

# Preventing Nuclear Use: Internationally-Controlled Theater Missile Defenses Among Non- Super-Arsenal States<sup>1</sup>

Carolyn C. James, PhD  
University of Missouri, Columbia

## INTRODUCTION

The current debates over missile defenses in the United States all have a common aspect - the systems are meant to provide a defense for US territory, allies, or troops abroad.<sup>2</sup> This article proposes a different view with significant security potential. Specifically, theater missile defenses (TMD) should be considered as an international tool to prevent nuclear weapons use among proliferated states.<sup>3</sup> Internationally-controlled TMD placed at potential flash points could prevent conflicts and crises from escalating to nuclear levels. These areas include borders with so-called “rogue” states, such as North Korea, Iran and Iraq, all of whom have seemingly aggressive ballistic missile programs and are embroiled in protracted conflicts with their neighbors.<sup>4</sup> Similar to the goal of peacekeeping, reducing and limiting conflict in regions such as the Middle East clearly is in the US national interest.

How, then, can nuclear use be prevented? Currently, there are seven declared nuclear weapon states (US, Russia, China, Great Britain, France, Pakistan, India), one non-declared “opaque” nuclear weapon state (Israel), and several states with known or suspected nuclear aspirations (including Iran, Iraq, North Korea, Libya and Taiwan). Two of these, the US and Russia, have established a legacy of Cold War deterrence policies. Nuclear deterrence, in particular, has been credited with maintaining crisis stability during those years.<sup>5</sup> Today, a major debate in the field of security studies surrounds the question: Does nuclear deterrence really work? A common failure in most of these discussions about successful deterrence and avoiding nuclear use is the lack of distinction among nuclear force levels.<sup>6</sup> The debate tends to be clarified by asking whether it was nuclear weapons, or mutual assured destruction (MAD), that kept the Cold War cold. Is it true that all rational decisionmakers will perceive nuclear threats the same way the Russians and Americans supposedly did during the Cold War -- primarily as a political tool whose consequence was too horrific to risk retaliation in kind? It may not be true among states that exist at nuclear levels below assured destruction. This article makes the argument that *the ability to strike an opponent with a nuclear warhead will not produce the same reactions among conflictual states, due in part to the size and capacity of the nuclear force structures involved*. If this were not true, any level of nuclear potential would be sufficient to deter sane decisionmakers with reliable command and control.<sup>7</sup> The assertion here is that such beliefs are as dangerous as they are counterproductive. A consequence of this assumption, therefore, is that it is necessary to view nuclear and quasi-nuclear states according to their individual nuclear capabilities in order to set policies that can prevent nuclear use. Studies are necessary to identify possible ways to promote meeting the security needs of proliferated states in non-nuclear ways. One of these options is theater missile defenses.

Ballistic missiles are, granted, just one method of delivery of nuclear weapons (or a variety of other weapons). They are, however, one of the most difficult to defend against. Between 1962 and 1996, the US spent \$98.4 billion on missile defense programs.<sup>8</sup> In the year 2000 fiscal budget alone, over \$4.4 billion were appropriated.<sup>9</sup> The US currently devotes the bulk of its ballistic missile defense (BMD) expenditures on TMDs, at the expense of national missile defense (NMD), with the former at 58.0% of the budget and the latter at 23.6%.<sup>10</sup> The

uses contemplated by the US for all of these are meant to protect US soil, troops abroad and allies.

Other states, in particular Russia and China, see any of these developments as changing the balance of military power to their disadvantage. Not surprisingly, both states have been staunchly opposed to US BMD programs. The Chinese, in particular, argue that NMD will result in an arms race – the need to build more and better missiles to overcome defensive capabilities. This view was represented at the April 2000 International Arms Control Conference sponsored by the Cooperative Monitoring Center of Sandia National Laboratories. An official from China’s Ministry of Defense stated his belief that the NMD proposed by the US is not in response to “rogue” states as put forward in the 1998 Rumsfeld Commission report and the 1999 National Intelligence Council (NIC) report.<sup>11</sup> The Russian argument centers around whether or not the ABM Treaty would be violated. Interestingly enough, a member of the Moscow Institute of Physics and Technology at the same conference felt the Treaty could be altered to each country’s satisfaction, *if* the United States mollified Russian concerns about US breakout potential, or the ability to increase the number of warheads deployed quickly.<sup>12</sup>

On September 1, 2000, President Clinton postponed the decision on NMD deployment, predicted for 2006 or 2007, but did not slow development.<sup>13</sup> President Bush campaigned with the promise of pursuing missile defenses, a promise he has kept. In addition, the U.S. formally withdrew from the ABM Treaty in December 2001, citing terrorist and rogue threats of a missile attack as well as the obsolescence of the Treaty itself. It would serve the US argument for this technology if additional uses of the systems beyond its own individual state interests could be added to its current list of missions.

Consider the possibility of another crisis between Iran and Iraq with the potential for escalation to armed conflict. US BMD policies would not, as of today, be a factor in meeting a non-violent end to the crisis. Yet US national security is intimately linked to the Persian Gulf and moderately-priced oil. Neither Iran nor Iraq would welcome a US presence in the area, especially one that might shift strategic balance one way or the other. Both sides might be open to the presence of a third party, not biased toward a particular state, that could provide a buffer of protection. *The challenge to maintain peace and prevent nuclear use among non-super-arsenal states could be facilitated if there were internationally-controlled TMD that promised to fire upon any ballistic missile launch, regardless of the source.*<sup>14</sup> At the very least, the pressure in a crisis to act quickly and engage in a preemptive strike could be reduced.

The next section looks at various reasons why the Cold War did not result in a nuclear exchange between the US and USSR. Next is a taxonomy of nuclear states that allows more accuracy in assessing propensities toward nuclear use. This is followed by a brief review of current developments of TMD systems and a list of objections to ballistic missile defenses among Asian states. The next section proposes internationally-controlled theater missile defense systems to help prevent nuclear use, particularly between states whose nuclear force structures are significantly smaller than the Cold War superpowers, citing examples in Asia and the Middle East.

## **SOURCES OF COLD WAR SUPERPOWER CRISIS STABILITY**

Crisis stability between the US and USSR during the Cold War was produced in large part by two interrelated factors -- escalation potential and MAD capability. Richard Smoke defines escalation as “the process by which the previous limits of a war are crossed and new ones

established” with the limits of a war defined as “the barriers or thresholds or stages of the escalation process.”<sup>15</sup> Applied here, therefore, the limited nature of war is hoped to remain conventional only, with unacceptable escalation crossing into nuclear realms.<sup>16</sup> Herman Kahn used the metaphor of an “escalation ladder.”<sup>17</sup> Meant as a methodological tool rather than a comprehensive theory of all crises, the ladder has a total of 44 rungs. States can move from the bottom of the ladder, “subcrisis maneuvering”, to the top of the ladder at “spasm or insensate war” by incremental steps to test the water without committing to all-out nuclear war. Kahn places the threshold for intentional nuclear use at the 21<sup>st</sup> rung, an “exemplary” local nuclear war in the category of “bizarre crises.”<sup>18</sup> However, at the previous 15<sup>th</sup> rung, “barely nuclear war”, “one or more nuclear weapons may be used unintentionally (accidentally or unauthorized). Or one of the antagonists may make military or political use of a nuclear weapon but try to give the impression that the use was unintentional.”<sup>19</sup> Fully intentional use at rung 21, however, would clearly break the “nuclear taboo.”<sup>20</sup>

Kahn’s ladder of escalation, taken to the top, typifies the capability of a nuclear force structure of the size and extent of the US or the USSR/Russia since the 1960s. Most states could not progress that far, due to a more limited nuclear capability. States with only a few warheads could expend their entire nuclear force in one or two strikes. Using the ladder metaphor, if a function of nuclear escalation is to probe the possibility of keeping a war limited while maintaining the threat of a general nuclear war, then clearly some nuclear-capable states would be restricted to shorter ladders. Policy meant to prevent nuclear use needs to reflect this reality.

MAD is a presumably stable relationship based upon a “balance of terror.”<sup>21</sup> The possibility of escalation among nuclear states with massive arsenals can create a potent relationship of deterrence by virtue of their ability to reach a level of destruction unacceptable to state decision makers. In these instances, nuclear use is less likely. It is impossible to create a scale or model to determine in advance and with certainty the level of pain decision makers are willing to risk on behalf of their citizens.<sup>22</sup> For example, calculated in terms of sheer destruction, Hiroshima and Nagasaki could be compared to the fire bombings of Dresden and Tokyo. “‘Nuclear’ is not synonymous with ‘unlimited’, nor ‘conventional’ with ‘limited.’”<sup>23</sup> There are differences, however, which place nuclear weapons in a separate class, even from some biological and chemical weapons of mass destruction. Edward Rhodes offers five effects that increase the “ease of inflicting pain” over unlimited conventional warfare: lower economic and social costs to the aggressor state, no direct correlation with traditional military victory, speed, physical concentration of power and negative effects on decision making processes.<sup>24</sup> This appears to match arsenals capable of escalation to MAD levels quite well, but is it true for lesser levels of nuclear capability?

Cold War observers recognized that escalation dominance could be used as a political tool to coerce an opponent. Therefore, under some circumstances, considering nuclear use is deemed rational. For example, Freedman points out that Kahn’s ladder provides a particularly significant prediction. Nuclear use is possible under controlled and rational decision making. Even seemingly irrational acts are performed for rational purposes since the actor, either more able, or more willing, to move up the ladder, or escalate, would have increased bargaining power.<sup>25</sup> In a crisis the state with the lowest threshold for pain would be more likely to make concessions first in order to avoid further escalation. Tactics based on this assumption can be translated into a state’s functioning policy. These could include convincing your adversary that you are incapable of making concessions,<sup>26</sup> feigning irrationality,<sup>27</sup> or Kahn’s dramatic metaphor of ripping the steering wheel from the car while engaged in a game of Chicken.<sup>28</sup>

There are other instances in which a state will contemplate escalation to nuclear use, examples that do not support deterrence. The idea that a nuclear attack may be survivable can lead to thinking similar to James Wirtz's concept of "conventionalization," in which nuclear weapons are given the attributes of conventional weapons rather than being treated as a revolutionary development.<sup>29</sup> This is most likely to occur at force levels lower than MAD. A military edge also may be sufficient to justify a limited nuclear attack if defeat of the enemy is deemed possible.<sup>30</sup> If, for example, Iran and Iraq successfully proliferated, for a significant period of time, their nuclear force structures would be quite small. Either side might be willing to risk retaliation from a nuclear strike if leadership believed the benefits outweighed the costs. Or perhaps no better alternative is perceived. This scenario does not suggest restraint from nuclear use based upon a fear of escalation grounded in MAD capabilities. Effective nuclear deterrence cannot be assumed. Other methods to prevent nuclear use, such as TMD, must be considered. Before that can be achieved, however, levels of nuclear capability need to be presented in a manner that allows efficient investigation and comparison.

### **SUPER-ARSENAL, SECOND-LEVEL, THIRD-LEVEL AND MINI-ARSENAL CAPABLE STATES<sup>31</sup>**

It is relatively easy to assume that if the United States and the Soviet Union avoided scenarios that could escalate into nuclear war, other states will do the same when facing a nuclear crisis.<sup>32</sup> The problem with this argument is the assured destruction component. At levels of cost below assured destruction, would decisionmakers react differently? While it is impossible to determine absolutely what costs a rational decisionmaker would risk for what gains, at least instances of potential, and intentional, escalation to levels of survivable nuclear levels can be identified. At differing levels of nuclear capability, factors other than nuclear retaliation may play a greater role in the cost/benefit analysis of a possible nuclear strike. In theoretical terms, the elements necessary for stable deterrence may be in evidence, but are not sufficient to prevent nuclear use.<sup>33</sup>

There are four potential levels of nuclear capability among proliferated states proposed for analytical purposes.<sup>34</sup> The first are super-arsenals, defined as states that can exact second-strike assured destruction at a global level. The super-arsenal states are the United States and Russia, each of which possesses warheads numbering in the thousands and dependable delivery systems.

France, the United Kingdom and China are second-level states. These states are believed to possess approximately 450, 250 and 400 warheads, respectively. At these levels, second-strike assured destruction is possible against one major opponent. Third-level states possess arsenals that number in the dozens. This would include India, Pakistan and Israel, with the possibility that Israel's opaque arsenal may actually be closer to second-level capability.<sup>35</sup> The main difference is that third-level states, particularly among each other, may have the potential to exact second-strike assured destruction of an enemy state's governing functions, but cannot guarantee the societal devastation of more powerful arsenals. These states also are in a transitional period toward more reliable arsenals. During this stage, deterrence could be quite unstable.<sup>36</sup>

The fourth level, arguably the most volatile, consists of states armed with mini-arsenals. These states have the capability to build, buy or steal just two or three crude Hiroshima-style warheads. A state with this limited nuclear firepower cannot assure the destruction of an enemy

state, much less its society. Some mini-arsenal states are considered quasi-nuclear, since at such minimal levels the outside world may not know when proliferation actually has occurred. Iran and Iraq, for example, could join the nuclear club quickly if their situation alters only slightly.<sup>37</sup> The problems that confront the US, a super-arsenal state, vis-à-vis Iran and Iraq are elaborated by Eisenstadt, who does advocate missile defense development as a possible solution.<sup>38</sup> It is just as likely that instead of a confrontation with the US, these two mini-arsenal states could face each other in another conflict. At present, there are no assurances that either side would practice nuclear restraint if that option were available. The issue of missile defense becomes less one of protecting US possessions, citizens and friends, as it does of preventing both war and nuclear escalation in a region critical to US national security.

It should be noted that these four levels of nuclear capability are not considered to be permanent, but can remain in place for a period of time that can be considered policy relevant. Take, for example, the neophyte superpowers. By the end of 1945, the United States had six warheads and fifteen bombers able to deliver them. In 1946 the number increased to eleven and 125, respectively. By 1949, the year in which the USSR had its first and, at that time, only deliverable warhead, the United States had an arsenal of over 200 warheads and over 400 bombers. The Soviet Union would catch up quickly, breaching the 200-warhead mark in stockpiled warheads in 1955. However, it was not until 1956 that they had a strategic force loading capability, defined as independently targetable warheads associated with total operational ICBMs, SLBMs or long-range bombers.<sup>39</sup>

There are, of course, considerations not stated here that are relevant in certain instances, such as the size of a country. Consider the devastation possible if an Iraq with two Hiroshima bombs attacked Kuwait or Bahrain. Some states also may shift categories depending on their adversary. For example, India versus Pakistan would be a much greater threat than an India opposing China. This reinforces the necessity to consider each potential nuclear offense according to its own particular characteristics.

Consider the crisis that many believe came the closest to a nuclear exchange - the 1962 Cuban Missile Crisis. In 1962, the United States is estimated to have possessed an offensive force loading capability of 1653 strategic launchers and 3451 warheads. The Soviet Union is believed to have had 276 strategic launchers and 497 warheads. The numbers for launchers in inventory and stockpiled weapons runs much higher.<sup>40</sup> The United States was certainly a super-arsenal, with the Soviet stockpiles placing that state close enough to be considered a probable super-arsenal. Rather than pointing to 1962 as proof of dependable nuclear deterrence, it should be recalled that not all states are super-arsenals. Crises today that seem to resemble the 1962 Soviet deployment of nuclear-tipped missiles in Cuba may or may not have the same non-nuclear results. This is particularly true for crises involving third-level and mini-arsenal states.

Cold War-style nuclear deterrence and threats of escalation to MAD levels should not be assured in a post-Cold War world of nuclear states possessing varying degrees of threat potential. Reliable deterrence may not exist. Nuclear use is possible. What can be done to prevent it?

## **THEATER MISSILE DEFENSES**

U.S. Senator Richard Lugar (R-Indiana) has stated that there are “three main lines of defense against emerging threats posed by the potential spread of ballistic missiles and weapons of mass destruction:” stopping proliferation at the source, preventing the trade of missiles and

weapons materials and technology, and responding to an attack.<sup>41</sup> One method of responding to an attack, missile defenses, has been a hotly contested option that is again under debate.

Missile defense programs in the US are intended, to a large extent, to provide protection from rogue states, referred to as “states of concern” by the State Department since June 2000. The number of states with ballistic missile capabilities has grown significantly (see Table 1).

The United States has several TMD programs: PATRIOT Advanced Capability-3 (PAC-3), Navy Area Defense, Navy Theater Wide Defense, Medium Extended Air Defense System (MEADS), Theater High Altitude Area Defense System (THAAD). PAC-3 is one of the lower-tier systems, meaning that it will operate within the earth’s atmosphere, or up to about 60 miles above the earth’s surface. A descendant of the Patriot that performed so poorly during Desert Storm, the current system claims to have improved accuracy against short-range ballistic missiles. It is a land-based system that can protect an area within a radius of about 25-30 miles. PAC-3 can be easily transported by air, but once in place, is difficult to move. The PAC-3 is scheduled for deployment this year.

Navy Area Defense (NAD) is a lower-tier, naval capability that uses the existing Aegis computer system that can operate against a variety of threats simultaneously. Aegis systems are currently deployed on cruisers and destroyers. The area that can be defended is 30 to 60 miles in radius. Ships could be deployed close to coastlines and provide defenses for ports and potential targets inland. Unlike other TMDs, NAD uses a blast fragmentation warhead instead of a kinetic “hit-to-kill” interceptor. NAD also uses a proximity fuse to increase its targeting accuracy. Fully developed, an advantage to this system will be its potential defense against aircraft and cruise missiles, in addition to ballistic missiles.

NAD has several advantages, but according to Swicker, requires an upper-tier system to attempt complete coverage.<sup>42</sup> This could be provided by the Navy Theater Wide System (NTW). This missile would be capable of ascent, midcourse and descent phase exoatmospheric intercepts and also is launched from Aegis-equipped cruisers and destroyers. The radius of defense can exceed 100 miles. Therefore, a NAD system would provide protection from short range ballistic missiles, while the NTW defends against longer-range theater ballistic missiles.

MEADS is another lower-tier system developed to defend ground troops, with 360 degree protection against short-range tactical ballistic missiles and cruise missiles. When deployed, it will be expected to be highly mobile, since its range is only a five to six mile radius. The idea is that as the system can follow troop movements, providing an ongoing defense. This project is being shared by the US, France, Germany and Italy, with the US bearing half the cost.

THAAD can attack missiles at a longer range and a higher altitude. An Army exoatmospheric system, THAAD will target incoming missiles in the early terminal or midcourse phase of flight. It depends upon a ground-based radar for surveillance and tracking. Its reach also exceeds 100 miles.

This list is by no means all-inclusive. Other systems in the research stage include a boost-phase intercept being developed by the Air Force, an airborne laser. The laser is the only boost-phase intercept being considered at this time. There are four advantages to a boost-phase intercept. First, it strikes the attacking missile while its rocket is still burning, making it easier to detect. Second, the missile will not have had the opportunity to release multiple warheads. Third, countermeasures such as flack and balloons meant to confuse missile defenses will not yet be deployed. Finally, unlike an exoatmospheric destruction of a warhead in which nuclear, chemical and biological agents cannot survive reentry into the atmosphere, a boost-phase

destruction could release these elements. However, it would most likely to occur over the enemy's own territory.

All of these TMD systems share a common characteristic -- they each have technological problems to surmount. On September 8, 2000, Joseph Cirincione, Project Director of the Carnegie Endowment for International Peace Nonproliferation Project, testified before the Committee on Government Reform, Subcommittee on National Security, Veteran Affairs, and International Security on this issue.<sup>43</sup> One area of critical emphasis was on system testing. While some systems, specifically the PAC-3, THAAD and NAD have been the most promising, some of their test performances have been problematic. In addition, Cirincione questioned whether the tests accurately reflected performance against realistic threats.

There is considerable debate about how much of the US budget should be committed to missile defenses vis-à-vis the potential for successful deployment. The possibility of joint research and development programs leading to internationally controlled TMDs will pool financial resources, as well as human resources. Cost/benefit assessments also must take into account the fact that none of these systems will be able to provide absolute, 100 percent protection from ballistic missiles. The amount of protection that is enough to provide the kind of assurances state leadership would need in order to slow down and calm crisis situations, is a matter that needs to be explored. If nuclear attack or war of any scale can be prevented, then any is better than none.

One way to measure the success of a missile defense system is by its ability to meet mission requirements. The Committee on Nuclear Policy offers a list of minimum criteria for a missile defense system:<sup>44</sup>

- (1) Missile defenses should have a clearly defined and achievable mission;
- (2) the effectiveness of missile defense technology should be proven under rigorous and repeated testing;
- (3) defenses should be cost-effective at the margin;
- (4) defenses should be affordable;
- (5) defenses should be pursued in a balanced fashion along with other initiatives to reduce nuclear dangers; and
- (6) the net effect of defensive deployments should be to reduce nuclear dangers.

A strong argument can be made that TMDs using alternate technologies such as those mentioned above can meet these criteria, although setting cost-effective and affordable levels of spending could never be accomplished unanimously. There are, however, critiques.

## **OBJECTIONS TO BALLISTIC MISSILE DEFENSE**

A missile defense system could tweak cost/benefit assessments of decisionmakers, including those contemplating nuclear use. Which way this influence will be felt is subject to conjecture, but what is the alternative? We know that nonproliferation efforts can fail. On May 20, 2000, the five original nuclear weapon states declared their commitment to eventually completely eliminate their arsenals. Will the states of the international system ever be able fully to trust each other's commitments to eliminate nuclear weapons? A return to a balance of terror should not be an alternative given consideration. Overall, the potential gains from missile defenses are such that the concept warrants further investigation.

International relations theory refers to a phenomenon known as the "security dilemma."<sup>45</sup> Simply put, an increase in one state's security is perceived as a decrease in others. This occurs

even if the actions taken by a state are strictly defensive. One result of the security dilemma is arms racing. Critiques of US NMD point out that some states, in particular China, would engage in increased ballistic missile development and deployment if TMD were acquired by Taiwan or Japan. Present proposals assume that Taiwan and Japan would control their own systems, just as the US would if its own NMD were deployed. This makes the systems beneficial to the possessor state, but a perceived threat to its neighbors and potential adversaries, resulting in an arms build-up meant to overcome any advantages resulting from the missile defense.

Is it possible to have missile defenses without the arms race? Let us consider Asia. There are three levels of nuclear force structure potentials -- second-level, third-level and mini-arsenal.<sup>46</sup> Nicholas Berry has listed the top national interest priorities and NMD objections for China, North Korea, India, Pakistan, South Korea, Japan and Taiwan.<sup>47</sup> The kinds of objections that Asian states have against US NMD might be avoided with internationally-controlled TMD and without endangering national objectives.

China, a second-level state, has interests that are, in order of importance, economic development, sovereignty and territorial integrity, and status as an autonomous major world power. The first and third of these would be in jeopardy if US NMD were deployed. Of even greater concern to the Chinese, is the possibility of Taiwan and Japan acquiring TMD. In July 2000, an arms control advisor for the US, John Holum, stated during talks in Beijing that Taiwan could have TMD in the future, making sovereignty and territorial integrity even more important to the Chinese.<sup>48</sup> Objections to Japan are less vigorous, since it is viewed as a sovereign state, but objections do remain.

North Korea, with a potential for mini-arsenal capability, is harder to read. However, an educated guess would list regime survival, foreign aid, reducing isolation, and emerging as the true Korean leadership on the peninsula as its priorities. US NMD would not move any of these goals forward, with one possible exception. As a response, the North Koreans may use their own missile development as they did their nuclear proliferation program -- as a bargaining chip. The government in Pyongyang also can be guaranteed to object to a Japanese TMD.

India, a third-level nuclear force structure as compared to China and second-level potential in relation to Pakistan, has exhibited a clearer sense of its national interests. First and foremost is economic development, followed by concerns over border disputes with China and Pakistan, and its desire to be recognized as a major power with a permanent seat on the UN Security Council. With reference to US NMD, India wishes to maintain good relations with states on both sides of the issue, including Russia, its principal arms supplier. India certainly does not want to see China engaging in a ballistic missile build-up. India would prefer that NMD was not an issue.

As does Pakistan, a third-level nuclear state. Its primary concern is monetary.<sup>49</sup> General Pervez Musharraf has declared that Pakistan is nearly bankrupt. Its national security is second, with militant Islamic movements adding to the traditional concern about India, increased now by the recent events spilling over from Afghanistan. Third, Pakistan wishes to pursue policies that will not lead to international isolation. Similar to India, Pakistan does not want to encourage a regional arms race or antagonize any other states. It too, is largely silent on US NMD.

The Republic of Korea (ROK) wants to remove any military threat from North Korea while increasing cross-border exchanges to include trade, communication and humanitarian relief. In addition, the ROK would like to see Korea as one country under the government in Seoul. The South Koreans do not have a TMD program nor does it have a nuclear arms program. To meet national security objectives, South Korea depends primarily on the US for



defense. Under these conditions, the ROK really does not need to be a player in missile defenses, since allowing the US to provide protection for its 37,000 troops stationed there essentially protects the entire country.

The Japanese, since World War II, have played-down their security issues. They also do not have a nuclear weapons program. Its interests include maintaining a security relationship with the US, keeping foreign markets open for trade, and being a prominent player in international organizations. If anything, US NMD might result in American isolationism, which is not in Japan's best interest. After the North Koreans tested their Taepo Dong-1 missile in 1998, the Japanese made plans to conduct research with the US on TMD, NTW in particular. Japan is aware of China's disapproval, but counters their protests by stating that a country with no ballistic missile program cannot pose a threat by deploying TMD. China, however, may be equally concerned by the fact that Japan possesses the technology and materials to produce a mini-arsenal or third-level nuclear weapon force structure relatively quickly, and do not wish to see them gain the same ability in ballistic missiles.

TMD for Taiwan is perhaps the touchiest issue. Some believe Taiwan has nuclear aspirations. The government in Taipei wants to remain autonomous from mainland China while increasing relations. Taiwan also wants to strengthen relations with the US. Consequently, trying to voice an opinion on US NMD would be a no-win situation. TMD, however, is worth the risk. In March of 1999, Taiwan announced its plans to develop a lower-tier PAC-3 type system with deployment projected between 2007 and 2009. These plans were discouraged when the complimentary Aegis destroyers were denied by President Clinton in April 2000. (He did allow the sale of long-range, early warning radar.) As a result, Taiwan declared in May 2000 that it will develop its own TMD domestically. China fears this capability can be translated into an offensive capability.<sup>50</sup>

Three of the Asian states mentioned are known to have nuclear weapons. At least two have been suspected of trying to join that group. Conflict between these states can be prone to escalation to nuclear levels. One reason is the fact that their capability falls short of assured destruction within certain state pairings. The two most powerful arsenals, that of India and China, are moderated to a certain extent by the two states' enormous size. As proposed earlier between Iran and Iraq, another way to meet the national interests of these states, without confronting the fears associated with US NMD, would be TMD under international, rather than state, control.

## **INTERNATIONALLY-CONTROLLED TMDs AS A TOOL FOR PEACE**

TMDs have the potential to prevent nuclear use without being a provocation by offering a stabilizing element to a state's calculus of power. For example, they could reduce the threat from accidental or unintentional nuclear attacks by allowing more secure forms of command and control. Peter Feaver differentiates between "assertive" and "delegative" command and control systems as it relates to the "always/never problem" in states with civilian control of the armed forces.<sup>51</sup> Under assertive command and control, weapons cannot be launched without specific permission from the civilians in authority, which might tempt a preemptive strike but can reduce the danger of unintentional use or nuclear terrorism. In delegative systems the military, while still subordinate to civilians, has been given more autonomy in decisions of nuclear use. In this case, the risk of an inadvertent launch is higher.

With TMDs, confidence might be increased for a given state that an accidental or surprise attack from a potential enemy is lessened, thereby encouraging assertive command and control systems. The argument could still exist that TMDs can shift strategic balances among states to the point that opponents would try to increase their delivery capabilities in order to overcome defenses. This fear could be overcome in some circumstances, determined in large part by the size of a state's nuclear force structure and that of its opponent, by adding TMDs to a state's calculus of power.

Recall that the United States perceives an increased threat of ballistic missile attack from North Korea. TMDs that utilize boost-phase interceptors, for example, must be placed closer to the Korean Peninsula than the currently proposed NMD sites in Alaska.<sup>52</sup> Both China and Russia suspect that the NMD is intended to increase American military potential relative to their own. Discussions to date about TMDs abroad usually have been about allowing the technology to be given or sold to Taiwan and Japan. In both instances, it is virtually impossible to imagine the Chinese government not reacting with an arms build-up or other destabilizing action. However, many of these fears might be placated. Options include placing the system under international or multi-state control, locating it in international waters or on Russian soil, and making it open to inspections by the Chinese. (China currently does not enjoy an open-enough society to allow TMD placement on its soil, as it might prove difficult to guarantee continued international access and control.) While Russia has its domestic political challenges, existing joint efforts between the US and the Russians, as reflected in agreements such as the Strategic Stability Cooperation Initiative, indicate that successful cooperation is possible.<sup>53</sup> The Strategic Stability Cooperation Initiative affirms continued support for arms control and nonproliferation efforts. Part of the agreement specifically advocates cooperative efforts in TMD research, development, and even cooperation. A joint TMD to counter threats from North Korea already may be politically feasible. In addition, internationally-controlled TMDs could facilitate an atmosphere in which commitments not to develop stronger offensive missile capability to counter defenses might become more credible.

There are positive potential applications of TMD to the subcontinent (which, in the case of Pakistan, could be considered an NMD). Mario Carranza is concerned about the possibility that Pakistan, currently dependent upon aircraft delivery systems, would launch a pre-emptive attack against India if it felt that its few airfields were in jeopardy. Ground-based missile delivery would only make the situation more unstable, since geographic proximity would encourage a strategy of launch-on-warning.<sup>54</sup> Rather than simply giving India and Pakistan TMD technology, protection against missiles could be provided to both states by means of internationally-controlled facilities, at least to the extent that enough confidence is built up to seriously consider more permanent solutions to the dangers of nuclear use.<sup>55</sup>

Iran and Iraq, as quasi- mini-arsenal capable states, may be more prone to nuclear use (and the risk of nuclear retaliation) by virtue of survivability.<sup>56</sup> For example, there is not a single, or even two or three, targets in either state that would destroy conventional military power. It would not be a novel solution to a potentially volatile border to place an international presence as either peacekeepers or as a tripwire guarantee of outside intervention should either side initiate a conflict. To inhibit nuclear use, the existence of an internationally-controlled TMD system could reduce tensions by, for example, increasing the time factor in crises. The long term goal of moving these two states toward an end to their protracted conflict and full assimilation into the international system could be closer to becoming a reality.

Returning to Asia, the national priorities of the seven states discussed by Berry would not be put into jeopardy with internationally-controlled TMDs. All the states were interested in economic growth in general, with both Korea and Taiwan desiring more cross-border exchanges (or cross-strait in the case of Taiwan). India, Pakistan and Taiwan could accept this kind of protection without antagonizing one or more regional powers or military suppliers. In fact, assurances derived from internationally-controlled TMDs could allow for increased trade based upon lowered tensions among states. South Korea's aspiration to become a united Korea would not necessarily move forward, but instances in which negotiations and the opening of ties between Pyongyang and Seoul could be facilitated by confidence derived from these TMDs. The fear of border disputes between India and Pakistan escalating, particularly in Kashmir, could also benefit from increased confidence that crises need not result in nuclear or ballistic missile attack.

The mission requirements for internationally-controlled TMDs would need to take into account the needs and concerns of states such as those listed in the Middle East and Asia. Returning to the criteria from the Committee on Nuclear Policy, the purpose for TMD missions could be clearly defined and cost-effective in comparison to the costs of indigenous TMD programs or war. Nuclear threats might be reduced, as would the threat from chemical or biological weapons. The task at hand is to continue research and development in order to meet the kind of rigorous testing advocated by Cirincione.

Obviously, under these proposals, the technology would not be kept an American secret. Even if the US can produce an NMD based on a system that does not require exact interception such as nuclear tipped anti-ballistic missiles or boost-phase interception technologies, it generally is just a matter of time before advanced states can imitate, copy or counter a technological innovation. However, the states most likely to engage in nuclear use, third-level and mini-arsenals, are the most inhibited technologically and economically. They are much less likely to be able to engage in an aggressive offensive missile build-up in order to counter missile defenses. These states may welcome the opportunity to have their relative balance of strategic power improved, or at least reinforced, via the installation of internationally-controlled TMDs on their borders or off their shores. Credible commitments to policies such as no first-use, no launch-on-warning, force reductions and eventual arsenal elimination should take precedence over protecting anti-ballistic missile technologies.

## CONCLUSION

In this imperfect world, no level of nuclear capability guarantees nuclear-free conflict. Nuclear force structures less powerful than super-arsenals, and especially mini-arsenals, are less likely to establish nuclear deterrence sufficient to prevent use. While missile defenses do not offer foolproof protection, they can increase confidence in order to mitigate a crisis and resist the urge to use smaller arsenals that might otherwise be lost to a preemptive attack from the other side.

Scholars cannot agree whether or not nuclear weapons can be used by rational decision makers. Is it, therefore, an exercise in futility to assume that sane decision makers may be similarly divided, and, in certain cases, seriously contemplate nuclear use? At the end of 1913 it may have been possible to argue that regional or global war would not be sparked by a crisis in the Balkans, since the 1912/13 troubles were contained and ended without spreading outside the immediate states concerned. The lessons of the Cold War also may not apply in a different time

and in a different place. Certainly, as long as nuclear weapons technology exists, intentional nuclear use is possible. Measures must be taken against this potential use, particularly when risks fall below assured destruction.

Under these circumstances, the importance of assessing a nuclear weapon state's level of capability vis-à-vis a potential opponent cannot be overly stressed. Only in this manner can the motivation to use nuclear weapons as an instrument of war be understood as fully as possible and, optimally, avoided through effective policies.

There are no easy solutions for policymakers to the threats that follow nuclear proliferation. The missile defenses discussed above do not encompass the only means available to attack an enemy state with weapons of mass destruction. Although many of the most primitive states have acquired sophisticated delivery technology, and even the most primitive methods of delivery can be effective with weaponry as destructive as nuclear warheads.<sup>57</sup> It is important to note that the mini-arsenal capable states that are of most concern to the US all have ballistic missile programs.

It is known that policies geared toward discouraging states from proliferation and nuclear testing are not always successful. The punishment doled out to India and Pakistan for their May 1998 tests appeared to have had some negative economic impact, and it is debatable whether or not potential proliferators would be deterred by the possibility of similar treatment.<sup>58</sup> Without the credible deterrence super-arsenals appear to establish, measures such as internationally-controlled TBMs need to be put into force that could lessen, or even remove, propensities toward nuclear use. In some instances the carrot, rather than the stick, would be more effective.

Table 1  
Ballistic Missile Capabilities

State	Producing (P) and/or Exporting (E)*	Developing (D) or Capability to Develop (C)	Possessing Ballistic Missiles
Afghanistan			X
Algeria			X
Argentina	P		X
Azerbaijan			X
Belarus			X
Brazil**		C	X
Bulgaria			X
China	P/E		X
Croatia			X
Czech Republic			X
Egypt	P/E		X
France	P/E		X
Georgia			X
Germany	P/E		
Hungary			X
India	P		X
Iran	P		X
Iraq	P		X
Israel	P/E		X
Japan		C	
Kazakhstan			X
Libya		D	X
North Korea	P/E		X
Pakistan	P		X
Poland			X
Romania			X
Russia	P		X
Saudi Arabia			X
Serbia		D	
Slovakia			X
South Africa		C	X
South Korea	P		X
Spain		C	
Syria	P		X
Taiwan	P		X
Ukraine			X
United Arab Emirates			X
United Kingdom			X
United States	P/E		X
Vietnam			X
Yemen			X

\* Not all exporting nations sell complete ballistic missile systems, but components necessary for systems.

\*\* Brazil's systems have been cancelled

Source: Centre for Defence and International Studies, <http://www.cdiss.org/bmg glance.htm>.

## Endnotes

---

<sup>1</sup> The author would like to thank the Centre for Military and Strategic Studies and the excellent comments by the reviewers, as well as valuable input from James Wirtz.

<sup>2</sup> This article originally was written during the Clinton Administration. Changes since that time include reorganizing the Ballistic Missile Defense Organization (BMDO) into the Missile Defense Agency (MDA), dropping the distinction of theater missile defenses (TMD) and national missile defenses (NMD) – referring simply to missile defenses (MD), and moving from the possibility of US withdrawal from the Anti-Ballistic Missile Treaty (ABM) to reality. The premise of this paper and the applicability of potential systems, however, remains unchanged.

<sup>3</sup> The article refers to nuclear force structures, but the concepts raised here can be applied to chemical and biological weapons of mass destruction as well. There also are substantial practical questions regarding the source of funds and technology, where these would be distributed, and precisely how the systems might be “internationally controlled.” The intent at hand is to suggest a policy direction, rather than address these kinds of specifics.

<sup>4</sup> A protracted conflict is an ongoing hostile relationship between states that erupts from time to time into military conflict. See Edward E. Azar, Paul Jureidini and Ronald McLaurin, “Protracted Social Conflict: Theory and Practice in the Middle East,” *Journal of Conflict Resolution* 32 (1988), 41-60.

<sup>5</sup> John J. Mearsheimer, “The Case for a Ukrainian Nuclear Deterrent,” *Foreign Affairs* 72 (Summer 1993), 50-66; Kenneth N. Waltz, *The Spread of Nuclear Weapons: More May Be Better* (Adelphi Paper 71, London: International Institute for Strategic Studies, 1981); Kenneth N. Waltz, “More May Be Better” and “Waltz Responds to Sagan,” in Scott D. Sagan and Kenneth N. Waltz, eds., *The Spread of Nuclear Weapons: A Debate* (New York: W. W. Norton & Company, 1995).

<sup>6</sup> Existing nuclear deterrence theory literature offers few suggestions about dynamics between states with lesser force sizes and capabilities. For recent work in that area see Carolyn C. James, “Iran and Iraq as Rational Crisis Actors: Dangers and Dynamics of Survivable Nuclear War,” *The Journal of Strategic Studies* 23:1 (March 2000), 52-73, and Carolyn C. James, “Nuclear Arsenal Games: Coping With Proliferation in a World of Changing Rivalries,” *Canadian Journal of Political Science* 33/4 (December 2000): 723-746.

<sup>7</sup> For a discussion of these attitudes, see Peter D. Feaver, “Proliferation, Optimism and Theories of Nuclear Operations,” *Security Studies* 2 (Spring/Summer 1993): 162 and Peter R. Lavoy, “The Strategic Consequences of Nuclear Proliferation,” *Security Studies* 4 (Summer 1995): 752-3.

<sup>8</sup> John E. Pike, Bruce G. Blair, and Stephen I Schwartz, “Defending against the Bomb” in Stephen I Schwartz, ed., *Atomic Audit: The Costs and Consequences of US Nuclear Weapons Since 1940* (Washington, DC: Brookings Institution Press, 1998), 287-294.

<sup>9</sup> Ballistic Missile Defense Organization (BMDO) Fact Sheet PO-00-01, “The Ballistic Missile Defense Fiscal Year 2000 Budget,” <http://www.acq.osd.mil/bmdo/bmdolink/html/factsheet.html>. The definition of NMD versus TMD used in this article is slightly different than the BMDO, which refers to the mission rather than specifics of speed and range. NMD is meant to protect the US homeland from a limited ballistic missile attack. TMD would protect “population centers, fixed civilian and military assets and mobile military units”. BMDO Fact Sheet PO-00-01, 2. TMD in this case is regional in nature, and also provides protection to national territories.

---

<sup>10</sup> Ibid.

The balance of the budget for missile defenses includes 8.6% for support technology and 8.9% for “other.”

<sup>11</sup> Guan Youfei, “Whose Security Benefits from WMD?” Prepared statement for the Tenth Annual International Arms Control Conference, Albuquerque, New Mexico, April 14-16, 2000. For a further disagreement on the findings of the Rumsfeld report and the NIC report, see Joseph Cirincione, “Assessing the Assessment: The 1999 National Intelligence Estimate of the Ballistic Missile Threat,” *The Nonproliferation Review* 7 (Spring 2000): 125-137.

<sup>12</sup> Pavel Podvig, “Is a Compromise on the ABM Treaty Possible?” Prepared statement for the Tenth Annual International Arms Control Conference, Albuquerque, New Mexico, April 14-16, 2000.

<sup>13</sup> Daniel Smith, “A Brief History of ‘Missiles’ and Ballistic Missile Defense,” in *National Missile Defense: What Does It All Mean?* (Washington, DC: Center for Defense Information, 2000), 4.

<sup>14</sup> The ideas proposed here also could apply to non-nuclear weapon states vis-à-vis a nuclear capable state.

<sup>15</sup> Richard Smoke, *War: Controlling Escalation* (Cambridge, MA: Harvard University Press, 1977), 17.

<sup>16</sup> Other uses of the term escalation can refer to a crisis moving from an embryonic stage to a full-scale crisis, from non-violence to the use of force, and an increase in violence from low to high levels without distinguishing conventional from non-conventional weapons. Michael Brecher, *Crises in World Politics: Theory and Reality* (Oxford: Pergamon Press, 1993), 130.

<sup>17</sup> Herman Kahn, *On Escalation: Metaphors and Scenarios* (New York: Frederick A. Praeger, Publishers, 1965).

<sup>18</sup> Ibid., 38-39.

<sup>19</sup> Ibid., 44.

<sup>20</sup> For an application of the concept nuclear taboo, see T.V. Paul, “Nuclear Taboo and War Initiation in Regional Conflicts,” *Journal of Conflict Resolution* 39 (December 1995): 696-717.

<sup>21</sup> Pierre Gallois, *The Balance of Terror: Strategy for the Nuclear Age*, translated by Richard Howard, (Boston: Houghton-Mifflin, 1961); and Albert Wohlstetter, “The Delicate Balance of Terror,” *Foreign Affairs* 37 (January 1959): 211-34.

<sup>22</sup> Attempts to move in this direction include the development of concepts such as critical risk and proportional deterrence or minimum deterrence. Critical risk is the maximum point of acceptable punishment before a decision maker is deterred. Proportional deterrence is attempted when a potential opponent tries to determine the adversary’s level of pain sufficient to deter by calculating the value of what is threatened.

<sup>23</sup> Edward Rhodes, *Power and Madness: The Logic of Nuclear Coercion* (New York: Columbia University Press, 1989), 143.

<sup>24</sup> Ibid., 137-140. A consensus that nuclear weapons have a special deterrent effect on non-nuclear opponents during a crisis does not exist. See Jacek Kugler, “Terror Without Deterrence: the Role of Nuclear Weapons,” *Journal of Conflict Resolution* 28 (September 1984): 470-506; and Daniel S. Geller, “Nuclear Weapons, Deterrence, and Crisis Escalation,” *Journal of Conflict Resolution* 34 (June 1990): 291-310.

<sup>25</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy* (London: St. Martin’s Press, 1989), 217-219.

---

<sup>26</sup> Glenn H. Snyder, "Crisis Bargaining," in Charles F. Hermann, ed., *International Crises: Insights from Behavioral Research* (New York: Free Press 1972).

<sup>27</sup> Daniel Ellsberg, "The Theory and Practice of Blackmail," in Oran R. Young, ed., *Bargaining: Formal Theories of Negotiation* (Urbana, IL: University of Illinois Press, 1975), 360; and Robert Jervis, "Bargaining and Bargainings Tactics," in J. Roland Pennock and John W. Chapman, eds., *Coercion* (Chicago: Aldine, 1972), 285.

<sup>28</sup> Herman Kahn, *Thinking About the Unthinkable* (New York: Horizon Press, 1962), 11.

<sup>29</sup> James J. Wirtz, "Counterproliferation, Conventional Counterforce and Nuclear War," *Journal of Strategic Studies* 23 (Spring 2000): 5-24.

<sup>30</sup> Lawrence Freedman, "I Exist; Therefore I Deter," *International Security* 13 (Summer 1988): 177-195.

<sup>31</sup> This taxonomy is elaborated in James, "Nuclear Arsenal Games."

<sup>32</sup> Classics of Cold War literature on this subject include Bernard Brodie, *From Crossbow to H-Bomb* (Bloomington: Indiana University Press, 1973); Robert Jervis, *Perception and Misperception in International Politics* (Princeton: Princeton University Press, 1976); Klaus Knorr, *On the Use of Military Power in the Nuclear Age* (Princeton: Princeton University Press, 1966); Thomas C. Schelling, *Arms and Influence* (New Haven: Yale University Press, 1966); and Wohlstetter, "The Delicate Balance of Terror."

<sup>33</sup> Frank Harvey, "Rigor Mortis, or Rigor, More Tests: Necessity, Sufficiency, and Deterrence Logic," *International Studies Quarterly* 42 (December 1998): 675-707.

<sup>34</sup> I do not include those states that could proliferate, but have chosen not to exercise that capability, such as Canada, Japan and Sweden. In addition, while specifics on the kilotons or megatons of warheads, MIRV capabilities, delivery systems, and so on certainly are pertinent, this simplified taxonomy can provide a basis for understanding the importance of different levels of nuclear force structure and escalation propensities. Full development of the taxonomy is the subject of ongoing research.

<sup>35</sup> According to some experts, India may be quite close to thermonuclear capability, which would alter nuclear thinking and crisis dynamics with the nation considerably.

<sup>36</sup> Mario Carranza, "An Impossible Game: Stable Nuclear Deterrence After the Indian and Pakistani Tests," *The Nonproliferation Review* 6 (Spring/Summer 1999): 16-17.

<sup>37</sup> The CIA reported in December 1999 that the agency could no longer claim with any assurance that Iran does not already have a bomb, although presently there is no firm proof to that effect. James Risen and Judith Miller, "CIA Tells Clinton an Iranian Bomb Can't Be Ruled Out," *New York Times*, January 17, 2000.

<sup>38</sup> Michael Eisenstadt, "Can the United States Influence the WMD Policies of Iraq and Iran?" *The Nonproliferation Review* 7 (Summer 2000), pp. 63-76.

<sup>39</sup> The United States had a strategic nuclear force loading capability from 1945. In this early period, both states relied exclusively on long-range bombers. By the end of 1949, the USSR had one non-strategic warhead. It was not until 1956 that the Soviet Union possessed strategic warheads, estimated at 126. The US and USSR acquired operational ICBM forces in 1959 and 1960, respectively, and SLBMs in 1960 and 1958, respectively. Robert S. Norris and William M. Arkin *US and USSR/Russian Strategic Offensive Nuclear Forces, 1945-1996* (Washington, D.C.: Natural Resources Defense Council, 1997). This information is available online, at <http://www.nrdc.org/nuclear/nudb/datainx.asp>.

<sup>40</sup> Ibid.



---

<sup>41</sup> Richard G. Lugar, "The Threat of Weapons of Mass Destruction: A US Response" *The Nonproliferation Review* 6 (Spring-Summer 1999), 52. Additional programs include the Joint TMD Program Efforts and Battle Management/Command, Control, Communications & Intelligence (BM/C3I).

<sup>42</sup> Lt. Col. Charles C. Swicker, "Ballistic Missile Defense from the Sea: The Commander's Perspective," *Naval War College Review* (Spring 1997), <http://www.nwc.navy.mil/press/Review/1997/spring/art1sp97.htm>.

<sup>43</sup> A transcript of the testimony can be found at <http://www.ceip.org/files/Publications/GovtReformCommitteeTestimony.asp?p=8&from=pubdate>.

<sup>44</sup> Committee on Nuclear Policy, *Jump-Start: Retaking the Initiative to Reduce Post-Cold War Nuclear Dangers* (Washington, D.C.: The Henry L. Stimson Center, February, 1999).

<sup>45</sup> John H. Herz, "Idealist Internationalism and the Security Dilemma," *World Politics* 5 (January 1950): 157-180.

<sup>46</sup> Japan is not considered a potential proliferator, but is recognized as having that capability. It is not surprising that Chinese leaders, for instance, believe it is necessary to take this possibility seriously.

<sup>47</sup> Nicholas Berry, "US National Missile Defense: Views from Asia," in *National Missile Defense*, 24-32.

<sup>48</sup> John Pomfret, "Taiwan May Get Antimissile Technology," *Washington Post*, July 8, 2000, 16.

<sup>49</sup> Recent events in Israel and the Occupied Territories easily might be raising Pakistan's concerns about the possibility of a major war involving Israel and the potential for missile attacks on potential adversaries, including Pakistan.

<sup>50</sup> Yan Xuetong, "Theater Missile Defense and Northeast Asian Security," *The Nonproliferation Review* 6 (Spring-Summer 1999) and Dingli Shen, "What Missile Defense Says to China," *The Bulletin of the Atomic Scientists* 56 (July/August 2000): 20-21. For an opposing view, see Arthur S. Ding, "China's Concerns About Theater Missile Defense: A Critique," *The Nonproliferation Review* 6 (Fall 1999): 96-98.

<sup>51</sup> Peter D. Feaver, *Guarding the Guardians: Civilian Control of Nuclear Weapons in the United States* (Ithaca: Cornell University Press, 1992), 7-28.

<sup>52</sup> Richard L. Garwin, "The Wrong Plan," *The Bulletin of the Atomic Scientists* 56 (March/April 2000), 36-41. Garwin refers to the NMD in this article, but the technology still is relevant.

<sup>53</sup> Phillip C. Bleek, "Clinton, Putin Issue 'Strategic Stability Cooperation Initiative'," *Arms Control Today* (October 2000), <http://www.armscontrol.org/ACT/oct00/strategicstaboct00.html>.

<sup>54</sup> Carranza, "An Impossible Game," p. 17.

<sup>55</sup> Specifically, states could be required to avoid launch-on-warning policies and operational planning in exchange for defense coverage.

<sup>56</sup> Survivability can be viewed at the level of the state, society and/or the regime in power. While Iran was willing to suffer the most casualties in the third-bloodiest war in the twentieth century (1980-1988 against Iraq), the current regime is much more moderate in its policies and open in terms of legislative and citizen participation. Still, predictions about acceptable costs are at best subjective. For Iraq, however, Saddam Hussein has given ample evidence of his willingness to sacrifice Iraqi lives and well-being in order to sustain his absolute power. In

---

addition, Iraq's resilience after Desert Storm indicates that Hussein's regime will not easily be toppled.

<sup>57</sup> Steven R. David, "Why the Third World Still Matters," *International Security* 17 (X, 1992): 127-159; and Lewis A. Dunn, "New Nuclear Threats to US Security." in Robert D. Blackwill and Albert Carnesale, eds., *New Nuclear Nations: Consequences for US Policy* (New York: Council on Foreign Relations Press, 1993).

<sup>58</sup> Morrow and Carriere feel that disincentives such as those imposed on India and Pakistan by the Glenn Amendment can, indeed, deter future proliferators. Daniel Morrow and Michael Carriere, "The Economic Impacts of the 1998 Sanctions on India and Pakistan," *The Nonproliferation Review* 6 (Fall 1999): 2. Evidence to the contrary can be found in the case of Iraq, currently one of the world's most determined proliferators, and at continued high costs to the population from sanctions. Iraqi sanctions remain highly controversial. Specifically, are they meant to prevent proliferation, or remove Saddam Hussein from power? UN Assistant Secretary General Denis Halliday, former UN coordinator in Iraq, resigned his post in 1998 in protest over the nature of sanctions against Iraq. He believed that the sanctions would not force disarmament. Rather, they had been reported to be responsible for malnutrition among 1/3 of Iraqi children under the age of 5 and in the deaths of 6-7000 children per month at the time Haliday left office. See Phyllis Bennis, "The US and Iraq: towards confrontation?" *Middle East International* 587 (13 November 1998): 4-5; Ian Williams, "'Why I resigned' - an interview with Denis Halliday," *Middle East International* 587 (13 November 1998), 6-7.