

Section 2.4: Delivery Systems

- 1 *Weapons of Terror*, p. 143.
- 2 Mark Smith, “Missing Piece and Gordian Knot: Missile Non-Proliferation,” *Weapons of Mass Destruction Commission*, published study No. 27, Stockholm, February 2005, p. 1 (“Mark Smith”).
- 3 *Report of the Canberra Commission on the Elimination of Nuclear Weapons*, Commonwealth of Australia, Canberra, 2005. Online at <http://www.dfat.gov.au/cc/CCREPORT.PDF>
- 4 *Mark Smith*, pp. 7-9.
- 5 *E.g.*, “Draft Report of National Security Advisory Board on Indian Nuclear Doctrine,” Section 3.1, August 17, 1999. Online at http://www.indianembassy.org/policy/CTBT/nuclear_doctrine_aug_17_1999.html. The preamble asserts that:

Autonomy of decision making in the developmental process and in strategic matters is an inalienable democratic right of the Indian people. India will strenuously guard this right in a world where nuclear weapons for a select few are sought to be legitimised for an indefinite future, and where there is growing complexity and frequency in the use of force for political purposes.
- 6 *Weapons of Terror*, p. 25.
- 7 *Id.*
- 8 “But I have no interest in diplomacy for the sake of returning Lebanon and Israel to the status quo ante. I think it would be a mistake. What we’re seeing here, in a sense, is the growing —the birth pangs of a new Middle East.... And whatever we do, we have to be certain that we are pushing forward to the new Middle East, not going back to the old one.” “Secretary Rice Holds a News Conference,” *The Washington Post*, CQ Transcripts Wire, July 21, 2006. Online at <http://www.washingtonpost.com/wp-dyn/content/article/2006/07/21/AR2006072100889.html>.
- 9 U.S. Department of Defense, *Nuclear Posture Review*, Submitted to Congress December 2001 (“*Nuclear Posture Review*”), provided in “Nuclear Posture Review Excerpts,” *Globalsecurity.org*, p. 7. Online at <http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm>.
- 10 U.S. Air Force Space Command, *Strategic Master Plan FY06 and Beyond*, 2003, p. 4.
- 11 See, *E.g.*, “Exhibit R-2, RDT&E Budget Item Justification,” Air Force, February 2007, Program Element 0603851F ICBM - DEM/VAL; “Exhibit R-2, RDT&E Budget Item Justification,” Navy, February 2007, Program Element 0101221N Strategic Sub & Wpns Sys Spt.
- 12 Amy Woolf, *U.S. Nuclear Weapons: Changes in Policy and Force Structure*, Congressional Research Service Report to Congress, CRS-28, Updated January 13, 2005.
- 13 Air Force Major General Thomas H. Neary, ret., remarks at Air Force Space Command “Guardian Challenge 2004” competition, quoted in Scott R. Gourley, “ICBM Transformation,” *Military Aerospace Technology Online*, Vol. 3, #2, June 25, 2004.
- 14 U.S. Air Force Space Command, “Final Mission Need Statement, Land Based Strategic Nuclear Deterrent,” AFSPC 001-00, January 2002 (unpaginated).

- 15 Robert S. Norris and Hans M. Kristensen, "U.S. nuclear forces, 2006," *Bulletin of the Atomic Scientists*, January/February 2006, pp. 68-71. http://www.williambowles.info/wmd/us_nukes_2006.html; see also Department of the Navy, Fiscal Year (FY) 2006/FY 2007 Budget Estimates, RDT&E Project Justification, January 2005, Program Element 0101221N, Strategic Sub & Wpns Sys Spt, Technology Applications 2228.
- 16 U.S. Department of Defense, *Report of the Defense Science Board Task Force on Future Strategic Strike Forces*, Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, Washington, D.C., 2004, p.5-8, see also Department of Defense, "Contracts," News Release, November 26, 2003.
- 17 See, for example, U.S. Department of the Air Force, Research, Development, Test and Evaluation (RDT&E), Descriptive Summaries, February 2007, Program Element 0604240F, B-2 Advanced Technology Bomber, requesting funds for various electronics upgrades including "a secure, survivable communication and Net Ready infrastructure systems upgrade, preserving the critical ability to guarantee communication in a nuclear environment" and other upgrades that "will provide a dramatic increase in the data flow into and out of the B-2, paving the way for integration into the Global Information Grid (GIG)."
- 18 U.S. Department of the Air Force, Air Force Materiel Command, AFRL, Space Vehicles Directorate, "Concepts and Technologies Study for Enhance [sic] Cruise Missile (ECM)," Sources Sought Notice, Reference Number AFNWCA002, December 7, 2004 (modified December 9, 2004).
- 19 U.S. Air Force Space Command, *Prompt Global Strike (PGS) Analysis of Alternatives (AoA) Study Plan Draft* 28 October 2005, p. 9.
- 20 *Id.*, p. 10.
- 21 *Id.*, p. 9.
- 22 See U.S. Air Force Space Command, "Final Mission Need Statement, Land Based Strategic Nuclear Deterrent," AFSPC 001-00, January 2002 (unpaginated); U.S. Defense Advanced Research Projects Agency, "FALCON (Force Application and Launch from CONUS)," Broad Agency Announcement, PHASE I Proposer Information Pamphlet (PIP) for BAA Solicitation 03-35, July 29, 2003. More about these programs can be found in Andrew Lichterman, *Missiles of Empire: America's 21st Century Global Legions*, Western States Legal Foundation Information Bulletin, Fall 2003 ("*Missiles of Empire*"). Online at <http://www.wslfweb.org/docs/missiles03.pdf>.
- 23 For more on the Common Aero Vehicle, see *Missiles of Empire*, pp. 3-6.
- 24 In 2004, Congress expressed concern that "nations possessing nuclear weapons capabilities" might "misinterpret the intent or use of the FALCON/CAV programs." Congress directed that funds appropriated for hypersonics research could not be used "to develop, integrate, or test a CAV variant that includes any nuclear or conventional weapon," or "to develop, integrate, or test a CAV for launch on any Intercontinental Ballistic Missile or Submarine Launched Ballistic Missile." The Conference Report noted, however, that "The Committees on Appropriations will consider expanding the scope of this program in subsequent years if safeguards negotiated among our international partners have been put in place." House Rpt. 108-622 - Making Appropriations for the Department of Defense for the Fiscal Year Ending September 30, 2005, and for Other Purposes. See also Exhibit R-2, RDT&E Budget Item Justification, February 2007, 0604856F Common Aero Vehicle.

- 25 U.S. Department of Defense, *Quadrennial Defense Review Report*, February 6, 2006 (“*QDR 2006*”), p. 6.
- 26 See Exhibit R-2, RDT&E Budget Item Justification, Navy, February 2006, PE 0604327N-Hard & Deeply Buried Target Defeat System Program. Online at <http://www.dtic.mil/descriptivesum/Y2007/Navy/0604327N.pdf>.
- 27 For a good overview of the policy implications of the conventional Trident proposal and of its current status in Congress, see Steve Andreasen, “Off Target? The Bush Administration’s Plan to Arm Long-Range Ballistic Missiles with Conventional Warheads,” *Arms Control Today*, July/August 2006.
- 28 U.S. Department of the Air Force, *Space Force Application Mission Area Development Plan*, 1997, p. 38 (obtained in part via the Freedom of Information Act by the Western States Legal Foundation).
- 29 U.S. Department of Defense, *Deterrence Operations Joint Operating Concept*, Version 2.0, December 2006 (“*Joint Concept*”), p. 41.
- 30 *Id.*
- 31 “Classified or ‘black’ programs appear to account for about \$28.0 billion, or 19 percent, of the acquisition funding included in the fiscal year (FY) 2006 Department of Defense (DoD) budget request.... This total includes \$14.2 billion in procurement funding and \$13.7 billion in research and development (R&D) funding. These figures represent 18 percent and 20 percent, respectively, of the total funding requested for procurement and R&D.” Steven M. Kosiak, “Classified Funding in the FY 2006 Defense Budget Request,” Center for Strategic and Budgetary Assessments, March 23, 2006, p.1—only has FY07 page—Online at <http://www.csbaonline.org/4Publications/PubLibrary/U.20060517.FY07BlackBudget/U.20060517.FY07BlackBudget.pdf>.
- 32 *QDR 2006*, p. 31.
- 33 *Id.*
- 34 See *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion of the International Court of Justice, July 8, 1996, I.C.J. Reports (1996), p. 226, paragraph 41, quoting *Case Concerning Military and Paramilitary Activities In and Against Nicaragua* (Nicaragua v. United States of America), Opinion of the International Court of Justice, I.C.J. Reports 1986, p. 94, para. 176.
- 35 U.S. Department of the Air Force, *United States Air Force Strategic Planning Directive for Fiscal Years 2006-2023*, p.20.
- 36 *QDR 2006*, p.49. See also *Joint Concept*, p. 40:

“Advances in conventional kinetic and non-kinetic means (e.g., cyberspace warfare, High Energy Radio Frequency (HERF) and directed energy (DE), etc.) may supplement US nuclear capabilities by 2015, nuclear weapons that are reliable, accurate, and flexible will retain a qualitative advantage in their ability to demonstrate US resolve on the world stage. Improving our capability to integrate nuclear and non-nuclear strike operations should further enhance these capabilities. Providing the President an enhanced range of options for both limiting collateral damage and denying adversaries sanctuary from attack will increase the credibility of US nuclear threats, thus enhancing deterrence and making the actual use of nuclear weapons less likely. Additionally, nuclear weapons allow the US to rapidly accomplish the wholesale disruption of an adversary nation-state with limited US national resources.”

- 37 “Sustaining and increasing the qualitative military advantages the United States enjoys today will require transformation - a transformation achieved by combining technology, intellect and cultural changes across the joint community. The goal is Full Spectrum Dominance—the ability to control any situation or defeat any adversary across the range of military operations.” U.S. Joint Chiefs of Staff, *The National Military Strategy of the United States*, 2004, p. viii. Online at <http://www.defenselink.mil/news/Mar2005/d20050318nms.pdf>.
- 38 Lieutenant General Henry A. Obering III, USAF, Director, Missile Defense Agency, Statement Before the Strategic Forces Subcommittee, House Armed Services Committee, March 9, 2006 (emphasis supplied).
- 39 “Advances in defensive technologies will allow U.S. non-nuclear and nuclear capabilities to be coupled with active and passive defenses to help provide deterrence and protection against attack, preserve U.S. freedom of action, and strengthen the credibility of U.S. alliance commitments.” *Nuclear Posture Review*, p. 7, provided in “Nuclear Posture Review Excerpts,” [Globalsecurity.org](http://www.globalsecurity.org), at <http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm>
- 40 U.S. Department of Defense, *Strategic Deterrence Joint Operating Concept Version 2.0*, December 2006, p. 38.
- 41 *Nuclear Posture Review*, p. 13.
- 42 Brad Roberts, *Asymmetric Conflict 2010*, Institute for Defense Analyses, Defense Threat Reduction Agency, Alexandria, Virginia, 2000, p. 4.
- 43 National Research Council, Naval Studies Board, Commission on Physical Sciences, Mathematics, and Applications, *Post Cold War Conflict Deterrence*, National Academy Press, Washington, D.C., 1997, Chapter 3. Online at <http://www.nap.edu/html/pcw/Dt-3.htm>.
- 44 As the recently retired Commander of U.S. Joint Forces Command stated in the fall of 2000, “This issue’s been studied by panel after panel after panel and we got it—Our current policy is one that I support and understand. The priority is lower tier theater ballistic missile defense systems first, upper tier systems second, national missile defense third. That’s the way the threat is arrayed.” Admiral Hal Gehman, ret., former Commander-in-Chief, U.S. Joint Forces Command, speaking at a Washington, D.C. conference, “National Strategies and Capabilities for a Changing World,” November 16, 2000, transcript at <http://www.fletcherconference.com/oldtranscripts/2000/panel5.htm>
- 45 See on this point John Steinbruner, “National Missile Defense: Collision in Progress,” *Arms Control Today*, November 1999, pp. 4-5. It is important to note that the full capabilities of satellite sensing systems often are not apparent until the system is deployed, and are likely to evolve as both ground and space-based elements of the system are improved and replaced over time. In a recent speech to the Air Force Association, the Vice Commander of Air Force Space Command predicted that the Space Based Infrared System (SBIRS), a major component of anticipated missile defense systems, would have a variety of applications beyond missile defense:

SBIRS brings exciting new capabilities to the battle space.... But people forget that SBIRS has far more capability than just as a missile warning sensor. The intelligence capabilities, the battle space characterization kinds of capabilities that this fire-improved sensor is going to bring to our national security equation, I think, would have important advantages....

When we get that kind of capability in orbit, we are going to discover all kinds of applications in a horizontal sense across the battle space that we never envisioned because we've never had experience with that kind of phenomenology and that kind of timeliness and that kind of sensitivity. It is very difficult to speculate exactly how powerful that will turn out to be. Lieutenant General Roger G. DeKok, Vice Commander Air Force Space Command, Air Force Association National Symposium, Los Angeles, CA, November 16, 2001. Transcript at <http://www.afa.org/AEF/pub/dekok1101.asp>.

For a useful account of the way in which some past U.S. satellite sensing systems have provided military capabilities beyond those originally envisioned, see Jeffrey T. Richelson, *America's Space Sentinels: DSP Satellites and National Security*, University Press of Kansas, Lawrence, Kansas, 1999.

- 46 *Nuclear Posture Review*, pp. 16-17.
- 47 For example, "Active and passive defenses have little or no ability to encourage adversary restraint. In fact, because they have the synergistic impact on our perceived willingness to impose costs described above, they have the potential to increase adversary concerns regarding preemption. Such concerns, in certain circumstances, could worsen an adversary's perception of the consequences of restraint. Deterrence planning and operations need to account for this possibility." *Joint Operating Concept*, p. 39.
- 48 For an in depth version of these arguments, see David Wright, Laura Grego, and Lisbeth Gronlund, *The Physics of Space Security: A Reference Manual*, American Society of Arts and Sciences, Cambridge, Massachusetts, 2005.
- 49 The United States currently, however, appears determined to keep all its military space options open. The *U.S. National Space Policy* released in October 2006, at p. 2, states that:

The United States will oppose the development of new legal regimes or other restrictions that seek to prohibit or limit U.S. access to or use of space. Proposed arms control agreements or restrictions must not impair the rights of the United States to conduct research, development, testing, and operations or other activities in space for U.S. national interests.

Section 2.5: Understanding U.S. Policy

- 1 *Weapons of Terror*, p. 53.
- 2 *Id.*, p. 54.
- 3 For similar remarks, see the Arms Control Association press briefing, "Hans Blix Reports on WMD Dangers and Solutions," June 7, 2006. Online at http://armscontrol.org/events/20060607_Blix_WMDC_Transcript.asp.
- 4 See Kevin Phillips, *American Dynasty: Aristocracy, Fortune, and the Politics of Deceit in the House of Bush*, Penguin, New York, 2004.
- 5 See Michael O. Wheeler, "INSS Occasional Paper 62: International Security Negotiations: Lessons Learned from Negotiating with the Russians on Nuclear Arms," USAF Institute for National Security Studies, February 2006, pp. 35-48.