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The Bunker-Busting Nuke: Essential Capability or Destabilizing Weapon?

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The Bunker-Busting Nuke: Essential Capability or Destabilizing Weapon?

"The worst of all conditions in which a belligerent can find himself is to be utterly defenseless. Consequently, if you are to force an enemy, by making war on him, to do your bidding, you must either make him literally defenseless or at least put him in a position that makes this danger probable."

Carl von Clausewitz[1]

Introduction

The nuclear weapons community has not seen such controversy over the development of a nuclear warhead since the neutron bomb. Over 20 years ago, the national and international debate on the neutron bomb ultimately killed the program and canceled plans for deployment. Militarily, the neutron bomb was easy to justify—it was designed to kill combatants without creating extensive structural damage to bridges and buildings or causing unnecessary fallout that could potentially kill millions of civilians and jeopardize friendly forces.[2] In other words, it was designed to execute its mission with minimal collateral damage. Despite sound military requirements and clear war fighting justifications, the weapon was nevertheless defeated on the battlefields of public opinion and political discourse because it was deemed "too useable" and therefore destabilizing.

Given the recent debate on precision low-yield nuclear weaponry, the bunker-busting nuclear warhead may follow the same fate. Today's arguments seem all too familiar to those heard two decades ago against the neutron bomb. There are, however, compelling reasons to develop a weapon that can hold any sanctuary or safe haven at risk in order to make the enemy, as

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[1] Carl von Clausewitz, On War. (Princeton, NJ: Princeton University Press, 1989), 77.

[2] Christopher Ruddy, "Bomb Inventor Says US Defenses Suffer Because of Politics," Los Angeles Tribune-Review, 15 June 1997, available at http://www.manuelsweb.com/sam_cohen.htm, accessed 11 April 2002.

Clausewitz would say, utterly defenseless. Many potential adversaries possess deeply buried bunkers where weapons of mass destruction are manufactured and stored. Short of nuclear weapons, a considerable number of these facilities cannot be destroyed.[3] Although some argue otherwise, America needs to develop and maintain a capability to defeat this target set should conflict arise. This thesis will become clear by first justifying the need to hold hard and deeply buried targets at risk, then refuting the arguments that precision low-yield nuclear weapons are destabilizing, and finally, making the case that America truly needs a bunker-busting nuclear warhead.

Holding Hard and Deeply Buried Targets at Risk

Hard and deeply buried targets (HDBT) pose a serious challenge to the nation's war fighting capabilities. HDBTs include super-hardened surface targets and deeply buried bunkers or tunnels. These targets are exceptionally well protected because they contain the essential capabilities needed to carryout national-level decisions. They also protect assets considered most dear. Examples include national leadership shelters, critical communications nodes, command and control systems, and weapons of mass destruction production, assembly, and storage.[4] Possessing the capability to hold these targets at risk is a crucial element of any war plan or military strategy.

Those nations engaged most fully in the Cold War saw great utility in developing and maintaining HDBTs. All across the former Soviet Union, China, North Korea, and former

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[3] "US Keeps Options Open on Low-Yield Nuclear Weapons," Disarmament Diplomacy, Issue Number 62, January – February 2002, 1.

[4] "Report to Congress on the Defeat of Hard and Deeply Buried Targets," July 2001, Submitted by the Departments of Defense and Energy in response to Section 1044 of the 2001 Defense Authorization Act, 8.

Warsaw Pact countries, hardened facilities were established to protect key infrastructures.[5] The technologies needed to create HDBTs were refined and well understood. While these hardened facilities were initially created to protect against US and NATO nuclear attack, they proved very effective against advances in precision strike weaponry. The message from the Gulf War and conflicts in the Balkans is to harden or deeply bury essential capabilities or risk losing them to superior US forces. As a result, there has been a proliferation of HDBTs worldwide, and the intelligence community believes there are now over 10,000 such targets, many of which the US cannot hold at risk with a standoff capability.[6] Although ground troops could be employed to overwhelm such facilities, their response may not be swift or assured enough to strike multiple targets simultaneously to deny adversaries access to their weapons of mass destruction.

The proliferation of HDBTs is particularly troublesome in the Third World where several countries are pursuing weapons of mass destruction and are protecting the associated delivery systems through various hardening and deeply burying techniques. For example, North Korea has spent years building a labyrinth of tunnels capable of storing men and materials in preparation for an invasion into South Korea. According to reports, many of these tunnels are 300 feet deep and are wide enough to allow movement of heavy equipment. Collectively, 8,000 troops per hour can move through these tunnels during an attack on South Korea.[7] In Libya, there are efforts underway to build a 2,000-mile long network of tunnels to move troops and equipment in a concealed and protected manner.[8] The greater concern, however, is when these hardened

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[5] Ibid., 8.

[6] Ibid., 8.

[7] Joseph S. Bermudez, Jr. North Korean Special Forces. (Annapolis MD: Naval Institute Press, 1998), 251.

[8] Raymond Bonner, "Mysterious Libyan Pipeline Could Be Conduit for Troops," New York Times, 2 December 1997.

transportation networks are linked to weapons of mass destruction storage or development facilities. An underground chemical manufacturing facility in Tarhunah, Libya is believed to be connected to the 2,000-mile long network. Without an effective means to target and destroy such facilities, potential adversaries are all but guaranteed a sanctuary or safe haven for their weapons of mass destruction.

Although many of these HDBTs can be destroyed by conventional means, the contents of the facilities may remain intact and released into the atmosphere, such as biological and chemical agents.[9] This would jeopardize the lives of nearby civilians and friendly forces, as well as creating a serious environmental hazard. Dealing with the consequences of such an attack could seriously hamper US military and coalition partner activities. Bunker-busting capabilities must not only hold the physical structures of HDBTs at risk, they must also defeat the contents of the HDBTs in a manner that minimizes danger to friendly forces and innocent civilians. Presently, the US lacks that capability short of large-scale nuclear weapons, but efforts to tailor-design smaller nuclear weapons has been met with considerable resistance.[10]

Why Some Argue Against Precision Low-Yield Nuclear Weapons

While most agree that the US needs to be able to hold HDBTs at risk, there is considerable disagreement on using nuclear weapons as the method to do so. Critics of precision low-yield nuclear warheads contend that these weapons make their eventual use more likely. Lowering the

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[9] H. Josef Hebert, "Bush Administration Wants to Build New Nuclear Bomb," Associated Press, 19 December 2001, available at http://www.nukewatch.org, accessed 11 April 2002.

[10] "Report to Congress on the Defeat of Hard and Deeply Buried Targets," July 2001, Submitted by the Departments of Defense and Energy in response to Section 1044 of the 2001 Defense Authorization Act, 20.

"threshold use" of nuclear weapons is therefore destabilizing.[11] In their view, possessing only large-scale nuclear weapons is a better option because they are less likely to be used. This belies their true position, which is to rid the nation of all nuclear weapons. Short of their goal to abolish nuclear weapons altogether, they seek to frustrate any effort to develop new nuclear weapons and to ensure existing weapons are ill-designed for potential uses. As America marches toward the 2001 Nuclear Posture Review's goal of 1700 – 2200 weapons, the inventory will consist almost entirely of strategic class weapons.[12] The Minuteman III ICBM will carry a W87 warhead with a 300 kiloton (KT) yield. The Trident II SLBM will be outfitted with a W88 warhead yielding 475 KT. The B-2 and B-52 bombers will carry the B61 multi-yield warhead ranging from 10 KT to 500 KT and the B83 mega-bomb yielding 1-2 megatons.[13] These weapons yields would create presumably unacceptable levels of collateral damage if detonated on the target's surface in an attempt to create blast and overpressure sufficient enough to neutralize hardened and deeply buried targets. Opponents of small-scale nuclear warheads know this, and want to keep it that way.

Developing new nuclear warheads also raises the specter of nuclear testing according to opponents.[14] The assumption is that any new design would require rigorous operational testing, particularly if the warhead was mated to an earth-penetrating device. US resumption of testing would encourage others to do so and undermine international condemnation of the recent nuclear testing in Pakistan and India. However, according to C. Paul Robinson, President and Director of

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[11] Rose Gottemoeller, "On Nukes, We Need to Talk," Washington Post, 2 April 2002.

[12] "US Nuclear Enduring Stockpile," Federation of American Scientists, available at http://www.fas.org/nuke/hew/Usa/Weapons/Wpngall.html, accessed 11 April 2001, 3.

[13] "An Overview of Current and Planned U.S. Nuclear Weapons," undated, available at http://www.nukewatch.org/nwd/weap.html, accessed 11 April 2001.

[14] Walter Pincus, "Nuclear Strike on Bunkers Assessed," The Washington Post, 20 December 2001, A29.

Sandia National Laboratories, "we would neither have to conduct testing nor redesign for such a weapon, because we have them already."[15] Robinson suggests that existing warhead "secondaries" could be removed, leaving the primary alone, which would generate yields of 10 KT or less, and would be near the desired yield for a bunker-busting nuclear warhead. In other words, the design is proven, testing is not required, and short of replacing the secondary with a dummy, the basic weapon already exists.

Concerns have also been raised regarding forward deploying these weapons closer to the battlefront where they are more vulnerable to attack or seizure, or commanders may circumvent rigorous command and control processes reserved for strategic nuclear weapons.[16] Without entering into an argument on the use control procedures for nuclear weapons, suffice it to say that all nuclear weapons are tightly controlled and can only be authorized by the President. The fact of the matter is that global delivery systems forego the need to forward deploy nuclear weapons. The B-2 has proven time and again its ability to depart its home base at Whiteman Air Force Base in Missouri, fly halfway around the world to execute a precision strike, and then return to its home base. Forward deploying nuclear weapons is not required.

There are, however, many who understand the full scope of nuclear weapons employment and support the basic tenets of nuclear deterrence in the strategic sense, but believe precision low-yield nuclear weapons create a dangerous and destabilizing era.[17] Their argument centers on the premise that the temptation to use small-scale nuclear weapons will be too great to resist. In reality, America has long had small-scale nuclear warheads such as the current B61-11 with a

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[15] "Ban the Bomb? Heck No, It's Too Useful," Insider Review, 12 September 2001.

[16] Allistar Millar, "It's a Bomb! Bush's Baby Nuke," The Progressive, August 2001, available at http://www.progressive.org/0801issue/mill0801.html, accessed 11 April 2002.

[17] Stephen I. Schwartz, "The New-Nuke Chorus Tunes Up," Bulletin of the Atomic Scientists, July/August 2001, Volume 57, Number 4, 33.

yield of less than 10 KT, or the now retired W-30 Tactical Atomic Demolition Munition with a yield of 4.7 KT.[18] These weapons were considered highly effective against their intended targets, such as bridges and soft targets, and would result in low levels of collateral damage, yet somehow America resisted the temptation to use them. Although the B61-11 is still in the inventory, it lacks the precision and earth penetrating capabilities needed to hold HDBTs at risk. The underlying argument, however, that bunker-busting nukes would be "too usable" runs counter to US history. America understands the nuclear threshold and the perils of crossing it. No one but the opponents of bunker-busting nukes are arguing that the nation would use nuclear weapons as a first resort. US Strategic Command and the nuclear laboratories view the use of nuclear weapons would be as a last resort, and only at the direction of national level leadership.[19] The primary purpose of nuclear weapons has been, and continues to be, one of deterrence.

The Case for Bunker-Busting Nukes

Deterrence doctrine has long been a mainstay of US military strategy, and it is one that is well understood and well defined. Simply put, deterrence exists when potential adversaries understand that the costs will exceed perceived benefits when embarking upon behavior that runs counter to US interests. There are three elements to deterrence and each is vitally important to the overall concept. First, America must have a credible capability—US weapon systems must be reliable and effective. Second, America must have the resolve or willingness to employ its capability. Third, the adversary must perceive that the US has both a credible capability and the resolve to inflict unacceptable damage. Ultimately, deterrence is not what the US and allies think,

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[18] "US Nuclear Enduring Stockpile," Federation of American Scientists, available at http://www.fas.org/nuke/hew/Usa/Weapons/Wpngall.html, accessed 11 April 2001, 3.

[19] John Fleck, "Nukes Could Hit Enemy Bunkers," The Albuquerque Journal, 18 December 2001.

it is what the adversary thinks. So much of the discussion on this issue has centered on the US being too willing to use low-yield nuclear weapons or never using them at all. What really counts is whether or not the adversary believes America's leadership will use when required. Being willing to use nuclear weapons either preemptively or in retaliation has deterrent value, but deterrence fails if the adversary perceives there is no occasion in which the US will respond. When it comes to countering weapons of mass destruction, the US needs a capability that is effective and one that the adversary perceives America is willing to use.

As discussed earlier, the weapons yields of Cold War legacy systems are too powerful to provide a credible deterrent in a multilateral, proliferated world.[20] These weapons are, in a sense, self-deterring. Quite likely, "rogue nations" such as Iran, Iraq, and North Korea recognize that America will not use nuclear weapons against their HDBTs if the only weapons available are either extremely destructive and will create extensive collateral damage (e.g., an SLBM with 475 KT) or has a low-yield but is ineffective because it does not have an earth penetrating capability (e.g., a B61-11 with 10 KT). To date, the US has maintained an air of ambiguity regarding the use of nuclear weapons in response to enemy use of chemical or biological weapons. However, that ambiguity fails when the US cannot hold the target set at risk, and has the choice of either no nuclear weapons or holding the general population responsible for their leadership's decision to use weapons of mass destruction. As a result, America's Cold War nuclear inventory undermines the deterrent message for Third World nations.

Under current legislation, the national laboratories are prohibited from developing nuclear weapons with yields less than 5 KT because it "blurs the distinction between conventional and

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[20] Richard Norton-Taylor, "Britain's Nuclear Industry," The Guardian, 25 April 2001.

nuclear war."[21] While new conventional capabilities are being created to defeat HDBTs, nothing in that arena promises the ability to penetrate the deepest facilities—the only current solution involves a nuclear yield. Based on the 2001 Nuclear Posture Review, it is quite likely that a proposal for research and development of a precision low-yield nuclear capability will be presented in the new Congressional session. This seems to be in line with the 2001 Quadrennial Defense Review, which places a premium on deterrence at every level of potential conflict. It must be clear, however, that nuclear weapons, no matter how large or small, must never be considered as "war fighting tools."[22] As weapons of last resort, even at yields below 5 KT, their primary purpose is war prevention and deterrence. If war occurs, nuclear weapons then serve to deter the use of weapons of mass destruction, be they nuclear, chemical, or biological. If the enemy elects to use weapons of mass destruction, nuclear weapons can then be employed to achieve war termination goals if they cannot be brought about by conventional capabilities. While conventional forces remain the mainstay of US military might, deterring with credible nuclear weapons can help prevent conflicts from beginning, deter escalation once conflict starts, and help end the war on terms favorable to the US.

Conclusion

Unlike the neutron bomb, the bunker-busting nuke provides a capability not present in the current US arsenal. It is more than a matter of achieving an existing mission with reduced collateral damage. Many HDBTs, particularly those associated with weapons of mass destruction,

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[21] H. Josef Hebert, "Bush Administration Wants to Build New Nuclear Bomb," Associated Press, 19 December 2001, available at http://www.nukewatch.org, accessed 11 April 2002.

[22] C. Paul Robinson, "A White Paper: Pursuing a New Nuclear Weapons Policy for the 21st Century," undated, available at http://www.nukewatch.org/resources/pursuing_a_new_nuclear_weapons_p.html, accessed on 11 April 2001.

cannot be credibly held at risk with Cold War legacy systems. In other words, this is a mission unfulfilled. As America broadens the fight against terrorism and draws additional linkages between nations sponsoring terrorism and the capability to produce weapons of mass destruction, this mission becomes even more important—the hard and deeply buried target set needs to be held at risk in an effective manner.

Although the nation would be better served with conventional capabilities that could penetrate several hundred feet of rock and soil to defeat hardened facilities and the nuclear, chemical, and biological agents they possess, that capability does not presently exist. America should fully develop and deploy the necessary number of earth penetrating nuclear weapons as a stopgap measure to counter the current and near-term HDBT threat. Recognizing that the nation is reducing its overall nuclear inventory, efforts should be made to replace high-yield Cold War legacy warheads with earth penetrating low-yield weapons where practical. The goal is to see no aggregate increase in the nation's nuclear arsenal. The focus should be to tailor the weapon to the target, rather than using high-yield "large size fits all" detonations as a kill mechanism.

Debate will continue on this topic and it will be healthy. America should carefully consider every viewpoint and every opinion, both at home and abroad when it comes to developing a new nuclear weapons capability. This decision cannot be taken lightly. In the end, the decision 20 years ago to cancel the neutron bomb was likely the correct one given the circumstances of the day. But this day is different and the circumstances are different. America is at war and there is great potential that it will need to deter the use of weapons of mass destruction in a credible fashion. As that famous German war theorist Carl von Clausewitz suggested, the worst condition a belligerent can find himself is "utterly defenseless." The bunker-busting nuke helps achieve that condition, and America may soon face a belligerent who needs to perceive that his every capability is held at risk.