



UNITED STATES AIR FORCE  
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DETERRENCE STUDIES

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Welcome to [USAF Center for Strategic Deterrence Studies](#) News and Analysis. As part of the CSDS mission to develop [U.S. Air Force](#), [Department of Defense](#), and other [government](#) leaders to advance the state of knowledge, policy, and practices within strategic defense issues involving nuclear, biological, and chemical weapons, we offer the government and civilian community a source of contemporary discussions.

## Feature Report

[“Graph Theoretic Algorithms for the Ground Based Strategic Deterrent Program: Prioritization and Scheduling”](#). RAND; Nov. 8, 2021.

"In this report, the authors present the underlying rationale behind algorithms already delivered to the GBSD program office that were designed to reduce the likelihood of rework in program execution, provide better insight into schedule risk, and provide insights into how to restructure task dependencies to manage schedule risk. Although the novel methods described in this report were developed for the GBSD program, they are general and can be applied to any program." [Read Report](#).

## Nukes and Deterrence, Counter-WMD, and Arms Control in News and Research

### NUCLEAR WEAPONS AND DETERRENCE

- [Submarine Detection and Monitoring: Open-Source Tools and Technologies](#) (NTI)

Nicknamed the “Silent Service,” submarines are considered the most survivable nuclear weapons-delivery platform.

- [China's Shock Hypersonic Missile Test Alarms U.S. Lawmakers: 'National Security Crisis'](#) (Newsweek)

Chairman of the Joint Chiefs of Staff General Mark Milley said the test was "very close" to a modern "Sputnik moment"—a reference to the Soviet satellite launch that birthed the Cold War space race.

- [China's Nuclear Arsenal is Growing. What Does That Mean for U.S.-China Relations?](#) (Washington Post)

The new Pentagon report reveals China's worries about U.S. missile defenses.

- [Pentagon: Allies' 'Views and Perspectives' Being Considered in Nuclear Posture Review](#) (Air Force Magazine)

The Nuclear Posture Review, scheduled to be released in 2022, will likely set U.S. policy for its nuclear weapons arsenal and comes at a key moment.

### COUNTER-WMD

- [Northrop Grumman's Missile-Tracking Satellite Passes Critical Design Review](#) (Space News)

After it delivers a prototype satellite to the Missile Defense Agency, Northrop Grumman plans to conduct an on-orbit test.

- [Penn State Researchers Will Map 700 of Anthrax Bacteria's Closest Relatives](#) (Global Biodefense)  
From a biodefense standpoint, it is important to understand the diversity of environmental Bacilli that could become novel biothreats such as anthrax, noted Kovac.
- [Missile Defense: Recent Acquisition Policy Changes ...](#) (GAO)  
GAO: "DOD doesn't fully match the new systems' capabilities with the needs of the systems' users. We recommended doing so."

## US ARMS CONTROL

- [Nuclear Peace in South Asia?](#) (Carnegie Endowment for International Peace)  
... A special event with Michael Krepon on the future of arms control from his recently published book, *Winning and Losing the Nuclear Peace*.
- [High-Level Officials/Experts Discuss Nonproliferation at CNS's International Advisory Council Meeting](#) (Center for Nonproliferation Studies)  
Founder and Director of CNS, William C. Potter, opened the meeting welcoming more than 80 attendees from over 20 different countries.
- [Taking Stock: U.S.-China Track 1.5 Nuclear Dialogue](#) (Center for Global Security Research)  
To inform thinking about these questions, CGSR proposed to bring together the core group of participants from both sides to take stock of the dialogue process.

## COMMENTARY

- [Biological Weapons in the 'Shadow War'](#) (War on the Rocks)  
"Even as a deterrent, biological weapons have little-to-no utility against an adversary contemplating the use of biological weapons."
- [Which President Was Best for Arms Control?](#) (Arms Control Wonk)  
"The highest marks for arms control accomplishment go to presidents who made the most of opportunities that presented themselves immediately before and after the Cold War ended."
- [The U.S. Should Be Realistic About Missile Defense](#) (Bloomberg)  
"The government has spent at least \$200 billion on missile defense over the last three decades. It's unclear whether this has made the country any safer."

