Strategic Weapons in the 21st Century Conference

Summary Report

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The 11th annual conference on Strategic Weapons in the 21st Century (SW21), co-hosted by the Los Alamos and Lawrence Livermore National Laboratories, was held in Washington, DC, on January 26, 2017. SW21 is a venue for policy makers and experts to engage in substantive dialogue on issues related to the nature of strategic conflict in the 21st century and the intersections of technology, strategy and policy and are conducted on a not-for-attribution basis. This year as in recent years, the U.S. community was joined by policymakers and experts from allied countries.

This 11th annual event focused on changes in the security environment and their implications for the U.S. approach to deterrence, with special attention to extended deterrence in Europe and East Asia. The agenda explored the following key questions:

- What are the changes in the global and regional security environments posed by regional and global powers? By space, cyber and other capabilities? By hybrid warfare?
- What do these changes affect the potential dynamics of strategic conflict?
- How have potential U.S. adversaries defined integrated strategic deterrence?
- In reviewing U.S. nuclear policy and posture, what are the key issues requiring analysis and decision?

A summary of the ideas and arguments discussed during the four panel discussions are presented below.

Russia, NATO, and Deterrence in Europe

The opening panel focused examined the following specific questions:

- What is Russia's strategy for coercion and war against NATO?
- How has it defined the requirements of integrated strategic deterrence?

- What is NATO's countering strategy?
- How must the NATO deterrence toolkit continue to evolve?

Russia's strategy for coercion and war against NATO has taken shape in recent years as it has focused increasingly on the challenge of regional conflict, as opposed to local or strategic conflict. This strategy emphasizes the use of coercion and displays of political resolve to induce its enemies not to fight, or to cease a conflict before escalating to the full extent of their potential. Russia's strategy also emphasizes the integration of all of its hard and soft power tools in a comprehensive deterrence strategy, with the hope of achieving its aims while preventing war or preventing its escalation. Its advancements in hybrid warfare, to create favorable political conditions without large-scale combat operations, has attracted significant Western attention. More recently, its new approaches to rapidly massing conventional effects in regional war to create a *fait accompli* has attracted Western interest in strengthening conventional deterrence. Russia has set out its own approaches to anti-access, area denial strategies, with significant strike capabilities (both nuclear and non-nuclear, both kinetic and non-kinetic) and with a significant new role for "aerospace defense." The precise role of nuclear deterrence and nuclear attacks in Russian strategy remains a subject of debate, with escalate-to-deescalate generating widespread discussion and concern. There is similar debate about the role of space, counterspace, and cyberspace in Russian military strategy *vis-à-vis* NATO.

NATO's countering strategy is still taking shape. It has made significant progress at the conventional level. NATO's perception of Russia has shifted dramatically in recent years—from potential partner to potential adversary and has fielded new, strengthened conventional capabilities to deter Russian aggression, particularly against Eastern European and Baltic member states, including the forward deployment of battalions of multinational NATO forces to Estonia, Lithuania, Latvia and Poland. These forces remain smaller than the Russian forces in the Western Military District of Russia; however, to overcome this force, Russia would have to attack with a sizeable ground and air force, far beyond what it could accomplish with hybrid warfare techniques (and so-called "little green men"). This would leave little about the severity of the attack and of the likely NATO response.

The future evolution of NATO's deterrence toolkit is uncertain. In its 2012 Deterrence and Defense Posture Review (DDPR), NATO committed to ensure that its deterrence and defense posture would continue to evolve in order to remain "fit for purpose" in a changing world. The challenges to Euro-Atlantic security do not stem solely from Russia, though Russia's salience has clearly grown in recent years. In its two most

recent summits in Wales and Warsaw, NATO has begun the process of adapting its deterrence strategies and posture to the new Russian challenge, a process that can be expected to continue.

China, North Korea, and Strategic Stability in Northeast Asia

The second panel examined the following specific questions:

- What is China's strategy for coercion and war in East Asia (e.g., A2AD)?
- How has it defined the requirements of integrated strategic deterrence and how has the U.S. responded (e.g., Air-Sea Battle Concept)?
- What is North Korea's strategy for coercion and war?
- How have the US-Japan and US-RoK alliances adapted?
- What further steps are needed?

China's strategy for coercion and war is not unlike Russia's. It encompasses a significant role for conventional forces and conventional deterrence to induce U.S. and allied restraint, while "changing facts on the ground" in ways intended not to initiate war. It seeks to contain the risks of escalation by posing significant costs and risks to the United States and its allies, and encompasses a significant anti-access, area denial agenda. Relative to Russia, the nuclear component of its strategy and posture appears more modest, largely insulating the mainland from nuclear (or other strategic) attack. It has, however, engaged in a significant program of nuclear modernization and the diversification of its nuclear strike forces. The new domains all play a significant role in China's strategy.

Also like Russia, China pursues an approach to strategic deterrence that emphasizes its integration., but unlike Russia, China's emphasis is mostly on integrating hard power tools to achieve military and political effects. China has set out a body of ideas about "war control" as being achieved through the comprehensive application of multiple tools in a manner that induces adversary restraint by signaling its resolve.

The United States and its allies have responded in multiple ways. Steps have been taken to ensure a balance of conventional forces in the region through allied modernization and the U.S. military re-balance. Other steps have been taken to bolster deterrence of Chinese ballistic missile attack, including regional missile defenses for the protection of Japan and U.S. forces. Nuclear modernization is also proceeding in order to ensure strategic stability. The United States and its allies are also exploring new

means to negate the military and coercive values of China's anti-access, area denial strategies.

The North Korean threat to South Korea and Japan is clear and compelling, as North Korean leaders regularly warn that Seoul and Tokyo are "in our nuclear cross-hairs." The North Korean nuclear threat to the United States is still taking shape, but is widely expected to grow significantly in the coming years. Debate continues about whether North Korea seeks only to safeguard the regime or intends to exploit its new nuclear capabilities to try to achieve a political settlement on the peninsula consistent with its long-term goal of reunification on its terms.

In addressing these various challenges in the regional security environment, the United States and its allies have responded with a comprehensive strategy to adapt and strengthen the regional deterrence architecture. This strategy rests on nuclear deterrence at its core. But it includes many non-nuclear means, including regional missile defense, U.S. homeland missile defense, non-nuclear strike capabilities, and resilience in cyber space and outer space. The role of the U.S. nuclear umbrella has been renewed and reemphasized in light of new nuclear threats.

Defining a US Approach to Integrated Strategic Deterrence: U.S. Nuclear, Space, Cyber, and Advanced Conventional Policies and Approaches

The third panel explored the following specific questions:

- How do new regional and global threats, including cyber, space, integrated missile and air defenses and hybrid warfare affect deterrence, extended deterrence and assurance?
- What are the roles of nuclear forces, conventional forces, defenses and other capabilities in addressing them?
- Will we have the right suite of capabilities to respond to new challenges?
- What is needed beyond the 3rd offset?

The U.S. approach is comprehensive, however whether it is integrated is an open question. The approach is comprehensive in that it encompasses the full set of deterrence tools—hard and soft, kinetic and non-kinetic, nuclear and non-nuclear. The non-nuclear components have attracted significant new attention in recent years. And the third off-set has attracted attention to the particular challenges of deterrence at the conventional (that is, non-nuclear) level of war. The toolkit is definitely improving.

But its integration is uncertain. In the various domains, communities of experts and military operators work in the "cylinders of excellence" to enable timely and effective action in war and the effective defense of assets and interests in peacetime and crisis. Operational planning lays the foundation for effective integration in conflict, in the context of political guidance providing by national leadership. But the way in which synergistic effects can and will be achieved remains uncertain.

Implications for the U.S. Nuclear Stockpile and Capabilities

The fourth and final panel explored the following specific questions:

- What new requirements may arise?
- Will the plans for stockpile management be responsive to any new requirements? What options are available?
- How can agility and responsiveness best be assured?
- What are the issues for the nuclear enterprise and the laboratories?
- What other issues will require analysis and decision?

The requirements for the stockpile and associated capabilities are reflected in the Program of Record for their modernization. These align with political guidance and military requirements and support the objectives of deterrence, assurance, and strategic stability. New requirements may emerge if political guidance changes (always possible with a new administration) or if some new development in the security environment creates a deterrence gap.

All recent administrations have emphasized the importance of being well hedged against geopolitical and technical surprise. The existing hedge provides a robust ability to up-load warheads and bombs onto delivery systems. But the capabilities and capacities to design, develop, certify, produce, and field nuclear weapons is very constrained by technical and fiscal issues, and limited human capital. The stockpile responsiveness plan is a useful step in the right direction. Improved responsiveness requires, among other things, some increased funding.

The issues facing the enterprise and laboratories are numerous. The anticipated 2017 Nuclear Posture Review can be expected to review a broad set of issues: the basic approach to stockpile sustainment (through life extension), the policy guidelines to the stewardship program (including for example the foreswearing of new military capabilities), the potential promise of new technologies (such as additive manufacturing), and the needed level of national investment.

The 2009/10 NPR was the first-ever review of nuclear policy and posture that was interagency in character. This gave the Department of Energy and the National Nuclear Security Administration important roles in defining key issues, conducting the needed supporting analysis, and ensuring technically-sound leadership decision-making. However, as the Trump administration's review of nuclear policy and posture takes shape, DOE and NNSA should be ready to again ensure that leaders make major policy decisions with a firm grasp of relevant technical factors.

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