



Defense of the U.S. Homeland Against Strategic Attack

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Daniel Goure
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... the probability that a missile with a weapon of mass destruction will be used against US forces or interests is higher today than during most of the Cold War.”¹

It has been eighteen years since President Reagan first articulated the goal of making ballistic missiles impotent and obsolete. Since that time there have been innumerable technical, policy, architecture and cost studies to support an endless series of concepts for theater missile defense (TMD) and national missile defense (NMD). As part of this study effort, Dr. Anthony Cordesman has done a superb review of the current literature and studies relevant to this topic and performed a detailed assessment of technical, operational, programmatic, and cost issues.² This study, as well as others such as the so-called Welch Report and the Department of Defense’s own Deployment readiness Review, strongly suggests that a missile defense against limited threats is technically feasible.³ It does remain to be seen whether or not the next Administration can provide the articulation of a strategy for the deployment and employment of missile defenses, needed management oversight, steady funding, and realistic schedule that will enable the department of Defense to deliver on the technological promise.

Rather than repeating existing efforts that have examined technical and other programmatic issues, this paper focuses on the critical questions that will affect the next administration’s decisions missile regarding missile defenses and the policy implications of pursuing an NMD capability. This paper addresses five areas:

- **Threat:** Does the evolving proliferation environment make it likely that the U.S. will, in the near future face a threat from long-range ballistic missiles armed with a weapon of mass destruction? Does this threat environment make it likely that the U.S. will face ballistic missile threats from more than one region of the world?
- **Strategy and Requirements:** What is the rationale for deploying missile defenses and how do they fit within a conception of U.S. national security for the 21st Century?

¹ Robert D. Walpole, National Intelligence Officer for Strategic and Nuclear Programs, testimony before the Senate Foreign Relations Committee, September 16, 1999

² Anthony Cordesman, Report on Homeland Defense and National Missile Defense (draft), The Center for Strategic and International Studies, Washington, D.C., June 2000;

³ Ibid. Also, Report of the Panel on Reducing Risk in Ballistic Missile Flight Test Program (Welch Report), February 27, 1998.

- **Capabilities:** What do we want a missile defense to do? What are the potential implications of missile defenses for offensive forces? What can be done to enhance the range of means available to the U.S. to further reduce the danger posed by ballistic missiles and WMD?
- **Program Plan:** Can we get a system that meets U.S. requirements? What needs to be done to reduce the risks associated with developing a capable limited missile defense system?
- **Politics:** How should the U.S. deal with the international implications of deploying missile defenses? How should the U.S. address the ABM Treaty? What needs to be done to address the concerns of allies and others?

I. Threat

Much has been written over the past several years regarding the character and significance of the ballistic missile threat to the U.S. A great deal of what has been written has focused on two questions: when might a prospective rogue state might acquire an intercontinental ballistic missile, and; whether the possession of a small number of such missiles, particularly if they were not armed with nuclear weapons, constituted a serious threat to the U.S. homeland. Because of developments in the North Korean ballistic missile program, most attention has focused on that threat and on the effort, announced by the Administration in early 1999, to deploy a limited National Missile Defense (NMD) to counter it. Recent events on the Korean Peninsula and the decision by the Administration to delay deployment of the initial NMD system, has led observers to question the existence of a threat to the U.S. and, hence, the need to deploy an NMD system.

What has been missing from most of the threat analyses is the recognition that the phenomenon of ballistic missile proliferation reflects a shift in the strategic environment. At the strategic level, this shift is a function of the collapse of the old bipolar international order. Nations are pursuing new strategic capabilities because they perceive their security to be at risk in ways it ways not during the Cold War. U.S. defense planners include ballistic missile as part of the so-called asymmetric threats being acquired by potential adversaries as a way of countering U.S. conventional superiority. What they often fail to fully appreciate is the extent to which the search for asymmetric responses to U.S. power reflects a deep concern regarding how the U.S. is behaving in the world and an apparent belief that the U.S. can be deterred by such new style threats. This suggests that under the right circumstances proliferating states may not be deterred by the U.S. advantage in strategic nuclear forces from brandishing their ballistic missiles or even from using them.

In addition to the shift in the strategic scene, there has also been a change in the character of ballistic missile proliferation. There has been a proliferation of ballistic missile design and production know-how and the creation of second and third tier supplier relationships. Not only does this phenomenon raise the prospects for new, even

unanticipated proliferators, it calls into question the ability of the intelligence community (IC) to anticipate or detect the development of ballistic missile threats.

One of the first studies to note the changes in the threat was the Commission to Assess the Ballistic Missile Threat to the U.S., the so-called Rumsfeld Commission. The findings of the Rumsfeld Commission are most notable not for their assessments of the potential near-term threat to the U.S. but because of the characterization provided of the changing nature of ballistic missile proliferation. Prior to Rumsfeld, the IC had judged it highly unlikely that so-called rogue states would be able to acquire long-range ballistic missiles within the next fifteen years. After Rumsfeld, that figure was changed to within five years for North Korea and within 10 to 15 years for Iran and Iraq, depending on the degree of assistance they received from more advanced states. The Rumsfeld Commission made the following detailed findings regarding the structure of global ballistic missile proliferation and its consequences for the U.S.:

- There was a concerted effort under way by a number of overtly or potentially hostile nations to acquire ballistic missiles with biological or nuclear payloads. The threat posed to the U.S. by these emerging capabilities was broader, more mature and evolving more rapidly than had been recognized by the IC.
- These efforts posed a direct threat to the U.S., its deployed forces and its friends and allies. These newer, developing threats from North Korea, Iran and Iraq were in addition to those still posed by the nuclear arsenals of Russia and China.
- The new nations that were seeking to acquire ballistic missiles would be able to inflict major destruction on the U.S. homeland within five years of a decision to acquire such a capability. Moreover, for several of those years, as the programs were under development, the U.S. might not be aware that such a program was underway.
- There exists evidence of sea-launch programs for shorter-range systems and alternative basing schemes in third countries to make these potential alternative paths to a capability to strike the U.S. within the time lines projected for ICBM development.
- A broad proliferation “network” exists that substantially aided the efforts of would-be ballistic missile proliferators. The two central actors in this “network” were Russia and China. The West was often an unwitting supplier of technology, know-how and education for those seeking to proliferate. In addition, a relatively sophisticated second tier trade had begun among the proliferating states themselves.
- Countries seeking to acquire ballistic missiles and WMD are pursuing them by new development and testing practices and procedures that are

difficult to detect and surveil. For this and other reasons, will not have warning time.⁴

In the six months following the March 1998 publication of the annual IC report to Congress on foreign missile developments, the Pakistani Ghauri, Iranian Shahab 3, and North Korean Taepo Dong 1 missiles/launch vehicles were all tested. The Taepo Dong test was particularly significant since it had an unanticipated third stage. In addition, the launch tested a number of important technical aspects of ICBM development and flight such as multiple stage separation. The IC concluded that the test had successfully proven the design for the basic Taepo Dong 1 medium-range ballistic missile and that, when important technical issues were resolved, the three-stage Taepo Dong 2 configuration could deliver small payloads, albeit with great inaccuracy, to most of the continental U.S. The IC assessment of the North Korean program also noted that foreign assistance was fundamental to the progress that had been made.⁵

Recent assessments by the IC of the character of the ballistic missile threat to the U.S. have echoed the basic themes of the Rumsfeld Commission. In testimony before the Senate Armed Services Committee in January 2000, Director of Central Intelligence, George Tenet, made a number of significant observations.

- The missile threat from countries other than Russia and China is steadily growing.
- In the next fifteen years, the U.S. will be threatened by ballistic missiles from North Korea, probably from Iran, and possibly from Iraq. The threat will be the result of both indigenous development and foreign assistance.
- In the next few years, Iran could test a missile that will be able to hit the U.S. with a small payload.
- MRBM proliferation, including that of North Korea's No Dong, is significantly altering strategic balances in the Middle East and Asia.
- North Korea has a space launch vehicle (Taepo Dong 1) that could be used as an ICBM and could test the Taepo Dong at any time.
- Countries that were once importers of weapons technology could soon become secondary suppliers. Primary suppliers now include Russia, China, and North Korea. Iran, Iraq and Syria could become suppliers, as well. In the near-term, they could supply short-range ballistic missile equipment. But as

⁴ Report of the Commission to Assess the Ballistic Missile Threat to the United States, July 15, 1998

⁵ Robert D. Walpole, National Intelligence Officer for Strategic and Nuclear Program, "North Korea's Taepo Dong Launch and Some Implications on the Ballistic Missile Threat to the United States," paper presented at a symposium at the Center for Strategic and International Studies, December 8, 1998

they develop, they could pass on a broad array of long-range missile technologies. Iran could potentially sell entire Scud and Shahab missiles.⁶

The acquisition and deployment strategies of the new proliferators are clearly different from those of the major nuclear/ballistic missile powers, in part because a number of them are aided and abetted by several of those same powers. This makes detecting and assessing ballistic missile developments more difficult. Furthermore, even a robust intelligence capability may not provide timely warning if a proliferator is able to purchase complete missile systems. In addition, the countries of concern practice fairly sophisticated concealment and deception measures, often with the assistance of countries such as Russia and China. This complicates the IC's ability to assess the pace of development and predict when a ballistic missile threat might arise.

Not only is it difficult to provide warning of when a new threat might emerge, it is also difficult to assess the purpose for which such weapons are being acquired and potential uses to which they might be put. Some observers have questioned the credibility of a threat by North Korea, Iran or Iraq to attack the U.S. with a ballistic missile armed with a relatively crude and inaccurate warhead. On this point, Robert Walpole, National Intelligence Officer for Strategic and Nuclear Programs, stated in testimony before the Senate Foreign relations Committee that:

“acquiring long-range ballistic missiles armed with a weapon of mass destruction will enable weaker countries to do three things that they might otherwise not be able to do: deter, constrain, and harm the United States. To achieve these objectives, the missiles need not be deployed in large numbers; with even a few such weapons, these countries would judge that they had the capability to threaten at least politically significant damage to the United States or its allies. They need not be highly accurate; the ability to target a large urban area is sufficient. They need not be highly reliable, because their strategic value is derived primarily from the implicit or explicit threat of their use, not the near certain outcome of such use.”⁷

In addition to a non-traditional approach to both weapons development and force planning, the emerging threats may have unique views regarding deterrence and the role that ballistic missiles might play in their national security strategies. Responding to a question during a Senate Armed Services Committee hearing, Director Tenet, opined that he had no knowledge whether traditional deterrence calculations applied in the case of states such as North Korea, Iran or Iraq. Emphasizing the difficulty of assessing the likely behavior of the emerging threats, Tenet responded to a question on alternative delivery means for weapons of mass destruction, stating, "In the world we live in, the concept of deterrence does not apply. I cannot say what is more and what is less likely. The CIA does not make that assessment. Obviously, use of a truck bomb is more likely

⁶ George Tenet, DCI, “Current and Future Worldwide Threats to U.S. National Security,” Testimony before the Senate Armed Services Committee, January 3, 2000.

⁷ Walpole, Testimony, op. cit.

today; however, missile use may become as likely in the future as truck bombs are today.”⁸

The IC has all-but admitted that the U.S. homeland is currently vulnerable to attack by North Korea. If North Korea tests/deploys the Taepo Dong 2 it will be able to hold at risk virtually all U.S. territory. Should Iran follow a similar development path, particularly given the degree of assistance provided by Russia, it too should be able to develop an ICBM-class missile within a very short period of time. Indeed, DCI Tenet indicated this possibility in his testimony cited above.

An additional threat to the U.S. is also posed by an accidental or unauthorized launch from Russia or China. While the risk remains relatively low, the consequences of such a launch are potentially incalculable. Reductions in Russia’s strategic arsenal could reduce both the likelihood and consequences of such a launch. The threat of accidental or unauthorized launches by China is very low, given the reports that warheads are not normally mated to missiles. However, as China undertakes a planned modernization program for its ICBM force, the reliability of the systems will increase, but so to might the risk of accident.

In addition, Russia has renounced the no-first use pledge made by Soviet Union. Moreover, its new military doctrine includes the concept of limited nuclear options and the use of strategic weapons as a means of constraining or “capping” a regional conventional conflict.⁹ It is conceivable that in a future crisis, the U.S., or more plausibly NATO or other allies, could be confronted by the threat of a limited Russian nuclear strike.

As a result, the decision to pursue missile defense programs, particularly a national missile defense (NMD), but also theater missile defense (TMD) may have to be made without definitive intelligence and warning. Rather, the decision to develop and deploy defenses will probably have to rest on the recognition of the extent to which the proliferation environment has changed since the end of the Cold War. This change results in a near-certainty that at sometime in the next ten to fifteen years, the U.S., its forces abroad, and/or its friends and allies will be threatened with long-range ballistic missiles in the hands of an adversary

It seems reasonable to conclude that long-range ballistic missiles in the hands of potential adversaries pose a danger to the U.S. today. While it is not possible to be absolutely certain regarding when and how that threat will intensify, developments over the past several years suggest that that the threat will grow more serious over time. Adding to the difficulty in estimating threat time lines is the erosion of the capability of the IC to monitor, assess and warn of ballistic missile and associated NBC programs or the deployment of weapons systems.

⁸ Tenet, op. cit.

⁹ Stephen A. Blank, “Undeterred: The Return of Nuclear War,” Georgetown Journal of International Affairs, Summer/Fall 2000, pp. 58-60

II. Strategy and Requirements

We are now at a point in the evolution of the international system at which a new strategic approach to securing the U.S. homeland, our forward deployed forces, and allies from ballistic missile attack is imperative. It has been argued by the Administration that the strategy that served the U.S. through most of the Cold War, deterrence based on offensive forces alone, is adequate and appropriate for the changed circumstances of this new era. Indeed, it has even been asserted that the stability of the relationship between Russia and the West and the goal of reducing nuclear forces through arms control requires maintenance of a situation of mutual vulnerability.

A traditional deterrence strategy, with its requirement for mutual vulnerability as the basis of stability, is less relevant and even unsuitable for the era in which we find ourselves. Russia is not our old ideologically-driven adversary, the Soviet Union. Once we viewed the relationship as a titanic struggle between two halves of the world, in which the stakes were our own liberty and the freedom of our friends and allies around the world. To defend liberty and freedom, the U.S. was willing to threaten the annihilation of the Soviet Union and its allies, and to place itself at risk of the same. To ensure stability under such circumstances, it made sense to establish a regime of mutual assured destruction and, in that context, limit the sides' capability to defend themselves.

Our continued adherence to a policy of deterrence based on strategic offensive forces alone, and on absolute vulnerability to WMD attack is incompatible with the current international environment, the changed relationship between the major world powers, and the emergence of new threats to the U.S. homeland. We no longer face the risk of global war. Now the danger is posed by emerging ballistic missile capabilities in the hands of potential adversaries and the potential for accidental or unauthorized launches by Russia and China. U.S. homeland vulnerability is unacceptable given U.S. intent to pursue an active foreign policy that risks, inter alia, confrontation with ballistic missile/WMD-armed adversaries. Absent defenses, there is the danger that a potential regional adversary will make an error in judgement that will result in their use of one or more weapons of mass destruction against the U.S. Countering this threat with offensive forces alone is a technically and operationally challenging task. Moreover, such an approach could raise U.S. requirement for offensive nuclear forces, running counter to the U.S. objective of nuclear arms reductions.

Now we hold out the prospect of a strategic partnership between Moscow and the West. While we differ with Russia on specific issues, it is difficult to see a disagreement rising to the levels of confrontation experienced during the Cold War. The U.S. no longer needs to protect our friends and allies by demonstrating its willingness to trade New York or Los Angeles for Bonn or Tokyo. Should disagreement lead to conflict today it is hard to imagine a situation where either side would seek to destroy the other or to place their adversary in a position where his only choice is to pursue such a course of action. Even if reform in Russia fails, there is no reason to conclude that we must return to the kind of confrontational relationship experienced during the Cold War

A situation of absolute mutual vulnerability does not accord with our aspirations for the relationship between Russia and the West. While it is unlikely that a requirement for deterrence will disappear soon, there is no reason why the character of that deterrent can not be changed to reflect the changing relationship between the two sides. What was necessary during the Cold War in terms of the structure and posture of offensive nuclear forces to protect U.S. interests and our allies has proven excessive for the present situation. Hence, the agreement in START II to reduce the number of offensive nuclear weapons on both sides to 3,500 and the prospect in further negotiations for even greater reductions.

The defense of the homeland against limited attacks is not incompatible with the goal of continuing reductions in strategic offensive forces. It is likely that deployment of defenses capable of defeating adversaries armed with ballistic missiles/WMD could have the additional effect of degrading the credibility of strategic offensive forces as first strike weapons. Limited defenses could also serve to deter Russian “backsliding,” that is an effort to reconfigure or increase their strategic offensive forces in an effort to acquire a first strike advantage.

Our relationship with Russia does not encompass the totality of our interests and relationships worldwide. U.S. national security strategy is based on expanding and deepening political, economic and military ties with friendly nations in regions of interest. In furtherance of this strategy, the U.S. is pursuing an active foreign and defense policy. While the military threat to the U.S. posed by Russia has declined from its Cold War levels, threats to the U.S. homeland from other parts of the world are growing.

U.S. success in pursuing an active foreign and defense policy requires two conditions. First, we must have the ability to project power into any region of interest to the U.S. that is technologically and operationally superior to that of any adversary. Second, we must protect America from the threat of deliberate attack intended to overcome or neutralize our regional superiority. Potential adversaries are seeking, in particular, asymmetric capabilities with which to challenge the ability of the U.S. to project power and our will to pursue an active foreign and defense policy. Posing a threat to the U.S. homeland or to the cities of regional allies could be the means by which potential regional adversaries seek to deter U.S. conventional power projection and undermine or foreign and defense policies. In order for the U.S. to exercise its leadership role in the world and support the creation of a congenial international system, our government must be able to secure the American people from attack, provide protection for forces abroad, and support allies in regions of interest threatened by ballistic missiles.¹⁰

We are not obliged to grant to any state a right to hold the U.S., its forces or allies hostage. We came to accept such a situation only reluctantly in the case of the Soviet Union and then only under circumstances in which the U.S. and its allies sought to draw a line-in-the-sand against Soviet encroachment. The superpower’s success in managing a

¹⁰ Dr. Stephen Cambone, “The Strategic Case for Missile Defense,” Security Strategy and Missile Defense Conference, June 20-21, 1995, Washington, D.C.

relationship of mutual vulnerability says nothing about our capability to institutionalize or manage such a relationship with other nations. An attempt to replicate this relationship with potential adversaries in different regions of the world would seem to be a prescription for disaster.¹¹ The risk of miscalculation and error in any one of these relationships that results in a WMD warhead exploding on the U.S. homeland is unthinkable.

The U.S. needs to consider the possibility that allies may become the hostages in a confrontation between this country and a regional adversary. This is already the case with respect to Japan, which is threatened by North Korean No Dong intermediate range ballistic missiles. The Iranian Shahab 3, based on the No Dong, could reach Israel and the Shahab 4 could place NATO territory at risk. Such a situation could deter the U.S. from taking action in the event of a regional conflict or undermine coalition support for such actions.

As a result, theater missile defense (TMD) must be of equal importance to NMD in U.S. security strategy. For U.S. allies, TMD is the equivalent of NMD. The U.S. and Japan are cooperating in the pursuit of a TMD capability. Once TMD systems are acquired, they will be part of the standard equipment of U.S. forward deployed ground and naval forces. As a result, there will be some inherent level of protection available at least for Europe and Japan. The question is whether U.S. allies will actively participate in the development and operation of regional defenses, to include procuring their own missile defense systems.

China is beginning a major modernization campaign for its strategic forces. It is unclear whether or not Beijing intends to maintain its historic minimum deterrent strategy and posture or will build a larger strategic nuclear force. The role of limited defenses in U.S. national security policy towards China could be to support U.S. foreign and defense policy by dissuading that nation from repeating the errors of the Cold War. In addition, should China seek to configure its strategic offensive forces for war fighting, the presence of defenses can negate that effort while permitting the U.S. to remain on our current path of reducing its overall dependence on nuclear weapons for its security.

Against potential regional adversaries, defenses offer a way of denying an adversary both the political and military utility of an emerging ballistic missile capability. Deployment of a robust NMD against limited threats can raise the bar to would-be entrants into the ICBM club, thereby forestalling the threat. Should an adversary nevertheless choose to pursue an ICBM option, such defenses, when coupled to a vigorous R&D program in follow-on defensive technologies, would defeat their efforts.

A shift in U.S. national security strategy away from a reliance on deterrence based solely on offensive nuclear forces to a mix of offensive and defensive capabilities cannot be accomplished over night. There must be time to manage the process, to bring defensive systems along at a pace commensurate with their technical maturity. There will also be time to decide both the structure and posture of future U.S. strategic and

¹¹ William J. Perry, "Lessons of the Cold War," Carnegie Reporter, Summer 2000, p. 41

theater nuclear forces. The answer to the latter set of issues must be informed by progress on the former. That is, U.S. requirements for strategic forces will be affected by the capability of defenses to reduce or eliminate U.S. vulnerability to first, limited strikes, whatever their source, and to, second, a calculated first strike.

In sum, the U.S. has both a right and a requirement to defend its homeland, forces abroad and allies against ballistic missile attack. The goal of U.S. defensive deployments is to permit the U.S. to continue to pursue its foreign and defense policies without creating an undue risk to the American people. Defensive deployments can serve four critical policy functions:

- Deter Russian backsliding while guarding against, to some extent, accidental and unauthorized launches.
- Dissuade China from pursuing a course in its strategic offensive force programs similar to that which the Soviet Union adopted during the Cold War
- Provide reassurance and protection for regional allies and friends
- Deny potential adversaries any political or military utility from emerging ballistic missile capabilities

III. Capabilities: What do We Need?

Any NMD the U.S. deploys will always be a work in progress. The Clinton Administration recognized the need to plan for defenses against more robust and sophisticated threats as reflected in the progression from C1 to C3 NMD architectures. The IC's threat assessments make it clear that NMD cannot be treated as a niche deployment, focused on a single threat or location.

A strategy for developing defenses against ballistic missile threats to the U.S. must be based on three requirements. First, meeting the challenge of the expected threat. Second, development of follow-on capabilities, which may or may not be deployed, that could make potential adversaries less likely to seek to counter or contest U.S. defenses. Third, research on farther term capabilities that can be deployed should an adversary nevertheless seek to contest our defensive deployments.

For these reasons, any NMD architecture cannot be designed around a point solution. Nor can it be designed to counter a niche threat. The system must demonstrate not only an initially high level of effectiveness against near-term threats but also growth capacity for future threats. Growth capacity is not synonymous with increasing the size of a given architecture by adding interceptors or multiplying sites. Growth can come through improvements in overall system effectiveness, say by the addition of new sensors. It can also be achieved by adding an additional interceptor layer. Finally, it can be achieved by exploiting new and different technologies

In defining a response to future ballistic missile threats it is no longer sufficient to think only in terms of defenses, or even defenses and consequence management. The defense of the homeland against the threat posed by relatively long-range delivery systems must involve efforts in at least three areas: intelligence, defenses, and offensive capabilities. Each of these will be considered in turn.

Intelligence

The typical analysis of counters to the ballistic missile threat focuses immediately on the character of potential defenses. In view of the discussion above of intelligence issues and concern regarding future ballistic missile proliferation and the threats that it will pose to the U.S., consideration should first be given to ways of enhancing U.S. intelligence collection and analysis in this area.

The intelligence community is being stretched very thin by increased overall demand and by competition for resources among the classic missions. In addition, there are now a host of new missions, including direct support to military operations and to diplomatic and economic activities.

At the same time, intelligence targets are becoming increasingly sophisticated in the methods and means of hiding their activities from view. They have access to technologies such as fiber optics and encryption software that make intelligence collection more difficult. A number of these targets, particularly those receiving assistance with their ballistic missile and weapons of mass destruction programs from Russia and China, also appear to be receiving technical advice and even training in ways of avoiding U.S. intelligence collectors. Finally, many of these targets have learned to bury critical facilities underground, shielding them from both collection and attack.

There needs to be a shift in the way we approach intelligence collection and analysis with respect to emerging threats. Rather than viewing the ballistic missile threat narrowly as a proliferation problem with a focus on the supply routes, it needs to be addressed as a strategic problem. The focus should be on determining the intent, plans, and doctrines of the potential proliferator. States such as North Korea, Iran, Pakistan and Iraq lack the sophisticated military planning and decision-making structures present in the Soviet Union. It is generally believed that in these countries the functions of the U.S. National Command Authority (NCA) and Strategic Command are exercised by only a small circle of senior leaders. As a result, there is little literature or available discussion, classified or open-source from which to glean their intentions or plans relative to a ballistic missile or WMD capability.

Attention also needs to be given to integrating analyses of activities among the so-called second tier suppliers. For example, what information might North Korea have gained from the Iranian and Pakistani tests of their No Dong variants? Similarly, what lessons might other emerging ballistic missile states learn about the political and military utility of such weapons based on the North Korean experience?

There needs to be significant increased investment in collection efforts against the potential proliferators. These need to reflect the different structures, institutions and practices of the emerging threat countries. They also must respond to the increased sophistication of the would-be proliferator to hide his activities and deceive U.S. intelligence. Ways need to be found, including enhanced human intelligence, to overcome efforts by proliferators to secure their communications, hide some activities under ground, and limit or camouflage above ground efforts.

The IC needs to develop a robust capability to evaluate the intentions and decision-making processes of potential proliferators. It is clear that the IC cannot impose a U.S.-centric model of strategic planning or weapons acquisition on these emerging threats. The tradition of “Red Teaming,” in which groups of experts were organized to simulate the decision-making style of the former Soviet Union, needs to be applied to these new threats. Technical “Red Teams” can be used to address potential alternative ballistic missile development paths as well as the implications for system performance and intelligence indicators resulting from limited flight test programs. Strategic “Red Teams” should be organized to develop an appreciation of the political-military motives for acquiring ballistic missiles and WMD as well as the reasons potential proliferators may consider for using them.

Because of the way the emerging threat countries operate, important intelligence indicators such as ballistic missile tests are often one-off events. The current intelligence system for observing ballistic missile developments is still deeply rooted in Cold War practices and expectations. In addition to a lack of collection assets, there is a lack of flexibility and responsiveness in the way the IC organizes for collection. The IC needs to rethink how it can best restructure its methodologies for collection or redeploy assets in order to be able to take advantage of what may well be fleeting opportunities to capture the state and direction of an emerging ballistic missile program.

Defenses

Proponents of missile defense, particularly NMD, need to develop a coherent statement on the purpose and objectives of missile defenses as an element of an overall national security strategy. The kinds of capabilities the U.S. seek must make sense in relationship not only to the size and sophistication of the threat but also relative to the other means at our disposal. A coherent strategy also needs to consider the relationships between TMD and NMD.

There is every reason to believe that the systems being developed as part of the current NMD program can provide the basis for a high-confidence defense against the threat that could emerge over the next decade. A combination of ground-based missiles, ground and space-based sensors, and integrated battle management/C3, in sufficient numbers and properly located, could provide high confidence protection against an emerging threat of up to several dozen ballistic missiles. In larger numbers, such a defense might even be effective against an accidental or unauthorized launch from a more robust nuclear power.

There is a need to set the threshold for an initial system sufficiently high to provide for high confidence of very high levels of effectiveness against small threats of the kind most likely to be deployed in the next decade by new ballistic missile states, and against an accidental or unauthorized launch by Russia or China. At the extreme, an NMD would be required to defend against approximately 100 incoming RVs/weapons. Depending on the capability of the defense and the presence or absence of countermeasures, this would range from 200-500 interceptors. An initial deployment of 100-200 interceptors would probably be sufficient for the emerging threat alone. An effective system will probably require deployments of interceptors at more than one or two sites. In addition, an effective defense will probably require multiple ground-based radars sited to address likely threat corridors both to the East and West of the U.S.

In order to ensure a high confidence capability against a more sophisticated Russia accidental/unauthorized launch, even an initial defense would require high quality sensing. Thus, space-based discrimination is likely to be an essential element of an initial deployment. Proliferated ground-based sensors would also probably be required. Up to a point, improving sensors could provide a way of defeating efforts by emerging ballistic missile states to overwhelm a defense with numbers. Instead of the operational doctrine associated with the initial C1 U.S. NMD architecture that envisioned three or four-on-one targeting of every incoming RV, improved sensing could reduce that to two-on-one.

The effectiveness of a defense can be enhanced by the addition of tiers or intercept opportunities in new regimes to a single tier system. The nominal NMD architecture would permit one or two intercept opportunities in midcourse. NMD effectiveness could be enhanced through the addition of a boost phase or terminal intercept capability.

In view of the uncertainties that exist regarding the evolution of the ballistic missile threat, the missile defense program needs to incorporate extensive research and testing of follow-on technologies. Consideration would need to be given to management of deployment decisions for follow-on technologies, perhaps as part of a revised ABM Treaty. There could be limits on layers, on technologies (such as the use of directed energy weapons), or on deployments in space.

In recent months, a number of concepts for theater boost phase system have been proposed as alternatives to a CONUS-based NMD. Most of these suffer from a number of similar technical and operational flaws. Existing sea and land-based TMD systems would not suffice to achieve the necessary kinematics for a high confidence intercept capability. As a result, a new missile, kill vehicle and, possibly, radar would be required. Pursuit of boost-phase concepts would result in diversion of scarce resources from existing NMD programs. Given the extremely short boost phase for most emerging missiles, such a defense would have to be pre-deployed to be effective and have an almost automatic fire sequence.

The deployment concepts for proposed boost-phase concepts lack the robustness necessary to meet a range of threats. A sea-based system is only practical for a peninsular nation such as North Korea, where the missile defense can be deployed close to the potential launch areas. Proposals for land-based boost-phase defenses would be dependent on the good will of the nation on which they are deployed. It is likely that a host country will want a finger on the trigger that would significantly complicate any battle management system.

There is general support in the U.S. for the development and deployment of capable TMD systems. Such systems are required in order to protect forward deployed U.S. forces. In addition, some U.S. allies have committed to exploring the development of regional TMD capabilities and one, Israel, has already deployed such a system.

The separation between TMD and NMD codified in the ABM Treaty and reaffirmed in the 1997 Helsinki Agreement no longer accords with the reality of the evolving ballistic missile threat. Proliferating states have already demonstrated the capability to build and test ballistic missiles that can defeat TMD systems constrained to the ABMT/Helsinki standards. Moreover, the technical characteristics of the evolving ballistic missile threat make it all but impossible to define a performance threshold either for strategic offensive forces or TMD. The North Korean Taepo Dong I is considered to be a non-strategic ballistic missile. Yet, with the addition of a third stage that results in no externally visible change to the missile, it is capable of placing a payload on the continental U.S. The Soviet Union built its earliest ICBMs by massing engine stages from SCUD derivative short-range systems.

In order to be effective against the theater threat that exists today, much less that that may come tomorrow, the U.S. will need to deploy theater defenses the performance characteristics of which will give them some inherent strategic capability. In addition, the effectiveness of even “compliant” defenses will be based, in part, on the use of targeting data from strategic sensors, including space-based systems.

It will not be possible for the U.S. to construct effective limited defenses, either TMD or NMD, within the constraints imposed by the ABM Treaty. Effective TMD will inherently have some strategic capability. Even the Administration’s minimal defense deployment required amending the ABM Treaty. In order to be highly effective against larger or more sophisticated threats, an evolved NMD will need to be larger than permitted under the ABM Treaty, deployed at more sites, and able to freely access a range of sensors, including some in space.

As the U.S. pursues deployment of missile defenses, consideration will have to be given to complementing such a deployment with air defenses. There may be some potential overlap in technologies and even systems between the requirements for air and missile defenses. It is likely, however, that there will need to be parallel deployments made. A limited air defense capability based on existing technologies is feasible. The most significant limiting factor would be cost.

Offenses

There is a need to begin the conceptual shift from an offense-only deterrent and defense of the U.S. to a combined deterrent/defense. Offense-only deterrence is animated by the strategic and technical threat of a first strike. Deterrence is achieved by ensuring that there is sufficient retaliatory capability to survive any plausible first strike scenario. The first strike-driven concept of deterrence had its place during the Cold War. In light of our present relationship with Russia, it is not clear that this should continue to motivate our thinking about deterrence or defense. Even if a review of strategic nuclear policy concludes that the threat of assured retaliation should remain the cornerstone of the U.S. deterrent, there is a growing sense among experts that this can be achieved at reduced numbers.¹²

There has been the general belief that the emerging threats will be deterred by the capabilities to retaliate massively in response to any WMD attack on the U.S., its forces, friends or allies. There are reasons to be concerned that a potential WMD adversary might not be deterred. Indeed, they could see the U.S. strategic retaliatory threat as inapplicable to them, given their size, the lack of appropriate targets, and their location relative to other states.

A combined deterrent/defense concept and force structure would seek to make assured retaliatory strategies both feasible and reliable. The purpose of the combined deterrent/defense would be, with respect to the emerging threats, to deny them the ability to strike the U.S., its friends and allies with long-range ballistic missiles, and, with respect to Russia and China, to undermine the credibility of any first strike strategy. This would include both the threat of first use posed by an emerging threat, or any threat posed by a strategic nuclear power. The use of preferential defense techniques could deny an attacker the ability to achieve his first strike objectives except at prohibitive cost. Retaliation would be assured while a first strike becomes incredible.

It is possible that the U.S. and Russia could develop formulas to allow trading between offensive and defensive systems. The goal would be a given level of retaliatory capability. Achieving this could come from deployment of a mix of forces. If it was not concerned about defending itself against the emerging ballistic missile threat, Russia could choose an offense-only force. The U.S. would forego some number of offensive weapons in return for the right to deploy some number of defensive systems. There might have to be additional sub-limits or rules to ensue that neither side had a fragile posture.

There needs to be consideration given to modifying the U.S. nuclear force structure to create credible means of effectively pre-empting or offensively countering the limited strategic threat posed by the emerging ballistic missile/WMD powers. In the

¹² Janne Nolan, "Preparing for the 2001 Nuclear Posture Review," Arms Control Today, November 2000; Barry M. Blechman and Leo S. Mackay, Jr., Weapons of Mass Destruction: A New Paradigm for a New Century, Occasional Paper Number 40, Henry L. Stimson Center, October 2000

event of an unsuccessful first strike by an emerging threat against the U.S., it would seem desirable to have the capability to destroy any targetable portion of the adversaries strategic force posture. This might be possible with conventional systems. However, given target location uncertainties or simply the possibility that the adversary has buried his strategic targets, nuclear weapons might be preferred.

The current U.S. strategic force posture may not be suited to retaliatory options set of countries with emerging ballistic missile/WMD capabilities. There is a need to consider what systems would best suit the mission. Indeed, it is possible that the U.S. would wish to develop new, very low yield weapons with which to be able to strike targets in the new threat countries.

IV. Program Plan: What needs to be done?

In July of 2000, President Clinton announced that he was postponing the decision to deploy the initial phase of an NMD system, citing concerns about the maturity of the technology and ongoing arms control negotiations with Russia. The system that had been proposed offered only a modest initial capability, the so-called “C1” capability, consisting of 100 ground-based interceptors at a single site in Alaska, a single engagement radar, and upgraded ground-based early warning radar. All this would be capable of meeting only an extremely limited threat, both in terms of numbers and technical sophistication. A subsequent defense capability, designated “C2,” would involve deployment of additional ground-based sensors, the use of the low-altitude portion of the Space-Based Infra-Red System (SBIRS) to provide discrimination of warheads and objects in flight, and the deployment of additional interceptors. According to BMDO, the C2 capability would be capable of addressing more technologically advanced threats, but still only limited numbers of missiles and warheads.¹³ A still more robust capability, designated “C3,” remains undefined beyond the general notions that it would involve more ground-based systems and, possibly, sea and space-based options.

There are any number of studies and assessments reviewing and critiquing the technical and programmatic state of both NMD and TMD programs.¹⁴ Many of these offer suggestions for ways of reforming the existing program, reducing risk, and improving performance. Others suggest the need to fundamentally rethink the U.S. approach to missile defenses, particularly NMD. A number of analysts and experts, including former senior government officials, have suggested alternatives to the proposed NMD deployment involving innovative use of land or sea-based theater missile defenses

¹³ National Missile Defense Program Update for CSIS, NMD Joint Program Office, December 18, 1998.

¹⁴ See, for example, James Kitfield, “Star Wars II: The Sequel,” National Journal, No. 28, July 2000; Daniel Goure, Charting a Path for U.S. Missile Defenses: Technical and Policy Issues, The Center for Strategic and International Studies, Washington, D.C., June 2000; Anthony Cordesman, Report on Homeland Defense and National Missile Defense (draft), The Center for Strategic and International Studies, Washington, D.C., June 2000; Report of the Panel on Reducing Risk in Ballistic Missile Flight Test Program (Welch Report), February 27, 1998; David C. Gompert and Jeffrey A. Isaacson, Planning a Ballistic Missile Defense System of Systems: An Adaptive Strategy, Issue Paper 181, The RAND Corporation, Santa Monica, CA, August 1999; General Accounting Office, Status of the National Missile Defense Program, GAO/NSIAD 00-131, May 31, 2000

in a boost-phase role.¹⁵ There are an equal number of critics of these alternative proposals.¹⁶ More to the point, none of these alternatives has been proven. They would require years of additional technical and engineering design work as well as time to develop components, systems, and architectures. It is not unreasonable to assume that these alternative concepts might not be available until well after 2010.

A decision to go ahead with the so-called C1 architecture could still be made soon by the next Administration. In reality, however, the failure of the last two tests of the system and political developments on the Korean Peninsula mean that there will be time available to reevaluate the U.S. ballistic missile defense programs and consider the alternatives. Both Presidential candidates have indicated that they would continue to pursue a workable NMD system, but neither has indicated that they would resurrect the C1 option. In the meantime, however, the Ballistic Missile Defense Organization (BMDO) is continuing the development of the elements of the C1/C2 deployments.

The question is how should the next administration use this time? First, there needs to be both clarity of purpose and stability of programs. One of the most significant, if not the dominant, factors that has slowed progress towards an NMD system has been the repeated changes in program focus and funding. On entering office, the Clinton Administration reduced the funding for NMD by 80% in favor of increased efforts on TMD. It is little wonder that five years later, when the direction shifted again in favor of NMD, that the program was unable to meet the stressing time lines demanded of it.

The availability of time allows for the restructuring the program from an event-driven to a success driven schedule. This may still allow for the deployment of a defense by the end of the decade. The advantage it offers is the ability to progress with certainty that the deployed system will meet performance requirements when it is fielded.

It is not certain that the present NMD program is adequately funded and properly structured to ensure an expeditious development path to support a deployment near the end of the decade. More work needs to be done to ensure that the system can address simple countermeasures such as basic penetration aids or salvo launches. Given the difficulties in the flight test history, more tests would be advised. Adding to the program could cause additional delay and certainly will cost more money.

Effort to develop a workable NMD must continue while consideration is given to a different architecture, one that provides the potential for highly effective defenses against larger and more sophisticated threats. The current NMD development program should be able to provide high confidence that the proposed system elements will work. But it is likely to be several years before a decision can be rendered. The same is true for TMD systems and for space-based sensors.

¹⁵ John Deutch, Harold Brown and John White, "National Missile Defense: Is There Another Way?" *Foreign Policy*, Summer 2000. For an alternative approach to boost-phase defense see Dean Wilkening, "Airborne Boost-Phase Ballistic Missile Defense" (Briefing), Center for International Security and Cooperation, Stanford University, July 16, 2000

¹⁶ Rodney W. Jones, *Taking National Missile Defense to Sea: A Critique of Sea-Based and Boost-Phase Proposals*, Council for a Livable World Education Fund, October 2000

It has been recommended that DoD and BMDO consider using Grand Forks as a test bed for an eventual operational system.¹⁷ Such a deployment is permitted under the ABM Treaty. A Grand Forks site could provide limited protection for most of the continental U.S. As part of a larger deployment, it would make sense even as the system grew in size and complexity. The effectiveness of this first site could also be enhanced with the deployment of space-based sensors.

In addition to adequately supporting the NMD program, the next Administration needs to continue the development of the family of TMD systems. The theater ballistic missile threat already exists. In view of the range of potential situations in which TMD may be required, it is clear that both ground and sea-based TMD will be needed. In addition, the Airborne Laser (ABL) program, which offers the potential for a highly responsive TMD system with boost phase applications, needs to be continued.¹⁸

V. Dealing with the Politics of Missile Defense Deployments

The U.S. ballistic missile defense effort and the issue of revision of the ABM Treaty have been extremely sensitive issues. What is needed is a framework in which to view ballistic missile defense that offers the prospect simultaneously of creating a new consensus within the U.S. political system, addresses Russian concerns, and reassures our own allies who are in some instances quite skeptical about U.S. ballistic missile defense efforts. It also needs to provide a basis for dealing constructively with China on this issue.

This framework needs to reconcile four competing U.S. policy priorities: discouraging (if not preventing) the proliferation of WMD and the means to deliver them, reducing the Russian nuclear posture in ways that are stabilizing, avoiding contributing to regional ballistic missile/nuclear arms races, and pursuing the development and deployment of ballistic missile defenses.

U.S. ballistic missile defense efforts need to be pursued as a part of a comprehensive strategy for dealing with WMD and the means to deliver them. That strategy of necessity must be a global strategy, one in which the U.S. can enlist its closest allies despite increasing economic competition and trade frictions with the United States.

The United States needs to go to its key allies, Russia, and perhaps even China at the highest levels to propose a revitalized effort against WMD jointly led by these key nations. Particularly with respect to Russia, such an undertaking would provide both a positive element in the U.S./Russia relationship and be the best approach for obtaining Russian cooperation.

¹⁷ Cordesman, *op. cit.*, p. vii

¹⁸ Daniel Goure, *Charting a Path for U.S. Missile Defenses: Technical and Policy Issues*, The Center for Strategic and International Studies, June 2000, pp.

Success of any effort to limit WMD will require “strategic consultations” between the United States and these governments to develop a common assessment of the risk posed by countries such as Iran, Iraq, and North Korea and the list of measures that will need to be pursued. The U.S. would use different avenues for its consultation with allies, Russia and China. Particularly attention will have to be given to expanding and deepening strategic discussions with allies.

Much has been made of the reluctance of some U.S. allies to support the U.S. NMD programs or even to agree to development and/or deployment of TMD. Clearly, one of the weaknesses of the C1 concept proposed by the Clinton Administration was its dependence on allied cooperation in building an NMD for the U.S. that provided those same allies with no additional measure of security. The U.S. and some of its allies differ on the severity of the threat, its imminence, and the phasing of measures to address the proliferation problem. In addition, many allies are concerned about the effects of an NMD deployment decision and Russian or Chinese reaction to it on regional stability.

The effort over the past eighteen months by the Clinton Administration to engage U.S. allies on the ballistic missile threat and missile defenses has served to narrow the gap in perceptions, particularly across the Atlantic. More needs to be done. As a recent study of European perspectives on missile defense noted, while an identity of views may not be attainable, it is important not to allow two substantially different approaches to deterrence and proliferation to persist.¹⁹ In addition, discussions between the U.S. and regional allies need to both take into account the views of those allies relative to their specific regional concerns and the broader set of issues and interests that confront the U.S.

For the U.S., engaging the Allies means much more than simply informing them of U.S. intentions. It includes striving to close the perceptions gap with respect to the seriousness of the threat, the efficacy of various strategies for addressing the proliferation problem, the future of deterrence (both conventional and strategic), and the future of arms control. There needs to be greater sharing of intelligence and even of technical data by the U.S. with key allies. For their part, the Allies must be prepared to engage the U.S. fully and put their own ideas and information on the table, rather than simply finding fault with U.S. actions.²⁰

Specific measures to which the U.S., its allies and possibly Russia and even China should give their attention include:

- Better means of collecting and analyzing intelligence information about potential proliferators.
- Regional strategies to try to resolve underlying tensions and disputes that provide part of the motivation for WMD proliferation (such as in the Middle East).

¹⁹ Stephen Cambone, Ivo Daalder, Stephen J. Hadley, and Christopher J. Makins, European Views of National Missile Defense, The Atlantic Council of the United States Policy Paper, September 2000

²⁰ Ibid., pp. 21-23

- Security strategies that deter the acquisition and use of WMD and the means to deliver them by states seeking to coerce their neighbors (such as Iraq).
- Enhanced export controls on a multilateral basis with real sanctions for non-compliance.
- Improved capabilities to deal with both the military and civilian consequences of WMD use (including improved detectors, vaccines, antidotes, protective clothing, and emergency response procedures and practices).
- Improved technical and operational means to detect and defeat the various means of delivery of WMD (including ballistic missiles, cruise missiles, aircraft, and unconventional means).
- Improved conventional capabilities (including weapons and sensors) to locate and destroy production, storage, and support facilities for WMD and associated delivery systems (though with obvious limitations on what could be shared with other countries).

This framework allows the U.S. to offer to contribute ballistic missile defense capability to those countries joining in this comprehensive effort against WMD. The U.S. is already doing this to some degree in its cooperation with Israel on the Arrow program, its sale of Patriot missile systems to close allies, and certain technology sharing under BMDO cooperative agreements. But significant technology transfer restrictions prevent wider sharing.

The framework also provides a better basis for dealing with China on the issue of ballistic missile defense. It would allow the U.S. to offer China a leadership role in this initiative if China was willing to commit itself to the key elements of the overall strategy. These would include tough export control limitations, an end to transfer of Chinese WMD and missile technology to key countries of concern, and a halt to its own ballistic missile threat to its regional neighbors.

As part of this framework, the United States should propose to Russia a “package deal,” coupling a significant reduction in the numerical ceilings in the START II Treaty with a revision of the ABM Treaty that permits the deployment of numerically limited, but still capable, ballistic missile defenses protecting the territory of the two nations. The theater missile defenses of the two sides could remain unconstrained.

Further analytical work would be required as to the proper level for strategic nuclear forces for the two sides. The arrangement would also have to be contingent upon no significant increase in the forces of other nuclear weapons states that might threaten either country (particularly China). But the number might be expected to be in the 1250-1500 warhead range.

Similar analysis would be required to determine the nature of the limits to be contained in an amended ABM treaty. But it is fully expected that the NMD system that could be deployed by either country under these limits would not undermine the credibility or effectiveness of either the U.S. or Russian strategic nuclear deterrents even at reduced levels. The U.S. should insure that this is also true for the French and U.K. strategic deterrents, which are likely to represent a much more sophisticated capability than can be handled by the current U.S. NMD system design.

While such an approach would reduce the economic burden of Russia's nuclear forces, it could mean a significant new economic burden in the form of ballistic missile defense deployments. Ironically, however, Russia already maintains the world's only operating ABM system, still has extensive air defenses, and produces its own TMD systems.

Still, the United States could consider as part of the "package deal" the possibility of cooperative efforts in the field of ballistic missile defense – as part of a comprehensive global strategy involving U.S. allies and other countries dealing with WMD and the means to deliver them. Such potential cooperation – again, also involving U.S. friends and allies – might include:

- Expanded ballistic missile launch notification, sharing of sensor early warning data for ballistic missile launches, and a joint ballistic missile warning center.
- Interoperable TMD systems – the U.S. PAC III and the Russian S300—that could be offered for sale in tandem as agreed between the two countries by a U.S./Russian joint venture to countries threatened by proliferating neighbors. (This could both provide an important contribution to the comprehensive global WMD strategy and offer U.S. support for Russian access to a legitimate export market for its TMD systems).
- A possible U.S./Russian joint venture to develop a ground-based TMD system that the U.S., its allies, and Russia could deploy, thereby assisting Russia in meeting its own needs for ballistic missile defenses.

This latter proposal raises the controversial issue of sharing defense technology with the Russians. This is not a new proposal. President Ronald Reagan offered to share just such technology with the Soviet Union as part of his SDI initiative and the Bush Administration defined several joint development activities to be pursued by U.S. and Russian scientists in the field of ballistic missile defense.

VI. Conclusions and Recommendations

President Clinton's decision to postpone deployment provides the opportunity to re-evaluate the path to national missile defense and the criteria for future system. The next Administration will undoubtedly conduct its review of programs and options. In light of program delays, there will be time, probably several years, before a decision on

NMD will be required if a deployment is to take place as soon as a defense is judged feasible. The decision on program direction should be based on the following:

- A return to first principle: a clearly stated Administration goal that the U.S. should deploy as soon as possible an effective NMD. However, an initial deployment need not provide, indeed it probably cannot, the same level of effectiveness as a robust system. Any system must have sufficient growth potential to address new missions.
- The recognition that current programs cannot provide effective defense before circa 2010.
- The requirement that the planned NMD architecture include additional capabilities beyond those associated with an initial deployment that will enable it to be effective not only against a near-term North Korean threat but also advanced threats posed by North Korea and simple or complex threats from other nations.

In order to develop and demonstrate an effective NMD capability at the earliest possible date, the next Administration should:

- Consider an initial NMD deployment, as soon as practical, at Grand Forks. Such a deployment would serve as a test-bed for the planned system, allow for testing of the integrated C3, and permit crew training.
- Restructure the NMD test and evaluation program. More tests and more realistic testing of the system are required.
- Address the countermeasures (CM) issue through a program to develop and test representative CMs.
- Ensure the successful development and deployment of SBIRs. Space-based surveillance will be required both as an alternative to land-based radar and as a means of defeating some countermeasures.

A program that can meet the requirement of effective defense against initial threats with growth potential will require, at a minimum, of the following elements:

- Multiple sites for ground-based interceptors (three to five).
- An interceptor inventory in the several hundreds.
- Freedom to deploy sensors
- Freedom to test and develop advanced defenses (e.g., directed energy)
- Freedom to deploy theater defenses (abandonment of demarcation)

The next Administration should consider additional measures to refine the set of potential options for responding to an emerging ballistic missile threat. These include:

- Evaluate options for enhancing an initial NMD system by the deployment of additional defensive layers (e.g., boost-phase, naval NMD, point defenses). Such an evaluation should not be permitted to delay efforts to deploy a land-based NMD.
- Improved intelligence collection and analysis of states possessing or acquiring ballistic missile states is required. Traditional assessments of proliferants capabilities, intentions and behaviors are inadequate. In addition, there is little understanding of potential adversary's military plans regarding BMs and WMD.
- Develop a new strategy for addressing the ABM Treaty that recognizes the limits it imposes on development of missile defenses. Effective nationwide defense against anticipated threats is not possible within the ABM Treaty. Modest amendments to the Treaty will not permit the development or deployment of the robust system required if a sophisticated threat emerges. The choices are to modify "early and often," pursue a "Big Bang" revision, or, if Moscow refuses to negotiate changes to the ABMT, withdrawal.
- Provide significant additional funding, on the order of several billion dollars annually in order to ensure that the proposed program can be achieved.
- Consider upgraded air defenses or at least early warning of strategic air threats. The air threat is likely to be easier to deter/defeat than ballistic missiles. This is also an area in which arms control may have a significant role to play.
- The area of greatest concern, and where the least thought and research has been devoted, is that of strategic offensive forces. Doctrinal and operational considerations are likely to establish a floor for strategic forces (at approximately 1,500 weapons) below which further reductions are likely to be highly destabilizing. The desire to go below this floor creates a discontinuity as the resulting force structures and postures are either not credible from the perspective of deterrence requirements, or unstable. Thus, once the floor is breached, it may be in U.S. interest to seek the most rapid movement possible to global zero. Strategic defenses may be the one means of smoothing the transition from 1,500 to zero if a decision is made to take such a momentous step.