

**UNITED STATES MILITARY SMALL ARMS  
REQUIREMENTS**

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**HEARING**

BEFORE THE

SUBCOMMITTEE ON AIRLAND

OF THE

**COMMITTEE ON ARMED SERVICES  
UNITED STATES SENATE**

ONE HUNDRED FIFTEENTH CONGRESS

FIRST SESSION

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# UNITED STATES MILITARY SMALL ARMS REQUIREMENTS

WEDNESDAY, MAY 17, 2017

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

The subcommittee met, pursuant to notice, at 3:31 p.m. in Room SR-232A, Russell Senate Office Building, Senator Tom Cotton (chairman of the subcommittee) presiding.

Present: Senators Cotton, Inhofe, Sullivan, King, McCaskill, Donnelly, and Peters.

Also present: Senator Ernst.

## OPENING STATEMENT OF SENATOR TOM COTTON

Senator COTTON. The hearing will come to order. Good afternoon, everyone. Today, we are being joined by some of our colleagues from the Emerging Threats and Capabilities Subcommittee, so a warm welcome to all. Our topic is small arms modernization.

Usually in these kinds of hearings, the attention goes to big-ticket items, things like missiles, ships, and tanks. But just because they have the highest price does not mean they have the greatest value. I think we would all agree the most precious thing in our arsenal is the lives of our troops. In spite of that, our planning process does not devote all that much time to the individual soldiers and their needs.

So today, we are going to put them front and center. This is not sentimentality talking. I am afraid it is deadly practical. For years, our rivals have been developing new tactics, new small arms, and new body armor, all while we have been largely asleep at the switch.

We should be especially concerned, I think, about our enemies' advances in anti-access and area-denial weapons. The thinking seems to be, if they cannot match our manpower, our firepower, or our brainpower, they can at least make it exceedingly treacherous for our troops to power through their defenses.

These weapons are now so far advanced that our troops, if engaged in battle, could call for fire support only for their call to go unanswered. This makes it all the more important for each infantry squad to be as resilient and lethal as possible.

So we need to take a closer look at what the individual soldier is working with—the standard-issue rifle for both Army and Marine infantry, the M4 carbine, which is a modified version of the Vietnam-era M16.

The M4 has come a long way since the 1960s, but it still has limitations. Specifically, I am talking about the 5.56 millimeter round it fires. There are lots of reports about enemy combatants surviving being hit by multiple 5.56 rounds.

In Afghanistan, meanwhile, the Taliban uses a larger and longer range 7.62 millimeter round, which can hit coalition targets beyond the effective range of the 5.56.

Now there is a new challenge. Everyone from Russia and China to Hezbollah and ISIS is using advanced body armor, which risks making the 5.56 round essentially obsolete.

Now, we have tried to improve the 5.56 round by developing different versions with greater range and firepower, but I am not convinced this gives our troops the edge they need, especially if our enemies continue making advances in technology.

That said, there are certain advantages to the 5.56. It is light-weight, which allows the average soldier to carry twice the ammunition capacity of the larger 7.62 round. In addition, it has less recoil compared to the 7.62. This means more shots can be fired downrange in quicker succession and with greater accuracy.

The key is finding the right combination of weight, recoil, impulse, range, and lethality, and that is what we will be talking about today. I am especially interested to hear our witnesses take on three questions: What small arms threats do we face? What technologies can we use to mitigate them? How can we keep our combat forces ahead of our adversaries?

I thank our witnesses for their testimony today. Lieutenant General John Bednarek is the former chief of the Office of Security Cooperation in Iraq. Major General Robert H. Scales is the former Commandant of the U.S. Army War College.

Gentlemen, thank you for your testimony.  
Senator King?

#### **STATEMENT OF SENATOR ANGUS KING**

Senator KING. Thank you, Mr. Chairman. Thank you for holding this important hearing.

I also want to thank our witnesses for appearing today to discuss the small arms requirement of the U.S. military. You both possess extensive experience not only leading the soldiers in combat but also filling leadership positions within the Army responsible for ensuring the readiness of the force. I thank you both for your service and I look forward to hearing your well-informed perspectives on these issues, which have been shaped by your nearly 70 years of combined military experience. I am sure you probably were not all that happy to hear that particular figure.

The lethality of soldiers in combat is based on a variety of inter-related factors, including but not limited to the soldiers' training and fitness combined with the accuracy, reliability, durability, and stopping power of the weapons they carry.

With regard to small arms, the U.S. Military Forces dating back to the Revolutionary War have always sought the optimal weapon or mix of weapons while also accounting for the cost and supportability of such weapons. The same story holds true for today's services.

Today's adversaries, including nonstate actors like al Qaeda, the Taliban, and ISIS, also continue to seek qualitative advantage over United States Forces in combat by adopting weapons that have greater range and stopping power.

The U.S. military must continue to incorporate the lessons learned based on the experience of our warfighters over the past 16 years of combat around the globe. Potential state adversaries also continue to improve their small arms and body armor that are used by their military forces, and they are proliferated around the world.

I understand the Army and Marine Corps have led efforts to modify and accelerate the development and fielding of next-generation small arms capabilities, and we have to continue to make progress for our warfighters.

I hope today's witnesses can provide their perspectives on how the U.S. Military selects, tests, and procures small arms for the use of our military personnel. I would like them to explain how the Department of Defense balances tradeoffs in cost, weight, lethality, supportability, and performance in making these decisions and any recommendations you, our witnesses, can make in how we should evaluate future procurements.

I also hope our witnesses can illuminate the debate surrounding the possible requirement for a so-called intermediate caliber that falls between the NATO standard currently used by the U.S. and our partners.

Finally, I would be interested in stepping back to get your thoughts on where upgrading our small arms capability should be prioritized with the Army's other modernization requirements.

I appreciate it, Mr. Chairman, and I look forward to the hearing.

Senator COTTON. I will now recognize Senator Ernst, who played a critical role in this hearing, as well as raising this issue to the attention of all the committee members.

Senator Ernst?

#### **STATEMENT OF SENATOR JONI ERNST**

Senator ERNST. Thank you, Mr. Chair.

Thank you, Major General Scales. Thank you, Lieutenant General Bednarek. It is very good to see you again.

I have pushed for action on small arms modernization since I entered the Senate. This hearing is extremely important to me and to our servicemembers. I was pleased to receive commitment from Secretary Mattis during his confirmation hearing to work with me on this issue, and I look forward to the discussion today.

In the fiscal year 2016 National Defense Authorization Act, I secured a provision requiring a report from the Secretaries of the Navy and Army explaining their plan to modernize Marine Corps and Army infantry weapons. What I got back earlier this year confirmed what we all know. The military has plans to replace its small arms, but it is going to take decades.

Meanwhile, Russia rapidly upgrades its rifles and invests in advanced body armor. China continues to field superior sniper rifles. Terrorist groups like ISIS get their hands on advanced weapons systems and protective equipment.

When we have the Army Chief of Staff Mark Milley in front of the Armed Services Committee telling us he would rather take the money to buy those new handguns and go to Cabela's to procure them, we know that we are facing a failing defense acquisition system.

Unfortunately, the struggle to field the best weapons for our infantry is nothing new. United States Army troops at war against Mexico in 1845 carried muzzle loaders nearly 80 years after the breach-loading rifle was invented. The United States entered World War I with a Springfield 1903 rifle, which held five rounds. The British carried the famous Lee-Enfield rifle, which held 10. Both were still inferior to the German rifle that was capable of firing more rounds per minute. In the 1960s, for Vietnam, the Army initially refused the AR15 that became our M16 and M4 because they lacked any military requirement.

Despite it all, our servicemembers have continued to win on the battlefield. But at what cost? How many firefights could have been one with better suppressive fire or a more lethal bullet? It is simply unacceptable that we continue to deny our servicemembers the best weapons available.

This is the year that we need to take action. With the support of the Secretary of Defense and supportive service chiefs, it is time we upgrade our military's small arms as we rebuild our military.

In this year's National Defense Authorization Act, I will be pressing the departments to prioritize the replacement of our small arms, and I look forward to your comments on how we can best do so.

Thank you, gentlemen.

Thank you, Mr. Chair.

Senator COTTON. General Bednarek?

**STATEMENT OF LIEUTENANT GENERAL JOHN M. BEDNAREK, USA (RETIRED), FORMER CHIEF, OFFICE OF SECURITY COOPERATION-IRAQ**

LTG BEDNAREK. Mr. Chairman, thanks to you and all the members for the opportunity to discuss this very important topic.

I would like to give a few insights not only on the weapons systems but also, Mr. Chairman, that you have highlighted and, Senator King, some of the questions that you have kind of highlighted and asked us to address.

The bottom line is, with our known threat environments that we have, the current weapons systems that we have, I want to share some thoughts and some potential options for us to consider.

From a broader perspective, the committee has a tremendous opportunity here, and that is to reinforce what we all know is a higher priority not only in the Department of Defense budget and procurement activities to influence what the heck it is that we buy, but also to ensure that the lethality across our infantry formations, regardless of service, is exactly what we need for the threats that we know that we are going to face in the future.

In our current formations that we have, Army, Marines, but our infantry combat troops clearly remain the most formidable ally on the planet. Our troops and our individual weapons are a system, and are a system of systems designed with one purpose in mind

that, quite honestly, we often lose sight of, and that is to close with and defeat our adversaries.

They have to be lethal. Lethality is the primary factor that guides whatever it is, the capabilities that we need to develop. It is all about this lethality, and it is all about ensuring that we can operate in all types of environments. It is all about readiness.

Senator Ernst, you have highlighted our Chief of Staff of the Army Mark Milley highlighting his number one priority. It is really all about readiness.

But the bottom line, again, from our infantry formations, it is all about killing our enemy. Again, all of our collective energies have to be focused on whether it is research, development, costs, et cetera, we have to highlight those future fights that we know are going to come.

We do not want near-peer competitors. Our Nation expects our ground combat formations to be the best-equipped force on the Earth. We want overmatch. I certainly, as a prior leader and certainly having an opportunity to guide the architect of our forces in the future, I am not looking for a fair fight anywhere, and I want to make sure that our troops are appropriately equipped.

The current M4 carbine, a lot of discussions about that, has served our Army and Marine Forces pretty well over the past decade-plus. Product improvements, as you have highlighted, have had incremental upgrades and changes that allow this to be, again, a well-serving caliber weapon system put in the hands of our infantrymen. I have trained with and I have been in firefights with that M4 carbine system of systems across Iraq over the past 9 years, and it has performed pretty well.

However, as this committee has heard, multiple studies have shown that it is time to upgrade to a higher, more lethal caliber weapons system for infantry ground troops. Regardless of service or component, regardless of color of uniform, that is the challenge that we see faced.

It is time to modernize our infantry weapon capabilities, and it is my opinion that our service chiefs, and you have highlighted both our Commandant of the Marine Corps Bob Neller and certainly Mark Milley, as already highlighted, they get it. They acknowledge it, and they are moving to get what they need.

I would like to highlight a few factors in the time remaining. Number one—and, Senator King, you highlighted this and asked us to discuss this—about the threat environment and our adversaries. At the start of our current conflict, OIF, OEF, pick a named operation, we were shooting enemy wearing T-shirts and baggy pants. Well, we are still shooting enemy wearing T-shirts and baggy pants, but now they are approaching with level II and level III body armor that precludes our lethality that we once dominated that infantry battlefield with regardless of range.

We can get into the details, although that is not the purpose of this hearing, about the range and effective range of different caliber munitions. But with this near level II or level III body armor of our adversary, regardless of what country that is coming from, as adversaries of the United States of America, our capability to eliminate that threat at medium or long range is almost gone. So

we must have small arms systems that can stop and can penetrate that increased enemy protection.

So it is not just an AK-47 or PKM rifle with our adversaries. It is well-known across the planet. It is the force protection capability that our adversaries now have that they did not have just a decade ago.

The second point is procurement. We have talked about this as well, and you asked us, both General Scales and I, to highlight this. All of our service chiefs, and you highlighted the discussion, Senator Ernst, about Mark Milley in taking several million dollars and going to Cabela's or wherever it is just to buy something to preclude this bureaucratic unique procurement process that we have. So both of the service chiefs, they are on public record on the excessive bureaucracy in our current processes.

While I am certainly not a procurement and contracting expert, I certainly, and I know I share General Scales' comments on this, do not want to look another soldier in the eye and tell him or her that our leaders have not provided them the best weapons system available because it is tied up in acquisition red tape and masking tape. A 5 to 7 year acquisition cycle to procure anything, especially the weapons that we are talking about, Mr. Chairman, is unconscionable.

The third and final thing I highlight is about the systems approach. I mentioned this before, and I think it is important to underscore. While our discussion today in this subcommittee is principally focused on the small arms weapons, we must remember that our services' strategic approach that gives the United States Combat Forces our decisive edge is an overall holistic approach.

It is not just the weapons. It is not just a higher caliber bullet. It is not just caseless or polymer munitions. It is about the system. It is about our human dimension. It is about the training, the leader development that we provide our infantry soldiers, again, the Army and Marines, that make them the best close combat formations anywhere.

This term of mission command, the trust, the leadership, the decentralization and the fact that we train our infantry combat formations to operate without specific instructions and to trust their leaders, marines, soldiers fighting together in teams, this holistic approach is real important.

You know, I think, Senator King, you highlighted it, about the combination of all of our services, whether that is fighter aircraft, whether that is close air support, whether that is attack helicopters. A soldier with a radio, sites, optics, embedded laser rangefinders on his or her weapons system, these capabilities all put together is what makes the U.S. Ground Combat Forces important and gives us the overmatch.

We need to sustain that for the long-term future and the systems approach with the capabilities that I have highlighted.

I appreciate the opportunity to take questions later.

[The prepared statement of General Bednarek follows:]

PREPARED STATEMENT BY LTG JOHN M. BEDNAREK (RETIRED)

Mr Chairman: Thanks to you and all the Members for the opportunity to provide a few insights on our Armed Forces small arms weapon systems. As stated, the pur-

pose of today's hearing is to discuss a current assessment of United States military small arms requirements, our known threat environment, and to share thoughts on potential options to better equip our Infantry units with the most effective small arms available, including emerging technologies. From a broader perspective, this committee has a tremendous opportunity. That opportunity is to reinforce a higher priority in our DOD budget and procurement activities to directly influence the needed increased lethality across our Infantry formations. Clearly one challenge is the delicate balance to improve our capability, increase our battlefield lethality, while watching our government costs.

Our Nation's ground forces, with their weapons and enablers, remain the most formidable ally on the planet. Our troops and their individual weapons, are a system of systems designed with one purpose: to close with and defeat our adversaries. They MUST be lethal. Lethality is the primary factor that guides capability development for all our combat troops to fight and win in all operating environments. It's all about readiness. It's all about effects to kill the enemy. Our Services—and our collective energies—must continue to research, develop, and provide the very best capabilities available for the future fights we know will come. We don't want “near-peer competitors”. Our Nation expects our ground combat troops to be the best equipped force on earth. We want overmatch. I'm not looking for a fair fight anywhere.

The current M4 Carbine family of weapons has served our Army and Marine Infantry Forces well for the past decade plus. Product improvements have provided our soldiers and marines the best available 5.56 caliber weapon available. I have trained with, and been in firefights with—the M4 Carbine across Iraq over the past 9 years. It has performed well. However, as this Committee has heard, and multiple studies have shown, it is time to upgrade to a higher, more lethal caliber weapon system for our Infantry ground troops—regardless of Service or component. It's time to modernize our Infantry weapon capabilities. It's my opinion that our Service Chiefs fully recognize this—CSA GEN Mark Milley & CMC Bob Neller—and they are moving out to get what they need.

I'd to highlight three key factors for the Committee's consideration and assessment:

1. *Threat Environment & Our Adversaries*—At the start of our current named operations (OIF / OEF, etc), we were shooting enemy combatants wearing T-shirts and baggy pants—a LOT of them. They're still wearing T-shirts and baggy pants, but now with near level II & III body armor. Our capability to eliminate this threat at medium to long range distance is almost gone. We must have small arms systems that can stop and penetrate this increased enemy protection.
2. *Procurement*—All our Service Chiefs, especially GEN Mark Milley, are on public record on the current challenges and excessive bureaucracy in our current DOD processes. While I'm not a procurement nor contracting expert, I do not want to look another soldier in the eyes and tell him or her that our leaders have not provided them the best weapon system available because it's tied up in acquisition masking tape. A 5–7 year acquisition cycle to procure weapons and equipment that our warfighters needed yesterday is unconscionable.
3. *Systems Approach*—While the discussion today is principally focused on small arms weapons, we must remember that our Services strategic approach that gives U.S. Combat Forces the decisive edge is the holistic systems approach. It is NOT just our weapons. It's not just a higher caliber bullet, caseless or polymer munitions. It's about the “system”. It is our “human dimension”. The training and leader development we provide our Infantry Soldiers (and others) that make them the best close combat formations on the planet. It's the term of “Mission Command”. Trust and decentralization—the fact that we train our small units to operate without specific instructions and then trust them to execute based on commander's intent. This approach includes our soldiers and marines fighting together as teams. It includes sights, optics, embedded laser range finders, night vision, radios to communicate with fellow troops to provide over-watching fires. It's about supporting capabilities of mortars, artillery, helicopter gun-ships, close air support, USAF fighter aircraft. It's about training our combined arms teams that gives us the overmatch. Sustained emphasis on this “systems approach” to our military capability must not be overlooked.

*Ongoing Service Actions:*

Current and future capabilities include continuing the “pure-fleeting” the Total Force with our current M4A1 carbine. Recent purchases of the new SIG SAUER pistol (modular system) starts fielding with the 101st AASLT DIV in several months.

U.S. Special Operations Command, in coordination with the U.S. Marine Corps, is looking into sources for a brand new lightweight machine gun from defense contractors, one that can bridge the gap in distance and lethality between the 7.62-mm light machine gun and the .50 caliber M2. Other activities include:

a. *Squad Designated Marksman Rifle (SDM)*. We must have increased caliber weapon systems in our baseline formations. The Army is buying a variant of the Heckler and Koch 417, 7.62 mm Rifle to be fielded as a SDM Rifle. Each Brigade Combat Team (BCT) rifle squad will be provided with a SDM Rifle to increase reach and lethality. Since this is a modified “COTS” commercial solution, fielding begins in 18 months.

b. *Precision Sniper Rifle (PSR)*. The PSR will replace the M110, M107, and M2010 Sniper rifles and provide increased range and lethality against individual targets and light vehicles. This rifle will give our snipers the punch and reach that they have in the .50 sniper rifle in a much lighter package. Army-wide fielding is scheduled to start in fiscal year 2020.

c. *M3 Carl Gustaf 84mm Recoilless Rifle*. The Carl Gustaf is currently being fielded to Army Infantry Brigade Combat Teams (IBCT) Rifle platoons to provide increased capability. The M3/M3E1 enables rifle platoons to engage area targets with a manual air-bursting capability and point targets. Light armor targets can also be engaged. Lightweight Carl Gustaf fielding begins in fiscal year 2020.

d. *Next Generation Soldier Weapons (NGSW)*. The NGSW family of small arms will replace current squad (rifle/carbine, squad automatic weapon, and sub-compact) weapons. Production is slated to start in fiscal year 2023. Informed by the Small Arms Ammunition Caliber Study (final report is expected this month), the NGSW will provide the increased range and lethality to maintain overmatch.

e. *Small Arms Fire Control (SA-FC)*. SA-FC is under development for Precision (sniper) rifles, Crew Served weapons, and Squad/Individual weapons. SA-FC will provide a modular integrated set of systems (including determination of range, meteorological data, target acquisition, ballistic solution and display of adjusted aiming point) that when combined will increase the probability of hit and decrease the time to engage target sets. These solutions will leverage equivalent Family of Weapon Sights to provide day, night, and obscured battlefield environments capability. (Examples include the M901 7.62 rifle, interchangeable upper receiver conversion kits; .338 Norma Magnum machinegun; etc) We must not wait to react to current or future threats. We must continue to leverage our wide and diverse intelligence activities and study our potential adversaries to gain and maintain soldier equipment—including improved small arms—superiority.

Senator COTTON. General Scales?

**STATEMENT OF MAJOR GENERAL ROBERT H. SCALES, JR.,  
USA (RET.), FORMER COMMANDANT, U.S. ARMY WAR COLLEGE**

MG SCALES. First of all, Mr. Chairman, thank you so much for the opportunity to allow me to address the committee.

I have a written statement here, but let me just begin by going off the statement and say my passion for this subject goes back almost 50 years. On the 13th of June 1969, my unit was overrun by elements of 29th NVA [North Vietnamese Army] Regiment. Three of my soldiers, Privates Waddell, Worrell, and Fuentes, when I rolled their bodies over, they were lying on top of M16s that were broken at the hinge.

If you are familiar with the rifle, it breaks at the hinge. Anytime you find a dead soldier with the rifle broken at the hinge, it meant he died trying to clear a jam. I have never forgotten that.

So this has been something that, as all of you know, that has been with me for a long time. The answer is that the M4 rifle and its antecedent, what I carried in Vietnam, the M16, is a terribly flawed weapon. It is a standard carbine in use by the infantry today.

But its operating system is fundamentally flawed. All the things that we can do to marginally improve it are not going to make a big difference because operating system is literally dependent on a

puff of gas that blows a floating bolt back and slides it back into position, and any amount of dust, in my case, dirt in our soldiers' rifles fouling from the round will cause the weapon to jam.

Russian systems and, in fact, systems of most other Western militaries, use a solid operating system where the bolt does not float, but the mass of the moving parts are solid enough to cycle through the firing of the bullets without having to jam. Thus, the M4 is far more likely to jam than the Russian weapons.

This risk of jamming affects every aspect of a fight. A Russian infantryman can fire about 140 rounds a minute without stopping in sustained fire. The M4 fires at roughly half that rate.

So Mick and I both, I think, are arguing for a new generation weapon. But the question is always, what should this new generation weapon look like? Let me just give you a few characteristics.

First, it should be modular. Multiple weapons can now be assembled from a single receiver or a chassis, if you will. So before a mission, let's just say a squad leader can allow his men to customize their weapons to make it a light machine gun, a carbine, a rifle, or an assault rifle.

This ability to modularize means that you do not have to suboptimize the weapons that you take into the field. If you are in a city, you use the short barrel version. If you are out in the open area, you use a longer barrel version for longer range.

As we said, the M4's 5.56 millimeter cartridge is just too small for modern combat. It is lack of mass limits its range to less than 400 meters.

I believe that tomorrow's rifle should be something in a midrange caliber between 6.5 and 7 millimeters.

Also, as Mick alluded, the cartridge could be made almost as light as the 5.56 in this heavier caliber by using a polymer shell or a plastic shell casing.

This is interesting. The Army can achieve an infantry version of stealth by attaching sound suppressors to every rifle. So instead of merely muffling the sound of firing by trapping gases, this technology redirects the firing gases forward, capturing most of the blast and flash well inside the muzzle. I saw 3/5 marine demonstrate this in November at 29 Palms.

Look, no weapon is quiet, but when you come under fire and you go to ground and you return fire, as a rule, you do not shoot at the site of something. You always shoot at the sound. If your sound is one-fifth the decibel level of the enemies', that is a huge combat multiplier.

A computer miniaturization now allows precision to be sort of squeezed into a digital size, about 2.5 ounces. All an infantryman has to do with this new technology is merely place a red dot on the target and push a button at the front of the trigger guard. The weapon quite literally fires itself. The computer automatically fires when a hit is guaranteed. Hunters have been using this technology for years. The Army refuses to adopt it.

The Army argues that, in an era of declining resources, a new rifle will cost more than \$2 billion. But if we only buy rifles for the infantry, a force that today, Army, Marine, and Special Forces of about 50,000, that total would be reduced to as little as \$50 million. The Army and Marine Corps can keep their current stocks of

M4s and M16s because the vast majority of men and women in the ground services are not infantrymen.

Frankly, for other MOS's, like artillery and the admin services, the M4 works just fine.

Now, there is some good news in this doleful saga. Reports about the fighting effectiveness of Putin's well-equipped little green men is changing the minds about the effectiveness of the M4. I think the Army universally realizes that the 5.56 bullet cannot defeat Russian body armor, and it is easily out-ranged by the latest Russian small arms. Senior leaders now, I think in both ground services, are calling for this middle caliber bullet.

As a historian, I will tell you very briefly, the Army discovered the value of the middle caliber bullet in 1927 and was going to make the grand in a middle caliber bullet, but we had such a huge stockage of 306, the Chief of Staff at the time said no.

The problem with all of this, Mr. Chairman, is the Army's acquisition executives tell me that they need 7 years to develop a new rifle. Mr. Chairman, 7 years is too long. With your help, we can develop and field a rifle in about a year.

Here is what we should do. I think we need to find a way to wire around the acquisition system, to use something like we used with the Rapid Fielding Initiative in the early 2000s that we used to develop the MRAP [Mine Resistant Ambush Protected].

I think Congress should authorize some amount of money, I say \$100 million, to support a competition between many different makers. This could be gun makers. It could be weapons makers from other nations. I think it should be run or that the tests should be conducted by officers and NCOs [Non-Commissioned Officers] in the closed combat arms, not acquisition community. I think the executive for managing this should be a consortium of ground service chiefs and perhaps the Commander of the Special Operations Command.

I would say competition would be open to anyone, because what is so interesting are the technologies that I mentioned to you exist individually all across this enterprise. What I guess we are suggesting is, if we can bring all of them together into a single system, that will give us dominance. I think the winner should be awarded enough money to manufacture 100,000 rifles over a reasonable period of time. This would allow not only the infantrymen to have this new weapon but also those who fight with the infantry, like sappers and fire support teams and intelligence specialists.

Let me end my statement by just saying that my grandson is 10 years old, and I am very proud of him. Both of his parents were soldiers. He tells me he wants to be a soldier someday. If we leave the Army's acquisition bureaucracy in charge of developing our next generation of small arms, I am fearful that he will be walking point some day with the same weapon that failed my soldiers so tragically 50 years ago in Vietnam.

Mr. Chairman, please do not allow that to happen. Thank you.  
[The prepared statement of General Scales follows:]

PREPARED STATEMENT BY MAJOR GENERAL (RETIRED) ROBERT H. SCALES

Mr. Chairman: Thank you very much for the opportunity to appear before your subcommittee. I've waited many years for this moment.

Since the end of World War II the richest and most technologically advanced country in the world has sent its soldiers and marines into combat with inferior small arms. So inferior, fact, that thousands have died needlessly. They died because the Army's weapon buying bureaucracy has consistently denied that a soldier's individual weapon is important enough to gain their serious attention.

The stories are a century old and as new as today. The venerable "Mu Deuce" 50 caliber machine gun, the one most soldiers use in mounted combat, will celebrate its 100th anniversary in 2019. Try to imagine any service (other than our ground services) still holding on to a centenarian for a weapon. The M249 Squad Automatic Weapon performed so badly in Iraq and Afghanistan that the last commandant of the Marine Corps wrote a check to get rid of it in infantry squads. He replaced it with the superb HK 416, the finest automatic rifle in the free world. By the way it was a German made HK, not an American weapon, that killed bin Laden.

After fifteen years of testing and a \$175 million investment the Army achieved a breakthrough with acceptance of the XM 25 grenade launcher. This amazing weapon fires a "smart" grenade that uses a laser to determine the range to an enemy hiding behind defilade, then transmits that data to the grenade. The XM 25 reaches out with great precision to 500 meters or more and detonates the grenade directly over the head of an enemy hiding behind a wall or inside a building. No longer will the Taliban be able to huddle under cover until our infantry fires slacken before he runs away. Now he has nowhere to run. The X M 25 is the first truly revolutionary small arms technology the Army has developed in almost half a century. By the way, the Army leadership canceled the XM 25 program last week.

The Army's Acquisition Community wasn't able to select something as simple as a pistol. After eight years and millions of dollars the only product they produced was a 400-page written "Request for Proposal" for an off the shelf commercial pistol. It took an enraged Chairman of this Committee and weekly interventions by the Army Chief of Staff to force the acquisition bureaucrats to pick the German made Sig Sauer pistol and get on with buying it for our soldiers.

The most horrific story has to be the one about the rifle. During my 35 years in the Army, it became clear to me that from Hamburger Hill to the streets of Baghdad that the American penchant for arming troops with lousy rifles has been responsible for a staggering number of unnecessary deaths. In wars fought since World War II, the vast majority of men and women in uniform have not engaged in the intimate act of killing. Their work is much the same as their civilian counterparts'. It is the infantryman's job to intentionally seek out and kill the enemy, at the risk of violent death. The Army and Marine Corps infantry, joined by a very small band of Special Operations Forces, comprises roughly 50,000 soldiers, some 4 percent of uniformed Defense Department employees. During World War II, 70 percent of all soldiers killed at the hands of the enemy were infantry. In the wars since, that proportion has grown to about 80 percent. These are the (mostly) men whose survival depends on their rifles and ammunition.

In combat, an infantryman lives an animal's life. The primal laws of tooth and fang determine whether he will live or die. Killing is quick. Combat in Afghanistan and Iraq reinforces the lesson that there is no such thing in small-arms combat as a fair fight. Infantrymen advance into the killing zone grimy, tired, confused, hungry, and scared. Their equipment is dirty, dented, or worn. They die on patrol from ambushes, from sniper attacks, from booby traps and improvised explosive devices. They may have only a split second to lift, aim, and pull the trigger before the enemy fires. Survival depends on the ability to deliver more killing power at longer ranges and with greater precision than the enemy.

Any lost edge, however small, means death. A jammed weapon, an enemy too swift and elusive to be engaged with aimed fire, an enemy out of range yet capable of delivering a larger volume of return fire—any of these cancel out all the wonderfully superior and expensive American air- and sea-based weapons that may be fired in support of ground troops. There's also a moral dimension as well. An infantryman who perceives that his weapon is inferior loses confidence in the close fight and might well hold back fearing that his opponent can kill him at greater range and with more precision. A soldier in basic training is told that his rifle is his best friend and his ticket home. If the lives of so many depend on a rifle why can't the richest country in the world give it to them?

The answer is both complex and simple. The M4, the standard carbine in use by the infantry today, is a lighter version of the M16 rifle that killed so many of the soldiers who carried it in Vietnam. (The M16 is still also in wide use today.) In the early morning of July 13, 2008, nine infantrymen died fighting off a Taliban attack at a combat outpost near the village of Wanat in Afghanistan's Nuristan province. Some of the soldiers present later reported that in the midst of battle their rifles overheated and jammed. The Wanat story is reminiscent of experiences in Vietnam:

in fact, other than a few cosmetic changes, the rifles from both wars are virtually the same. The M4's shorter barrel makes it less effective at long ranges than the older M16—an especially serious disadvantage in modern combat, which is increasingly taking place over long ranges.

The M16 started out as a stroke of genius by one of the world's most famous firearms designers. In the 1950s, an engineer named Eugene Stoner used space-age materials to improve the Army's then-standard infantry rifle, the M14. The 5.56-mm cartridge Stoner chose for his rifle was a modification not of the M14's cartridge but of a commercial Remington rifle cartridge that had been designed to kill small varmints. His invention, the AR-15, was light, handy, and capable of controlled automatic fire. It outclassed the heavier, harder-recoiling M14. Yet the Army was again reluctant to change. As James Fallows observed in 1981, it took the "strong support" of President Kennedy and Defense Secretary Robert McNamara to make the Army consider breaking its love affair with the large-caliber M14. In 1963, it slowly began adopting Stoner's invention.

The "militarized" adaptation of the AR-15 was the M16. Militarization—more than 100 proposed alterations to supposedly make the rifle combat-ready—ruined the first batch to arrive at the front lines, and the cost in dead soldiers was horrific. A propellant ordered by the Army left a powder residue that clogged the rifle. Finely machined parts made the M16 a "maintenance queen" that required constant cleaning in the moisture, dust, and mud of Vietnam. In time, the Army improved the weapon—but not before many U.S. troops died.

Not all the problems with the M16 can be blamed on the Army. Buried in the M16's, and now the M4's, operating system is a flaw that no amount of militarizing and tinkering has ever erased. Stoner's gun cycles cartridges from the magazine into the chamber using gas pressure vented off as the bullet passes through the barrel. Gases traveling down a very narrow aluminum tube produce an intense "puff" that throws the bolt assembly to the rear, making the bolt assembly a freely moving object in the body of the rifle. Any dust or dirt or residue from the cartridge might cause the bolt assembly, and thus the rifle, to jam.

In contrast, the Soviet AK-47 (and most other western designed assault rifles) cycle rounds using a solid operating rod attached to the bolt assembly. The gas action of the AK-47 throws the rod and the bolt assembly back as one unit, and the solid attachment means that mud or dust will not prevent the gun from functioning. Fearing the deadly consequences of a "failure to feed" in a fight, some top-tier Special Operations units like Delta Force and SEAL Team Six use a more modern and effective rifle with a more reliable operating-rod mechanism. But front-line Army and Marine riflemen still fire weapons much more likely to jam than the AK-47. Failure to feed affects every aspect of a fight. A Russian infantryman can fire about 140 rounds a minute without stopping. The M4 fires at roughly half that rate. Today it still jams after overheating and in dusty field conditions, just like in close combat. In the open terrain of Afghanistan, the M-4 is badly out-ranged by Taliban weapons manufactured before the First World War.

Sadly, until very recently the Army has done all it could to cover up the poor performance of the M4. After my article "Gun Trouble" appeared in January's Atlantic Magazine Army Public Affairs responded that the weapon was fine, as good as it could be. Then Rowan Scarborough of the Washington Times revealed a few months later that the M-4 was undergoing over 140 improvements. So, Rowan asked: "why, if the gun was so perfect in January, was it necessary to rebuild it a few months later?" Remember we aren't talking about stealth, encryption or lines of code here. There are no interoperability and integration issues. Nothing is hidden deeply in Area 51. It's a 7-pound piece of plastic and steel.

What should a next-generation, all-purpose infantry rifle look like? It should be modular. Multiple weapons can now be assembled from a single chassis. A squad member can customize his weapon by attaching different barrels, buttstocks, forearms, feed systems, and accessories to make, say, a light machine gun, a carbine, a rifle, or an infantry automatic rifle.

The military must change the caliber and cartridge of the guns it gives infantry soldiers. Stoner's little 5.56-mm cartridge was ideal for softening the recoil of World War II infantry calibers in order to allow fully automatic fire. But today's cartridge is simply too small for modern combat. Its lack of mass limits its range to less than 400 meters. The civilian version of the 5.56-mm bullet was designed as a "varmint killer" and six states prohibit its use for deer hunting because it is not lethal enough to ensure a quick kill. The optimum caliber for tomorrow's rifle is between 6.5 and 7 millimeters. The cartridge could be made almost as light as the older brass-cased 5.56-mm by using a plastic shell casing, which is now in final development by the Marine Corps.

The Army can achieve an infantry version of stealth by attaching newly developed sound suppressors to every rifle. Instead of merely muffling the sound of firing by trapping gases, this new technology redirects the firing gases forward, capturing most of the blast and flash well inside the muzzle. Of course, an enemy under fire would hear the muted sounds of an engagement. But much as with other stealth technology, the enemy soldier would be at a decisive disadvantage in trying to determine the exact location of the weapons firing at him.

Computer miniaturization now allows precision to be squeezed into a rifle sight. All an infantryman using a rifle equipped with a new-model sight need do is place a red dot on his target and push a button at the front of his trigger guard; a computer on his rifle will take into account data like range and “lead angle” to compensate for the movement of his target, and then automatically fire when the hit is guaranteed. This rifle sight can “see” the enemy soldier day or night at ranges well beyond 600 meters. An enemy caught in that sight will die long before he could know he was seen, much less before he could effectively return fire.

But infantrymen today do not use rifles equipped with these new sights. Hunters do. In fact, new rifles and ammunition are readily available. They are made by many manufacturers—civilian gun makers and foreign military suppliers that equip the most-elite Special Operations units. Unlike conventional infantry units, top-tier Special Operations units are virtually unrestricted by cumbersome acquisition protocols, and have had ample funding and a free hand to solicit new gun designs from private industry. These units test new guns in combat, often with dramatic results: greater precision, greater reliability, greater killing power.

The Army has argued that, in an era of declining resources, a new rifle will cost more than \$2 billion. But let’s say the Army and Marine Corps buy new rifles only for those who will use them most, namely the infantry. The cost, for about 100,000 infantrymen at \$1,000 each, is then reduced to roughly \$100 million, less than that of a single F-35 fighter jet. The Army and the Marine Corps can keep the current stocks of M4s and M16s in reserve for use by non-infantry personnel in the unlikely event that they find themselves in combat.

#### WHAT TO DO . . .

There is some good news in this doleful saga. Since 9/11 the M4 has been marginally effective against poorly equipped and armed insurgents like al Qaeda, ISIS and the Taliban. But reports about the fighting effectiveness of Putin’s well-equipped little green men is disturbing. The Russians have spent their defense rubles wisely investing in a new family of assault rifles and the new Ratnick soldier systems that include a new soldier suite for protection, small arms and communications. Putin’s philosophy is to spend money only on units he needs to advance his national security aims: Spetnaz, GRU, naval infantry, airborne infantry and special armored units.

The Army now realizes that the varmint gun can’t defeat Russian body armor and is easily outranged by the latest Russian small arms. Senior leaders are now calling for the adoption of a “middle caliber” bullet and a new rifle to shoot it. It’s about time. The problem is that the Army’s turgid acquisition gurus want 7 years to develop the new rifle.

Mr. Chairman, 7 years is too long. With your help, we can develop and field the rifle our soldiers and marines deserve in about a year. Here is what we should do:

For the 2018 National Defense Authorization Act, we request that you authorize 100 Million dollars to support an open competition to development a new family of dominant small arms. This single authorization should expire in a year. The effort should be run and overseen by ground combat arms officers and Non-Commissioned Officers. The Executive for managing this effort should be a consortium of the Ground Service Chiefs and the Commander, Special Operations Command. No acquisition agencies from any service should be involved in executive decision making or the management of the competition.

Competition will be open to anyone, small business, big business, foreign, domestic or even clever individuals. After one year the consortium leadership will conduct the shoot-off. The shoot off will be open to all services, the media and congress and anyone from the public who is interested. Results will be scored and posted daily on a web site.

The new rifle requirements document will be one page. It will speculate only six characteristics:

- First the rifle must be modular capable of being converted in the field to a carbine, rifle, machine gun or sniper rifle.
- Second, it will fire an intermediate caliber bullet probably a military version of the venerable Remington 270.

- Third, the rifle will be suppressed. A muzzle suppressor greatly reduces a rifle's report and in the confusion of a close fight a quieter rifle gives a decided advantage.
- Fourth, the new rifle will use a solid recoiling action like most first-rate assault rifles.
- Fifth, the rifle should have a snap on digital sight capable of killing reliably to a range in excess of 1,000 meters.
- Sixth, the rifle should be able to fire ammunition in a polymer casing. Polymer rounds weigh 30 percent less than brass cartridge casings.

A desirable feature would be an attachment to allow the rifle to fire belted ammunition.

The winner would be awarded about 100 million dollars to manufacture the first 100,000 rifles, enough to equip all close combat small units in the Army and Marine Corps as well as those who fight close to the infantry to include Sappers, Fire Support Teams, and intelligence specialists. The rest of the Army and Marine Corps will do just fine with the M-4 . . . for now.

I am not alone in calling for a significant reform of our small arms systems. Many very senior combat veterans share my passion. One in particular comes to mind. This from an often-quoted note to a friend written in 2009:

*Yesterday I was at Walter Reed and among others spoke at some length with a fine young marine infantry officer, Lt David Borden, who lost a leg in Ramadi to a suicide bomber. He lost a leg along with other serious wounds, blast killed one of his lads, wounded others. Most notably, he emptied a magazine into the man charging them, at close range, even as his fellow marines riddled him as well at close range. Certainly, the guy was on drugs, but the bottom line was that our assault rifle did not have the stopping power to put the enemy down on first, second, third...fifteenth etc. rounds to the body . . .*

*Once the problem is well defined (we are using a rifle whose caliber is illegal for shooting small deer in nearly all states due to its lack of killing power), we will move swiftly to the solution. While I believe, the solution is 6.8mm, I'm open to whatever will work. Physics says that the best advances in bullet technology will not give us the increased stopping power/energy of the 5.56, since any improved 5.56 ammunition could only be more effective if adopted at 6.8mm or other heavier round.*

The sender of the message was General James Mattis.

My grandson is ten and I'm very proud of him. He tells me he wants to be a soldier someday. If we leave the Army's Acquisition bureaucracy in charge of developing our next generation of small arms I'm fearful that he will be walking point some day with the same weapon that failed my soldiers so tragically fifty years ago in Vietnam.

Please don't allow that to happen.

Senator COTTON. Thank you, gentlemen, for your testimony.

General Scales, why is this so hard? It is not a ballistic missile defense system. It is not a new stealth bomber. It is not a new aircraft carrier. It is a rifle. Why is it so hard? Why is the Acquisition Corps saying it is going to take 7 years to get a new rifle?

MG SCALES. I think the reason is just the system. I hate to say it, but some of the people I have talked to in the Army staff recently are telling me that the same regulations that dictate building a F-35 fighter are at play in trying to design and build a little 7-pound piece of plastic and steel.

But here is another important point to make, Mr. Chairman. When the military tries to build something, they want to build it internally.

But you are from Arkansas. There are a lot of hunters in Arkansas. You know as well as I do that a lot of the technologies that we are talking about are craft technologies. They come from weapons makers, civilian firms. They come from people who are not in the government but who are making cutting-edge advances. It is extremely hard for the military, particularly the Army acquisition system, to wire around the regulations and apply common sense very quickly and develop a rifle very quickly.

There are always people in the Army who say that it is just too expensive. The other common objection I hear from the Army is, well, you know the logistical system cannot support another bullet. My point is, that is what Westmoreland said in 1965, that we could not support another bullet. But, you know, you cannot support another bullet until suddenly you can.

As I said, we are not trying to design and build a weapon for everybody who wears a uniform, just for those who use it, as Mick says, to do the nasty business of intimate killing. If we are a military that can field 31 varieties of MRAPs in the most inhospitable region of the world, Afghanistan, I do not understand why our logisticians cannot add another bullet.

Senator COTTON. Is the Acquisition Corps that said this would take 7 years the same Acquisition Corps that wrote a 350-page request for proposals for a new pistol?

MG SCALES. Exactly the same.

Senator COTTON. General Bednarek, do you have anything to add to the question of why this is so hard?

LTG BEDNAREK. Mr. Chairman, I echo what General Scales highlighted. But also, you may recall, just years ago, in mobilizing the 39th Brigade Combat Team there in Arkansas similar challenges with not just weapons systems but other kit.

General Scales highlighted the Rapid Fielding Initiative that the Army has done pretty darn well with the MRAP type of capability.

So the bottom line is, although some of our procurement and acquisition challenges faced, whether that is just a simple bureaucracy of rules, regulations, et cetera, we know we can do this, because we have shown that we can do this with much larger capabilities that our soldiers need for the future.

Senator COTTON. General Bednarek, General Scales suggested that not every soldier, not every branch, maybe not every service, would need this kind of weapon, but it would be only the core frontline fighting troops in the infantry. Would you agree with that opinion?

LTG BEDNAREK. Senator, I do, but let me caveat.

Right now, the Army, the system of record, as Senator Ernst highlighted earlier, the M4 carbine family, is on the glide path of what we call pure fleeting, which means that every soldier in the United States Army, that will be their individual weapons system. That pure fleeting will go through and including fiscal year 2022.

As General Scales highlighted, we have to have a start point, and that start point must be our frontline combat formations.

Again, regardless of component, and the Chief of Staff of the Army is adamant and I 100 percent agree, particularly with my prior privilege in our Army responsible for the training, readiness, and oversight of our National Guard and Reserve Forces across the United States, those soldiers, those infantrymen brigade combat teams, just like your 39th there in Arkansas, they have to have the same type of infantry capabilities as our frontline troops.

But you have to start somewhere. You have to have a line of departure. That obviously is our special operations forces on the frontlines. Those are our infantrymen, again, regardless of component, and as General Scales highlighted, those who accompany

those frontline troops, our fire supporters, are engineer sappers, et cetera. That has to be the first to fight.

Senator COTTON. So 11 Bravo riflemen, whether they are in the 101st Airborne or in the National Guard, need this enhanced capability. But finance clerks, whether they are in the 101st or the National Guard, maybe can do with the M4?

LTG BEDNAREK. Chairman, I agree with that. But the bottom line also is the service chiefs and their staff are pretty smart individuals, and I am very confident that given that decision space that they hold pretty close, they will make the right decisions for those prioritized formations heading out the door for our next deployers to get the capability in the hands that they need.

Senator COTTON. General Scales, one final question. With an enhanced rifle, what are the implications for the infantry squad automatic weapon, the M249 and the grenade launcher, the M203?

MG SCALES. That is a great question. I have spent some time over the last year talking particularly to the Marines about this.

I think we are in a transition zone, Senator. I think that the Marines have given up on the SAW [Squad Automatic Weapon]. They have just found it to be too unreliable. Many are saying that an intermediate caliber like this will allow one rifle to do all those things, to include a grenade launcher, because you have a bullet, probably more than you want to know, but an intermediate caliber bullet stays supersonic longer when you fire it, which means it has a flatter trajectory. So a lighter bullet, when compared with say the 7.62 that you are familiar with, actually has about 90 percent of the range and lethality of that bullet even though it is much lighter. It is small enough to be used in an automatic weapon that you can fire from the shoulder.

So I think the Marines are certainly going in that direction, perhaps the Army too. The day is going to come when you can have one bullet, one family of weapons to perform all functions that you just mentioned. When that day comes, we will have a truly, truly lethal squad.

Senator COTTON. Thank you.

Senator King?

Senator KING. Thank you, Mr. Chairman.

Do we need to replace all the weapons in a squad or can it be a mix of weapons that can meet different requirements? Do you see what I am saying?

MG SCALES. Yes, sir. I do. Boy, that is a great question. Again, it is under heavy debate right now.

I think what I hear from, again, from the Marines principally is that the squad has to have a way to not only shoot flat trajectory fire inside the squad but also to get behind obstacles and fire through windows in cities. So many of our enemies today hide behind mud walls or they hide in urban terrain.

What most of the people I talk to tell me is that the old grenade launcher is not sufficient. We need an additional weapon.

There are some, Senator, inside the Marine Corps who also argue for a heavier automatic weapon actually inside the squad. That, of course, is a debate that sort of transcends services.

But I would say the starting point is to have this universal weapon, and then to augment it within the squad, kind of depending on the mission.

Mick used the term “pure fleeting.” Five, six years ago, when we started off on this crusade, inevitably, the hands went up and people said, “Bob, that is great idea. We would like to do it, but we have a policy in the Army of pure fleeting.” I would hope that the number one decision that the Army and Marine Corps would make upfront is to give up on this idea of pure fleeting.

Senator KING. Can you define that term of “pure fleeting”?

MG SCALES. Sir?

Senator KING. Define “pure fleeting”?

MG SCALES. “Pure fleeting” means that every soldier in the Army, regardless of whether he uses his rifle or not, has to have the same one. He has to have the same boots, the same uniform, the same rucksack.

Senator KING. But every soldier does not have the same function.

MG SCALES. Bingo. That is exactly right. Most soldiers in the Army, 85 percent of the soldiers in the Army perform functions like every other civilian does. God bless them, they are great human beings. Only the infantry close with and destroy the enemy.

As an example, a soldier shoots 80 rounds a year. At the Battle of Wanat in 2009, evidence indicates that some soldiers were cycling 5,000 to 7,000 rounds through a single weapon. An M4 is just not robust enough to do that.

Senator KING. What do the SEALs use now for a weapon?

MG SCALES. They use many things. They use the HK416, which is the Heckler & Koch weapon, the one that killed Osama bin Laden.

Senator KING. Would that be a suitable weapon that would meet the needs that you have described?

MG SCALES. It would.

Senator KING. Why don't we just buy that?

MG SCALES. Great question. I did not come here before the committee to advocate for a weapons maker, but let me say this. Most people will tell you that the H&K [Hekler & Koch] system is the best in the world.

The Marines just bought—they call it the M27, but it is really the HK416. It is the most reliable action in the world.

Senator KING. You have used the term a couple times “wiring around the current acquisition process.”

MG SCALES. Yes, sir.

Senator KING. One way to wire around it is to buy something that is already available—

MG SCALES. Amen.

Senator KING.—without going through all the process of reinventing the—

MG SCALES. The only thing that would have to be—a couple things. Number one is, you have to ask a company like H&K, can you make it modular? I think the answer is yes. Number two, obviously, you would have to rebore it for a slightly larger bullet, and I understand that the magazine H&K makes actually will accept both the mid-caliber and the lighter caliber bullet. Then you would

have to make it suitable for the other things that I talked about, a silencer and a site.

Senator KING. If we change the caliber, General Bednarek, if we change the caliber, does that create problems with NATO [North Atlantic Treaty Organization]? What is the constraint there?

LTG BEDNAREK. Senator, a couple things, and I am going to address the NATO issue and the caliber weapons systems, and this term that many of us are very familiar with of interoperability with our partners, both coalition and allies, et cetera.

Number one, and to get back to General Scales' comment about the Heckler & Koch 417, the Army is purchasing, based on their current small arms strategy, a variant of the HK417, which is a 7.62 rifle.

It is part of the earlier question, Senator, that you asked about, does everybody in a rifle squad have the same kit? The answer is no. They have the baseline weapon, but they also have specialty weapons. The HK417 is one of these of a "squad-designated marksman." So you have one individual who is a little bit higher trained, certainly designated as a marksman based on that team leader or squad leader. They also have a precision sniper rifle embedded within that squad or platoon.

They also have—now the Army has already fielded, and more to come with additional variants, a larger caliber, what is called the Carl Gustaf. It is an M3 84 millimeter recoilless rifle that fielded back—when I first fired it was back in 1991. They have adjusted it since then.

But to your point of capabilities within a squad, within a rifle platoon, there are some capabilities that the Army and the Marines already have embedded within their formations now that provide them, as General Scales, highlighted based on the mission set at hand, based on what their requirement is to accomplish that particular day, night, or mission set, they can accomplish what they need to get done.

Senator, to your question on NATO, it gets complex in the sense of ammunition stocks, stockpiles, locations, where they are, who we are partnered with, et cetera. I will just give you some near-term examples.

Senator KING. I am going to urge you to be brief, because I have a clock running.

LTG BEDNAREK. Yes. For our partners in Iraq, most of those have, obviously, AK-47 7.62. As we start working with them in foreign military sales with our Iraqi partners, certainly the system that we are using is the M4 carbine. But for our NATO allies, 62 countries involved with the coalition effort in Operation Enduring Freedom and Iraqi Freedom, the challenges associated with stockpiles and working through those weapons is a challenge because you are working with different systems. The spare parts, breakage, ammunition, caliber weapons do not fit all weapons, and it is problematic for the ground force commanders.

Senator KING. General Scales, one more very quick question. Does the current M4 bullet penetrate current body armor on our adversaries?

MG SCALES. Sir, it does not.

Senator KING. Isn't that the end of the discussion? If it doesn't, we have to have a new weapon.

MG SCALES. Let me just build off what Mick said in about 20 seconds or less. He mentioned commonality.

Well, the NATO countries, that enemy they all face is Russia. I will guarantee you that, over time, if the NATO armies realize that the weapons, the 5.56 weapons that they have, will not penetrate Russian body armor, and they will not, that it is inevitable that, spontaneously, the other armies of the world will have to upgrade their weapons to a heavy caliber. Otherwise, they will be defeated by the Russians in the close infantry fight.

Senator COTTON. Senator Ernst?

Senator ERNST. Thank you, Mr. Chair.

Gentlemen, thank you again. Again, Secretary Mattis committed to me during his confirmation hearing that he would work with us to modernize our small arms.

General Scales, you note how it took strong support from President Kennedy and Secretary of Defense McNamara to consider the M16. As we see our adversaries modernize, I believe we are going to need this type of pressure from this administration as well to ensure that this actually happens. That is why I have requested this hearing.

Do you agree that we need to pressure the administration and signal that it is taking way too long? Seven to 10 years is way too long. Would you agree we need pressure to make this happen?

MG SCALES. Absolutely, but I will also say, from my long association with General Mattis, working on this specific project beginning in 2004, that as far as the Secretary of Defense is concerned, you are pushing on an open door. This has been a passion of his.

I remember, a quick war story, in 2004, we started off on what was called the national program for small unit excellence when he was commander of MCCDC, Marine Corps Development Command, and later Joint Forces Command.

Secretary Mattis is passionate about this because he remembers the second battle of Fallujah, and several marine who were killed, needlessly killed, by suicide bombers who cannot be stopped with the M4. He has that, I believe, embedded in his brain.

So I believe that the best advocate for this is going to be the man at the top. That is why this hearing is so important, to let him know that Congress is behind him, that you understand the nature of the problem, and that you hopefully will be able to give him the support he needs to press forward with this.

Having said that, there are a lot of people in OSD that would rather make antiballistic missiles and supersonic aircraft than rifles. Lockheed Martin does not have a rifle division in their corporation.

Senator ERNST. What a great point, General. Thank you very much.

Continuing with that same line of thought as well, General Bednarek, we have committed to fielding platforms like the F-35, very complicated systems out there. Why is it that we cannot field a rifle?

LTG BEDNAREK. The answer is there is no good reason why we cannot, and we absolutely should.

In the broader scheme of things, Senator, to your point, reinforced by General Scales, with the broader, complicated, billions of dollars of systems that the United States has a signature platform to accomplish our Nation's bidding, there is absolutely no reason why we should not have a capable, higher caliber, modular weapons system in the hands of our infantry combat troops.

Senator ERNST. I know that General Miller had told me this as well when we were visiting about small arms modernization, that, of course, the marine is very emotional about their rifle.

You know that, General Scales, as well.

So do you, Senator Sullivan. You understand that.

For our warfighters like Senator Cotton, we need the best available small arms for our infantrymen. This should not be an issue. This should not be an issue. I think we are signally loud and clear to the man at the top that this needs to happen.

Now, General Bednarek, you also say in your opening statement that troops and their individual weapons are a system of systems and that they are designed with one purpose, to close with and defeat our adversaries, and they must be lethal.

So do you believe the answer to a more lethal weapons system is a commercial off-the-shelf product, as we have discussed earlier? Or something that maybe we should have industry specifically develop?

LTG BEDNAREK. Senator, thank you for the question.

Again, I think a COTS [commercial off-the-shelf] system, a commercial off-the-shelf, certainly is one course of action, as General Scales highlighted. He and I talked about this before.

Competition is always good, but it cannot be tied up in absolute bureaucratic masking tape for years. It is absolutely unconscionable, in my view.

We can do this. It was shown in the Rapid Fielding Initiative it should not take so long. We have to continue to press this really hard.

I think the service chiefs are behind this, as I highlighted in my opening statement. They want the best thing for our infantrymen as well, to defeat our adversaries.

Senator ERNST. Thank you, gentlemen.

Thank you, Mr. Chair.

Senator COTTON. Senator Sullivan?

Senator SULLIVAN. Thank you, Mr. Chairman.

General Scales, I think your opening statement, your first sentence here, "Since the end of World War II, the richest and most technologically advanced country in the world has sent its soldiers and marines into combat with inferior small arms. So inferior, in fact, that thousands have died needlessly." I think that kind of opens and shuts the point of the hearing.

I think Senator King's point is also worth reemphasizing. You mentioned that the 5.56 caliber ammo cannot pierce the Ratnik soldier system of the Russian body armor? What else cannot the 5.56 penetrate? I noted in one of your testimony that six different states have outlawed its use because when you shoot a deer with it, it is considered cruel.

MG SCALES. It is not lethal enough to take down an animal, Senator, so there are several states that have banned its use.

In fact, when Mr. Stoner first developed the AR-15, in those days, in the 1950s, it was called a 223. If you look on the box of ammunition, it is called a varmint, a varmint shell. In other words, it is intended for rabbits and small animals rather than something big like a deer or a human being, for that matter.

Senator SULLIVAN. I think I want to commend Senator Ernst for being the motivator behind this hearing. But I think this should be an issue that is that not difficult.

When the Army is talking about cost, if it is going to save thousands of lives of frontline troops, then it should not even be debatable.

Let me ask another kind of related question. Have you looked at all in terms of our sniper rifles and their ranges? In the Marine Corps, there is some concern about the M40A5, which is the Marine sniper rifle right now. I think the range is about 1,000 yards. I know that 50 cal Barrett sniper rifle has a much greater range.

But are you also concerned with regard to our snipers, Army and Marine Corps snipers, that our ranges are such that we cannot compete against their snipers?

MG SCALES. I know Mick knows more about this than I do, but this is a great point.

The technology today, particularly in the technology of the bullets and some of the great refinements made in telescopic sites, particularly night sites, the standard now, Senator, for the British and for JSOC, the standard now on flat terrain is 1,600 yards.

Senator SULLIVAN. Right.

MG SCALES. In fact, the world record, which is claimed by a British SAS [Special Air Service] sniper, is something like 1,850. My gosh, that is a mile.

So the technology has come a long way. Sadly, until very recently, the Army's standard sniper rifle, they are changing it now, but the Army's standard sniper rifle was invented in 1907. It is an adaptation of the Remington Model 70 that I used in Vietnam.

Senator SULLIVAN. So do you think we need to look at that, not just the caliber issue, but do you think we need to look at the sniper rifle? I know that SOCOM [Special Operations Command], and as you mentioned JSOC [Joint Special Operations Command], has a different rifle, but I am talking about Marine, Army snipers who should be having the ability to range the enemy at the same distance other members of the U.S. military have.

Should we be looking at that as well?

MG SCALES. Mick probably will get mad at me for saying this, but I get a little upset sometimes when I hear from people who argue with me, that say, "Well, that is just for JSOC. That is for the SEALs. That is for the Rangers. That is for Delta. Not for infantrymen." I get angry when I hear that.

Senator SULLIVAN. Just for the record, the Marine Corps thinks it is special without the name "special."

MG SCALES. Well, okay, I'm not going to go there, Senator.

Senator SULLIVAN. You don't need to you, General.

MG SCALES. I guess my point is, when you have a dead soldier on your hands who gets shot from an enemy firing at long range, no one really puts him in a body bag and worries about what insignia he has on his collar. I get pretty—if it is good enough for—if

it something like a rifle that is good enough for JSOC, it should be good enough for a Marine rifleman and an Army rifleman.

Senator SULLIVAN. Agreed.

LTG BEDNAREK. Senator, just a couple points. You hit it right on the head about the lethality of distance. Regardless of service, to include our special operations forces brothers, the bottom line, I agree with General Scales, it does not matter what the hell color uniform it is. You have to have the best in your hand.

If you are a designated marksman or a sniper, you are going to reach out and touch somebody, and the rest of your mates expect you to do that.

But I highlight back to what I mentioned earlier with Senator King of the system of systems, because it is also, as you well know, is the training. It is the discipline, it is firing your weapon all the time, confidence and competence, with whatever capability that you have. It is about use of sensor to shooter. It is drone technology, it is communication, it is somebody with an overwatch position being able to dial in at that particular range, whether that is 1,600 yards where the marine is currently at 1,000 yards with their M4085, whatever, the 110 from the Army. You have to train and be confident and comfortable with whatever system that you have, but it has to be the best.

MG SCALES. One final thing, Senator. I was at Fort Benning 2 weeks ago. I said I am going to testify before the Senate. Just give me a template of what I should tell them. They told me something really—this is the two-star head of the infantry center.

He said 1,000 yards, 1,000 meters. I said, what does that mean? He said 1,000 meters, to Mick's point, with the ability to not only see but to identify your target, in other words, not just motion but an actual soldier out there, and 1,000 yards to reach them with weapons that are organic to the squad.

He said take that to the bank. If we have that capability, he told me, regardless of the system at hand, then we dominate the close fight.

That is something that I think we need to embrace as we go into the future.

Senator SULLIVAN. Great. Thank you.

Thank you, Madam Chair.

Senator ERNST. [Presiding.] At this point, we will go ahead and take another round of questions, if Senators have additional questions they would like to ask.

Senator KING?

Senator KING. The HK416, which I understand is also the M27, that is a 5.56. Can that be modified to take a larger caliber?

MG SCALES. Yes, sir, it can, and it already is. HK, which is the company we were talking about earlier, has that rifle, that system, in many, many different calibers, so it is not a big deal.

Senator KING. So that is not a big deal.

MG SCALES. No, sir, it is not.

Senator KING. Because larger caliber seems to be part of what we are coming away from this meeting with.

MG SCALES. Yes, sir.

Senator KING. Both for body armor and for distance.

MG SCALES. Yes, it comes down to physics. Energy equals mass times velocity. If you do not have the mass, then you do not have the energy.

Senator KING. Do either of you have any idea how many M4s there are deployed in the services today?

MG SCALES. No, sir. I have no idea.

Senator KING. We have not talked about cost, and the HK is something like three times more expensive, however, if we are buying them 100,000 at a time, I do not know what the number is, presumably, that would bring the price down.

MG SCALES. Sir, the Chief of Staff of the Army was very successful in negotiating with Sig Sauer. That is the company that we finally decided should make our pistol. He was able to reduce the price from the commercial price, the wholesale price, by a factor of two-thirds.

I think if a gun maker knew that the world standard was going to be made at his company, he would be more than happy to get that price down.

LTG BEDNAREK. That also, Senator, goes to your question earlier about our allies and our coalition partners. If they know the United States is purchasing a higher caliber weapons system, that has gone through the rigorous testing, et cetera, that General Scales has highlighted, there will be additional sales and a marketing perspective. So it is, again, total quality and quantity, the price will come down.

Senator KING. I do not want to get too dramatic, but it seems to me, if we are fielding a weapon as the standard weapon that cannot penetrate the body armor of our adversaries in a close fight, that is unethical.

MG SCALES. You are absolutely right.

Senator KING. It is wrong to put our people in that position.

MG SCALES. Could I just amplify what you said?

We are not talking about killing from a distance here, Senator. We are talking about what some psychologists call intimate killing, where you see your enemy, where you kill him, and you watch him bleed out. I remember in Vietnam in my unit, I noticed there was a period in 1969 when some of my soldiers were carrying AK-47s. I mean, what type of condemnation is that?

So a rifle is as much a moral instrument as it is a physical instrument. If you believe that what you were carrying out the 50-meter fight is inferior to your enemy's, that affects everything.

Senator KING. That affects your mental state.

MG SCALES. Audacity, courage, initiative, elan, as Mick says, the human characteristics that make our infantry dominant. If you really believe what you are holding is the best damn assault rifle in the world, that changes the whole equation of close combat. I think that is important.

Sometimes, acquisition people just do not understand that. That is why I think close combat soldiers and marines should be the ones to dictate what this rifle is going to look like.

Senator KING. It is more than just physics.

In terms of the time, Madam Chair, we have to do something about that. I mean, 7 years, during World War II, Bath Iron Works

in Bath, Maine, built a destroyer every 2 weeks. Why? Because we needed them.

I think this is a case that we need this weapon, and we should not have to wait. We need a skunkworks or something, a way to get around this acquisition problem.

By the way, this is a problem throughout the Federal Government. We had a hearing this morning in the Budget Committee. The same problem with acquisition for computers for the FBI or whatever. The Federal acquisition process is a nightmare. I would call it byzantine, but that would be an insult to the Byzantine Empire.

Thank you, Madam Chair.

Senator ERNST. Thank you Senator King very much.

I do think we have an immediate need here. We need to fulfill our obligation as Congress to our young men and now women who are serving in our combat arms.

I am going to close with a question for you, General Scales. In your statement, you had mentioned that the 50 cal Ma Deuce is coming up on its 100th anniversary.

MG SCALES. Yes, in 2 years.

Senator ERNST. Hundredth anniversary, that is pretty incredible.

The Marine Corps recently came out with new upgrades for the 50 cal putting on a flash suppressor that reduces the gun signature by 95 percent at night. That is incredible.

MG SCALES. Right. Think of the implications of that. I mean, the Navy and the Air Force have spent hundreds of billions of dollars to build stealth fighters. Well, the ground analogy to a stealth fighter is a stealth sniper rifle or a stealth rifle that has no flash at night. The 50 caliber has virtually no flash, if it is properly suppressed, is a better word, not silenced. The sound, in terms of decibels, is one-fifth of the enemy.

I think I mentioned earlier, when you are in a firefight and the IED goes off or the enemy opens up with an ambush, you bury your face in the ground. When you look up, you should at sound. You do not shoot at people.

I think it would be transformational—oh, and I asked the Commander of 3/5 Marines back in November when I visited 29 Palms, I said, it must have been—this is so typical of my friends the Marines. I said it must have been expensive to put a suppressor on every one of your rifles. He said, damn, sir, 20 bucks apiece. It was really expensive.

Senator ERNST. Isn't that something,

MG SCALES. Twenty bucks apiece.

Senator ERNST. Isn't that something? So is that something our industry is working on, cheap suppressors?

MG SCALES. No.

Senator ERNST. Inexpensive suppressors?

MG SCALES. Not that I know of.

Senator ERNST. Isn't that something that we should be demanding?

MG SCALES. Yes.

Senator ERNST. Okay.

MG SCALES. Absolutely.

Senator ERNST. That is my belief is well.

Do we see this happening with our adversaries or other countries? Are they suppressing the larger caliber rifles like that?

MG SCALES. I do not know about the larger caliber. I know that the Russian sniper rifle, the Dragunov, and they have a new one.

If you look at pictures of the little green men in the Ukraine, you can see several things. You can see this new heavy, stiff, metal-backed body armor. You can see the Russians' new helmet. They have squad-size radios that are smaller than ours. They have their use of sensors. As Mick said, their use of tactical UAVs [Unmanned Aerial Vehicles] is exceptional. Their rifle bullet will penetrate our body armor.

In fact, Senator King and I were talking yesterday, the analogy is very much similar to World War II in tank-on-tank warfare. It was not until we went up against the Germans that we realized that our M4 tanks could be penetrated by the German guns, and we could not penetrate the Panther tanks. General Bradley lost 3,380 tanks in tank-on-tank engagements in 11 months of warfare because the Army did not discover until too late that our tank guns were outmatched by the German tank guns.

This is just an infantry analogy to the same problem. The only difference is, by my calculations, in wars since World War II, over 58,000 infantrymen have died in close combat—58,000. Why not make sure when they go to war next time, our bullets penetrate their body armor and their bullets do not penetrate ours? There is nothing complicated about any of this.

LTG BEDNAREK. Senator, what we do know, particularly with the variants of the AK-47, as General Scale highlighted, and you asked the question, not only the AKM, the AK-74, but also the AK-12, which came out of recent technology, and it is similar to what our industry has already been looking at, but it is a modular system. It is kind of like the plug-and-play, not only suppressors but different folding stocks, weapon systems, upper receivers, sites, and also the modular adjustable caliber weapon capability.

Senator ERNST. Any closing thoughts, Senator King?

Okay, gentlemen, I will close by thanking you very much for your testimony today. Your input has been very important. This is an important topic for many of us in the

United States Senate and one that we will continue to pursue through fruition. That is the goal, to make sure that we have advanced small arms weapons in our infantrymen's hands, Marines and Army.

God bless you for the work that you are doing. We will continue the good fight, and I look forward to having many more discussions as we work through the hopefully soon acquisition process. So thank you very much, gentlemen.

MG SCALES. Thank you very much, Senator.

Senator ERNST. We will close this Senate hearing.

[Whereupon, at 4:35 p.m., the subcommittee was adjourned.]