

**GENERAL MARK A. MILLEY
AUSA EISENHOWER LUNCHEON
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GEN. MILLEY: Let me first say thank you, thanks to General Ham, and to all of you for being here. But thanks to General Ham. I've known him for many, many years. I worked for him when he was the DDRO, the J-33 on the Joint Staff. I was a colonel. And then later when he was a J-3 as well, and there were other guys, the CNO, Johnny Richardson was there with me, and others like Dan Allyn, the Vice Chief of Staff was there, and so many others. And we absolutely loved coming in at 04:30 in the morning and going home at 22:00 at night, working for General Ham. It was a thoroughly enjoyable experience working seven days a week.

(Laughter)

GEN. MILLEY: And as the motto of the team was, led by General Ham, was row well and live.

(Laughter)

GEN. MILLEY: That was great. Very positive climate, it was awesome!

(Laughter)

GEN. MILLEY: So... no actually General Ham was an incredibly great guy to work for. And in reality he's a representation of what it means to be a soldier's soldier.

And thanks also to the Association of the United States Army for providing yet again every year, year in and year out, a great venue to showcase America's Army to the American people, and indeed to the world.

And I want to particularly thank Secretary of the Army Eric Fanning for being with us today, at his first AUSA conference as the Secretary of the Army. And I want to take a moment to just tell everyone here how proud, how very proud I am, as Chief of Staff of the Army, to have Eric Fanning as my wing man. I've gotten to know him well, and he's a man of tremendous talent, who knows Washington, D.C. He knows the Pentagon. He knows the Hill. He knows the White House.

But more than his skills in the Pentagon or in D.C. is his character, and this is a man of immense personal courage and incredible integrity. So Secretary Fanning, thank you, and we're all so proud to have you as our Secretary of the Army.

(Applause)

GEN. MILLEY: And I want to also thank Secretary Murphy, a long-distant cousin from the Philadelphia Murphys, as opposed to the Boston Murphys, but I want to thank you as well for your leadership and unwavering support to the soldiers and their families. And we, we as an Army are very, very lucky to have both Secretary Fanning and Secretary Murphy as our most senior civilian leaders. So thanks, Secretary Murphy, thanks, Secretary Fanning, for your great leadership, both of you.

(Applause)

GEN. MILLEY: And I'm really glad to see everyone here, and in fact considering the quality and the length of my remarks from last year, I'm surprised anybody actually came back.

(Laughter)

GEN. MILLEY: I noticed my Vice, Dan Allyn, already left. He said, "I can't stand it. Just e-mail me the text. I'll read it later".

(Laughter)

GEN. MILLEY: We're practicing multi-domain battle on a digital battlefield right now between he and I.

(Laughter)

GEN. MILLEY: And I was really glad, we've got about 2,000 people here today, or 2,000 or 3,000 in the room, but I was really glad to shake all 30,000 of your hands last night. That was fun.

(Laughter)

GEN. MILLEY: That was just awesome.

(Laughter)

GEN. MILLEY: So we have a lot of VIPs here today, former secretaries of the Army, an entire table of former chiefs of staff that are grading me out on every moment that I speak. Lots of current and former four-stars who I asked to stay awake, sergeant majors of the Army who I know will stay awake, all the sergeant majors that are here.

But one group I would like to point out, and I'd like to have them stand to be recognized, is our Medal of Honor recipients and their families. Lieutenant General Foley is here, and Master Sergeant Leroy Petry is here, and Mrs. Miller, the mother of Medal of Honor recipient Staff Sergeant Robert James Miller. If you could each stand, just to be recognized. Thank you.

(Applause)

GEN. MILLEY: And I must say that General Foley gets double kudos because he's from Boston and he's a charter member of the Red Sox nation, and Master Sergeant Petry wanted to be from Boston, so well done.

(Laughter)

GEN. MILLEY: We've got a variety of joint and international allies and partners here, and by the count that was given to me, there's at least 54 different nations represented in this room today, along with not only the Navy but the Air Force, United States Marine Corps, and the Coast Guard.

And our Army is only one part of a collective effort, and we do not fight alone. We've always fought alongside our brothers and our sisters in the Navy, the Marines, Air Force, and Coast Guard, and with all of our allies and friends. We, after all, deploy on Navy ships and Air Force planes. And it's close air support from either Navy or Air Force Air, their fighters and their bombers, that is always the first call that we in the Army make when we make contact with the enemy.

We, the United States Army, we are truly blessed to have the absolute greatest Navy and Air Force the world has ever known. And when the bullets start flying, it's the Navy and the Air Force that are the Army's best friend. And in my personal experience, and in every history book I've ever read, neither the Navy nor the Air Force have ever failed the Army. So thank you to all of our teammates and our joint and allied forces.

(Applause)

GEN. MILLEY: But my main purpose today is actually to find a lawyer.

(Laughter)

GEN. MILLEY: To find a lawyer to free Tom Brady.

(Laughter)

GEN. MILLEY: Last weekend was devastating.

(Laughter)

GEN. MILLEY: Shut out, no points on the scoreboard as Tom was lounging around the Riviera.

(Laughter)

GEN. MILLEY: It was killing me.

(Laughter)

GEN. MILLEY: And I know I've got some New Yorkers out there who are proud of that.

(Laughter and applause)

GEN. MILLEY: But to all of those New Yorkers, I can only say at least one thing: where are the Yankees? Because the Red Sox are on a roll.

(Laughter and applause)

GEN. MILLEY: Hey, look, I do want to talk to you about some serious stuff today. I want to talk to you about our future. I'm going to review for a few minutes our current situation and our current readiness, but then I want to delve into the future and lay out what I think we're facing in the years ahead.

But before we do that, I'd like to go ahead and roll a short video clip. It's about, I don't know, two or three minutes. And I'd ask you to just pay attention to the screen. So go ahead and roll the film.

(Video)

GEN. MILLEY: So that's your Army, 187,000 soldiers in 140 countries today. There's not a lot of Tom Bradys or NFL players who could do half of what our soldiers do. And on this team we actually stand for the national anthem.

(Applause)

GEN. MILLEY: So a year ago I stood before you and said that the number one priority for our Army is readiness for war, and that remains true today. The global security environment remains volatile, uncertain, and complex. And it demands high readiness. Resurgent, revanchist, and unstable states and radical terrorist organizations continue to pose challenges to international order and undermine peace and stability.

We have made progress. We've made progress in the fight to destroy ISIS. That's clear. We've made progress in halting the Taliban in Afghanistan. But the broader security environment still remains unsettled. The strategic resolve of our nation, the United States, is being challenged, and our alliances tested in ways we haven't faced in many, many decades. In this environment the United States Army remains the world's premier ground force, the foundation of America's joint force, and the Army as part of the joint force along

with our allies and partners, must be ready to win, must to be ready to fight tonight, and readiness remains our number one priority.

But we simultaneously have to build the right force for the future, while always taking care of our soldiers and the families and the great Army civilians, as they all remain our most valuable asset.

But I want to be clear. I want to be unambiguous. I want to be clear to those who try to oppose the United States. I want to be clear to those who wish to do us harm. I want to be clear to those around the world who want to destroy our way of life and that of our allies and friends.

The United States military, despite all our challenges, despite our optempo, despite everything we've been doing, will stop you and we will beat you harder than you've ever been beaten before, make no mistake about that.

(Applause)

GEN. MILLEY: And the United States Army is America's combat force of decision. And when the political leadership of the United States decides to deploy its Army, and when we show up on your turf and you know the game's for real, and the stakes are for keeps, and the other thing you know is you're going to lose. You will lose to the American Army. Make no mistake about it. We can now, and we will remain in the future, retain the capability to rapidly deploy, and we will destroy any enemy, anywhere, any time.

So I stand here today and I caution the enemies of America who doubt or misread our capability. Many enemies have grossly underestimated the United States and its people in the past. They've underestimated our national resolve. They've underestimated our capability, our skill and our combat power. And each made a fatal choice which ended with their enrollment in the dustbin of history. The same will be true of any enemy that makes that mistake today or tomorrow. But while we are ready now, and will remain so in the future, we are also facing tough strategic choices, and we are being increasingly challenged with very capable potential adversaries, clearly acting in opposition of our interests.

It's our aim to deter war. But if deterrence fails, we as an Army, we as a nation must be prepared to fight. And the pain of preparation is always less than the pain of regret.

Never forget that deterrence is expensive, and the only thing more expensive than maintaining capable ready forces is actually fighting a war. And the only thing more expensive than fighting and winning a war is fighting and losing a war.

And our job as an Army, our contract with the American people and the people's Army, we make this contract with all American citizens, that we, the United States military, we, the United States Army will never lose a war.

And yes, as Secretary Fanning said just yesterday, you have to pay for it. And the cost of victory it is very expensive. It costs a lot of money, a lot of treasure, and a lot of blood.

So we find ourselves in a difficult place. Our readiness to fight a war against a high-end near-peer adversary has eroded in the last 15 years, as we fought and continue to fight against terrorist and guerillas in Afghanistan, Iraq, and elsewhere. We were highly successful in ripping apart Saddam's army in 1991, ejecting him from Kuwait. And we shattered his army again in 2003.

Similarly, we destroyed the Taliban and Al-Qaeda in Afghanistan in very short order, but we had difficulty consolidating gains and adapting to a counter-insurgency fight.

We eventually made the necessary changes. We changed our strategies and our tactics, and we've been battling terrorists consistently ever since. And the likelihood is that we will continue to do that for some time to come, as we work closely with our partners and allies in the region.

However, the Army mortgaged our future. We mortgaged our future readiness, our modernization in order to adapt and sustain the fights in Afghanistan and Iraq. We reduced the size of our forces significantly since the end of the Cold War, the so-called peace dividend, and we significantly reduced our Army modernization budget by over 75 percent in the last decade, and 30 percent in the last three to four years alone.

While we focused on a CT and COIN fight. Other countries, Russia, China, Iran, and North Korea went to school on us. They closely watched how we fought in '91 and '03. They studied our doctrine, our tactics, our equipment, our organization, our training and our leadership. And in turn they revised their own doctrines and they are rapidly modernizing their militaries today, to avoid our strengths in hopes of defeating us at some point in the future.

Recently a senior Russian official, Ambassador to the United Kingdom Alexander Kramarenko, he said, quote, the established world order is undergoing a foundational shake-up with the Crimea, Ukraine, and Brexit. He went on to call for the dismantling of NATO and the European Union. And he said, quote, "Russia can now fight a conventional war in Europe and win. Russia is the only country that will remain relevant forever. Any other country is dispensable, and that includes the United States. We are at end game now", end quote.

He said that all just 30 days ago. Bluster? Hubris? Bravado? Or does he mean what he says? Does he believe it? And more importantly, do the leaders in the Kremlin believe it?

Well, history tells us to be careful. It's always wise to believe a foreign leader's declaratory policy, as most nations tend to telegraph their strategic intentions.

So we've taken a number of steps over the last year to increase our readiness in the total Army, our regular Army, our Guard, and our Reserve. We've increased the number of BCTs going through high-end full-spectrum war-fighting rotations at the combat training centers at Polk and at the NTC.

Two of these rotations are Guard brigades and we're about to double that with the National Guard to four annually. And these additional rotations are improving readiness throughout the Army, current readiness, but also improving our future readiness by creating a pool of leaders that are now developing multiple rotations, hitting the sled over and over again, in the most challenging training environment against the world-class OPFOR that realistically portrays the current and projected threat environment.

We've also initiated our Regular Army/National Guard associated units pilot program, which is strengthening the bond between the active and National Guard components, increasing the readiness of the total Army.

And we are seriously considering increasing the number of annual training days in selected National Guard units, so they will be able to more rapidly deploy in the event of conflict.

We've also significantly increased our combined arms live fire programs, both at home station and the combat training centers, and we've also increased the frequency of our mech and armored gunneries, improved our artillery skills to deliver massed timely and accurate indirect fires. We've re-energized our forcible entry airborne and air assault capabilities, and renewed our rapid deployment capability with increased emergency deployment readiness exercises both in CONUS and overseas.

In short, our readiness is steadily improving across the entire formation of the United States Army. But our progress is slow, and it's going to take consistent, predictable funding, and much more time and effort to reach the levels we need to in order to provide our political leadership capable options that adequately reduce current risks to both mission and force.

And we are also planning to field "train, advise, and assist" brigades and multi-domain task forces in our force structure in order to sustain our efforts to defeat terrorists by, with, and through regional partners, and free up conventional brigade combat teams to regain much needed training time to hone their skills at the higher end of warfare.

Another critical effort to improve readiness is our acquisition reform being led by Secretary Fanning. This is a top priority for us. We must do better. We can do better.

We must exploit our science and technology to create options for a very challenging future battlefield, and have an acquisition system that's up to the task, an acquisition system that can deliver on time and on budget. We cannot afford acquisition failures. We cannot afford systems that are late to need and we must not send tomorrow's soldiers into harm's way with yesterday's equipment.

As Secretary Fanning discussed yesterday, many of the initiatives we are putting in place, like the revised Army requirements process and the Army Rapid Capabilities Office are just but two examples.

In the near-term, our equipment modernization strategy will continue to focus on critical capability areas, like lethality, protection, the mission command network, integrated air and missile defense, rotary wing and ground mobility, emerging threats, and rapid development of our offensive and defensive cyber capabilities, as part of a joint force wide effort.

In the near-term the Army will continue to invest in incremental improvements, with the highest operational return on existing systems, and build new systems only by exception.

So readiness for combat, readiness to fight tonight, remains our number one priority. But the future is actually going to come. The future is going to be here pretty soon, and sooner than many of us may like.

So we must look over the hill. We must look past the challenging demands of the present, and ensure that our future Army is equally ready to fight and win. We must work now to anticipate the broad nature of the challenges we face, the threats we will confront, the options we will need to present to our leadership.

Which future force decisions must we make in our own time, and which can we defer to those leaders that follow us? Over the past year, led by TRADOC, we have dedicated significant time and resources to thinking about drivers of change, and the future operational environment, how warfare is changing and how we must adapt our doctrine, our organizations, equipment, training, and leader development.

We must also take a humility pill here, eat a little humble pie, and recognize that the future is not really knowable in any kind of detail. And frankly, we're not going to get it right. But as the great British historian Michael Howard said, you don't have to get it right, you just have to get it less wrong than your enemy.

And it's my belief that here we are on the cusp of a fundamental change in the character of warfare, and specifically ground warfare. The nature of warfare is not going to change. It's immutable. It's still a political act, war is. A decision by humans to impose

their political will on their opponent by the use of violence. War will still be characterized by chance and fog and friction, and it will always be a dynamic interaction of competing human wills. And its cause will likely still adhere to Thucydides' famous analysis of fear, pride, and interest.

But the character of war, how wars are fought, where wars are fought, with what weapons and technologies, organizations and doctrines, in short the ways and means of war is in my view, about to undergo fundamental, profound, and significant change.

That change will not happen on a certain day, or even in a year. In fact we're undergoing that change right now as we sit here, and we've been in the midst of it for some time. That change is evolutionary, not revolutionary. But it is no less profound.

And I suspect that the organizations and weapons and doctrines of land armies between 2025 and 2050, in that quarter century period of time, will be fundamentally different than what we see today, and will likely have in the few years ahead.

Think of the difference between the smooth-bore musket and the rifle, or the rifle and the machine gun. The difference between muscle power of foot soldiers and horse cavalry, and the machine power of tanks, trucks, and airplanes. Think of the shift from guidons and flags and drums, to the telegraph, telephone, and radio. Think of observation from the limits of the human eye to the introduction of the radar, the shift from sail, to steel and steam, the shift from dumb bombs to smart bombs.

A soldier of 1865 could not imagine a soldier of 1918, even less so a GI of 1945 or a grunt of 1965. That was pure science fiction to the Yank or Johnny Reb. Rapid change, however, has become increasingly compressed, especially in the last 150 years. And I would submit to you that those of us today will find it difficult to recognize the battlefield of 2035, let alone 2050.

It is that kind of profound shift; that shift from 1865 to 1918, or even to 1945, that I am talking about, that is ongoing right now. And it is the result of a series of geopolitical, economic, societal, and technological change, some of long duration and some relatively recent, that is driving this change. But I believe we are definitely going to see it.

And history offers some caution here. In all the past cases of significant change in the character of war, the elements were all present prior to the war, but few if any ever realized their significance. And the armies that did see the change and adapt accordingly usually prevailed, at least at the beginning of wars. All the elements of World War I were visible in the Civil War, the Franco-Prussian War, the Boer War, the Russo-Japanese War, but very few understood their profound impact in the summer of 1914, as Europe slid over the abyss into a devastating world war, the consequences of which we still feel today.

A few years after the war to end all wars, all the technologies of armor, mechanization, wheeled vehicles, airplanes, and radio, they were all available to all the great powers of the 1920s and '30s. But only Germany, only Germany combined them in a concept of war in a way that led to incredible battlefield success from 1939 to 1942, when their opponents rebounded and realized the threat, and then massed their industrial might, adjusted their doctrines, organization, and equipment under the pressure of war, to eventually destroy the Nazi Reich.

And the failure to see, the failure to connect those dots pre-World War I, the failure to see and the failure to connect those dots in the 1920s and '30s, cost 100 million lives, a huge amount of blood, and years and years of human suffering. It is our task, the task of you and I, the task of us, both civilian and military, to do better, to see the trends, and to get the future less wrong than our enemies.

So what do we think is shaping that future out to about 2050? Unfortunately, war between nation-states, in my view, is very unlikely to remain relegated to the history books. Although constrained by a variety of factors such as the incredible financial cost and human cost of war and the incredible lethality of modern weapons, various international regimes and organizations designed and dedicated to keep the peace, it is my firm belief, and I hope I am wrong, but I believe that war is not yet purged from the inventory of human behavior.

Although there is clearly a diffusion of power in the international system with the rise of various non-state actors, the nation-state is still the fundamental and most important element in the international system, as it has been since the Treaty of Westphalia in 1648. And each nation-state is still considered sovereign, although those boundaries are clearly under pressure.

Most importantly, there is no single higher power in the international system with the legitimacy, the authority, and power to enforce the global order, as most functioning nation-states routinely do within their own boundaries. There is clearly growing instability, as many countries are proving fragile, and certainly do not control the widespread use of organized violence within their own borders.

But it's also clear that the nation-state remains the basic actor in the system, and is likely to remain so to at least 2050. And the most important core national interest of any state is to survive. Survive in a system of international anarchy. Survive in a system with no higher order. And absent a higher authority, each nation must dedicate itself to secure itself. And because there is no higher authority, and because security is the primal interest of each state, conflict between nation-states is virtually guaranteed at some point.

There's been some huge geopolitical shifts in history. The fall of Rome in 476, the rise of western Europe in the 1500s, the rise of imperial Japan and Nazi Germany, the dominance of the United States in the immediate post-World War II era, the collapse of Soviet Russia.

And today, today we are in the middle of yet another major geopolitical change. Since the fall of the Berlin Wall, the U.S. essentially was the unchallenged global military, political, and economic power, and we were experiencing what some have labeled a unipolar moment. That is changing, and changing fast.

The United States is under significant challenge in Europe, Asia, and the Middle East. In Europe we see a revanchist Russia who has modernized their military and pursued an aggressive foreign policy in Georgia, Crimea, Ukraine and elsewhere. In Asia we are in the third decade of the biggest global economic shift in five centuries, with the world economic center of gravity moving from the North Atlantic to the North Pacific, and resulting in a rapidly rising China as a great power, with a revisionist foreign policy, backed up with an increasingly capable military.

Also in Asia we are faced with a rogue North Korea that is rapidly increasing their missile and deliverable nuclear weapons capabilities. In the Middle East and parts of Africa we see instability from terrorism in many places, and likely to continue as the very concept of the nation-state comes under intense pressure, while we also still see a revolutionary Iran carrying out various malign activities to assert its regional dominance.

In short, the global order since the end of World War II, and for sure since the end of the Cold War, is under significant stress in areas of vital interest to the United States of America. And we know from history that unipolar and bipolar international systems tend to be very stable, but we also know that multi-polar systems are inherently prone to competition, confrontation, instability, and state-on-state wars. We are entering that multi-polar future, and in fact we've probably been in it for a few years.

The Director of National Intelligence, James Clapper, in his now-famous litany of doom testimony, said that, quote "unpredictable instability is the new normal. We are seeing the highest rate of instability since at least 1992, in that Russia sees itself in direct confrontation with the West that China continues its robust military modernization program, directly aimed at what they consider to be U.S. strengths, with training exercises unprecedented in scope, scale, and complexity."

And then he concludes "that in his 50 years, [50 years] in the intelligence business, I cannot recall a more diverse array of challenges and crises that we confront as we do today." John Brennan, the head of the CIA, echoed similar comments, as well as many respected civilian foreign policy and security analysts.

In addition to the international order undergoing significant stress and fundamental change, we are witnessing significant demographic change, with mass migrations for both security and economic reasons, as people flee war-torn regions to survive, while others move from resource- or job-scarce areas in search of a better life.

For whatever reason, the bottom line is that massive amounts of people, in unprecedented numbers, are moving from one country or one region to another, which is amplifying destabilizing effects.

One of the most militarily significant mass migrations is the movement of people to cities, which has really been going on for well over a century. Seventy-five percent of Americans lived in rural areas 100 years ago, while today that number is completely inverse, with almost 70 percent of Americans living in urban areas.

Globally we are witnessing urbanization on a massive scale. In 1950 only two cities, New York and Tokyo, had populations of over 10 million people. Today there are 38, and it's projected by 2050 there will likely be over 50 mega-cities of over 10 million inhabitants, with 70 percent of the world's estimated 8 billion people living in urban areas.

If war is politics by other means, and politics is all about people and power, then future wars are almost certainly going to be fought mostly in cities, which has significant implications for the military.

Climate change is yet another likely significant driver of future instability, and has been long in development. But we know that the seas are rising. We know that now. And most of the world's population lives at the water's edge.

There is also significant impact on various resources, not the least of which are the basic elements of human life, i.e. food and water. We are witnessing the disappearance of freshwater lakes and rivers in many parts of the globe, like Lake Chad, for example, projected to disappear by mid-century. With it goes a major water source for Central Africa, which is already in turmoil for many other reasons. The possibility of devastating effects of resource conflicts in parts of Africa, the Middle East, and South Asia is very, very real.

Lastly, the maturity of various technologies that either exist today or are in advanced stages of development, when combined are likely to change the very character of war just all by themselves. Information technology exploded in the mid to late 1800s, and has been on an upward curve for the last century and a half. Today's internet, iPhones, big data, and soon to be internet of things, are either here or just over the horizon.

And it has become cheap to the point where there are way more interneted communication devices today than there are people. In just a few years it's expected there'll be 50 billion internet-connected devices in a world of 6 to 7 billion people.

The ubiquitous effect is that almost no matter where you go in the world today, it's observable from some device. The ability to surveil, to see and communicate, is at levels never before seen in human history. Almost everyone and everything is a potential ISR platform capable of transmitting real-time information, that if properly analyzed can be useful intelligence which can significantly help or seriously hinder military decision-making and operations.

And the proliferation of information technologies is rapidly defusing power once held by nation-states, and potentially accelerates instability, as we witnessed during the Arab Spring.

And with the advances of information technology, we are now seeing an entire new domain of warfare in the form of cyber. This is an area of truly dramatic change, with very significant military implications. Serious cyber capability is right now being developed and employed by major nation-states, and it is entirely possible to inflict widespread damage on an opposing country's economy or military, solely through the use of cyber tools. We see this in our daily lives now, with hackers and cybercrime and imposters and the like. But that is a relatively minor nuisance compared to the resources that an advanced nation-state like Russia, China, or even North Korea and Iran can bring to bear.

The predecessor of cyber is of course electronic warfare, and electronic warfare capabilities have advanced rapidly for the last 20 years, and they have reached unprecedented levels that can significantly degrade and shut down friendly communication networks.

We're also seeing the rapid development of robotics, especially in the commercial sector. Many analysts are projecting a significant impact on future jobs, and potential elimination of entire job categories in areas like transportation and the service industries. Some predict an entire overhaul of the type of work humans will do in the future, and expect robots to be pervasive in our everyday life within just a decade.

Of course we already use robots in the military in a limited way with unmanned aerial vehicles, as most commonly known. But the scope of robots in military operations is not yet widespread, and that is likely to change in the very near future, as unmanned fighter bombers, unmanned surface and subsurface naval vessels come online. And we are likely, very likely to see the increased use of robots in ground operations as the technology matures.

In fact, my Russian counterpart has publicly set an objective that one third of the Russian military will be robots by 2020. That's in four years. He may not actually achieve that goal, but his intent and his direction is clear.

We are also in the midst of major change in lethality and the proliferation of precision munitions to most nations, and varying degrees of quality and quantity. Lethality against fixed and rotary wing aircraft has also advanced significantly in the last few decades, so airspace can be denied even to the most sophisticated and expensive aircraft.

Land and sea-launched ballistic missiles have proliferated throughout the world, and land, air, and sea-launched cruise missiles have done the same, to deny either the maritime or air domains. What was once the exclusive province of the United States military is now available to most nation-states with the money and will to acquire them.

There are a wide variety of technologies developing in synthetic fuels, 3-D manufacturing and medicine, human engineering and enhancement, all of which will likely have significant military implications as well.

And finally, there is the mother of all technologies, artificial intelligence, where machines are actually developing the capacity to learn and to reason. There's lots of ethical and moral issues associated with all these technologies, and especially in their application to warfare, but there's no doubt in my mind that the combination of geopolitical, societal, natural, economic, and technological change is rapidly converging in time and space, and will likely result in the most significant and profound change in the character of war we have ever witnessed throughout all of recorded history.

And whatever overmatch we enjoyed militarily for the last 70 years is closing quickly, and the United States will be, in fact we already are challenged in every domain of warfare, space, cyber, maritime, air, and of course land.

So what are the logical implications and what must we do to prevail as an Army in future combat? The first thing is to understand the basic likely outlines of that future world. Although we cannot determine the exact environment we will have in 2030 or '40 or '50 or beyond, we can through rigorous analysis determine what the world is likely to look like in its broad outlines. There will surely be lots of surprises along the way to the future, but we can get the basics about right to develop the forces, the weapons, and the equipment that we need to protect our great nation.

And then we have to place the big bets, the big bets in research and development and science and technology, while simultaneously conducting legitimate and genuine experiments with our force designs and our doctrine. And this means to us, the Army, that every assumption we hold, every claim, every assertion, every single one of them must be

challenged. War, war tends to slaughter the sacred cows of tradition, of consensus, of group-think and myopia. The next war will be no different. Those of us, or those nation-states that stubbornly cling to the past will lose. They will lose that war, and they will lose it in a big way.

We should think of nothing in the past as sacred, except the concept of victory. The structure and organization of our Army, both operational and institutional, may change drastically, and we must be open-minded to that change. We may not have divisions or corps or tanks or Bradleys. We don't know yet. But we're on a serious and deliberate campaign of learning to figure it out. And I can tell you, we need to figure it out pretty fast.

And it's better for us to slaughter our sacred cows ourselves, rather than lose a war because we're too hidebound to think the unthinkable. At this point we can say a few things we've learned over the last year of study that we've done intensely, about future high-end war between nation-states or great powers, and the first, not surprisingly, is that it will be highly lethal, very highly lethal, unlike anything our Army has experienced, at least since World War II.

With sensors everywhere, the probability of being seen is very high. And as always, if you can be seen, you will be hit. And you'll be hit fast, with precision or dumb munitions, but either way you'll be dead. So that means just to survive, our formations, whatever the wire diagram looks like, will likely have to be small. They will have to move constantly. They will have to aggregate and disaggregate rapidly. They'll have to employ every known technique of cover and concealment.

In a future battlefield, if you stay in one place for longer than two or three hours, you'll be dead. That obviously places demands on human endurance, on equipment, but I can guarantee you the days of Victory Base, the days of Bagram or other static locations for comfort or command and control will not exist on a future battlefield against a high-end threat. That fact requires a significant change in our current methods of thinking, training, and fighting.

Additionally, the battlefield will be highly complex, almost certainly in dense urban areas, and against elusive, ambiguous enemies, that combine terrorism and guerilla warfare alongside conventional capabilities mixed with large civilian populations.

Our Army for the last 241 years, for two and a half centuries, has fought mostly in rural areas, rolling plains, and open deserts. Yes, we were in Baghdad, we were in Huế, we were in Aachen, but for the most part it was rural areas, rolling plains, or open deserts. In the future, we're going to have to optimize ourselves for urban combat. That fact, and I believe it to be a fact, has huge implications on intelligence collection, vehicle and weapons design and development, logistics, communication systems and mission command. Can

tanks elevate their guns to near vertical? Can UAVs fly down alleyways? Can radios communicate through multi-story buildings? How do we develop intelligence inside underground areas of a city? How do units and people move and maneuver? How do you do target discrimination and identify friend from foe from non-combatant? All of that and more will be extraordinarily difficult. Army operations in complex densely populated urban terrain is the toughest and bloodiest form of combat, and it will become the norm, not the exception, in the future.

The battlefield will also be non-linear, compartmented, and units will have non-contiguous battle space with significant geographical separation between friendly forces. This type of battlefield will place a very high premium on independent relatively small formations that are highly lethal and linked to very long-range precision fires. Our formations will come under enemy fixed wing, rotary wing, UAV and missile attack on a routine basis.

Dominance of the air by the United States Air Force, which the Army has enjoyed since the Normandy landings in 1944, will no longer be a luxury that we can assume in the next war. That means our units are going to have to be combined arms, multi-domain capable. We will still have to fight and destroy land-based enemy units and seize terrain, but the Army, yes, the Army, we're going to sink ships, and we're definitely going to have to dominate the airspace above our units from hostile air or missile attack. This is going to require sophisticated air defense capabilities that are not currently in our unit inventories.

In fact just this morning, a few hours ago, we began to roll out our multi-domain battle concept where all of our Army will maneuver in all of the domains to gain temporal advantage, enable the joint force freedom of action to seize the initiative. And we will employ our great mobility, we will employ our advantage in fires, both long-range and close, and we will conduct cross-domain fires and land forces will, both horizontally and vertically, integrate all of the joint force in all of the domains, and it will be armies that will be central to winning future wars.

Because the enemy anti-access and areal denial capabilities and their development over the last decade, land-based forces now are going to have to penetrate denied areas in order to facilitate air and naval forces. This is the exact opposite of what we have done for the last 70 years, where air and naval forces have enabled ground forces. To do that, we're going to have to develop ground capabilities that can see and shoot at very long range, far in excess of what is available today.

The sustainment challenges will be significant. Life will almost certainly be extremely austere. Water, chow, ammo, fuel, maintenance, and medical support will be about all that we should plan for. Pizza Huts, fast food, mail, showers, and any other comfort items should not be expected on this battlefield, at least not as a matter of routine.

And our lines of communication will for sure be contested, and probably denied. Being surrounded will become the norm, the routine, the life of a unit in combat. In short, learning to be comfortable with being seriously miserable every single minute of every day will have to become a way of life for an Army on the battlefield that I see coming.

The ability of units to produce and purify their own water, and locally manufacture their own spare parts with 3-D printing, may become a necessity. And if the lines of communication can be open then resupply convoys will likely be autonomous robots or remotely controlled convoys, because they will be the only acceptable risk method of supply that we can get to forward troops.

Our strategic lines of communication and ports of embarkation and debarkation will absolutely be challenged. We will have to fight just to get to the fight. And we will have to rediscover the art of port openings under pressure, and at scale. And we will have to re-learn the skills of strategic sea and air rapid deployment to introduce combat power before strategic ports are closed.

And mission command. Mission command will be one of our toughest challenges. Crises will unfold rapidly, compressing decision cycles and response times. Ambiguous actors, intense information wars, and cutting edge technologies are going to confuse situational understanding. Information overload is going to be a problem for every echelon, and separating the wheat from the chaff will place a premium on information management systems.

The sheer volume and speed of conflicting information can easily bring decision-making to a screeching halt. And of course that'll only be a problem if the electronic systems even work. Our Army, in fact our military and that of our adversaries, are highly dependent on reliable, secure electronic systems, not only for communication but for fires, navigation, and other functions. There is a high probability, a certainty really, that anything electronic will come under cyber or EW attack, and that we will be operating routinely in a partially or significantly degraded environment.

That means we must invest in hardening our systems, and equally important, training in the techniques of operating with limited electronics. That will be a shocker for all of us, but it will be a reality. We might actually have to read a paper map again, and learn how to use a lensatic compass.

More significantly, we will have to seriously train and prepare ourselves for decentralized independent operations based on mission command to execute the higher commander's visualization and intent, without ever having actual contact with our higher headquarters for extended periods of time. Imagine not being able to talk to the Pentagon or the White House. That will be reality.

This method will have to become a reality in everything we do, a basic MO, a basic modus operandi, and not just a buzzword in briefings and classrooms.

And that brings me to people. Our most valuable asset, and arguably our most significant asymmetric advantage inherent in the American military and the United States Army, for we come from a society of improvisers, a society of tinkerers, innovators, problem solvers, techno-savvy at an early age. An independence of action comes natural to all Americans. Self-starting initiative, disdain of boundaries and rules, non-linear critical thinking, and an aggressive will to win, coupled with an eternal optimism to overcome all obstacles to achieve the objective. All of that is hard-wired in the national DNA of an American soldier.

Our leader development programs, Officer and NCO schooling and training, and individual soldier training is going to have to amp-up in order to leverage the already present inherent qualities in all of our soldiers from private to general.

In the absence of supervision, the willingness to disobey specific orders to achieve the intended purpose, the willingness to take risk to meet the intent, the acceptance of failure in practice in order to learn from experimentation, these are all going to have to be elevated in the pantheon of leader traits.

And finally there is character. On a non-contiguous, non-linear battlefield, with little higher command supervision and maximum decentralization, we must, we have to, develop leaders who have incredible character under intense pressure, leaders that can be trusted to do the right thing when no one is watching except the enemy and the news media. Leaders who make the right moral and ethical choice in the most emotionally charged environment humans can ever face, the environment of ground combat. And those leaders will not only be responsible and empowered, but they will be accountable for both the results they achieve and the values they hold.

So in short, the next 25 years are not going to be like the last 10, and they're not going to be like the last 25. The accumulating challenges we face and the changing character of war is unlike anything our current force has ever experienced in intensity and lethality.

So we are developing those capabilities while sustaining our CT and COIN capabilities. And our potential adversaries are already moving out, so we really have no choice. It's a tall order for sure, to operationalize and execute multi-domain trans-regional battle, to project power into contested theaters, to project power into all domains, to fight inside denied territory. To fight in urban areas that are highly populated, with all of its complexities. And to survive and to win in on intensely lethal and distributed battlefield, and to create leaders and soldiers that can prevail.

Tough, yes. But impossible, absolutely not.

We're the United States Army, and we don't shrink from tall orders. We're the United States Army, and our enemies need to know that these colors don't run from tough fights. We will adapt, and we will evolve our current force, but in the end we will win. That much, I can tell our enemies that they can take it to the bank.

And I am not speaking only to our Army, for our Army does not win wars on its own. Nations, not armies, go to war. So we need the support of industry. We need the support of our civil leaders. We need the support of Congress. We cannot do this alone. We have our allies. We have our joint partners. But we've got to have the entire nation.

In the last year we focused on current readiness, and applied time and money to building it, and it's improving, and it'll remain our top priority. And now we have to define and build the Army of the future. And we're heading in the right direction on both fronts. The process that we developed to think critically and deliberately is working, and it's guiding our investments and decisions.

But our nation expects us to be ready, and to win, so we're going to have to get this less wrong than whoever opposes us. And we're going to have to do that in order to pass to the next generation the gifts of life, liberty, and the pursuit of happiness, that have been so granted to us.

You know, 100 years of relative peace separated the Napoleonic Wars from the abyss of World War I, when nations and empires marched off to their destruction, blind... blind to the changes in war that existed before the battle was ever joined. We are now over 70 years since the last great power war. That was the most destructive war in human history, a war that both my parents fought in.

A noted classics historian recently wrote that he sees an increase in nationalism and regional arms races, unresolved territorial claims, ethnic and sectarian disputes, and a return to 18th century balance of power politics with spheres of influence. And he concluded that there's a light breeze in the air, and it may turn into a storm. And he concluded at the end of his essay that a hard rain is about to fall.

So let us, here, now in the present, let us commit to not march into that abyss, blind to the changes. Let us for once, for once in our own history not be unprepared for the next first battle. Let us have the vision to change and to prevent the war from happening in the first place. But if it does happen, let us create an Army that will prevail on that battlefield, in the unforgiving environment of combat.

The leaders of tomorrow, the leaders of that Army, are the sergeants and the lieutenants of today. They will be the command sergeant majors and the colonels and the

generals of this Army of the future. And representative of these great young men and woman are two of our very best, Army Specialist 24-year-old Robert Miller from the 25th Infantry Division, and 21-year-old Specialist Trey Caster from the 1/75th Rangers, who placed first and second in this year's best warrior competition. They represent all, all that is good about our Army, and they give us hope for a better future. So I ask both of them to come up on stage with me, and I ask you to rise and join with me as we promote both of them to the rank of sergeant, and get them on the road to our future.

(Applause)

(End of remarks.)