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CSDS News and Analysis 1473 (Feature Paper: "The Impact of Secrecy on Deterrence," Maj. John LaMonica, ACSC/AU)

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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 Paper

["Invisible Stop Signs: The Impact of Secrecy on Deterrence"](#). Maj. John LaMonica, Air Command and Staff College, April 2021.

This paper* examines several cases in which secrecy, or the lack thereof, had a direct impact on the deterrent value of a weapon, system, or feature intended to deter adversary attack. The paper references game theory and previous literature over the course of its analysis. Each case is ranked according to the level of secrecy present and the resulting effectiveness of the deterrent in question. [Read Paper](#).

*Prepared during 'AY21 DRTF: Deterrence Research Task Force,' led by Dr. James Platte (CSDS)

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

NUCLEAR WEAPONS AND DETERRENCE

- [Lawrence Livermore Team Looks at Nuclear Weapon Effects for Near-surface Detonations](#) (Lawrence Livermore)

Attempts to correlate data from events with low heights of burst revealed a need to improve the theoretical treatment of strong blast waves rebounding from hard surfaces.

- [What are Atomic Bomb Quasicrystals, and Why Do They Matter?](#) (Bulletin of the Atomic Scientists)
This quasicrystal evidence from the first atomic bomb test—codenamed Trinity—holds promise as an analytical tool that could help determine (for one example) who was responsible for a terrorist nuclear attack.

- [Nuclear Deterrence Forum: Gen Timothy M. Ray](#) (Mitchell Institute)
Gen. Ray "shares his insights into the recapitalization and modernization of long-range strike, the sustainment of the bomber fleet, and emerging technologies such as hypersonic weapons."

- [USAF Won't Retire More B-1s Until B-21 On Duty](#) (Air Force Magazine)
Air Force Rapid Capabilities Office director and program executive officer for the B-21, Randall G. Walden, told Air Force Magazine late last year that the second B-21 was in production and the first would roll out in early 2022.

- [Chinese Strategy and Military Forces in 2021](#) (CSIS)

China's capability to compete at given levels has generally increased radically since 1990 in virtually every civil and military area

COUNTER-WMD

- [Synthetic Bioweapons Are Coming](#) (USNI Proceedings)

COVID-19 has demonstrated that biological threats are almost entirely unaffected by sophisticated kinetic, cyber, and electromagnetic defenses.

- [Missile Defense Strategy, Policies, and Programs in Review of the Defense Authorization Request](#) (Carnegie Endowment)

Congress should play a leading role in steering the United States toward a strategically prudent and responsible missile defense policy

- [DoD Wish List Seeks More Funds to Boost Pacific Missile Defense, Weapons Cybersecurity](#) (Defense News)

The commander's number one priority on the list is more money to develop a ballistic missile defense system for Guam, which would require an additional \$231.7 million total.

- Video: [Top Missile Defense Leaders Brief Senate Committee on Programs](#) (DVIDS)

Navy Vice Adm. Jon A. Hill, director of the Missile Defense Agency, and Air Force Gen. Glen D. VanHerck, chief of U.S. Northern Command, brief[ed] the Senate Armed Forces Committee's Strategic Forces Panel on missile defense programs.

US ARMS CONTROL

- [NATO Members Set to Say They Won't Deploy Land-based Nukes in Europe](#) (Defense News)

President Biden, whose approval is needed for the communiqué, would likely receive praise from arms control advocates but blowback from hawkish nuclear weapons advocates in Congress.

- [The Biden-Putin Summit: What is 'Strategic Stability' and Why Is It Important to U.S.-Russia Relations?](#) (NTI)

In practice, establishing and maintaining strategic stability is complicated and requires an array of processes and agreements that facilitate dialogue and engagement

- [Israel and a Nuclear Iran: Implications for Arms Control, Deterrence, and Defense](#) (Institute for National Security Studies)

The five essays that comprise 'Israel and a Nuclear Iran: Implications for Arms Control, Deterrence, and Defense' examine the principal challenges for Israel associated with Iran's acquisition of nuclear weapons.

- [Portable Technology Offers Boost for Nuclear Security, Arms Control](#) (MIT News)

When bombarded with neutrons at specific energy levels, the nuclei of some materials will undergo a resonant interaction with these neutrons, and achieve a transition to an excited state.

COMMENTARY

- [Sing, Missile Muse, of Gods and Heroes: America's Most Fearsome Weapons Need Better Names](#) (War on the Rocks)

"Whatever the cause, tolerances grew for generic descriptions, bunching letters and numbers into clumps, and overusing hyphenated prefixes and suffixes."

- ['Drone Wars': New Book Wonders Who Will Be the Next Drone Superpower](#) (C4ISRNET)

"If the U.S. ever had to go to war with a major power such as China, then it could get to see if the swarms work against other advanced technology, but that is also a big gamble to take with the technology for the first time."

- [AI and Synthetic Biology are Critical to Future U.S. Competitiveness](#) (War on the Rocks)
"It could also create environmentally friendly fertilizers, improve the readiness of our military, and help create solutions to monitor for biological threats."

