

# Future Challenges In Operationalizing Nuclear Deterrence

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I am grateful for this opportunity to share a few thoughts with you. I trust my thoughts today are helpful as we all of us in this room try to get our arms around what deterrence in the 21st century really means.

Right up front, two points to make ... obvious points but they merit emphasis nonetheless. The first is that **The Cold War is Over**. Indeed, the **post**-Cold War is over. Airmen who started active duty service after the fall of the Soviet Union are now eligible for retirement. A generation has passed and what that means is that we really need to hit fast-forward on how we think about strategy, force structure and force posture. In this 21st century. It does not mean, however, that nuclear deterrence is an "anachronism."

Secondly, in pursuit of the President's vision as outlined in the Nuclear Posture Review to "reduce U.S. nuclear weapons and their role in U.S. national security strategy," we take to heart our responsibility to uphold the entirety of his vision and his pledge: "...as long as nuclear weapons exist, "the United States will maintain a safe, secure, and effective arsenal, both to deter potential adversaries and to assure U.S. allies and other security partners that they can count on America's security commitments." We continue to provide the bedrock of strategic stability.

With that said, the Chairman, Joint Chiefs of Staff Admiral Mullen recently pointed out, "...we have done precious little spadework to advance the theory of deterrence. It is as if we all breathed a collective sigh of relief when the Soviet Union collapsed and we said to ourselves, 'Well, I guess we don't need to worry about that anymore.' We were wrong. The demands of deterrence evolve." A brief reprise then on my opening point: We've got some catching up to do on the new demands of deterrence.

So how have those demands evolved? Our new National Military Strategy just a couple weeks old holds that shifts in relative power and increasing interconnectedness of the international order have brought us to a "Strategic Inflection Point" and that "as a global power, U.S. interests are deeply intertwined with the security and stability of the broader international system - a system of alliances, partnerships, and multi-national institutions."

The international structures and norms that enable our globalized world were built upon the foundation of the stability that were formed with all our instruments of national power. Our ability to effectively prevent major-power conflict, prevent crises escalation, respond to changing regional military balances, and maintain effective alliances ultimately rests on a foundation of U.S. nuclear capabilities and strategic deterrence.

The United States remains the world's preeminent power in our new "multi-nodal" world. Rising economic powers with burgeoning modern militaries strive for greater influence to bring change to regional security status quo. Nuclear proliferation has been on the rise. Now all of us must adapt.

We have a history of successful strategic deterrence ... and we will continue to provide that in this new environment to underwrite our national will. The basics of deterrence theory may not change, but how we operationalize it will change.

To that end, we could, we should shift the focus of our analysis to the challenge of maintaining or creating stability in multiple asymmetric situations. Two significant aspects of the new environment that merit analysis:

One, changes that occur as a result of lower numbers and two, changes that occur as a result of a non-bipolar

security environment.

In support of U.S. efforts to reduce the number of nuclear weapons then, we do indeed need more and different analysis. We have a lot of experience with analysis to determine force structure or develop targeting guidance and strategies ... but do we know how to conduct analysis that reveals the changes in the actual strategic environment caused by the reduction itself?

**Less isn't just *Less* - *Less is Different*.** The environment and related deterrence calculus will change as a result of lower numbers and adversaries may arrive at conclusions we don't expect ... and so might our allies and partners. We fully expect that as the number of weapons or delivery systems decrease, the intrinsic value of each remaining platform will increase, and the Triad of today may behave differently -- complementarity may take on a different meaning -- when total weapon numbers and triad component numbers are less.

We are entering an environment without historical precedent -- low numbers, in a non-bipolar world.

There will also be changes unrelated to the number of nuclear weapons or delivery platforms. For instance, it's no surprise some powers rising today may resist current international structures and norms. In this new environment, some states, more states, other states will closely watch U.S. actions to discern our intent and resolve.

In a bipolar environment, we used to rely on general assumptions about the situation and the adversary. In this new age of multiple actors, we require more specific, more dynamic assumptions about things like communication, trust, commitment, and decision making to prevent crises from escalating, and to restore stability if conflict has erupted. Confidence-building measures for instance, among nuclear-armed neighbors will likely become more important during regional crises.

We should then define requirements for strategic deterrence across the spectrum of adversaries and understand that deterrence constructs that have proven successful with near-peers will act differently against non-peer adversaries. In this environment we have reached the limits of the rational-actor model of deterrence and we ought to explore behavioral approaches.

This is the new "hybrid" environment. I'm confident we can foresee and mitigate potential instability as we understand how these changes manifest themselves. For sure, harnessing the strengths of the intelligence community will be required to achieve such understanding.

It's important to remember that assurance is a close relative of deterrence. Assurance must also be deliberately planned for, invested in, and conducted in close consultation with our allies. Allies whose continued assurance is directly linked to our nonproliferation goals. Assurance is an area where U.S. conventional capabilities and defensive capabilities such as missile defense can play a crucial supporting role. Assurance is clearly an area where we need detailed regional-based understanding of the security concerns of our allies and partners.

Of course, a prominent method of providing assurance is through what we call Extended Deterrence, which in the 21st century will likely play a larger, not a lesser, role. The extended deterrence umbrella is provided by a mix according to the NPR of "strategic forces of the Triad, non-strategic nuclear weapons deployed forward in key regions, and U.S.-based nuclear weapons that could be deployed forward to quickly meet regional contingencies." Our global posture not only supports assurance through extended deterrence, but also increases our strategic depth.

So as an Airman, it is only fitting to discuss Air Force contributions to this challenge. Airpower inherently provides the Nation useful tools to deter and assure. The Air Force provides responsive, reliable, and operationally adaptable forces, with global reach.

Clearly the change from a "bipolar" to a "multi-nodal" world does not eliminate the need to consider near-peers. Our Triad continues to provide the required stability there. U.S. Navy nuclear submarines with Sea-Launched Ballistic Missiles provide survivable second strike capability critical to strategic deterrence and stability. While assured second-strike capability is essential, stability also requires additional capabilities.

The Air Force intercontinental ballistic force continues to be highly stabilizing. Our ICBM forces deny an adversary the opportunity for a limited attack or first strike, especially when deployed with single warheads. They provide a credible and survivable force at the highest readiness (and at relatively low cost). The value of this leg increases as the overall force structure declines and is more survivable as total numbers decrease. With fewer total systems, it becomes harder for a near-peer adversary to hold our ICBM force at risk.

Air delivered weapons are inherently tailorable and adaptable forces, well suited for the hybrid environment that we face. Bombers may be placed on alert or deployed, providing visible indication of U.S. capability and intent to both adversaries and allies. They also provide a rapid and effective hedge against technical challenges which may arise.

Dual-Capable Aircraft fighters and bombers expand our flexibility, strengthen the credibility of US extended deterrence, and signal US and allied resolve. Our allies appropriate these capabilities and their deterrent effects and they become part of their own policy and force structure decisions.

Preventing wars is as important as winning them..... pretty basic to say but it is also far less costly. Our current Air Force nuclear deterrent capability comprises just 2.9 % of our budget's Total Obligation Authority.

That's how we operationalize deterrence today and how we will in part do so in the future. These capabilities are essential, but are insufficient to the 21st century hybrid environment. It is an environment difficult to fully comprehend, but just because it's hard hasn't stopped us before.

Our National Military Strategy points out that a prosperous and interconnected world requires a stable and secure environment, the absence of territorial aggression or conflict between states, and reliable access to global commons resources. States are developing anti-access capabilities that threaten to limit our freedom of action. This requires globally available and regionally focused capabilities and posture to match. The flexible deterrent force of the future must provide the President options to maintain stability and guarantee security. New long-range strike capabilities will be part of that future deterrent.

The next long-range penetrating bomber and follow-on air-launched stand-off capability will provide survivable, flexible capabilities -including nuclear capabilities that can be surged or relocated to hold any target on the globe at risk within hours. The bomber will be one part of a family of systems that includes intelligence, surveillance, and reconnaissance; electronic attack; communications; command and control and other capabilities.

This family of systems highlights the interdependent nature of our future force structure. Our nuclear forces must be supported by deliberately developed complementary non-nuclear capabilities. We should analyze the blend among conventional and nuclear capabilities as well as the contributions and limitations of conventional forces, to include space, cyber, and missile defense, in producing overall strategic deterrence.

We can also expect increasing demands on ISR, command and control, special operations, Global Precision-Attack, all capabilities that provide critical information and specialized focus for WMD interdiction elimination operations, including technical systems to monitor and analyze nuclear materials. These capabilities will support nonproliferation and threat reduction, treaty compliance monitoring and verification.

As our strategy and posture evolve, we must look beyond the weapons systems themselves and be prepared with a solid Human Capital Strategy which commits us to a deliberate, comprehensive, and sustainable pipeline for

development of what is a national treasure--our precious talent and expertise. Any discussion of how we ensure that the best minds are engaged in the application of science, engineering, and technology to find solutions to today's deterrence problems must include our reliance on the national laboratories, a point Dr. Kunan emphasized so well. For us In the Air Force, we will continue a rigorous effort to deliberately develop a generation of field grade officers, senior NCOs, and civilians to be leaders for the future who are schooled in the doctrinal, technical and intellectual foundations of nuclear deterrence.

So during the next seven years, implementation of the 2010 Nuclear Posture Review and the New START Treaty will continue our pursuit of reduced numbers of nuclear weapons. Under the NPR, the Air Force will remove multiple warheads from its ICBMs. Under New START, which entered into force just 13 days ago, the United States and Russia will reduce their numbers of accountable strategic warheads from the current limit of 2,200 to 1,550. For its part, the Air Force will begin formal data exchanges with Russians in March, inspections, and exhibitions of bombers and missiles will start in April and the Air Force also will begin actions necessary to reduce bombers and missiles to comply with central treaty limits -- actions that must start soon to be complete no later than February 2018.

But future arms reductions and negotiations are now being discussed. As we pursue reducing numbers below New START limits, we should recognize that a final number should be only one driver of our future force structure. Before we target-fixate on a particular number of warheads or delivery systems, let's pause and consider strategy and deterrence with a capital D. Our strategy should be "stability" driven.

Our National Military Strategy characterizes the U.S. military as "a convener." As a convener, our relationships, our values, our military capabilities provide us, often uniquely, with the ability to bring others together to cooperatively address common security challenges. Moreover, we will also be prepared to act as security guarantor - preferably with partners and allies, but alone if necessary - to deter and defeat acts of aggression.

Your Air Force is "operationalizing" deterrence 24/7/365 with Airmen manning the nation's weapons systems which deliver deterrent effects non-stop. We produce that capability that marries with the national will and we will continue to do so into the future - it is in our DNA.

All of us in this room have part of this challenge.

In a few words to wrap up

The Post-Cold War is over. We really do need to fast forward our analysis of today's environment and what it takes to produce 21st century.

The Triad continues to provide stability, but a fresh look at all complementary capabilities is in order. Continued, deliberate development of our people across the entire nuclear enterprise is crucial

Numbers are extremely important, but our analysis has to have stability as its end

*And finally in this the 21st century, Less isn't just less, Less is Different*

Thanks for the opportunity to share a few thoughts.