

# The Doctrinal Basis for Reinvigorating and Sustaining the Nuclear Enterprise

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Reinvigorating and sustaining the nuclear enterprise relies on a foundation of sound doctrine that provides the guiding principles for (1) ensuring that the United States presents a credible deterrence and (2) fostering a culture which promotes confidence and eliminates the risk of nuclear surety incidents. The new Air Force Doctrine Document (AFDD) 2-12, *Nuclear Operations*, offers this foundation.

Nuclear operations remain essential to the national security of the United States. As affirmed in the *National Security Strategy of the United States of America* (2006), "Safe, credible, and reliable nuclear forces continue to play a critical role."<sup>1</sup> Requisites of an effective nuclear deterrent strategy include a credible capability and the willingness to employ that capability as perceived by those whom one intends to deter. The willingness to employ is a political decision whereas the credible capability is a military responsibility, the preponderance of which the US Air Force shoulders.

Two well-publicized nuclear surety incidents raised questions about the Air Force's ability to present a credible capability and served as indicators of a systemic, corporate decline of that service's nuclear enterprise. One incident, the unauthorized weapons transfer from Minot AFB, North Dakota, to Barksdale AFB, Louisiana, occurred in August 2007. The other incident involved the misshipment of four forward-section assemblies used on the Minuteman III intercontinental ballistic missile (ICBM).<sup>2</sup> Several in-

vestigations and reports followed these incidents, among them the Air Force's strategic plan titled *Reinvigorating the Air Force Nuclear Enterprise*, which establishes reinvigoration of the nuclear enterprise as the Air Force's highest priority. Recommendations from this plan include restoring the culture of compliance, rebuilding our nuclear expertise, investing in our nuclear capabilities, organizing to enable clear lines of authority, providing sustained institutional focus, and reinvigorating the Air Force's nuclear stewardship role.<sup>3</sup>

In keeping with these fundamental precepts of strategic deterrence and the Air Force's highest priority of reinvigorating the nuclear enterprise, the LeMay Center for Doctrine Development and Education at Maxwell AFB, Alabama, recently published the aforementioned AFDD 2-12. That document contains guidance for the Air Force's nuclear operations, based on a body of knowledge gained from experience and lessons learned in organizing, training, and equipping nuclear forces. This new doctrine covers a spectrum of topics that includes fundamentals of nuclear operations, command and control (C2) of those operations, planning and support considerations, surety, and training. In the process of covering these topics, AFDD 2-12 presents doctrinal principles for reinvigorating and sustaining the nuclear enterprise. This article briefly reviews some of those principles and highlights changes from the previous doctrine of nuclear operations, published in 1998.

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## Deterrence and Effects

AFDD 2-12 begins by examining Air Force nuclear operations within the context of the service's day-to-day role as an element of deterrence and as a provider of strategic effects, emphasizing key ideas in boldface. Early in the document, one such statement asserts that “although nuclear forces are not the only factor in the deterrence equation, our nuclear capability underpins all other deterrent elements, and the fundamental purpose of the US nuclear arsenal is to deter an enemy's use of its nuclear arsenal or other WMD [weapons of mass destruction].”<sup>4</sup> This statement underscores the critical role of nuclear operations in deterrence and, consequently, the importance of maintaining a credible nuclear capability.

AFDD 2-12 also addresses the matter of extended deterrence, another important policy construct. Through alliances and treaties, the US strategy of extended deterrence provides friendly and allied nations a nuclear umbrella that assures them of its commitment to their security. Moreover, it serves as a nonproliferation tool by obviating their need to develop and field their own nuclear arsenals.<sup>5</sup>

Nuclear deterrence is believed to have strategic effects because an adversary's (or potential adversary's) leadership should consider the cost of aggression against the United States, its interests, or its allies so high as to outweigh any possible gain. The actual use of nuclear weapons will also yield strategic effects. AFDD 2-12 emphasizes that “the nature of nuclear weapons is such that their use can produce political and psychological effects well beyond their actual physical effects.”<sup>6</sup> Due to the potential severity of the effects of nuclear weapons, only the president of the United States has the authority to order their use.

The concept of nuclear deterrence has evolved since the Cold War era to adapt to evolving national security requirements. In 2001 Secretary of Defense Donald Rumsfeld observed that “credible deterrence no longer can be based solely on the prospect of

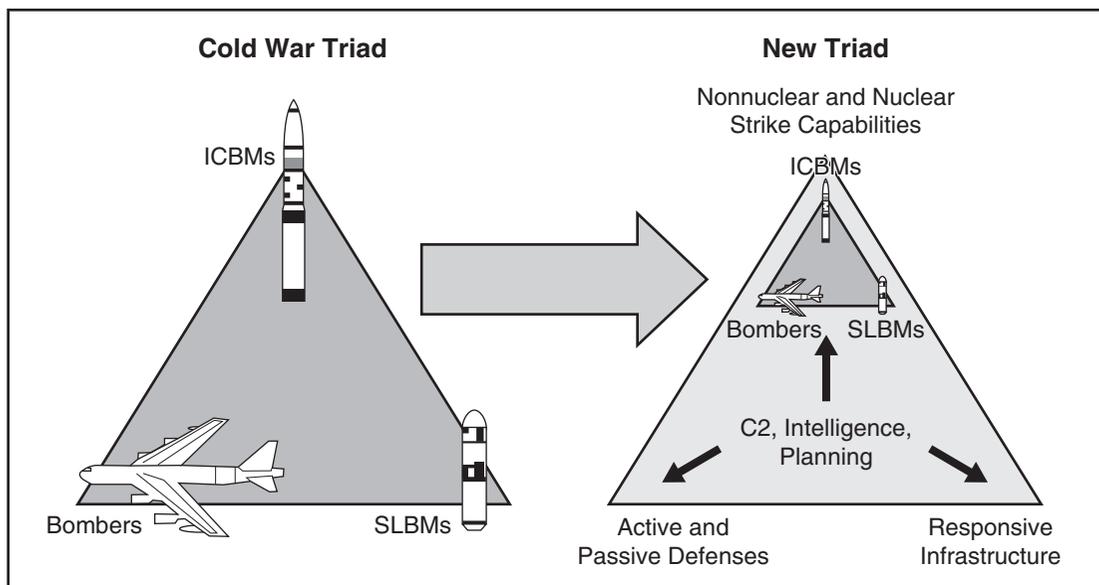
punishment through massive retaliation. Instead, it must be based on a combination of offensive nuclear and non-nuclear defensive capabilities.”<sup>7</sup> The 2001 Nuclear Posture Review codified Rumsfeld's statement by defining a new triad that departed from the Cold War triad's construct of bombers, ICBMs, and submarine launched ballistic missiles (SLBM) (see figure).<sup>8</sup> However, the conceptual assimilation of this new triad did not fully occur. In fact, a finding of the Secretary of Defense Task Force on DOD Nuclear Weapons Management found that many of those involved in the Air Force nuclear mission did not generally understand the concept of the new triad as articulated in national and defense policy documents. The report went on to recommend that the Air Force update its nuclear doctrine with the new triad concept.<sup>9</sup> As now contained in AFDD 2-12, the new triad incorporates a mix of strategic offensive and defensive capabilities that include nuclear and non-nuclear strike, defenses, and a robust research and development infrastructure with an industrial base:

### Strike Capabilities

Deployed nuclear strike capabilities include the three legs of the previously existing nuclear triad (ICBMs, submarine-launched ballistic missiles, and bombers) and theater-based, nuclear-capable dual-role aircraft. Non-nuclear strike capabilities include advanced conventional weapons systems (long-range, precision-guided weapons and associated delivery means), offensive information operations, and special operations forces which can be used to hunt for mobile missiles or operate against WMD facilities.

### Defenses

Active defenses include missile and air defenses. Passive defenses include measures that reduce vulnerability through operations security, communications security, emission security, physical security, mobility, dispersal, redundancy, deception, concealment, and hardening. Passive defenses warn of imminent attack, support consequence management activities that mitigate the damage caused by WMD use, and protect critical in-



**Figure. Comparison of the Cold War triad and the new triad.** (Adapted from AFDD 2-12, *Nuclear Operations*, 7 May 2009, 6, [http://www.dtic.mil/doctrine/jel/service\\_pubs/afdd2\\_12.pdf](http://www.dtic.mil/doctrine/jel/service_pubs/afdd2_12.pdf).)

formation systems. This element of the new triad comprises defenses for the US homeland, forces abroad, allies, and friends.

### Infrastructure

This component of the new triad has two elements. First, the research and development and industrial infrastructure includes the research facilities, manufacturing capacity, and skilled personnel needed to produce, sustain, and modernize the elements of the new triad as well as supporting intelligence and C2 capabilities. Second, a responsive infrastructure that can augment US military capabilities through the development of new systems or accelerated production of existing capabilities in a timely manner provides strategic depth to the new triad.<sup>10</sup>

### Command and Control

Effective nuclear operations require a robust C2 capability that ensures control of nuclear weapons. According to AFDD 2-12, “effective C2 is critical for the proper em-

ployment of nuclear weapons.”<sup>11</sup> At the top of the nuclear C2 structure, civilian leaders will always decide whether or not to use these weapons. As mentioned earlier, only the president of the United States has the authority to order their use. A communication system that is survivable, redundant, secure, and interoperable enables this C2 capability. Survivable C2 should be able to operate in a chemical, biological, radiological, or nuclear environment. Redundant systems ensure the availability of communications. Interoperable systems guarantee effective communications across myriad systems employed in this C2 infrastructure.

### Nuclear Surety

AFDD 2-12 emphasizes nuclear surety by dedicating a new chapter to the subject. It opens by declaring that “perfection is the standard for the safety, security, and reliability of nuclear weapons operations.”<sup>12</sup> To prevent nuclear accidents, incidents, loss,

or unauthorized or accidental use, the Air Force conducts a stringent nuclear surety program that applies to materiel, personnel, and procedures. Safety, security, and reliability are indeed the hallmarks of such a program.

Strict adherence to directed procedures and weapon system design is critical for safety. This combination provides fail-safe assurance against the unauthorized use of nuclear weapons. Examples include control measures such as inherent features of warhead design that prevent accidental or unauthorized nuclear yields as well as operational procedures that prevent accidental or unauthorized use.

With regard to security, AFDD 2-12 notes that “nuclear weapons and their components must not be allowed to become vulnerable to loss, theft, sabotage, damage, or unauthorized use.”<sup>13</sup> A specialized security infrastructure and highly trained personnel assure the security of nuclear weapons.

The final component of an effective nuclear surety program takes the form of both the weapon system’s and the individual’s reliability. Sustainment, testing, and modernization ensure the reliability of nuclear weapon systems, whereas that of individuals depends upon assuring that only trained, certified, and dependable people have access to nuclear weapons, delivery systems, and C2 systems. Personnel monitoring allows only those persons whose behavior demonstrates integrity, reliability, trustworthiness, allegiance, and loyalty to

the United States to perform duties associated with nuclear weapons.

Certainly, all individuals working in nuclear operations are responsible for safety, security, and reliability, but commanders especially must guarantee the effectiveness of the nuclear surety program. AFDD 2-12 expresses the effects of successful nuclear surety: “Adversaries and allies should be highly confident of the Air Force’s ability to secure nuclear weapons from accidents, theft, loss, and accidental or unauthorized use.”<sup>14</sup>

The importance of nuclear surety cannot be overemphasized. Effective strategic deterrence requires a credible capability attainable only with an effective nuclear surety program. Such surety begins with knowing the doctrinal principles contained in AFDD 2-12.

## Conclusion

Nuclear operations and their contributions to strategic deterrence will remain a critical aspect of US national security strategy. Effective deterrence requires the military to present a credible nuclear capability so that an adversary’s (or potential adversary’s) leadership will believe that the cost of aggression against the United States, its interests, or its allies will be so high as to outweigh any possible gain. A reinvigorated and sustained nuclear enterprise yields a credible capability. AFDD 2-12, *Nuclear Operations*, offers the doctrinal basis for realizing just such an enterprise. ✪

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## Notes

1. *The National Security Strategy of the United States of America* (Washington, DC: White House, March 2006), 22, <http://www.strategicstudiesinstitute.army.mil/pdffiles/nss.pdf> (accessed 10 September 2009).

2. *Report of the Secretary of Defense Task Force on DoD Nuclear Weapons Management, Phase I: The Air Force’s Nuclear Mission* (Arlington, VA: Secretary of Defense Task Force on DOD Nuclear Weapons

Management, September 2008), 13, [http://www.defenselink.mil/pubs/Phase\\_I\\_Report\\_Sept\\_10.pdf](http://www.defenselink.mil/pubs/Phase_I_Report_Sept_10.pdf) (accessed 10 September 2009).

3. *Reinvigorating the Air Force Nuclear Enterprise* (Washington, DC: Headquarters United States Air Force, Air Force Nuclear Task Force, 24 October 2008), 1, 3, <http://www.af.mil/shared/media/document/AFD-081024-073.pdf> (accessed 10 September 2009).

4. Air Force Doctrine Document (AFDD) 2-12, *Nuclear Operations*, 7 May 2009, 2, [http://www.dtic.mil/doctrine/jel/service\\_pubs/afdd2\\_12.pdf](http://www.dtic.mil/doctrine/jel/service_pubs/afdd2_12.pdf) (accessed 10 September 2009).

5. *Ibid.*

6. *Ibid.*, 3.

7. US Senate, *Statement of the Honorable Donald H. Rumsfeld, Prepared for the Confirmation Hearing before the US Senate Committee on Armed Services*, 107th Cong., 1st sess., 11 January 2001, [4], <http://armed-services.senate.gov/statemnt/2001/010111dr.pdf> (accessed 10 September 2009).

8. See "Weapons of Mass Destruction: Nuclear Posture Review [Excerpts]," *GlobalSecurity.org*, <http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm> (accessed 10 September 2009).

9. *Report of the Secretary of Defense Task Force*, 3.

10. AFDD 2-12, *Nuclear Operations*, 6–7.

11. *Ibid.*, 12.

12. *Ibid.*, 22.

13. *Ibid.*, 25.

14. *Ibid.*, 22.



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