

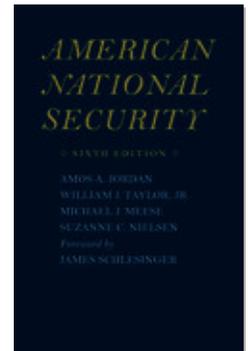


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## American National Security

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## Nuclear Policy

Throughout the Cold War, nuclear weapons formed the backbone of Western defense policy. Unable to fully match the conventional military strength of the former Soviet Union and the Warsaw Pact, the United States and its North Atlantic Treaty Organization (NATO) allies used the threat of nuclear retaliation to help avert what U.S. policy makers believed to be a serious risk of Soviet military adventurism as well as to deter the use of the Soviet nuclear arsenal. In support of this policy, the United States and its allies built tens of thousands of strategic and tactical nuclear weapons and deployed them in Europe, the Far East, and at sea. The policy was fraught with risks—indeed some believed that the nuclear arms race placed the very survival of the human race in jeopardy—but Western leaders thought the Soviet threat justified those risks.

In the years since the end of the Cold War, the Soviet nuclear threat has been replaced by a range of challenges posed by new or aspiring nuclear weapons states, such as North Korea and Iran, as well as by nonstate actors looking to acquire a nuclear weapon or a nuclear device to strike at Western targets. Particularly in the case of nonstate actors, U.S. strategic planners confront an enemy that most analysts believe cannot be deterred or contained by threats of nuclear reprisal (see Chapter 14). This chapter primarily focuses on what defense planners have termed *catastrophic challenges*, as shown in the upper right box in the diagram of threats identified in Figure 13.1 in Chapter 13 (though it also has implications for traditional and disruptive challenges). It examines the role of nuclear weapons in the post–Cold War security environment and measures to prevent the spread of nuclear weapons to states and nonstate actors that might use them against the United States or its allies.

## U.S. Nuclear Strategy during the Cold War

As the leader of the Free World during the Cold War, the United States was the principal guardian of western Europe, the Middle East, northeast Asia, and other regions against communist incursions. Its nuclear arsenal was the keystone of containment, providing military strength and deterrence that buttressed U.S. and NATO conventional military strength and political unity. On many occasions, the United States enunciated or became party to doctrines explicitly relying on the threat of nuclear war to achieve U.S. strategic aims (see Chapter 3). The predictable result was the deployment of a vast U.S. nuclear arsenal that included more than twelve thousand strategic warheads, thousands of tactical nuclear weapons at locations throughout Europe and the Far East, extremely accurate counterforce nuclear weapons, the satellites and command systems to help guide them, intercontinental ballistic missiles (ICBMs), submarine launched missiles, and heavy bombers to penetrate enemy airspace. The United States spent trillions of dollars on the strategic triad—the combination of nuclear missiles, bombers, and submarines—that comprised the U.S. nuclear posture.

**Nuclear Deterrence.** At different times, U.S. policy during the Cold War reflected two basic theories regarding how to deter an opponent from starting a nuclear war. One theory, known as *assured destruction*, holds that as long as a nuclear power is capable of responding in kind to a nuclear attack, any aggressor state would know that an attack would be suicidal and would therefore be deterred from making such an attack. Assured destruction requires a secure, second-strike capability—a nuclear force capable of withstanding an enemy attack and responding. If both sides have this capability, a situation known as *mutually assured destruction* (MAD) exists. Neither side can rationally start a war, because both sides are vulnerable to planned and credible retaliation. This threatened retaliation is often aimed at civilian targets, such as cities and industries, in what is called a *countervalue* approach to targeting. Assured destruction does not require a large or extremely accurate nuclear arsenal, but one that is certainly survivable and capable, after an enemy attack, of inflicting an unacceptably high level of punishment. The emphasis on credibility requires not merely the existence of nuclear weapons but the command, control, training, and exercising of nuclear weapon delivery systems so that an adversary will conclude that it could and would suffer devastating retaliation if it launched a nuclear attack.

A warfighting theory supported by a *counterforce* nuclear strategy, on the other hand, is much more ambitious than a countervalue, assured destruction approach. It holds that to deter an opponent, whose leaders might believe a nuclear war could be fought and won, military forces must have the ability to go beyond retaliation and be able to prevail over an opponent in a nuclear conflict. Such a strategy requires numerous accurate weapons capable of destroying enemy nuclear forces, well beyond the relatively few nuclear weapons required to hold enemy population centers or factories at risk. Counterforce strikes could be aimed at either nuclear or non-nuclear targets, such as command nodes or radar sites, but it is most commonly

associated with counternuclear strikes. This approach seeks to deter by denying the attacker the ability to prevail in a nuclear attack.

One common analogy for the nuclear superpowers during the Cold War is of two people with guns pointed at one another's heads. In the context of this image, assured destruction would have each side merely watch and wait and promise to pull the trigger if the other side does. Counterforce advocates say such a mutual suicide pact may not be credible and argue that each side must be prepared to win a gun duel rather than merely fire back. The distinction is between deterrence by threatening punishment and deterrence by demonstrating the capability to win a nuclear conflict.

**History of U.S. Nuclear Weapons Strategy.** To properly understand nuclear strategy today, the evolution of U.S. nuclear weapons policy must be considered, because previous approaches provide the theory, context, weapons, and precedents that affect current decision making. The earliest U.S. nuclear war plans emphasized countervalue targeting of Soviet cities because of the small number of bombs available and because of their unprecedented destructiveness. President Harry Truman saw little value in nuclear weapons and placed emphasis on arms control with such initiatives as the 1946 Baruch Plan—a proposal for total nuclear disarmament. Civilian control of nuclear weapons was absolute; it was not until 1948 that the military was allowed to formulate plans for the use of nuclear weapons.<sup>1</sup>

Eventually, however, Truman redoubled U.S. production of nuclear weapons and began to permit some military control.<sup>2</sup> Once given the right to formulate nuclear options, the new Strategic Air Command began to immediately develop plans to destroy Soviet war-making potential. The Soviet Union's August 1949 test of an atomic bomb lent new urgency to efforts to target Soviet military assets. By 1956–1957, the Soviet Union was expected to possess up to two hundred fifty bombs, and Soviet nuclear stockpiles, production facilities, and bomber delivery vehicles became the chief targets of the U.S. nuclear force.<sup>3</sup>

This targeting policy was not publicly announced, however. Secretary of State John Foster Dulles formally endorsed massive retaliation in 1954, and official U.S. statements still stressed general retaliation against Soviet society. Yet counterforce targeting had already begun, and target priorities would remain largely unchanged for decades. By the late 1950s, the push to target the Soviet military was in full force, and Defense Secretary Thomas Gates spelled out the implications: “We are adjusting our power to a counterforce theory,” he said. “We are not basing our requirements on just bombing Russia for retaliatory purposes.”<sup>4</sup>

From the beginning, U.S. military planners sought two primary goals with counterforce strategies. One was damage limitation. By destroying Soviet nuclear assets, planners contended that those weapons could not be launched against the United States. A second rationale for counterforce targeting was tied to the American policy of threatening nuclear escalation in Europe's defense. Early on, U.S. and NATO officials recognized that they would be unable to match Soviet

conventional force levels in Europe, and they looked to American nuclear weapons as the absolute deterrent. Though committed to this policy, American policy makers also sought options that would not necessarily cause immediate Soviet retaliation on U.S. cities. The ability to selectively target with nuclear weapons military formations moving toward western Europe could deter a Soviet attack without necessarily escalating to a major strategic nuclear exchange.<sup>5</sup> A policy of extended deterrence—where U.S. nuclear weapons deterred not only a Soviet nuclear strike but also protected allies against a Soviet conventional attack—began as early as 1948, with the deployment of B-29 bombers to Germany, and emerged fully during the Eisenhower administration.

The Kennedy administration and Secretary of Defense Robert McNamara pursued this same strategy and did so in part by downplaying the threat of massive retaliation and emphasizing flexible strategies of counterforce targeting as well as conventional force development. Domestic and international opinion quickly forced the Kennedy administration to retreat from public statements on flexible nuclear options. Some observers in the United States viewed counterforce strategy as problematic, because it suggested the possibility of launching a first strike at the Soviet Union. As might be expected, Moscow condemned the doctrine as provocative and dangerous. American allies also expressed doubts about a strategy that contemplated fighting limited nuclear wars. While such a policy could make the threat of nuclear use more credible, it might also make nuclear war more conceivable, and the territory of allied countries could become nuclear battlegrounds.

Given the destructiveness of nuclear weapons, the potential damage of even limited nuclear wars—let alone the ever-present possibility of further escalation—made U.S. discussion of making nuclear weapons “usable” unpopular at best and, for many, an unacceptable policy option. Development of means other than nuclear weapons to deter or defeat limited threats became the hallmark of the “flexible response” strategy.

During the Nixon administration, a distinction again emerged between publicly stated strategies and actual ones. Public opposition to counterforce targeting strategies and the Soviet’s major buildup of strategic nuclear weapons induced President Richard Nixon to adhere to a policy of *strategic sufficiency*—a more limited doctrine that aimed at some notion of adequacy rather than superiority—but, in fact, his administration accelerated the trend toward counterforce targeting. Secretary of State Henry Kissinger’s National Security Study Memorandum 3, requested the day after Nixon’s inauguration in 1969, was partly designed, as Kissinger put it, to “kill assured destruction” and establish the need for limited nuclear options and escalation control. A series of Nixon directives and decisions on the development of nuclear weapons as well as their employment reflected this goal.<sup>6</sup> Secretary of Defense James Schlesinger, the architect of this shift, sought a robust but limited and discriminatory nuclear counterforce.

For the remainder of the Cold War, counterforce targeting strategies continued to dominate U.S. nuclear policy. During the Carter administration, senior officials

held the view that an ability to *fight* a nuclear war had become an integral component of deterrence.<sup>7</sup> By the late 1970s, influential Western experts on the Soviet Union were convinced that Soviet military officers believed that their combination of heavy intercontinental ballistic missiles and an evolving strategic defense allowed them to fight and win a nuclear war against the United States. American planners concluded that they must threaten Soviet leaders with death and defeat, not just post-attack destruction, to deter them adequately. Counterforce capabilities would promote those goals.

By 1983, when the Reagan administration instituted its nuclear war plan, counterforce targets dominated U.S. retaliatory plans. As documented in numerous books and articles during the early 1980s, U.S. planning to fight, survive, and ultimately win a nuclear war reached a peak during the early Reagan years.<sup>8</sup> Some of the proponents of Ronald Reagan's policy to begin building defenses against missile attacks (the so-called Strategic Defense Initiative or SDI) made their case in a counterforce context, arguing that missile defenses were necessary to deny Soviet war aims. Even today, the United States continues to pursue some form of counterforce targeting as part of its comprehensive nuclear weapons posture, which is discussed later in this chapter.

## **U.S. Nuclear Policy after the Cold War**

The end of the Cold War brought with it the demise of the past central focus of U.S. nuclear policy—the Soviet Union. Theoretically, Russia still possesses the capability to destroy the United States in a matter of hours with its huge nuclear arsenal, but despite recurring tensions in relations between the two countries, few observers believe that Russia intends to wage nuclear war against the United States or poses the military threat to NATO or other U.S. allies that it did during the Cold War (see Chapter 22). Nevertheless, since Russia still has the ability to devastate the U.S., a nuclear deterrence hedge continues to be essential.

This change in context requires a complete re-examination of the role of nuclear weapons in U.S. national security policy. There are two related, and yet distinct, issues to be considered. The first challenge facing U.S. strategic planners is the threats created by the proliferation of nuclear weapons and technology to additional states or nonstate actors. The second issue concerns the overall nuclear capabilities that will best enhance U.S. national security in the current and probable future strategic environment.

**Current and Future Threats.** While the end of the Cold War has diminished though not entirely eliminated the threat of an all-out nuclear war involving the United States, the threat of nuclear weapons, possessed by a handful of states and coveted by other states and nonstate actors hostile to the West, is highly dangerous. Considering each of these potential threats illustrates the complexity and interconnected nature of U.S. nuclear policy.

*Russia.* Despite Russia's continuing nuclear capabilities, improved relations between the United States and Russia since the end of the Cold War have dramatically reduced the risk of nuclear war. In the minds of some experts, concern over the potential for nuclear conflict has now been largely displaced by fear of the deteriorating condition of the Russian nuclear arsenal. Russia's nuclear forces did not entirely escape the general collapse that occurred in all the country's armed forces. Horror stories of broken equipment, lax security, Strategic Rocket Forces personnel not being paid for months at a time, and rumors of attempted black-market sales of nuclear warheads had become commonplace by the late 1990s. Many analysts believe that the greatest threat from Russia stems not from deliberate government action but rather from a lack of effective control, which could lead to an accidental, unintentional, or unauthorized use of nuclear weapons.<sup>9</sup>

*China.* As of 2008, China's nuclear arsenal remains modest. China has an estimated twenty nuclear-tipped missiles with truly intercontinental range, and another twenty-two long-range missiles. It also deploys another estimated one hundred intermediate range missiles and at least one nuclear-armed submarine. The balance of China's nuclear arsenal is composed of hundreds of gravity bombs or tactical nuclear weapons.<sup>10</sup>

This relatively small force has long been adequate to China's traditional nuclear strategy of minimum deterrence. During the Cold War, China never sought to match the nuclear arsenals of the United States or the Soviet Union. Instead, China built a force large enough to destroy a number of major cities of any state that attacked its homeland. The question remains whether Chinese military leaders will remain content with this approach or will seek to expand their nuclear arsenal to achieve parity with the reduced forces of the United States and Russia. As far as can be determined, China's current nuclear plans, similar to those for the rest of the People's Liberation Army, point to more of the same—it has declared a preference for modernizing its relatively small force rather than substantially increasing its size. Of course, changes in U.S. nuclear policy could influence China's choice. Surprisingly, some American analysts argue that the United States should seek dramatic reductions in U.S. and Russian nuclear forces to emphasize to Chinese policy makers that a further nuclear buildup is not necessary.<sup>11</sup>

*North Korea.* On October 9, 2006, North Korea detonated a nuclear device. This detonation came after years of negotiations among six parties: the United States, North Korea, South Korea, China, Japan, and Russia. Throughout the long diplomatic process, North Korea, despite promises to the contrary, continued to secretly pursue nuclear weapons.

According to an authoritative 2006 Congressional Research Service report, North Korea is estimated to have enough plutonium for six to ten atomic bombs and enough highly enriched uranium (HEU) for between two and six additional

weapons.<sup>12</sup> Likely targets of a North Korean nuclear weapon would be South Korea or Japan, as well as U.S. forces deployed in the region. It is unclear whether North Korea has been able to miniaturize a nuclear device to fit on the tip of a missile. Current North Korean ballistic missile technology is not capable of targeting cities in the United States.<sup>13</sup>

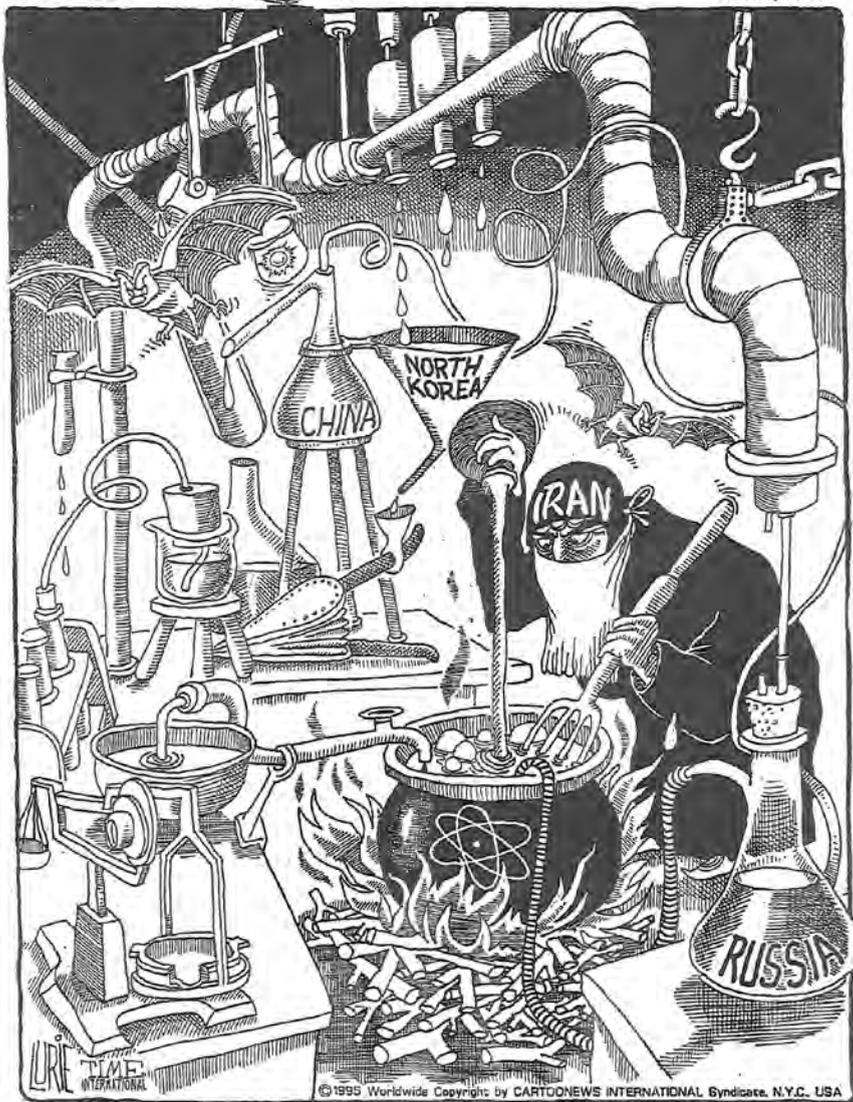
One worrisome side effect of a nuclear North Korea is the specter of a nuclear arms race in Asia. It is possible that South Korea and Japan would want to acquire nuclear weapons to deter a North Korean attack. In turn, the possibility of South Korea and Japan acquiring nuclear weapons could cause China to create more robust nuclear capabilities in response. Also, given the nuclear status of India and Pakistan, a destabilizing arms race could spread beyond the immediate region and engulf most of Asia.

*India and Pakistan.* In 1998, India and Pakistan conducted underground nuclear tests and became declared nuclear weapons states. This situation raises at least three significant concerns. First, relations between the two states are still marked by sharp tensions—particularly over the contested region of Kashmir—and they have already fought one minor war since becoming nuclear powers.<sup>14</sup> Second, the nuclear programs of these states could become a source of proliferation of nuclear technologies to additional state or nonstate actors, as has already occurred through the network that Pakistani nuclear scientist Abdul Qadeer Khan admitted to having established in 2004 (see Chapters 19 and 26). Third, domestic political instability in the region—particularly in Pakistan—could result in risky nuclear posturing or loss of control over the country’s nuclear arsenal, constituting another possible source of nuclear anarchy. The bilateral relationship between India and Pakistan and their nuclear postures will remain serious concerns for U.S. national security policy makers.

*Iran.* The 2006 U.S. National Security Strategy identifies Iran as the single most dangerous state-centered threat to U.S. security.<sup>15</sup> Iran pursued nuclear weapons in secret for nearly twenty years until 2002, when the National Council of Resistance of Iran blew the whistle on nuclear activities at Natanz and Arak.<sup>16</sup> Despite these covert nuclear programs, Iran proclaims that its nuclear ambitions are peaceful, claiming that nuclear energy is required to meet rising domestic energy requirements. However, the November 2007 U.S. National Intelligence Estimate (NIE) on Iranian nuclear intentions and capabilities reports that Iranian military entities were “working under government direction to develop nuclear weapons” until the fall of 2003, when they stopped their nuclear weapons program “in response to international pressure.”<sup>17</sup> The NIE further judges that if Iranian policy changed, it could restart the nuclear program, and Iran could produce a nuclear weapon some time between 2010 and 2015.<sup>18</sup> The difficulty of assessing the intentions and capabilities of a covert nuclear weapons program in Iran highlights the difficulty and importance of using intelligence assessments as a guide for national security policy making.

# LURIE'S WORLD

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The regional implications of a nuclear Iran are similar to those of Asia. Should Iran successfully acquire nuclear weapons, it would create numerous problems, including the possibility of touching off a nuclear arms race in the region. Israel in particular has reason for concern; Iranian President Mahmoud Ahmadinejad has stated many times that Israel should be wiped off the map. Should Iran nearly or

actually complete a nuclear device, Israel might decide to take action, much as it did in 1981 when the Israeli air force conducted a successful preemptive strike against the Osiraq nuclear reactor in Iraq. Whether such a raid would succeed against hardened buried facilities in Iran is unclear. Additionally, a Shiite Iran with nuclear weapons would likely make the Sunni Arab states feel dangerously threatened, perhaps leading them to seek their own nuclear weapons. Finally, Iranian sponsorship of terrorist groups, such as Hezbollah and Hamas, leads to the possibility of terrorists gaining access to nuclear weapons. This would raise the specter of some of the most dangerous people being armed with the world's most dangerous weapons. Each of these consequences highlights the importance of precluding Iranian nuclear weapons, if that is possible.

*Nonstate Actors.* The rise of terrorism in the post–Cold War era has been marked by an increase in violence toward nonmilitary targets, such as civilians. Many terrorism experts agree that nuclear weapons especially lend themselves to this purpose (see Chapter 14). Once terrorists acquire a weapon, deterring its use is highly problematic. Perhaps the most promising deterrence policy is to focus on preventing the acquisition of a device or the nuclear material for it in the first place.

The obstacles that a terrorist organization, such as al-Qa'ida, would have to overcome to attain nuclear capability include the acquisition of a weapon and the ability to employ it. A more likely related scenario would be for a nonstate actor to acquire sufficient radiological and explosive material to fashion a *radiological dispersion device*, or what is more commonly referred to as a *dirty bomb*, for use against targets in the United States or abroad.<sup>19</sup> This type of device would be easier for a non-state actor to acquire, transport, and use than a nuclear weapon, yet it would still inflict significant physical and even greater psychological damage. The danger of this scenario developing is far from negligible.

**Managing the Nuclear Challenge in a New Era.** As this brief survey reflects, the challenges to U.S. national security created by nuclear technology have grown far more diverse in the twenty-first century. U.S. policy makers can no longer focus on the threat posed by a single, rival superpower; instead, they must seek effective ways to deter the threat posed by new and aspiring nuclear weapons states as well as nonstate actors. Detering this hosts of threats requires understanding of the values, motives, fears, risk tolerance, and priorities for each and tailoring policies for each without confusing the differing messages that must be sent.<sup>20</sup> These traditional nuclear deterrence strategies cannot be discarded but must be supplemented with other foreign policy tools, such as arms control, nonproliferation strategies, and counterproliferation measures.

*Arms Control.* In 1961, the United States established the Arms Control and Disarmament Agency (ACDA) to advise the president on arms control, to regulate nuclear activities, and to build expertise on negotiated measures for dealing with international conflict. For a United States focused on the problems of military

strategy and international conflict in a nuclear age, *arms control* was defined as having three purposes: to reduce the likelihood of war by enhancing communication and crisis stability, to limit the damage if war were to occur, and to lessen the economic burdens of preparing for war.<sup>21</sup> While these purposes continue, in 1999 ACDA was dissolved as an independent agency, and its bureaus and functions were incorporated into the State Department.

During the Cold War, arms control agreements were an important component of U.S. nuclear policy. They can broadly be grouped into three categories: confidence-building measures, restrictions on the development and testing of weapons, and limitations on the weapons themselves. Examples of *confidence-building measures* include the “Hot Line Agreement” that established a direct communications link between the leadership of the United States and the Soviet Union (1963) and the on-site inspections by foreign teams that were instituted by the Stockholm Conference on Confidence and Security-Building Measures and Disarmament in Europe (1986). Examples of *testing restrictions* include the Limited Test Ban Treaty that banned nuclear tests in the atmosphere, outer space, and under water (1963); and the Threshold Test Ban Treaty that committed the superpowers to limit the size of underground nuclear weapons tests (1974). *Weapons limitations* include: the Nuclear Non-Proliferation Treaty (NPT; 1970), which is discussed below; the Strategic Arms Limitation Talks (SALT I), which constrained certain offensive strategic systems (1972); the Anti-Ballistic Missile (ABM) Treaty, which limited the superpowers’ development of defensive capabilities (1972); SALT II, which sought arms reductions between the superpowers (1979; although the U.S. Senate never ratified it, the United States followed its restrictions); the Intermediate-Range Nuclear Forces Treaty, which eliminated U.S. and Soviet intermediate-range nuclear systems (1989); and the Strategic Arms Reduction Treaty (START), which reduced U.S.- and Soviet-deployed nuclear forces and established robust verification measures (1991).

In the early twenty-first century, it is not clear what role bilateral arms control agreements will play in U.S.-Russia relations. In May 2002, U.S. President George W. Bush and Russian President Vladimir Putin signed the Strategic Offensive Reductions Treaty (SORT), which committed each side to reduce its forces to not more than 2,200 operationally deployed warheads by the end of 2012. However, the treaty lacks verification measures and allows the storage rather than destruction of warheads that are not operationally deployed. The SORT treaty is scheduled to expire on the same day its limits must be reached, unless it is extended by both nations. The George W. Bush administration preferred flexible and informal arrangements, while the Russian leadership preferred another formal agreement cutting strategic nuclear forces.<sup>22</sup>

Another dynamic in the U.S.-Russia relationship has been created by the U.S. withdrawal from the ABM Treaty in 2002, followed by U.S. proposals in 2007 to put ground-based missile interceptors in Poland and a new radar system in the Czech Republic. From the U.S. perspective, these initiatives merely recognize the end of the Cold War and the existence of new threats—such as the possibility of Iranian missile launches—in a new strategic environment. However, Russian officials have

expressed strong opposition to these developments. According to one Russian foreign ministry statement, “one cannot ignore the fact that U.S. offensive weapons, combined with the missile defense being created, can turn into a strategic complex capable of delivering an incapacitating blow.”<sup>23</sup> Whether the United States and Russia continue to turn to arms control as a way to manage the nuclear arsenals each side developed during the Cold War remains to be seen.

*Nuclear Non-Proliferation Treaty.* The most significant multilateral agreement regarding nuclear weapons is the treaty commonly referred to as the NPT. This treaty was signed by the United States in 1968 and entered into force in 1970. As of 2008, 188 states were party to the treaty, including the five recognized nuclear weapons states (the United States, Russia, the United Kingdom, France, and China) and 183 non-nuclear weapons states. The only states that are not signatories to the treaty are India, Pakistan, Israel, and North Korea (North Korea withdrew from the NPT in January 2003, but this action has not been recognized by the United Nations [UN]).<sup>24</sup> India, Pakistan, and North Korea possess nuclear weapons, and Israel is an undeclared nuclear weapons state.

The NPT commits the non-nuclear weapons states to not build or use nuclear weapons and commits the nuclear weapons states (the five states that had exploded a nuclear device by January 1, 1967) to the eventual elimination of their own weapons. In addition, all parties to the NPT agree to accept International Atomic Energy Agency (IAEA) safeguards on all nuclear activities; to not export nuclear equipment or materials to non-nuclear weapons states except under IAEA safeguards; and to give ninety days’ notice when withdrawing from the NPT. The NPT has undoubtedly played an important role in limiting the spread of nuclear weapons to only four states in the nearly forty years since its inception. (South Africa had a nuclear weapons program from 1977 to 1989 but later dismantled it, destroyed the six weapons it had reportedly produced, and signed the NPT in 1991.)<sup>25</sup> The relatively small growth in nuclear weapons states is particularly impressive in light of the fact that the NPT has no means, aside from referring the matter to the UN Security Council, of punishing those who violate its provisions.

Though the NPT is the centerpiece of the global nonproliferation regime, it has faced numerous trials over time and remains under stress. One tension results because the NPT enshrines the status of the five nuclear weapons states and therefore can be seen as preserving their long-term military dominance. This aspect of the treaty was partially mitigated by the fact that these nuclear weapons states committed to eventual nuclear disarmament by signing the NPT. However, they are regularly criticized “for not disarming fast enough and for abandoning nuclear arms control, increasing reliance on nuclear weapons, and especially for developing new types of weapons.”<sup>26</sup> A second source of tension relates to compliance. A particularly unpleasant surprise occurred after the Persian Gulf War in 1991, when it was discovered that Iraq had managed to begin a nuclear weapons program despite the oversight of IAEA inspectors. Iran’s case, discussed above, is another compliance problem. Other current tensions include safeguarding the nuclear fuel cycle to support the use of nuclear energy for peaceful purposes while stemming

the diversion of material to weapons programs; and recent U.S. initiatives to support India's nuclear energy program despite the fact that India's facilities are not all subject to IAEA safeguards (see Chapter 19).<sup>27</sup>

*Cooperative Threat Reduction.* In November 1991, in response to deteriorating conditions in the former Soviet Union, the U.S. Senate passed the Nunn-Lugar Act, with the intent "to assist the states of the former Soviet Union in dismantling weapons of mass destruction and establishing verifiable safeguards against the proliferation of those weapons."<sup>28</sup> The objectives of cooperative threat reduction (CTR) are to:

- Destroy nuclear, chemical, and other weapons of mass destruction (WMDs).
- Transport, store, disable, and safeguard weapons in connection with their destruction.
- Establish verifiable safeguards against proliferation of such weapons.
- Prevent diversion of weapons-related expertise.
- Facilitate demilitarization of defense industries and conversion of military capabilities and technologies.
- Expand defense and military contacts between the United States and the former Soviet Union.<sup>29</sup>

Initial CTR support included assisting in the transport of nuclear warheads from Kazakhstan, Ukraine, and Belarus back to Russia; converting the Soviet-era method of tracking nuclear warheads from a time-consuming and often inaccurate manual system to a rapid, automated system; and providing upgraded security equipment at weapons storage sites.<sup>30</sup>

In addition to securing nuclear weapons, CTR efforts focused on securing the material necessary to construct a nuclear weapon. Russia possesses the world's largest stock of fissile material (highly enriched uranium [HEU] and plutonium).<sup>31</sup> Keeping this material out of the hands of terrorists became even more pressing after the events of September 11, 2001. By April 2005, Senator Sam Nunn estimated that, since 1991, the United States and Russia had "completed between 25 and 50 percent of the job of securing nuclear weapons and materials, depending on definitions."<sup>32</sup> In recent years, CTR programs have continued and have expanded beyond the former Soviet Union into other states in eastern Europe.

*The Nuclear Suppliers Group.* The Nuclear Suppliers Group (NSG) is a forty-five-state association that has agreed to coordinate export controls to prevent the sale or transfer of nuclear-related equipment, materials, or technology to non-nuclear weapons states. Its aim is to preclude nuclear exports for such commercial, peaceful purposes as medicine and agriculture from being diverted to production of nuclear weapons. Its formation in 1975 was in response to the 1974 explosion by India, which had diverted commercial materials to build its nuclear device. To be eligible for nuclear imports, non-nuclear weapons states have to agree to IAEA

safeguards on the imports. Among the nuclear weapons states that have not joined the NSG are India, Pakistan, Israel, and North Korea. In addition to the problem of lack of universal membership, the NSG faces the difficulty that, as a voluntary organization, it cannot compel compliance with its guidelines. Russia, for instance, despite opposition by other members, transferred nuclear fuel to India in 2001.

*The Proliferation Security Initiative.* Originally launched in 2003, the Proliferation Security Initiative (PSI) is designed to stop the international shipment of nuclear weapons, weapons materials, and related technology. The focus of PSI is interdicting nuclear materials during transit between the country of origin and the country or nonstate actor that is the intended recipient. States that are party to PSI voluntarily agree to provide intelligence, law enforcement, and diplomatic cooperation to combat the spread of nuclear weapons, utilizing force if necessary. Membership in the PSI, as well as levels of participation by the signatories, is not widely publicized because of the political sensitivity of these activities.

Reviews of the effectiveness of PSI are mixed. On the one hand, it has raised awareness of illicit trafficking in WMD-related materials, probably constrained traffickers, and “increased national capacities for coordinated detection and interdiction of suspect shipments” through its exercises.<sup>33</sup> On the other hand, the initiative is characterized by a lack of transparency that reflects the political sensitivity of interdiction activities and the ambivalent status of such interdiction under international law. These characteristics make claims of its success difficult to verify.<sup>34</sup>

*Counterproliferation.* In addition to the various measures to stem proliferation, such as the NPT, PSI, and NSG, in recent years the United States has begun to focus on actions that can minimize the impact of weapons that have been proliferated. Offsetting the dangers of state and nonstate actors that have already acquired or may acquire nuclear weapons is at least as difficult as stopping the proliferation in the first place; however, several steps can be taken. First, missile defense, discussed below, is a measure that, if successful, would address one dimension of the problem. Second, strengthening the IAEA, expanding arms control initiatives, and increasing international pressure on actors with nuclear weapons minimizes the prospect of their proliferation. Third, development of sensors that can locate nuclear weapons and their production facilities as well as conventional weapons that can destroy them are important to counterproliferation. Finally, various defensive steps, which are analogous to the civil defense programs that were aimed at mitigating the damage of a nuclear attack during the Cold War, can be part of a comprehensive counterproliferation strategy. These include homeland security measures, such as improvements in detection, vaccines, antidotes, communications, medical responses, and protective equipment. Known collectively as *consequence management*, such measures comprise a system that organizes, trains, and exercises government agencies and ordinary citizens to respond to a nuclear weapons or other major disaster can minimize the impact of such an event. While no

government action can fully negate the proliferation of nuclear weapons, several steps pursued as part of a comprehensive counterproliferation strategy may be effective at limiting the impact that such weapons can have on national security.

## **Missile Defense**

Given the security challenges posed by nuclear weapons, as well as the difficulty each of the approaches mentioned above faces in meeting those challenges, a perennial issue is the development of an effective defense against nuclear weapons. This has been an issue since the development of nuclear weapons and has become increasingly important with the proliferation and the progress of missile defense technology.

In the context of the superpower rivalry of the Cold War, the United States accepted limits on the creation of ABM defenses, which are enshrined in the 1972 ABM Treaty. By becoming a party to this treaty, the United States acknowledged the situation of MAD and accepted vulnerability as a means of preserving stability in its nuclear competition with the Soviet Union. The first significant challenge to this situation came in January 1984, when Reagan issued Presidential National Security Decision Directive (PNSDD) 119. The purpose of PNSDD 119 was to establish the SDI (which became known as “Star Wars”) to “investigate the feasibility of eventually shifting toward reliance upon a defensive concept. Future deterrence should, if possible, be underwritten by a capability to defeat a hostile attack.”<sup>35</sup> Reagan’s proposal has evolved since its inception because of budgetary constraints, the evolution of technology, and the changing nature of the threat.

A realistic test for missile defense technology came during the 1991 Gulf War with Iraq. U.S. Patriot missiles were used to shoot down incoming Iraqi Scud missiles aimed at Saudi Arabia and Israel. Although the Scud missiles carried only conventional warheads and were not very accurate, and the Patriot missiles had limited success in actually defeating them, these engagements demonstrated the possibility of defeating ballistic missiles while in flight. Each subsequent administration has continued to develop a missile defense program. These efforts have been a great deal more successful for theater weapons than for strategic ones.

On December 17, 2002, George W. Bush directed the Department of Defense (DoD) to develop a system “to protect our homeland, deployed forces, and our friends and allies from ballistic missile attack.”<sup>36</sup> The resulting Ballistic Missile Defense System (BMDS) is a layered network of systems that is designed to eventually be able to destroy ballistic missiles in all three stages of flight: the boost phase, the midcourse phase, and the terminal phase.<sup>37</sup> In fiscal year 2008, the United States spent \$8.7 billion on BMDS.<sup>38</sup>

**The Case for Ballistic Missile Defense.** The primary reason for the United States to acquire a defense against ballistic missiles is the threat of missile-delivered nuclear weapons on the United States, on deployed U.S. troops, or on U.S. allies and interests abroad. According to a 2001 State Department report

entitled “The Emerging Ballistic Missile Threat,” some twenty-seven states currently possess or are in the process of obtaining ballistic missiles.<sup>39</sup> A handful of these states also have nuclear weapons programs. The report cites missile technology in North Korea and Iran as the greatest threat to the “U.S., its forces deployed abroad, and allies and friends.”<sup>40</sup> The report further states that the pre-eminence of the United States in the world’s political affairs may cause its adversaries to seek ballistic missiles as a means to deliver chemical, biological, radiological, or nuclear weapons (CBRN). These adversaries would seek to use CBRN weapons to “deter the U.S. from intervening in, or leading coalitions against, their efforts at regional aggression, or these states may believe that such capabilities would give them the ability to threaten allied countries in order to dissuade them from joining such coalitions.”<sup>41</sup> A viable BMDS not only would confront the threat posed by states or nonstate actors possessing ballistic missiles but also would protect the United States and its allies against an accidental nuclear launch by any other state.

**The Case against Ballistic Missile Defense.** Opponents of the BMDS argue that such a system cannot protect the United States, provides a false sense of security, and requires great expenditures for a program of uncertain effectiveness. If BMDS works by destroying a hostile warhead with an interceptor, to achieve certainty the United States would need to launch multiple interceptors for every single hostile warhead. For example, if a country were to launch one thousand warheads, then the United States would need to launch many more than one thousand interceptors to defeat each warhead as well as to confront any decoy warheads or other countermeasures that would likely accompany any attack.

Because the BMDS is a layered network of systems that consists of elements that acquire targets, computer systems that analyze the data, and interceptor missiles that destroy the incoming missiles, it is difficult to test such a system. Even if a very expensive missile defense may be effective in theory or simulations, it would be difficult or impossible to ever know if it would work perfectly in practice. Moreover, some believe a successful strategic BMDS could even be destabilizing; other states may perceive U.S. strategic invulnerability to portend greater U.S. aggression vis-à-vis other states.

In addition to these concerns, two additional issues are opportunity cost and appropriateness to current threats. With regard to opportunity cost, investments in missile defense systems come at the expense of other defense or homeland security priorities. A second and related issue concerns the nature of the threat. Some analysts argue that other homeland security measures, such as cargo inspection at U.S. ports, might actually be more effective than missile defense in providing protection against the most probable delivery method of CBRN against the United States.

Whether to deploy strategic or theater ballistic missile defenses and, if so, which kind of defense to deploy will continue to be a central issue in U.S. nuclear policy. The allure of defensive weapons integrated into a system that reduces

vulnerability will always be appealing, despite costs, technical challenges, and potential strategic ramifications.

## **Toward a New Nuclear Posture and Strategy**

Despite repeated efforts at arms control, membership in the NPT, and less formal arrangements, such as CTR, PSI, and NSG, the United States continues to maintain the essentiality of nuclear weapons. Nuclear weapons are the ultimate deterrent. Many experts believe that Saddam Hussein did not use chemical or biological weapons during the 1991 Persian Gulf War because he feared threatened nuclear retaliation by the United States.

Maintaining a credible deterrent means that the United States must continue to invest in nuclear technology, inevitably at the expense of other weapons or other critical programs. Nuclear weapons, much like conventional weapons, become obsolete over time and require investment in basic sustainment and modernization. Current American nuclear weapons are decades old and in the absence of testing will be increasingly difficult to certify as reliable. Congress has been very reluctant to appropriate the funds necessary for sustainment, let alone modernization. As the strategic situation changes over time, new threats to national security may require new types of weapons. Debates over new weapons are likely to travel through familiar territory, requiring answers to such questions as their continuing deterrence role their political and strategic utility for purposes beyond deterrence and projections about the ability to control escalation in the event of nuclear weapons use.<sup>42</sup>

In January 2002, at the direction of Congress, the DoD released the classified Nuclear Posture Review (NPR). The intent of the NPR was to develop a road map for the future development of strategic weapons. The NPR recognizes that the U.S. Cold War nuclear arsenal is no longer appropriate in light of twenty-first century threats. The DoD therefore developed a new strategic triad to replace the old model. The new triad incorporates the previous triad (nuclear weapons launched from ballistic missiles, strategic bombers, and submarines) while also adding non-kinetic and non-nuclear weapons as part of the offensive strike capabilities on the first leg of the triad. These offensive capabilities allow the United States to use a spectrum of weapons when responding to a threat against its interests, reserving nuclear weapons as the highest level of response the United States could take. The first leg of the new triad is reminiscent of the flexible response policy of the Kennedy administration and clearly recognizes that nuclear weapons have a major role, although they need not be the initial weapon of choice, in future military planning.

The second leg of the new triad consists of passive and active defensive measures (such as the BMDS and the PSI). These methods seek to deter adversaries from the pursuit of nuclear weapons technology, dissuade those states (and potentially nonstate actors) that seek to possess nuclear weapons from acquiring them, and deny or reduce the effectiveness of nuclear attacks if they occur. The aim is to add deterrence by denial to deterrence by retaliation.

The third leg is an improved nuclear weapons infrastructure designed to improve the development and procurement of weapons systems as well as to improve communications and intelligence capabilities. This leg of the triad acknowledges the need to modernize the Cold War nuclear force using current technologies that make nuclear forces safer and more effective. Additionally, the new triad, according to the NPR, should allow the United States to reduce its nuclear arsenal to between 1,700 and 2,200 operationally deployed nuclear warheads by the year 2012.<sup>43</sup> This would make the U.S. nuclear posture consistent with that proposed as part of the SORT, discussed above.

To maintain a strong viable nuclear arsenal, despite obsolescence and shrinking numbers, the Secretaries of Energy, Defense, and State, in July 2007, urged the Congress to support initiation of the Reliable Replacement Warhead (RRW) Program. This program is designed to improve the safety of the U.S. arsenal by replacing older warheads with new similar yield warheads that contain state-of-the-art security systems. These systems are designed to augment prevention of unauthorized use or accidental launch of a nuclear weapon. Additionally, the RRW Program is designed to improve weapons reliability by offsetting the natural effects of age while also eliminating the need to test weapons to measure their output.<sup>44</sup> The Congress was not, however, persuaded and the program has not been funded as of late 2008.

For a variety of reasons, U.S. spending on the further development of its nuclear arsenal is seen with a critical eye in many quarters. One issue is scale. In 2006, two national security scholars, Kier Lieber and Daryl Press, argued that U.S. investment in more or improved nuclear weapons—especially given the status of the arsenals of major nuclear rivals Russia and China—could reasonably be seen as an effort by the United States to obtain a first-strike capability. In other words, a degree of U.S. nuclear superiority had the potential to enable the United States to inflict such a devastating nuclear first strike that an adversary would be unable to retaliate.<sup>45</sup> (This argument disregards the fact that both Russia and China are modernizing and enlarging their nuclear arsenals.) Some policy advocates, concerned about the effect of continued U.S. nuclear weapons development upon arms control and nonproliferation efforts, argue against modernization on the grounds that, even before modernization, the current U.S. nuclear arsenal is more than capable of meeting contemporary and future threats to national security. On the other hand, experts on the actual status of our weapons argue that, given obsolescence, without modernization the U.S. is on the path to unilateral nuclear disarmament. Some believe that the United States has an obligation not to pursue new nuclear technology, especially in light of its NPT obligations and its commitment to limit the spread of nuclear weapons. A final argument relates to resources, with some analysts believing that money spent on researching and developing new nuclear weapons would make a more effective contribution to U.S. national security if it were spent on securing “loose” nuclear weapons in the former Soviet Union or funding other CTR programs. Collectively, these and similar anti arguments have produced a national nuclear allergy in the U.S that makes it difficult to maintain a viable nuclear deterrent.

Clearly, the end of the Cold War has reduced the profile of nuclear weapons in international politics, at least among the major powers. Yet despite currently planned arms reductions in the U.S. and Russian arsenals, many policy makers around the globe continue to push for new nuclear weapons to replace the old, outdated models. Whether the impetus for denuclearization will continue and build or nuclear arsenals will increase in the future is an open question. What is clear is that nuclear weapons cannot be uninvented and that any scheme to eliminate them once and for all would require climbing a verification mountain of unprecedented height.

## Looking Ahead

After the end of the Cold War, the United States faced a new strategic environment in which the role of its nuclear arsenal became less central. If anything, this trend accelerated after the terrorist attacks of 9/11 and the U.S. wars began in Afghanistan and Iraq. Policy makers and analysts consumed with diverse new challenges have generally paid less attention to matters of nuclear policy. Indicative of that inattention is the fact that deep reductions in the U.S. nuclear arsenal since the end of the Cold War have gone almost unnoticed.

The serious issues that the United States should address in the nuclear area would benefit from broad-ranging, vigorous debate, which to this point has been lacking. A discussion of the size and characteristics of the future U.S. nuclear arsenal should include the likely impact of such weapons on nonproliferation efforts, arms control, crisis stability, deterrence, military budgets, and other political and economic factors.

The vision of a world in which nuclear weapons play a diminishing and ultimately nonexistent role has had broad, worldwide appeal for decades. But nuclear weapons are spreading. The extent to which their elimination is achievable and the extent to which the United States should pursue that goal are issues U.S. policy makers will have to confront in the years ahead.

## Discussion Questions

1. What is the difference between a *countervalue* and a *counterforce* nuclear strategy? Which strategy requires more nuclear weapons? Which strategy would better suit U.S. national security needs? Why?
2. What is *counterproliferation*? What is *nonproliferation*? What are the similarities and differences between the two policies?
3. Will traditional methods of deterrence used during the Cold War work on modern adversaries, such as Iran, North Korea, and such nonstate actors as al-Qa'ida? Why or why not?
4. What did the U.S. strategic triad include during the Cold War? What does it include today? What are the reasons for the changes?
5. Which poses the greater threat to U.S. security: possession of nuclear weapons by rogue states (such as North Korea and Iran) or by nonstate actors (such as al-Qa'ida or Hezbollah)? Why?

6. Has the NPT been a success, or does the spread of weapons to at least four states since 1970 constitute a failure?
7. How does North Korea's acquisition of nuclear weapons affect security in Asia? Does the threat posed by Iran's nuclear program have similar consequences for the Middle East?
8. Should the United States focus its efforts on preventing the spread of nuclear weapons or on defending itself and its allies from a nuclear attack?
9. What is the role of nuclear weapons in U.S. defense policy today? Should the United States develop new nuclear weapons as new threats emerge? Why or why not?

## Recommended Reading

- Ball, Desmond, and Jeffrey Richelson, eds. *Strategic Nuclear Targeting*. Ithaca, NY: Cornell University Press, 1986.
- Brown, Michael E., ed. *Grave New World: Security Challenges in the 21st Century*. Washington, DC: Georgetown University Press, 2003.
- Campbell, Kurt M., Robert J. Einhorn, and Mitchell B. Reiss, eds. *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*. Washington, DC: Brookings Institution Press, 2004.
- Cirincione, Joseph, Jon B. Wolfsthal, and Miriam Rajkumar. *Deadly Arsenals: Nuclear, Biological, and Chemical Threats*. Washington DC: Carnegie Endowment for International Peace, 2005.
- Cordesman, Anthony H. *Terrorism, Asymmetric Warfare, and Weapons of Mass Destruction: Defending the U.S. Homeland*. Westport, CT: Praeger, 2002.
- Drell, Sidney D., and James E. Goodby. *The Gravest Danger: Nuclear Weapons*. Stanford: Hoover Institution Press, 2003.
- Feldman, Shai. *Nuclear Weapons and Arms Control in the Middle East*. Cambridge, MA: MIT Press, 1997.
- Knopf, Jeffrey W. "Wrestling with Deterrence: Bush Administration Strategy After 9/11." *Contemporary Security Policy*, 29: 2, August 2008
- Lieber, Keir A., and Daryl G. Press. "The End of MAD? The Nuclear Dimension of U.S. Primacy." *International Security* 30, no. 4 (Spring 2006): 7–44.
- Sagan, Scott D., and Kenneth N. Waltz. *The Spread of Nuclear Weapons: A Debate Renewed*. New York: W. W. Norton & Company, 2003.
- The White House, Nolan, Janne E., Bernard I. Finel, and Brian D. Finlay, eds. *Ultimate Security: Combating Weapons of Mass Destruction*. New York: Century Foundation Press, 2003.
- The White House. National Security Strategy of the United States of America, March 2006.
- The White House. National Strategy to Combat Weapons of Mass Destruction, December 2002.
- Wirtz, James J., and James A. Russell. "A Quiet Revolution: Nuclear Strategy for the 21st Century." *Joint Forces Quarterly* (Winter 2002/2003): 9–15.

## Internet Resources

- Arms Control Association, [www.armscontrol.org](http://www.armscontrol.org)
- Carnegie Endowment for International Peace, [www.carnegieendowment.org](http://www.carnegieendowment.org)
- International Atomic Energy Agency, [www.iaea.org](http://www.iaea.org)
- Missile Defense Agency, [www.mda.mil](http://www.mda.mil)

The Nuclear Files Web site, [www.nuclearfiles.org](http://www.nuclearfiles.org).

Nuclear Posture Review, [www.globalsecurity.org/wmd/library/policy/dod/npr.htm](http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm)

Nuclear Suppliers Group, [www.nuclearsuppliersgroup.org](http://www.nuclearsuppliersgroup.org)

Nuclear Threat Initiative, [www.nti.org](http://www.nti.org)

Programme for Promoting Nuclear Non-Proliferation, [www.ppnn.soton.ac.uk](http://www.ppnn.soton.ac.uk)

U.S. Air Force Counterproliferation Center, <http://cpc.au.af.mil>