrastructure that is going to be necessary to meet the Army's acquisition requirements is being met? And how are we working to make sure that the workforce behind that at our Army test ranges is being maintained as well?

General Anderson: What I was specifically talking about, Senator, was the two parts of the installations, base operations sustainment and then sustainment restoration modernization, SRM and BOS. That is the stuff that has been critically underfunded across all installations. I cannot give the specifics of the test range typically running through installation. I just command about 50 percent for the last 3 years.

So the issue is how are you catching up and the test facilities would fall on the same category. MILCON, though, as you know, compete in a whole different --

Senator Heinrich: Right.

General Anderson: -- pot --

Senator Heinrich: Yes.

General Anderson: -- based on what the priorities are from the readiness projection platforms, two test facilities, two labs, et cetera. So I would have to get back to you on how that was being broken out to compete --

Senator Heinrich: Yes.

General Anderson: -- but this is the rolling reoccurring phenomenon we are dealing with now for the last
3 plus years underfunding in all these facilities and capabilities --

Senator Heinrich: Right.

General Anderson: -- for a myriad of reasons.

Senator Heinrich: And I think that with MILCON in particular, even though we are definitely making tradeoffs, we tend to have a long-term plan that seems to be able to mitigate a lot of that risk. I would just bring up the issue of the question of, are we adequately sourcing and providing for infrastructure at our test ranges? And sometimes I think those particular issues do not get addressed the same way that some of our other bases and facilities do get addressed in the MILCON process.

General Anderson: I would say the operating force, the guys that go and go do things, do get prioritized based on what installation you are talking about.

Senator Heinrich: Great. That is great. I have got, General Williamson, a question that is a little different in that if you have been following some of the stories coming out of the IAEA, some of the stories in the open press regarding theft of nuclear materials, the IAEA recently warned the international community about this increased danger of potential nuclear incidents because we have seen theft and misuse of nuclear materials worldwide. We have seen some incidences in Mexico and Iraq.
Such an incident at home or abroad would have real implications for servicemen and -women who would have to respond who would be at risk for radiation exposure or something where they do have to respond to that. So one of the things that I think is essential is that all of our soldiers have the most up-to-date dosimeter technology to be able to deal with something in the case that they had to detect and combat these sorts of threats.

Is it true that the majority of the devices that we use to measure radiation exposure for our soldiers were developed back in the Cold War with 1960s technology and are lacking the ability to relay information the way that modern information is typically relayed quickly and precisely in a network sort of situation?

General Williamson: Sir, you are correct. The technology that was employed in our existing systems -- and specifically we have an ANPR 75 dosimeter, and that is what we use within the Guard, the Reserve, and the Active Duty forces. It is an effective system.

But I would tell you that after the disaster in Japan, as we helped the Japanese Government, one of the things that we discovered was I will call it a gap. So as you looked at the ability to read the response, what we found is that that was all kind of manual.

Senator Heinrich: Right.
General Williamson: And so the intent -- what we learned there was we needed to automate that. And so we did a joint program. We are engaged with the Navy to build a new series of dosimeters. And if you are familiar with within the Army we have something called the Nett Warrior, which takes advantage of commercial technologies --

Senator Heinrich: Yes.

General Williamson: -- and it keeps you -- it gives you situational awareness. And so the connection between this new dosimeter will be to automatically send those updates so that you can get some early warning and reduce the threat of exposure.

Now, right now, that program, the path it is on right now will get you to the deployment of new systems in the '20 time frame, and so there is still some development work that has to be done and testing, but we think we are on the right path for a better dosimeter.

Senator Heinrich: I have exhausted my time so I will yield back, Mr. Chair.

Senator Cotton: Senator Wicker?

Senator Wicker: Thank you.

Lieutenant General Williamson and Lieutenant General Murray, on page 11 of your joint statement it says under aviation "The Army continues to invest at a slower pace in aviation." So let me ask you about the UH-72A Lakota. The
Army's budget request did not include funding for the Army's only light utility class helicopter. However, the Army subsequently published an unfunded requirement for 17 Lakotas in FY 2017.

When considering readiness as paramount, why did you not include any Lakotas in your base budget request? Should you lose your UH-72 production capability, what is the Army's long-term plan to replace and/or conduct major repair and overhaul of the Lakotas if there is attrition or loss due to unforeseen accidents down the road? And absent other budget considerations, do you support Congress funding at least 17 Lakotas in FY 2017?

We will begin with Lieutenant General Williamson.

General Williamson: Sir, from a broader perspective could I ask General Murray to start talking about the budget and the readiness implications and I can talk programmatic?

Senator Wicker: That will be very helpful.

General Murray: Thank you, Senator. So there were none in '17 because we met our production requirement in '16 of 427 aircraft. And as you are very familiar, we are using the Lakota in a variety of administrative roles and for pilot training. So there was none in '17. Basically because we bought what we needed.

The 17 you are referring to in the UFR list -- it was
mentioned earlier -- is tied to the National Commission recommendations. So if those recommendations were to be enacted, we require an additional 17 Lakotas at Fort Rucker for pilot training. And that was to increase -- that was to account for the increased pilot training load at Rucker based upon 72 aircraft, which equals four battalions retained in the National Guard in the 11th Cav that has been talked about. So that is the additional 17 in the UFR request.

General Williamson: The only thing I would add, sir, is that -- so for all of our production, whether it is aviation or combat vehicles, we really have a test that takes a look at criticality and fragility. So what is the impact if I slow down/increase our ability to produce those assets? So right now, because there are commercial variants, we are comfortable that we could support a smaller number of LUHs being procured this year.

I would go back to something that General Murray said, and that is so you cannot do that year after year because what happens is, is that -- if everyone focuses on the primes, but the reality is, is what I am concerned about is all of those small businesses that build parts, all of those other things that go into the final system, if I do not continue to buy certain critical platforms --

Senator Wicker: Right.
General Williamson: -- we start to lose that portion of the industrial base. And it has to be a consideration. I am seeing it on combat vehicles, I am seeing it in other areas that we have to make sure we understand all of the components and who manufactures those.

Senator Wicker: Okay. Well, let me say I am glad that you made the last point about the industrial base. And I know that it has been the position of the Army with regard to other important assets that maintaining the industrial base is a critical part of that. And so it gives me some encouragement to hear your last statement, and I appreciate that. I hope you will continue to work with us on this important issue.

General Williamson: Yes, sir.

Senator Wicker: Thank you.

Senator Cotton: Senator Donnelly?

Senator Donnelly: Thank you, Mr. Chairman. I want to thank all of the witnesses for being here with us today. General Williamson, it is good to see you again. With or without JLTV coming online, I have been told that the Army plans to rely on Humvees to comprise the majority of its tactical vehicle fleet for decades to come. Is that accurate?

General Williamson: That is correct, sir. It is part of our light tactical vehicle strategy.
Senator Donnelly: Knowing that we will continue to rely on Humvees for another 20 to 30 years, would you agree we need to make appropriate investments to sustain and modernize our Humvee fleet, placing priority on those areas that are most critical to the safety of our soldiers?

General Williamson: Yes, sir.

Senator Donnelly: Okay. And it has come to my attention that the average age of the Humvee ambulance fleet is more than 24 years, 10 years older than the average of all other Humvee variants and more than a decade beyond the point at which these vehicles are expected to go without major overhaul.

While we are working to modernize the Humvee ambulances for the Army National Guard, there has not yet been any investment like that for the regular Army. Does that concern you or is there any plan for that?

General Williamson: Sir, I am going to have to give you two answers.

Senator Donnelly: Okay.

General Williamson: So one -- I would defer to General Murray to talk broader in terms of the modernization strategy, but what I would offer is that -- and I think, sir, in part with your leadership, the investment that we have been able to make on upgrading existing Humvees within the Guard and Reserve, it has been
a significant investment for us. I could kind of show you
the numbers of platforms that we have been able to address.
We still have more in the future.

I think what you will find, though, is that the mix
between the Humvee fleet, the projected JLTV fleet, and
then what you are going to see with the introduction of the
AMPV gives me a little less concern that we will not have
that kind of capability gap as you look into the future.
And I ask General Murray if he has any comment.

General Murray: The only thing I would add to what
General Williamson said, sir, is add in the MRAP ambulance
variant that we still have in the Army in quite a few
numbers.

So as we look at, you know, at the Brigade Combat Team
forward level, we are really looking at track solution in
terms of medical capability, and then really what you are
talking about is from the BCT back. And you are absolutely
right; we have not figured out exactly what that capability
will look like. We have several options. MRAP ambulance
is one, recapping in the AC, and we appreciate the support
of Congress with the National Guard in terms of their recap
for their ambulance or a track variant, and that is what we
are working through right now.

Senator Donnelly: Thank you. Generally Williamson,
you and I have spoken in the past about the Army's
assessment that the tank transmission industrial base is particularly fragile and a critical area to maintain our track vehicle capabilities.

On a related note, it is my understanding that if the Army fields a new armored Brigade Combat Team in Europe, this unit will require modernized Abrams tanks and Bradley fighting vehicles that are not currently funded. Can you tell us what those requirements are and what you require in FY 2017 to begin this effort?

General Williamson: Sir, I cannot talk to the specific numbers as the G-3 works their way through. I would like to address specifically your comment about transmissions both for Abrams and Bradleys. So I will admit that I am concerned because, as a nation, we have gotten to the point where we have really one manufacturer of transmissions for our heavy combat vehicles.

Now, I acknowledge that there are people who build transmissions, but it is different when you are putting it in a combat vehicle that weighs 45 tons or 70 or 80 tons. And so we are engaged with that manufacturer to ensure that we have, one, enough workload to ensure that we keep not only the skill sets employed but that we also have transmissions to support whether it is this deployment in Europe or whether it is to sustain our existing platforms.

Senator Donnelly: Well, I would like to stay in close
contact with you on this subject because, particularly in this area we think in Indiana we have some extraordinary transmission capability and the ability to make this mission more successful.

General Williamson: Sir, I will do that. And again, I really do appreciate your engagement. This challenge for us on transmissions is really reflective of how we have to look at the entire industrial base in terms of support to our critical assets. And transmissions is one that we will continue to stay engaged on.

Senator Donnelly: Well, thank you all for making sure that our soldiers are safe, that they get to come home to their families. And your hard work helps to make that possible every day. So thank you very much.

Thank you, Mr. Chairman.

Senator Cotton: Senator Ernst?

Senator Ernst: Thank you, Mr. Chair. Gentlemen, thank you for joining us here today.

I am going to tag on just something from what Senator Donnelly said, and there has been a lot of discussion about the ground combat vehicle program so I will not belabor it, but we have a situation right now as well with the Marines where they are short amphibious vehicles. And we certainly do not want to see that gap increase with our war fighters in the Army as well. So I do want to encourage you to keep
working on this issue, and we will certainly follow up at a
later date with that as well.

But I would like to go back to small arms
modernization. This has been kind of a point of issue for
me. In the NDAA fiscal year '16 the Army and Marine Corps
was required to jointly develop a 15-year small arms
modernization plan. And, General McMaster, if you can
address this and just maybe give us the status of the plan.

And the Army is really -- we have gone ahead -- we
have really moved ahead with respect to modernization of
our battle rifle. We have added objects to them, different
types of scopes. We have added other attachments for the
M4 components, floating barrels, you know, a longer rail,
but these are things that have been in the DOD's inventory
for quite a while. Our special ops folks have used those
for many, many years. So is that really weapons
modernization? You know, if you could just give us an
update there.

General McMaster: Yes, ma'am. And I know you are
familiar with all the upgrades that have happened to the
various weapons systems. You already sort of summarized
those. I mean, I think it is 90-some upgrades to the old
-- you know, the M4 today versus how it was, you know, 15
years ago or something like that.

So the weapons have improved tremendously, but as you
know, it is a combination of -- and you already alluded to this as well -- the optics, the weapon, the ammunition, and the training. And there have been tremendous improvements across all of those areas.

But what we are doing now as we look for future force development and we are working very closely with the Marine Corps Combat Development Command on this as well. It is called the Caliber and Configuration study because what you do not want is just sub-optimized for an individual soldier. Soldiers fight together as teams obviously so you want the squad, upon contact with the enemy, to be able to overmatch the enemy in close combat. So we are looking at what are the configurations of calibers and types of weapons systems for small arms, crew-served weapons, but then also long-range capability and shoulder-fire capability.

So that study will be done by the second quarter of fiscal year '17, and that will help us layout the -- finalize the requirements and then begin to procure or to pursue the capabilities associated with how we see the future of squad fighting.

Senator Ernst: Okay.

General McMaster: And there are some new technologies that are very promising, light-weight technologies, closed-bolt technologies, for example, for automatic weapons
systems. We have an opportunity, I think, now to integrate a lot of these new technologies into the future squad.

Senator Ernst: Well, I think it is important that we remember we have a lot of modernized weapons that will go into the special ops community. That is great. They utilize those weapons, and they appreciate the advanced features of those weapons. And why are we not able to push those out then to our guys in the BCTs? You know, Specialist Joe Snuffy would probably love to have a rifle that is, you know, being utilized in special ops.

So I think they are great. They utilize the technology that they have, and why do we not follow through with that and make sure other infantry soldiers on the ground are provided with those same advantages. That is something to look at.

And as well if we look at, you know, the pistols that we use, when is the last time that we upgraded with the pistols? This has been a real big issue. It has been bungled, I think, with the request for proposals and so forth. General Milley recently said you give me $17 million on a credit card and I will call Cabela's tonight and I will outfit every soldier, sailor, airman, and Marine with a pistol for $17 million and I will get a discount on a bulk buy, you know, great for General Milley. I appreciate him being forthright.
Why is it so difficult -- and this is for General Williamson and General Murray -- why is it so difficult for the Army to buy a basic item like a pistol?

General Anderson: I agree.

General Murray: So I will start. I would like to be part of the deal with General Milley if he can get that many pistols at $17 million.

But, ma'am, to be honest with you, I agree. I mean, we had been down a torturous path on this. And so I think we all know the history of it, and General Milley has been very eloquent about talking about it.

But I would just tell you and hope it is reassuring that, Senator Cotton, your letter and the authorities given to General Milley in NDAA '16, I will guarantee you he is involved in the testing, the requirements, concurrent with the source selection when we get to that point, and every intimate detail. I mean, General Anderson and I have sat several very painful, long meetings with him in the last week or two as we dug into how we got to where we are, how we fix this. And I think you are going to see a pretty good outcome coming out of it.

Senator Ernst: Okay. Well, I appreciate it. My time is expired.

And, gentlemen, I do not mean to make light of this situation, and I know General Milley takes this very
seriously, but I think it really gets to the basic root of the problem that we have made this so complicated when it should not be.

General Murray: Ma'am, if I could add one thing. So special ops soldiers in Afghanistan -- which I was there 9 months ago -- are carrying the same rifle that our soldiers and infantry squads are carrying. They are carrying the M4A1.

Senator Ernst: Okay. Fantastic. Thank you very much.

Senator Cotton: I am astonished that a meeting with Mark Milley could be painful.

Senator Gillibrand?

Senator Gillibrand: Thank you, Mr. Chairman.

General Williamson, I understand the Army was required to make tough choices for the coming fiscal year, and one of the toughest was the decision to cut the funding for the UH-60 Black Hawk program. Several of my colleagues and I have asked the relevant committees to consider the plan to significantly scale back on procurement and recapitalization for the aircraft.

If the Army's aviation budget were to be implemented as requested in the President's budget, what in your view would be the operational impact on units that rely on capabilities provided by the Black Hawk? And given the
decision to essentially swap out the Army National Guard's Apache fleet in exchange for more Black Hawks, do you think that impact will be felt particularly strongly in that component?

General Williamson: So, ma'am, as the technician sitting at the table, I can talk to the programmatic impacts in terms of we have negotiated a multiyear contract for the procurement. And so one thing I can tell you that the Army worked hard to make sure that even though we had to slow modernization down, we did not want to break that multiyear and lose the savings associated with it.

I would ask General Anderson or General Murray to talk about the operational impacts.

General Anderson: As you know, ma'am, the ARI program kind of locked in concrete and gave us a way ahead in terms of who had to transfer non-NFCA-related or just who had to transfer what to maintain the base to pure fleet, divest the Kiowa fleet, and make sure we had the appropriate mix between all versions from the 64s, to the Black Hawks, to the Chinooks and then how we do the unmanned team to make sure our shadows link in our Apaches and help us with aerial reconnaissance.

So the plans -- everything laid out by that plan is being followed through. All transfers are occurring on -- this is multi-compo issue referred to. All the pieces from
the active transfers to the Guard, the 60s that are coming
good of 1st AD Cav and everything going for Drum and
Schofield are all on progress, are all on time, and so far
operationally. But as you know, the other components at
11th Cav, we are trying to build from the National
Commission for Korea to help reduce that rotational burn on
that peninsula to maintain our three-to-one ratio for all
of our requirements.

General Murray: And ma'am, I would just add that out
of -- the Black Hawks were supposed to transfer to the
Guard as part of the original ARI plan. We are four short
right now. Those four will be done in June and so we will
be complete on that. We are still on track to take the
last UH-60 Alpha out of the National Guard in '23, the last
one out of the active component in '25.

And I have seen a lot of numbers about, you know, the
differences in Black Hawk production, and that was really
from '16 enacted to the budget request you saw for '17. We
had actually planned for less production in '17 based upon
requirements.

And the operational piece, I mean, the aircraft are
there. They are older, but we do not see an operational
impact based on that because we intend to account for some
of that reduction in production '18 and out as we build
those budgets, assuming that we are not back to
sequestration level in '18.

Senator Gillibrand: Okay. And another topic, in your joint statement recognize the threat posed to our forces in the electromagnetic domain, particularly from military rivals with near-peer capabilities, for deployed Army forces like those stationed on the Korean and Arabian peninsulas, and Eastern Europe may be particularly exposed to some of these capabilities. Examples of electronic warfare could range from spoofing the unit's geolocation to blocking tactical-level communications between command and maneuvering units.

At the appropriate level of classification, can you discuss how the Army is orienting itself to the rapidly deployed electronic warfare capabilities of certain competitor states? And in your view, do you believe the Army is identifying and fielding new electronic warfare technologies adequately enough to keep us up with the rate of change in the operational environment?

General Anderson: Yes, ma'am. We have got a couple of things in the works. I think you are familiar with CREW, which is the Counter Remote. That is the first evolution. That is the 32,000 platforms that are out there. We do have this new multifunctional electronic warfare platform coming along, and that is a next-generation requirement. It has both an air and a ground
component. But right now the CSARs, which is the C-12 version, does the jamming in the air, and the GATR is a ground jammer.

So, you know, it is the million-dollar question, how do we make sure the technology we produce, the quantity we get out there in sufficient scale, you know, but the CREW has been very effective as the first whack, but now, again, as we watch what is happening -- what Russia is doing, we will see what North Korea is doing, the question becomes getting the multifunctional one further along faster to keep up.

Senator Gillibrand: Anyone else?

General McMaster: Yes, I would say, as we look to the future, we are not keeping pace with the cyber electromagnetic threat. We need to catch up to it. I think it is been a real wake-up call, ma'am, in terms of what is going on in Ukraine and really not that sophisticated capabilities, and now they can challenge our systems.

So what we are doing in the next 2 months is we have convened a team of experts to figure out what can we do now. And this is again, this relates to the modernization budget. Again, our research and development budget has been reduced about 54 percent since 2008, so we do not have the flexibility we might like to have to be able to pile
onto these sort of problem sets. But this is something obviously we can work with the joint community.

The problem is we rely -- we made the assumption several years ago that we would be able to achieve and maintain air supremacy, and what we have seen an Ukraine is that Russia, with its tiered-air defense capability, is not allowing -- would not allow our systems maybe even -- to fly in a scenario. So we have to regain our competency and our capability of terrestrial-based electronic workfare, signal intelligence capabilities. And so that is one aspect of it.

The other aspect, though, is mission assurance for us, as you already mentioned, the threat to precision navigation and timing. How do we assure our own systems can degrade gracefully and operate in a contested and congested cyber electromagnetic environment? So we have a short-term effort that I mentioned. Joe Anderson mentioned some of the long-term capabilities we are trying to develop. But what we have seen broadly here is that we cannot rely on maintaining dominance in any domain, and we need synergistic capabilities across each of our services so we can fight together as a team and pose the enemy with multiple dilemmas and ensure we can protect our own ability to operate.

Senator Gillibrand: Thank you. Thank you.
Senator Cotton: Senator Manchin has another obligation, but one more question, so I will turn to him for that question.

Senator Manchin: I am so sorry. Thank you for the consideration.

By fiscal year '18 the Army projects its end-strength levels to be at 980,000 uniformed personnel; 450,000 to be regular Army; 335, Army National Guard; and 195, Army Reserve. With all of the new challenges that we have around the world, emerging threats and this and that, I guess just cut to the quick, is the Army able to meet the security needs of the United States with those figures? And what do we need to do to change that so that we can meet the needs?

General Anderson: Thanks, sir. I think, as you heard our chief testify a while ago, we are at high risk to do that. So as I rambled earlier about all the plans we have to be prepared to defend against, the issue becomes again how do you sustain and how do you build combat capabilities. We talked about it takes about 3 years to get a brigade built, but how would you be able to sustain the operations I described earlier?

And again, the best categorization we use or the numbers we are going to now are minimally sufficient. But as the chief risk assessment to the chairman, it is a high
risk for us to support things around the globe.

Senator Manchin: General, the only thing I would say is if, you know, if we do not listen to the people that have the knowledge such as you on the expertise and we start setting caps and different things that basically sound politically correct and we can sell them back home, it makes no sense at all because when things go to hell in a hand basket, people want to make sure we are protecting them.

And I will use basically Afghanistan. You know, how do we get to caps of 10? Was that something was right -- you know, I am sure that there was -- and I am not going to put anybody on the spot there, but if I am correct, I think that figure was closer to be like 13, 13-5, 13-6, so we did not repeat the sins of the past as Iraq. But we did not adhere to that.

I think we are to the point now we want to cut through the chafe and get the numbers and see if this committee and this subcommittee can work towards getting you the strength that is needed.

General?

General McMaster: As we look to the future, sir, we think that that risk will become unacceptable to national security in terms of the size of the force, and it is because of what we have mentioned. We have been able to
have smaller forces have bigger impact --

      Senator Manchin: Right.

      General McMaster: -- because we were not as
challenged in the cyber electromagnetic domain, in the
aerospace domains. And so we see the demand for land
forces going up to do the things you have always wanted
land forces to do, to defeat enemy organizations, but to
establish control of territory, which is what all these
conflicts are about today.

      But then what is really critical is to regard the
consolidation of military gains politically as an inherent
part of conflict. When we try to solve complex land-based
problems exclusively from standoff range, you get a
situation like we have seen in places like Libya, for
example, where you cannot consolidate those gains.

      So I think the two big implications for land force as
we look to the future is the consolidation of gains, as I
mentioned, as an integral part of conflict, and the second
of these is the importance of land forces to deter enemies
and to deter enemies not by the threat of punitive action
later but by having the demonstrated capability to deny the
enemy their objectives, deterrence by denial.

      And so these are -- as we look to the future and we
see the ships that have happened quite recently in the
geopolitical landscape where we see this probing by China,
by Russia, I think you make the argument by Iran at the
frontiers of American power, and as these revisionist
powers are trying to advance their interests at the expense
of U.S. interests, it is very important to have land forces
as a credible deterrent against a revisionist power waging
the sort of limited wars for limited objectives.

Senator Manchin: But 980, I am just saying, is there
a number? Is it going to be 1-1, 1-2, 1-3? Where do we
need to be as far as our personnel?

General McMaster: Yes, sir. Sir, we --

Senator Manchin: Three years out, you know, knowing
we have emerging threats. I know that is a tough one.

General McMaster: Sir, I think -- I mean, as we look
to the future that if you look at the -- as I mentioned,
484,000 in 1994 when the world was a much safer place, and
I would say we are going to 34,000 less in the active force
now, that the number is, I think, in the future is going to
be much larger.

The thing is, I think, from your perspective as well
-- not to be presumptuous about this -- but it is much
easier to retain a capability than to have to rebuild it.
It is much easier to maintain a deterrent than to have to
rebuild a deterrent capability and capacity once it is
gone.

Senator Manchin: Thank you.
Thank you, Mr. Chairman.

Senator Cotton: Senator Rounds?

Senator Rounds: Thank you, Mr. Chairman. Gentlemen, thank you all for your service. It is appreciated and sometimes we do not say it enough, but we appreciate what you do.

I am going to follow up a little bit on what Senator Manchin was working on. Just at the end of my time I would like to lay this out for you over the next few minutes. If you could, please, if there are just a few items that we as policymakers are either doing or that we should not do that would be helpful to you in you carrying out your mission, would you just -- at the end of this would you give us the one or two things that you think would be helpful to you in your job, okay?

But let me begin by this: It seems that an important consideration of the Army's modernization effort is its cyber capabilities. I understand that the Army is undertaking a number of significant initiatives in this regard. These include the creation of 11 Cyber Protection Brigades in the National Guard, a Cyber Center of Excellence at Fort Gordon, Georgia, and a separate cyber branch for offices in the same level in the Army as other branches.

Could you share with me a little bit, what is the
current state of play for these initiatives, and are you seeing any problems recruiting and retaining the cyber workforce, both military and civilian?

General Anderson: Yes, sir, thanks. We are building a COMPO 41 -- the cyber mission force, active component is 41 teams, 20 of which are Cyber Protection Teams and the other 20 are Cyber Maneuver Teams. The Reserves are building 10 teams, CPTs, and the Guard is building 11 teams, sir, CPTs.

The issue is the timeline, very extensive training. I think one of your concerns was the Guard piece. Selecting these folks and making sure they can pass all the prerequisites to get to the program remain a challenge for both COMPOs. And the length of training it takes, we are not going to be all fully operational, capable until the end of '18, FY '18, so it is a very long pipeline for the '17 to build that force.

The good news is, as you referenced Gordon, the Cyber Center of Excellence, great programs, and the synergy they get between being co-located with the NSA makes it very powerful from an operational perspective.

But twice a year now, EW cyber, heavily focused NTC rotation January and June. Every rotation has a red team and then the hardest challenge we are having now is how do you operationalize cyber down at the tactical level? How
do you help commanders figure out how they can shoot things
like unmanned aerial systems down with these cyber guns? I
mean, the technologies are out there, the capabilities are
out there, but how do we get those deeper in our formations
than what we have currently now from the teams that operate
here at Fort Meade and the teams down at the Cyber
Protection Brigade down at Fort Gordon?

But it has come a long way, and the Army is now the
executive agent for the Department of Defense on cyber
offensive ranges. We are very defensively focused. Now,
we are working that capability at the Joint Readiness
Training Center and how that enables skill sets in that
function down at Fort Polk, so some pretty good things.

Senator Rounds: I understand that some of the
individuals and the competencies that you begin with and
the built-ins that we have got in some cases you may find
the competencies that you want in some unusual places.

General Anderson: Right.

Senator Rounds: And in doing so, that it may not fit
necessarily the traditional individual that you would
expect to be the next young person you would recruit into
the Army. I am just curious. What are the challenges in
finding the talent that it takes with regard to
cybersecurity, and how do you approach that differently, if
you do, than what you what in terms of looking for the
right people that you would normally find in the Army today?

General Anderson: The problem is they are another one of these low-density enabler categories. So you are typically robbing Peter to pay Paul. So, for example, the forensic CID agents that do all -- that can dig into computers and find all the stuff in there to figure out what you did, we have taken guys like that and brought them into cyber, and then you have this criminal investigation command complaining because we have taken their high technical experts.

So the problem is, sir, it is competing resources between a very limited gene pool. How you recruit, so like the Army Cyber Institute that the military academy does and now that we actually have an officer commissioning source that actually screens those kind of students you are talking about and figures out which ones are the better ones to be vectored into this highly technical field, that is starting to be one of our feeders.

But it is going to take us a generation to build a capability from, you know, the officers that lead the teams to the warrants. The warrants, as you can well imagine, are very experienced, and the NCOs are typically coming out of the intel pool. So you are typically grabbing intel analyst-type people, and that is the guys and gals you see
on these teams. So it is a nut-and-shell game until we get
more capacity.

Senator Rounds: Well, my time is just about up, but
with the chairman's indulgence, I would just really like to
know is there something out there, gentlemen, that we can
do as policymakers that we are not doing or things that you
would like to share with us that you would like us to do?

General Anderson: Long-term, predictable, sustainable
funding.

General Murray: I would just echo that, sir. So, I
mean, the inability to plan budgets year-to-year based upon
threat of sequestration, continuing resolutions, that
really makes, from my perspective, the most difficult
thing.

General McMaster: I would say, sir, just recognizing
the synergy of the joint force and recognizing that
investments to ensure that we can overmatch the enemy in
close combat is as important to the investments that we
make in the maritime and aerospace domains.

General Williamson: Sir, I would just echo the
stability in funding, but what I would add is this notion
of risk. And so if you want to operate in an environment
where we are leading and causing our potential adversaries
to react to us, it means you have to be able to take some
risk. That is risk on the science and technology, and that
is risk in terms of modernization. So how do we find those things and have the agility and the ability to incorporate them very quickly that causes the enemy to have to react to us as opposed to us waiting to find out a new capability that the enemy has and forcing us to react?

Senator Rounds: Thank you for your service, gentlemen.

Thank you, Mr. Chairman.

Senator Cotton: Senator Sullivan?

Senator Sullivan: Thank you, Mr. Chairman.

Gentlemen, good to see you all again. I want to go back to Senator Manchin's questions about end strength and, you know, General McMaster, you mentioned that we could be approaching a point at which this is unacceptable, the risk level. But it seems to me it is a pretty dramatic statement that the chief and the senior leadership in the Army is saying that we are at a high risk. I do not know how many other service chiefs or how often the Army chief of staff has previously said high risk.

And if you look at just the recent testimony of Secretary Carter and General Dunford in front of the SCAS, they all talked about these emerging threat environments, all of which have increased. If there is one common theme that we have heard in the last year is how much the threat environment globally has increased. And yet, the glide
path to 450 has been straight down.

So there is a number of us -- I think it is a bipartisan sense that 450 Active Duty force is unacceptable risk. So, again, General McMaster, you said high risk. You said it is getting to unacceptable. My view is high risk from the senior Army leadership when they are saying that that is unacceptable risk. So do you all agree that 450 then is high risk for the country?

General Murray: If I could, sir, and just in terms of the -- so it is high military risk is what General Milley said, and then he specified that that does not apply to enemies like ISIL or the Taliban, the enemies we are currently fighting right now. That is high military risk against the near-peer --

Senator Sullivan: Correct.

General Murray: -- state-type actors. And I absolutely agree with the high military risk categorization.

Senator Sullivan: Do you think that -- so I would assume since General Milley thinks it is high risk, that all four of you would agree. Do you think that is unacceptable risk?

General McMaster: Well, sir, from my personal opinion it is. I think that it is unacceptable risk because of a combination of factors. And this is not a criticism of
policy to say that it is time to make a reassessment.

I think you have already recognized, and I think we all recognize, that the threats to national and international security are increasing. Many of those threats are interconnected. It is impossible to remain insulated from a lot of these threats.

And, as you mentioned, our Army is going to a historic low. In terms of active force strengths, the smallest it has been since before World War II. And we have not been modernized. And so we did spend a lot of money for Iraq and Afghanistan against those enemies, but it is not the kind of modernization we will need to fight the threats that we see emerging.

And so in the recent CSIS report, they called this, you know, the triple whammy, you know, of really, first of all, taking a huge cut that is bigger than previous cuts in a postwar period. By the way, it is -- I am not sure -- I do not think it is a postwar period. I mean, we are still obviously fighting in Afghanistan and in Iraq and across the greater Middle East.

But the second point is that this previous draw-downs that happened after the Cold War, after Vietnam, happened after the Army had been modernized considerably. So the old Big Five had been largely bought out before the end of the Cold War. We have not done that, so we are not
recently modernized, plus we have a big cut.

And the third thing is that the RDT&E money has also taken a cut that is at a historic high as well. So I think the threat is -- I think primarily the thing that I would personally be most concerned about is the size of the total force, but it is that in combination with the modernization of resources.

Senator Sullivan: That is a great answer. Again, I think there is a lot of agreement on this committee that 450 is an unacceptable risk, and I think a number of us are going to start to work to try and reverse that.

Let me ask just two quick questions. One is kind of operational, one is much more strategic. You know, General McMaster, you talked about how long it takes to actually stand up a unit once you have cut it. How long does it take to stand up an airborne unit once you have gotten rid of it?

So I was recently down at JRTC and watched one of our finer airborne BCTs do their initial forced entry operation, over 800 soldiers, middle of the night jumping into an airfield, pretty awesome instrument of American military power. You cannot grow that overnight. How long, if you got rid of an airborne BCT, would it take to regenerate that kind of expertise in capability?

General Murray: Sir, we do not have experience
rebuilding, but, I mean, we do have experience in terms of an Armored Brigade Combat Team recently when we grew the Army. So when we grew the Army to 45 BCTs. We only really grew from scratch one BCT, and it was an armored not an airborne, and that was a 31-month ordeal to grow a BCT, so somewhere in that order of magnitude.

And I would just like to clarify one thing that may have come off differently. So when we collectively say high military risk and individually said high military risk, whether that is unacceptable or not it is not our position to --

Senator Sullivan: No, I got that. I said it was unacceptable.

General Murray: Okay.

Senator Sullivan: And I know you did not say that. At a certain point I would imagine you would all agree that it is unacceptable. I know you did not say that today. I said that today, though. Yes, sir?

General Murray: I mean, all I am saying is basically we are happy to identify the risk and then, you know, it is up to our civilian leadership to determine whether that is acceptable or unacceptable.

Senator Sullivan: Hearing that the uniformed military leadership of the U.S. Army says high risk at 450, in my view from this committee's perspective is unacceptable
1 risk.
2
3 Thank you, Mr. Chairman.
4
5 General Anderson: Sir, can I make one comment, though? An Airborne Brigade Combat Team is much more lethal effective than an Armored Brigade Combat Team, so chances are it is probably about 6 years to build one.
6
7 Senator Sullivan: That is what I was thinking as well, but I did not say that.
8
9 General Anderson: I knew you would.
10
11 Senator Cotton: Especially if it is based in Alaska according to the father protector of the 4th through the 25th.
12
13 Senator Sullivan: Probably the most important Airborne BCT in the entire U.S. Army, but we can debate that another time.
14
15 Senator Cotton: General McMaster, to build upon Senator Sullivan's comments about 450,000 being an unacceptable risk in terms of end strength, there are some ideas in this Congress to mandate a higher level than that, say 480, 490, what have you. What would be the implications if Congress took that step but did not increase funding any?
16
17 General McMaster: Sir, from a historical perspective and then, you know, they could answer that from a -- it would be disastrous in terms of Army readiness. It would
be disastrous in terms of really -- it could be -- talking about unacceptable risk, it could result in very high risk to not only the mission but to soldiers who would not be prepared for combat because they have not had the proper training work or could be overmatched by an enemy because they had rudimentary equipment.

As you know, there are a lot of big armies in the world. There are some big armies in the world, and many of those armies I would welcome -- I mean, I would not be really fearful of engaging them in close combat because they are not sufficiently modernized. They do not have the kind of training and leaders necessary to be effective.

So, sir, I would say that really what is necessary for an army is to have the balance that Joe Murray talked about earlier.

General Murray: And, Chairman Cotton, so the Army will never give up the readiness of its formation. So if you increase the number of soldiers without an increase in top line, we will ensure the readiness of our soldiers. So will you will do is modernization will take another hit.

So at this point, I mean, we cannot stretch out things much more than we are to have. We would have to go in and start canceling programs like we do not want to do and slowing down production across probably every portfolio to the minimum sustainment rate. I mean, so we would further
decrement installations, MILCON, and modernization to make sure that higher force level was trained and ready.

Senator Cotton: So mandating a higher end-strength without increasing funding would mean a hollow force unless you borrowed more money from modernization to pay for readiness, therefore, further undermining the modernization-readiness balance we discussed earlier?

General Murray: It makes the problem we have right now even worse.

Senator Cotton: And, General McMaster, roughly how much does it cost for, say, 10,000 troops?

General McMaster: I want to ask Joe Murray about this, but the rough figure is typically $1 billion for every 10,000 soldiers. So I think sometimes that -- I mean, that sounds like a lot. Obviously, it is a lot. But I think when you compare that to some of the higher-ticket weapons systems and so forth, you know, really what the Army is is soldiers, right, and so that is really what gives us the capacity that we need to help defend our nation.

Senator Cotton: So before this Congress considers moving forward with mandates on end strength, we need to consider how we might pay for that to ensure both readiness and modernization.

Senator Blumenthal?
Senator Blumenthal: Thank you, Mr. Chairman.

I am very concerned about the level of procurement of Black Hawks, which have been serving the United States Army for more than 35 years, as you observe in your testimonies, the workhorse of the Army's aviation force, and it is not only used by us, America, not only by you, by our services, but by our partner nations across the globe. And there have been continuous modifications to modernize it, to make it more capable, and to implement technology and capacity and efficiency that make it increasingly valuable.

And I am very, very concerned that the level of request for the FY '17 budget is inadequate. In fact, I have written a letter joined by 13 of my colleagues and 21 Representatives expressing concern regarding the need for additional Black Hawks in the FY '17 budget.

Right now, my understanding is that the requested level is 36, which is substantially below the projection of last year, 24 below last year, roughly half of what the Army itself seems to believe is necessary to continue with modernizing and keeping capable our aviation capability.

So I invite you to comment on the -- I ask you to comment on the level of the procurement request in the FY '17 budget and focus particularly on how we are raising the cost per unit if we lowered the level of procurement and how we may lose the defense industrial base that produces
these helicopters, specifically, the men and women who are
highly skilled and efficient who may leave because they are
in fact laid off, particularly in light of the drop-off in
commercial production. As you know, the commercial side of
this industry is very challenged at the moment.

So you know this subject better than I. I have
suggested some questions, and I invite any or all of you to
comment.

General Murray: So I will start off, and I am sure
General Williamson can answer, sir. So -- and I am sure
General Williamson will say this. So we did not violate
the multiyear contract. So when we took it down to -- and
your number is correct; 36 is in the budget of Black Hawks.
That is in accordance with the multiyear, and that applies
to the Apache and the Chinook as well. So we will maintain
the multiyear contract, maintain the workforce.

And you are also correct, a difference of 24 between
what was enacted in '16 and what you saw in the best
request. When we built the '17 budget before the BBA hit
and we understood what our top line was going to be, we had
actually planned to reduce it to 50, so it is actually 14
between what we planned and what we put into the budget
request based upon the BBA.

It is going to have an impact, but fundamentally, to
pay for the increase in readiness that the chief's number
one priority is the near-term readiness, we had to go
someplace to find that money. It is about a 5 percent cut
in procurement, about a 5 percent increase in readiness.
It is almost a direct proportion in terms of what we cut.

We have protected the aviation portfolio for the last
3 or 4 years based upon our plan originally, the ARI. And
I just remind you that this budget did not account for the
National Commission's recommendations. This budget was
built around ARI. The recommendations came in after we had
turned in our budget, and that is why you see some of the
things in our UFR request.

So this year, to find that kind of money for the Army,
there was about a $2.6 billion bill. We had to go to
aviation to find that type of money to pay our decrement
based upon the BBA. We do have plans in the out years, and
they are plans, until we see what the '18 budget is going
to look like, whether it is closer to PB levels or BCA
levels. We do have plans in the out years to try to buy
back some of that divot we would be taking in '17.

Senator Blumenthal: General Williamson?

General Williamson: Sir, I just wanted to add a
couple comments and start by acknowledging at least two of
the things that you said, and the first is this notion of
the Black Hawk being a workhorse for us. As you know, at
any given time we have had over 220 helicopters deployed in
support of operations in combat, millions of hours of flight in support of our troops, and so that helicopter is critically important to us.

I would echo something that General Murray said in terms of we went into this with an awareness of what was that minimum, and in this case it was 36. But this is where I would have to acknowledge your other point is that when we negotiate those kinds of deals, any multiyear, it is with an awareness of what gives us some efficiencies in the plant, what affords us the opportunity to meet production numbers, all of those things in line with the needs of our service.

But the point that you made about the commercial side is really important. So on the other side of the table when they are negotiating those rates, when they are negotiating that price with us, it is in anticipation of understanding what they are going to get from commercial sales and also -- and this is a factor that is not often considered is other sales to our allies as an example. And so as we have seen the stress, if you will, in military budget, along with these new pressures on the commercial side, that has to be a factor.

We try to work very closely with our vendors, with our partners with an understanding of what happens to their vendors and the agreements that they reach with their subs
in order to give us that price.

And so to just finish with something else that General Murray said is that as we are continuing to engage with our vendors on the aviation side, as well as on the combat vehicle side, we are trying to give indications of what goes beyond '17 so that they can think through not only their workforce but also things like capital investment or their plant and their facilities and also for their machinery. It is not something that we take lightly, sir, and we will continue to stay engaged.

Senator Blumenthal: I appreciate the very articulate points that you have made, and I can well understand that you appreciate that production of helicopters, production of most anything that is so essential to our Army and our military cannot be turned on and off like a spigot. It takes planning, it takes training of a workforce, it takes capital investment, and I am grateful to your sensitivity, and I would like to pursue some of these questions.

This is a very complex and developing situation, and I know that we have a common interest in making sure that procurement is at a level that we look beyond this fiscal year to what is available and at what cost in future fiscal years. And I think these are all very, very important points.

Thank you, Mr. Chairman.
Senator Cotton: Senator Sullivan?

Senator Sullivan: Thank you, Mr. Chairman.

Gentlemen, I just wanted to end with kind of a broader question on how the Army is thinking about broader strategy and how we should be thinking about broader strategy. You know, General McMaster, you have written about this. You and I have both had the opportunity to serve under General Abizaid, who has thought a lot about these issues and, you know, when he was one of the first military leaders, started talking about the long war and thinking about how to address that, he has even talked recently about a raid force concept in the Middle East.

But a lot of that came out during the time when we were not also having to think about conventional near-peer situations like we do today. So how is the Army thinking about kind of broader strategy, you know, the long war or whatever else we are -- that you are thinking about in terms of looking at 2, 3, 4 years from now, and then how should we be thinking about that as well? And I open that up to everybody.

General McMaster: Sir, first of all, I think what we are seeing is really the value of forward position, joint forces and Army forces in particular, and deterring conflict against determined enemies and capable enemies. Obviously, we --
Senator Sullivan: You mean in foreign countries?

General McMaster: In foreign countries, sir, so --

Senator Sullivan: So the value of allies is pretty important in our --

General McMaster: Yes, sir.

Senator Sullivan: -- broader strategy. You know, whether it is the President in his recent, you know, Atlantic interview or some of the candidates on the campaign trail, remarkably, there seems to be almost a dismissive attitude towards allies. I think it is incredibly shortsighted. The President's comments in his recent interview were very shortsighted. I think some of the comments coming out of the campaign trail are. So allies are critical to forward deployment, correct?

General McMaster: Yes, sir, and our engagement with those allies is what can bolster their will and their capabilities. And obviously, we want to deter conflict, and we have succeeded in doing so for over 60 years on the Korean Peninsula, over 70 years since the hit of World War II in preventing great power conflict.

I think as we look at the way that threats to U.S. security are evolving, especially with, you know, the four-plus-one construct for state actors, these are the revisionist powers of Russia and China, along with North Korea and Iran who have been taking bellicose and hostile
actions, and the plus one is transactional terrorist organizations, ISIL but also al Qaeda and associated groups and so forth.

When we look at what is required to deal with those threats, it is a joint force and in particular it places a very high demand on ready land forces. I mean, I do not mean to sound snide, but, I mean, ISIL does not have a navy or an air force, and they are doing okay. And so the need for ready land forces that have the will and the capability to close with capable and elusive enemies, enemies that operate in and amongst populations and restrictive terrain, who avoid being classified as a target from standoff range, and now you combine that with enemies that now are demonstrating sophisticated long-range capabilities, cured air defense capabilities, creating this so-called anti-access/area denial threat.

So what we need is we need to maintain ready land forces that can deploy rapidly, they can be forward positioned, but then also deploy rapidly and then transition quickly into operations. And those land forces, I mean, those land forces have to have mobility. They have to have protection. They have to have lethality.

I mean, we cannot -- a lot of times you will hear the terms, you know, light and nimble. Well, you know, Richard Simmons is light and nimble, but we do not send him to go
do harm to somebody or to defend our nation. So we need
forces that can get there and fight once they get there.
And for us, that is a combination of Airborne and Infantry
Brigade Combat Teams, Stryker Brigade Combat Teams, and
Armored Brigade Combat Teams.

But what we see, to your question about the future,
what do we see in the future for Army forces? Army forces
will have to do, as I mentioned, when they have always had
to do: defeat enemy organizations on the ground, secure
territory to deny its use to the enemy, protect
populations, but now increasingly, project power outward
from land into the maritime aerospace and cyberspace
domains in part to help ensure freedom of movement and
action for maritime and aerospace forces.

Russia has established air supremacy over Ukraine from
the ground, for example. China is building landmass in the
South China Sea to project power outward from that landmass
into the maritime and aerospace domains.

And so what our Army has to do is develop some of
these new capabilities that allow us to support the joint
force better, but I think when we see how technology is
evolving, threats to our security from the shifts in the
geopolitical landscape, the kind of missions we are going
to have to conduct, and the sort of -- you know, what we
have learned from history and what is happening today, we
see the demand for ready land forces going up, not going
down.

Senator Sullivan: Anyone else? Gentlemen?

General Anderson: I think, sir, the whole -- back to
your Allied peace, that is the whole thing behind the
regionally aligned forces concept. So you know based on
the global demand we have for all things Iraq, Afghanistan,
Kuwait, and the whole GRF piece, but the bigger issue
becomes how do we appease, and it is all about the
assurance, deterrence. And we watch this in Europe every
single day, as we watch and let it resolve, as we work all
those nations, and from where we are stationing equipment
to where we are storing equipment to where all the
exercises are. But when you run a 55-exercise activity
over the course of a fiscal year, a lot of effects in terms
of our partners. And we are having equal success in the
Pacific with specific pathways.

So when you look at those two models and the
differences it makes from Balikatan, Foal Eagle, all the
different exercises, Cobra Gold, the different exercises
that are just going on, it is a huge enabler, and we do
build some good partner capacity.

Senator Sullivan: Well, I appreciate the emphasis on
allies because if you look at our potential adversaries,
they all seem -- whether it is North Korea or Iran or China
or Russia, they seem to have a hard time collecting any allies, and yet we have most of them and yet we are at this interesting period where some of the leadership in our country seems to be -- right at this moment when allies matter more than anything and they are part of Army strategy and doctrine, we are being dismissive, which I think is shortsighted for our leadership in this country. So thank you, gentlemen.

Thank you, Mr. Chairman.

Senator Cotton: General McMaster, in light of the comments you just made, what is your opinion of the Reconnaissance Strike Group from recommendation 22 in the Commission report?

General McMaster: Sir, I think this is a really important initiative, and so what we think is -- you know, we have some opportunities now. If we would have the resources, you know, to be able to pursue some of these capabilities, we can integrate them into formation.

So the problem we have now that is on the topic of modernization is we see some technologies that are very, very mature, for example, some new combat vehicle technologies, new power train capabilities, demand reduction in terms of, you know, hybrid and power and energy capabilities, light weight band track, independent suspension, active protective systems, improved lethality,
but we do not have a place to put those now in terms of a prototyping program that is well-funded or a combat vehicle program. So we need to develop these technologies, apply them, combine them so we developed a real no-kidding capability but then put them in organizations.

So we think that the trend is combined arms at lower levels. The trend is toward longer-range weapon systems. The trend is toward integrated air and ground formations. And so we want to build formations that are capable of operating widely dispersed with combined arms-air-ground capabilities over wide areas but can maintain mutual support, right, because we do not want those to be, you know, a bunch of Little Bighorns that occur simultaneously across a large area.

We have to be able to fight together as a team, as part of the joint team, and we think this kind of a force, a force that can project power at greater range, combine arms-air-ground at lower levels, can essentially elevate the tactics of infiltration to the operational level.

And so this is the kind of ideas that are consistent with Reconnaissance Strike Group. We are undergoing a force design effort now looking at the Army of 2030 as part of our Unified Quest war game. By the end of this calendar year, we are going to have some proposals about what we would like future Army organizations to look like and how
those organizations would fight together under realistic
conditions and under contingencies that we think are
plausible in the 2030 time frame.

General Murray: And sir, H.R. was basically talking
-- I mean, so the concepts that General McMaster described
apply really to all four recommendations in -- you know, it
was not just the Reconnaissance Strike Group. And there is
no arguing with the concepts. So the chief is still -- we
are about a week or two out from offering up where the
chief is on his thoughts on all 56 recommendations after
the Sec Def, and then we should have something over here
very shortly after that.

Senator Cotton: Okay. We have had a good discussion
so far. I need to close out with just a few specific
programs that have been touched on earlier but we have not
gone into at length. First, DCGS: There was a January
2016 DOT&E report about DCGS Increment 1, Release 2,
concluding that it was operationally effective,
operationally suitable, and not survivable.

I have some doubts about the testing parameters that
were used, also, the inability to get the data that would
allow us to quantifiably test against critical needs like
intelligence, fusion, targeting, data synchronization. I
also have some doubts about the size of the data set, had
191 different entries, which are several orders of
magnitude about what you would see on the combat terrain, and some reports that the system had to be rebooted every 20 hours, which is not suitable for an operational environment.

General Williamson, as I mentioned in my opening statement, you had said last year that you thought the value of the system would be shown by May. Where do you stand on that now on the value of the DCGS-A program?

General Williamson: So, sir, I go back to some of the comments you just made. So both, first, ATEC, the Army Test and Evaluation Command, their assessment was also suitable, effective, and survivable and DOT&E's report in terms of operationally suitable.

But I would like to set those aside for a second. So having gone out and seen the system and obviously working very closely with the PM, we understand that there are additional capabilities that are required in that system. On the ground what I saw was that the brigade level, that system with trained soldiers provides the capability to commander. I think what we have seen is that lower echelons we probably -- not we probably -- we have to do more to reduce the complexity of the system and the ease of use. And I think that is what you are going to see in Increment 2 of DCGS.

We have reached out to industry to include three
requests for information so that we could understand what
industry believe they could provide in a capability. We
had 80 one-on-one sessions, and we included two industry
days where we brought in over 240 vendors who said here is
what we think you need to do. And so we think we have a
path forward on improving the usability of that system.
From an operational standpoint, I pass to General Anderson.

General Anderson: Yes, sir, we had a mission command
summit last week. The issue is what does the field want?
So the field is frustrated, as you very much know, and of
course the bigger challenge is fixed site, static, DCGS,
much less challenge, deployable, small unit, much more
difficult, and battalions are having a hell of a time.

So the issue was to try and get a balance between the
129 app version that has been developed, down to something
between the DCGS-Lite, which the SOF has, which is four
apps, and we think we have come to about 20, so that is
what we laid out last week at Leavenworth, and now it is
back out to the field to say did we pick the right apps to
give you the COP so your analysts have the tools they need.
And then the question becomes how do we work the intel-
sharing from a brigade platform that is less challenged by
this, or a battalion platform is extremely challenged.

And when I was out at the interview in the fall, not
one of the six battalion commanders out there underground
said that they wanted DCGS in their TACs but they knew they
needed the common operating picture tools, and that is --
Senator Cotton: And that is why we hear reports of using workarounds like the old pencil and paper --
General Anderson: Right.
Senator Cotton: -- and PowerPoint --
General Anderson: Analog, right.
Senator Cotton: It sounds to me like it is not working very well.
General Anderson: I am going to --
Senator Cotton: I mean, it works fine if you are an O4 NMI and you live it day in and day out. It works less fine if you are an E4 in a battalion TAC.
General Anderson: That is the key, sir --
Senator Cotton: Expeditious --
General Anderson: -- the training. So the bottom line, the young E5 who was operating that system -- now, 1st AD is a little bit separate from the brigade modernization command, but it is the big C2 facility there right at Bliss, the sergeant E5 intel analyst had not touched that machine until the first day of the exercise. So that is a huge piece of -- part of the problem.
General Murray: This time last year, Chairman Cotton, and this is differently than obviously a brigade, but I had E4s in my division headquarters to section using DCGS in
Afghanistan. Now, it was not moving every day, but I do agree that we still have some issues to work through. But I think one of the biggest issues we have to work through is the training piece because we are not giving these kids time to train on this system before asking them to operate them.

And there are ways that we can get after that. So there is a facility at Fort Stewart called the IROC which has DCGS up and running every day. And I just mandated my DCGS operator. That was their place of duty. They were not pulling guard, they were not going -- they would go to the range and qualify, they would go right back to that facility. So they knew DCGS in and out, and they were operating it each and every day in a garrison environment.

And that is the other effort besides the effort to make things simpler is to make sure we understand that DCGS is a weapons system, and it is just not something you are going to pick up like a smartphone and jump on it and get on it. It has got to be trained day in and day out whether you are in garrison or in a deployed environment.

Senator Cotton: Okay. I want to move on to the next topic. I have to say that I still have my doubts about that. Active protection systems for vehicles, I will direct this towards General Williamson and maybe General McMaster as our armor expert.
As I mentioned at the outset of my opening remarks, as part of the Army's FY '17 budget proposal, the Army reportedly plans to experiment in commercially available active protection systems as part of Abrams, Bradley, and Stryker survivability enhancements, to put it simply, systems that would be able to intercept something like a rocket-propelled grenade could you briefly describe the efforts that are planned for FY '17?

General Williamson: Sir, I will start out by talking about the path to '17, and then I will defer to General McMaster to talk about the capability itself.

So, as indicated, sir, by yourself and by others on this panel, the need to take advantage of these technologies is critical, and we are seeing our adversaries start to take advantage. So we are not unfamiliar with the capabilities of active protection systems. We have made choices that we wanted those systems to mature from a safety standpoint, from a reliability standpoint, and therefore had not employed them.

What we have seen over the last, I would say, 24 months is some advances made both on the commercial side but also by our allies in the employment of those systems, and so we have reached out to them.

So we have taken two paths, sir. So, first of all, we started on a science-and-technology path with a modular
active protection system. That system really has three
two pieces, the first one being how do we develop a modular
system that gives me, first, the ability to sense. How do
I detect that something is being fired at me? And then the
first part will be can I provide an obscurant to make it
more difficult for something to hit the system.

The second point is the soft-kill capability. So
today, if you look out at about 90 percent of the weapons
that would be fired against a platform, those can be
deterred by some sort of electronic means. And then the
third is kinetic. It is directly intercepting a system
that has been fired at you. That is force on force.

What we know is that some of those technologies are
more mature than others, and so what we want to do is reach
out, and we have started out today. We have started that
in FY '16 to take advantage of existing systems. And there
are roughly four out there that we have considered, and we
are now doing the integration work on a Bradley, a Stryker,
and an Abrams.

The FY '17 request allows us to complete that. We are
coming an above-threshold reprogramming to help us get
started sooner and to start that effort with our vendors.

Senator Cotton: General McMaster, do you have
anything to add?

General McMaster: Sir, I think you are highlighting
an immensely important capability. As General Williamson said, we have seen these technologies before and we have seen them employed.

I think there are just a few quick points on this is, first of all, a lot of times we prose ourselves with a false dilemma of either waiting for the perfect capability later or doing something now. And I think this is a case where we have to do both. We need the capability for hard kill, soft kill target location, and then we have to integrate that into the formation as well. So you want to protect an individual vehicle, but you want the formation to be protected.

It is a ground problem, but it is also an air problem now with rotary-wing aircraft. So advanced protection systems for aviation and for ground and then tied to counter UAS and C-RAM, or counter-rocket artillery and mortar capabilities. We see these technologies having a lot of commonality, and it could be tied as well to directed energy, electronic warfare capabilities.

So we have to really work hard on a concept to integrate a lot of these emerging technologies longer term. But there is an immediate threat that we can see now from enemies who possess this capability and we do not. We see that with Russia, for example.

Senator Cotton: Given the programs you described, if
successful, when might we actually see vehicles commanded
by the next generation of H.R. McMasters downrange in
Eastern Europe and Middle East with these systems?

    General Williamson: So, sir, on the expedited
version, taking advantage of commercial existing systems,
we will do that characterization this year, integrate those
onto existing platforms. Early next year, we will be able
to make a decision, essentially a go/no-go that says this
adds more value and more protection than not having it.
And at that point in '17 we make the decision to start
outfitting, equipping systems, and I believe that in '18
you have formations equipped with a measure of protection.

    Senator Cotton: Good. I think, as we have discussed,
as Senator Ernst raised in her questions, this fits in with
the theme of modernization and readiness. Some of these
items, because of their availability off the shelf, sit at
the intersection of readiness and modernization that can be
done so quickly, that they can actually contribute to
readiness today for the force as opposed to readiness for
the force 10 years from now.

    I want to turn to a third topic, activity sets and
pre-positioned stock. I am getting into great detail.
These are obviously platforms that are designed to support
rotational troops that are in contingencies in places like
Eastern Europe, South Korea, so forth. I will throw it up
there for whoever wants to take it. Activity sets and pre-arranged stocks are very equipment-intensive undertakings. We are expanding them worldwide. Where do the vehicles and other associated equipment in the sets and stocks come from?

General Anderson: A variety of means, sir. So the Europe piece first, the European activity set is going to be the first set to be converted to start building the first ABCT APS set for Europe. So starting first quarter '17 we start deploying heel-to-toe brigades. The next brigade to do that is 3rd Brigade, 4th ID out of Carson.

They will bring their equipment from home station with them, and when that gets delivered to Europe, that EAS stuff will get harvested to build the first set of that APS, and then the second APS set will get built from the conversion 225 when Hawaii converts from a Stryker to a Lite. The Strykers from Hawaii will go to the West Coast, the 81st between Washington, Oregon, California, that ABCT's kit will get modernized, and that will get sent over to be the second set.

The stretch will be based on what we do with additional force structure now based on Korea and elsewhere, where would you harvest -- how could we possibly harvest based on the Korean equipment set on the peninsula based on taking potentially somebody's home station set if
we have to build more, or do you harvest within the APS sets? Like APS-5's kit right now is all -- the next rotation to Kuwait is also going to be the entire brigade comes with all of their kit, and then the kit that is being used now in Kuwait for Spartan Shield, that will get harvested to get reset back into APS-5. So it is kind of a -- again, between APS and what you may have to pilfer now here at home station based on what we do structure-wise or other set-wise.

General Murray: I would just add, sir, so we have plenty of tanks and we have plenty of Bradleys, and it is based upon force structure reductions we have had, and we have really lightened the force over the last 10 years, so we have many fewer armored brigade combats.

The problem is they are not modernized, and so if you go down to Anniston down in Alabama, I mean, we have yards of tanks, but it takes money to bring them up to the most modern configuration. We have enough Bradleys. Where you get into issues is primarily with wheeled vehicles, recovery vehicles, engineered, low-density equipment. That is where we have equipment issues that you are talking about, new production. And the way General Anderson kind of laid it out is exactly right.

And the fundamental thing we are kind of struggling with right now is how many unmanned sets of ABCT equipment
do we really want to have? And you talked about the value
of pre-positioned stocks, and I do not disagree with that,
but there is also the value of having a manned ABCT, and so
we are getting to the point now where we are going to have
to start making some decisions about how many unmanned
equipment sets we can really afford.

And I would just add, General Williamson was pretty
specific with APS and AT, and I would say that it is going
to depend upon funding levels. So if, for instance, we
were back at sequester levels, I would be less confident
that we were going to be able to do APS and AT and start
fielding.

Senator Cotton: It seems like a challenging balance
to get back to the pre-positioned activity set. On the one
hand, if that equipment is needed, you need it to be the
most capable equipment we have. On the other hand, you
might have it sitting idle for years at a time.

General Murray: Yes, sir, and an earlier question was
about the next generation of Bradleys and tanks, and that
is actually in the ERI OCO request, and so the 81st
equipment that General Anderson talked about, the intent is
to turn that into the SEP A3 and the Bradley V4 -- other
way around -- the SEP V3 and the Bradley A4 for that second
set of ASP stock in Europe.

Senator Cotton: One final topic, General Murray,
obviously, aviation has been a main recurring topic of conversation here. That is in part because it is pretty expensive, I think 20 percent of RDT&E, 20 percent of our procurement, but also, as we look at some of the capabilities our adversaries have that General McMaster has cited, you know, are our rotary-wing aircraft able to support troops on the ground given the kind of tiered air defense you see from the S300 or S400 systems in places like Ukraine or Syria or wherever else Russia might position them or sell them?

General Murray: And I will let H.R. kind of tag onto this, too, Chairman Cotton, but, I mean, you know, if you have those type of active air defense systems, we would have a difficult time operating rotary -- we would have a difficult time operating fixed-wing. And I think H.R. will kind of say that is the requirement for ground forces because we have always operated -- so, for instance, we have also taken a lot of artillery out of our force structure because for the last 15 years we have operated under the assumption that we would always have air supremacy from our Air Force. And we have got a great Air Force, but here recently within the last year or two, we have got to challenge that assumption. So in that type of threat environment, no, we could not operate our rotary-wing aircraft.
And you talked about protection, and we have talked about APS. APS, as H.R. said, also applies to air. And we are probably further along with the APS for aviation, our rotary-wing aircraft than we are for ground, and we have continued to invest in that as well.

General McMaster: So I would just say it would put a premium on really operating low level for rotary-wing aircraft. Anything that is medium or high altitude is extremely vulnerable to the long-range systems. So then as you are operating at low level, you really have to ensure mutual support, as you know, between ground and air forces and aviation forces. And this is where the 11th Aviation Brigade comes in as very important because we have to train as air-ground teams, develop that common understanding of how we provide that mutual support.

Ground forces clearing, for example, shoulder-fired air defense systems so then attack aviation can operate above or maybe even slightly behind those ground forces and pose that enemy with multiple dilemmas. We want, obviously, our enemies to respond to multiple forms of contact simultaneously, indirect fire, aviation, ground so that they cannot respond to everything that we are doing to them in close combat.

And so in those kinds of tiered air defense areas, it put a premium on air-ground operations at the lower
tactical level and ensuring mutual support between our
aviators and our infantry armored cavalry team.

Senator Cotton: All right. Gentlemen, thank you very
much for your time. Thank you very much for a productive
conversation. And most importantly, thanks for your
service to our country.

This hearing is adjourned.

[Whereupon, at 4:34 p.m., the hearing was adjourned.]