

## U.S. Air Force Strategic Deterrence Capabilities in the 21st Century Security Environment

### A Workshop Summary

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Changes in the 21st century security environment require new analytic approaches to support strategic deterrence. Because current adversaries may be deterred from the use of nuclear weapons differently than were Cold War adversaries, the Air Force needs an analytic process and tools that can help determine those Air Force capabilities that will successfully deter or defeat these new nuclear-armed adversaries and assure U.S. allies. While some analytic tools are available, a coherent approach for their use in developing strategy and policy appears to be lacking. Without a coherent analytic approach that addresses the nuances of today's security environment, Air Force views of its strategic deterrence needs may not be understood or accepted by the appropriate decision makers. A coherent approach will support Air Force decisions about its strategic force priorities and needs, deter actual or potential adversaries, and assure U.S. allies. In this context, the Air Force in 2012 requested that the Air Force Studies Board of the National Research Council undertake a workshop to bring together national experts to discuss current challenges relating strategic deterrence and potential new tools and methods that the Air Force might leverage in its strategic deterrence mission. The workshop consisted of two 3-day sessions held in Washington, DC on September 26-28, 2012 and January 29-31, 2013 and was attended by a very diverse set of participants with expertise in strategic deterrence and a range of analytic tools of potential interest to the Air Force.

#### Background and Overview

Early in the planning of the workshop, the committee considered whether its work should produce something that can actually be used by the Air Force. More than once committee members questioned whether the scope of this workshop should be limited to deterrence by "nuclear" forces or broadened to include deterrence by non-nuclear forces—for example, conventional offensive weapons, missile defenses, cyber capabilities, space-based systems, and drones. The resulting discussion indicated that the workshop focus would be primarily on those tools and methods applicable to analysis of nuclear deterrence. With respect to adjusting the terms of reference (TOR) for the workshop, the main concern was that "social network analysis and crowd sourcing" was explicitly called out, but it became clear that these terms were not meant to limit the techniques to be considered.

The committee ultimately did not change the TOR but did develop several questions to be considered during the workshop, including the following:

1. How are the challenges for nuclear deterrence in the 21st century similar to and different from those of the 20th century?
2. What are the analytic challenges, and what approaches are needed to resolve them?
3. What are the insights for the future and ancillary issues raised during workshop discussions that the Air Force should consider?

The first two questions align well with the panels and related discussions during the workshop, and the third question was explored as part of the dialog among the workshop participants at both sessions. Additionally, some speakers with a great deal of experience offered a variety of perspectives that helped establish a comprehensive backdrop for the workshop.

Finally, as a result of this workshop, the Air Force possesses a rich variety of independent thoughts regarding potential analytic approaches to substantiate Air Force concepts and articulate Air Force capabilities as deterrence strategy is developed in the 21st century security environment. The Air Force will also have illustrative elements of a TOR for a future longer-term study to evaluate potential toolsets and analyze gaps.

### **Insights for a Follow-on Study**

During both workshop sessions, but especially the second, workshop participants offered many insights regarding the content of a possible follow-on study. The dialog focused on an illustrative TOR that could form a framework for such a study. Several versions of this TOR were discussed and modified during the workshop, taking into account a wide range of individual views of the participants.

### ***Notional Terms of Reference for a Follow-on Study***

As identified during the workshop, possible items in the terms of references for a follow-on study by an ad hoc committee were as follows:

1. Identify the broad issues and factors that must be considered in seeking nuclear deterrence in the 21st century. Describe a program of analysis to address those issues and support planning, resourcing, and managing U.S. nuclear deterrence in the 21st century.
2. Identify the major components of the analysis and the relationships among them to serve as a basis for the identification, development, and use of necessary tools and methods.
3. Evaluate and recommend tools, methods—including behavioral science-based methods—and approaches for improving the understanding of how nuclear deterrence works in the 21st century, how it might fail, and how failure might be averted by the proper choice of capabilities, postures, and concepts of operation of American nuclear forces.
4. Recommend a way ahead for evolving and adapting methods and approaches in a coherent, systematic approach. This will include identifying what questions need to be addressed and assessing what questions each tool, method, or approach is most and least valuable for this purpose.
5. Recommend how these methods and approaches can be drawn upon as a package or used to inform each other. It is likely that any tool, method, or approach will have strengths and weaknesses.
6. Recommend criteria and a framework for validating the tools, methods, and approaches and for identifying which classes of tools, methods, and approaches are the most promising.
7. Recommend a balance of resourcing across the classes in today's austere financial climate and that can be reserved for future resourcing when and if it becomes available.

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