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DETERRENCE AND THE IMPACT OF STRATEGIC DEFENSE

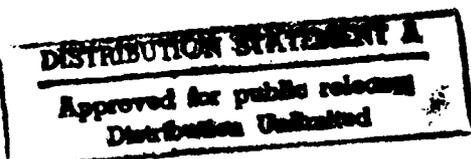
by

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The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.



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Abstract of

**DETERRENCE AND THE IMPACT OF STRATEGIC DEFENSE**

This paper examines the role of strategic defense in a deterrence strategy. Deterrence theory, strategic defence, the 1972 ABM Treaty, the national military strategy and Global Protection Against Limited Strikes are reviewed. It is asserted that the roles of nuclear forces and strategic defense are complimentary and stabilizing. The options to counter the threat of future proliferation of weapons of mass destruction and the threat of accidental or unauthorized launch of ballistic missiles are examined with the conclusion that a comprehensive defense is necessary.

TABLE OF CONTENTS

CHAPTER		PAGE
<b>ABSTRACT</b>		
I	INTRODUCTION	1
II	DETERRENCE THEORY AND STRATEGIES	3
	Punishment and Denial	3
	Stability	4
	A MAD View of Defense	6
	Assured Survival	8
	Strategic Defense and the ABM Treaty	9
III	MILITARY STRATEGY AND DEFENSE	13
	National Military Strategy	13
	The Threat	14
	Own Courses of Action	16
	GPALS Concept and System	17
	Sensors and Weapons	19
	Battle Management	21
	Capable or Not	23
IV	CONCLUSIONS	25
NOTES		27
BIBLIOGRAPHY		29

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# DETERRENCE AND THE IMPACT OF STRATEGIC DEFENSE

## CHAPTER I

### INTRODUCTION

For the past 40 years the United States has used the grand strategy of containment to confront an expansionist Soviet Union and Soviet sponsored Communist ideology. That titanic struggle has come to an end with the dissolution of the Soviet Union. With Russia and the newly formed Commonwealth of Independent States espousing a desire for some form of democratic government and free market economy, the level of international tension has been greatly reduced throughout the world.

Although 1991 ushered in a new era of hope, the world was quickly reminded by events in the Middle East of the peripheral dangers that have been lurking in the shadows of the Cold War. For the United States the new era will bring fresh challenges to our national security strategy. President Bush stated in the National Security Strategy of August 1991, "shaping a security strategy for a new era will require an understanding of the extraordinary trends at work today - a clear picture of what has changed and what has not, an accurate sense of the opportunities that history has put before us and a sober appreciation of the dangers that remain."<sup>1</sup>

The need for understanding and a clear picture will be particularly important as the United States grapples with the question of what to do with its huge nuclear arsenal, which was principally developed to deter the defunct Soviet threat. On 27

September 1991 President Bush announced bold unilateral action to cut the level of short-range theater and sea launched tactical nuclear weapons while simultaneously reducing the alert posture of strategic nuclear forces. In an effort to induce Soviet cooperation he said," if we and the Soviet(now CIS) leaders take the right steps...we can dramatically shrink the arsenal of the world's nuclear weapons. We can more effectively discourage the spread of nuclear weapons. We can rely more on defensive measures in our strategic relationship. We can enhance stability and actually reduce the risk of nuclear war. Now is the time to seize this opportunity."<sup>2</sup>

This paper will examine the opportunity to which the President has alluded, the increased role of strategic defensive systems in the United States' deterrence strategy.

Chapter II examines deterrence theory and the impact of strategic defense on the strategies of mutually assured destruction and nuclear warfighting. The concept of assured survival is presented.

Chapter III examines the role of nuclear forces and strategic defense as assigned by the nation military strategy. The projected threat is compared to future courses of action with the conclusion that a comprehensive defense is necessary. The concept and system details of Global Protection Against Limited Strikes are presented.

Chapter IV provides conclusions concerning the need for a defense-reliant strategy, changes to the 1972 ABM Treaty and employment of Global Protection Against Limited Strikes.

## CHAPTER II

### DETERRENCE THEORY AND STRATEGIES

The national security strategy states that in concert with its allies the United States seeks to "deter any aggression that could threaten the security of the U.S. and its allies and - should deterrence fail - repel or defeat military attack and end conflict on favorable terms."<sup>3</sup> The concept of deterrence has usually been understood to include not just nuclear war but war at all levels of conflict. In addition to fundamental deterrence of attack on the U.S. proper, it includes extended deterrence of attack on our allies. In order for deterrence to be effective it must be perceived to be credible by an adversary. The adversary must perceive that the U.S. has both the capability and the will to use it. Additionally, uncertainty as to how or when the deterrent will be used is helpful.<sup>4</sup>

#### PUNISHMENT AND DENIAL

There are generally two methods to deter an adversary: threat of punishment and denial of objectives. Punishment is the simpler of the two to accomplish. It requires a secure retaliatory (second strike) capability be maintained to respond to an adversary's first use of nuclear weapons. Denial of objectives requires that a warfighting capability be maintained to convince a foe that the U.S. can prevail in a nuclear war. The forces required for each strategy are different.<sup>5</sup>

Threat of punishment can be accomplished by relatively cheap

and simple systems. Targeting by less accurate weapons can be oriented to "countervalue" assets: population and industrial capacity. Command and control requires an early warning system and Presidential approval to launch the retaliatory strike. However, this deterrent lacks flexibility in that it provides only two options in response to aggression: retaliate and risk holocaust or do nothing (ride out the attack). An adversary may not perceive this threat to be credible, especially against aggression short of the nuclear threshold.

Denial of objectives requires weapons to be targeted against "counterforce" assets which have warfighting potential. The force needed will be much larger, more accurate and costly. The President will have much more flexibility to respond to the full spectrum of conflicts as opposed to an "all or nothing" decision. This uncertainty of response may be seen to enhance deterrence.<sup>6</sup>

#### STABILITY

One of the characteristics that any deterrent strategy seeks is stability in the face of political, economic and technological change. The size and type of forces possessed by adversaries contributes to the stability of deterrence. There are basically three types of stability of concern to strategists: first-strike, crisis and arms race.

The minimum condition of nuclear stability has been that neither side's deterrent forces could be completely destroyed by a preemptive first attack. Size and vulnerability of forces are the

key factors as even a small number of surviving forces are capable of immense retaliatory destruction. Arms reduction presents a paradoxical threat to first-strike stability unless force structure is carefully tailored for survivability.

Second to a disarming strike is the danger of a preemptive strike that significantly changes the balance of forces. A reduction of forces, such that only a countervalue option remains to the defender, could be the equivalent to a disarming strike. Since the retaliatory strike would not be directed against nuclear forces an even greater counterblow could be expected. Therefore, the minimum force requirements for crisis stability are that no preemptive strike should be able to take away the counterforce capability of an opponent.

Arms race stability focuses on the susceptibility of an initial balance of forces being disrupted over a long period of time. The deterrence relationship should be invulnerable "to clandestine build-ups, by open build-ups so large or so technologically leveraged that they exhaust the other sides' financial or technological ability to compete, or by quick - and quickly exploited - technological breakthroughs that render previously survivable forces vulnerable."<sup>7</sup> Generally, neither side should have an incentive to pursue a competitive advantage over an adversary.

Theoretically the most stable situation will develop if both sides are positioned to accept the concept of assured destruction. Neither side can successfully preempt or use the threat of nuclear

force to diplomatically coerce the other. If both sides use a counterforce strategy, the outcome will be more devastating, but relatively stable. "The most unstable situation prevails when one side accepts assured destruction while the other depends on a counterforce strategy. The assured destruction side is theoretically vulnerable to both a first strike and the consequent diplomatic coercion."<sup>2</sup>

Arms reduction has always held the allure of making the world safe again. Regardless of the attraction of arms reduction, it is unrealistic to think that all of the nuclear armed nations are going to give up their weapons in the near future. The ability of nuclear weapons to equalize a battlefield is too great an advantage. Even reducing to a very low number may be counterproductive to stability, as they would be vulnerable to preemption, to cheating and to technological breakthrough.

#### A MAD VIEW OF DEFENSE

As can be seen by the U.S. nuclear arsenal, a warfighting capability was developed to match a strategy called flexible response. Throughout the nuclear age the U.S. has had an evolving deterrence strategy, which was highly dependent upon the technological capabilities of the times. However, a strong case can be made that mutually assured destruction would be the end result of an escalation to the nuclear threshold. The stability of the situation was dependent upon whether both sides shared the perception that they were vulnerable.

For those who advocate mutually assured destruction (MAD) offensive nuclear weapons are the mainstay. MAD is a vulnerability based strategy in which the terrible destructive power of nuclear weapons is sufficient to preclude their use. Defensive forces and efforts are detested by MAD enthusiasts, who fear that the public will conclude that nuclear war is thinkable. Defenses add uncertainty and make it more difficult to calculate the minimum number of weapons to assure destruction.<sup>9</sup> In fact Secretary of Defense McNamara canceled the U.S. anti-ballistic missile system in 1975, "because he feared that pursuit of a missile defense would ignite an arms race, and because assured destruction as a concept fails if one or both sides deploy a defense. The side with a defense could presumably launch a first strike and then defeat any attempted retaliation."<sup>10</sup> Of course MAD advocates have no objection to perfect defense which can replace deterrence altogether.

Nuclear offensive forces dominate a warfighting strategy even more than MAD. Warfighters want massive numbers of accurate weapons to destroy the thousands of military targets, especially the foe's nuclear striking force. There is an element of MAD in the warfighters strategy, in that a portion of the force will be reserved for the destruction of the adversary's society. Warfighters follow a Clausewitzian approach of using defense to compliment the offensive forces, which will bring victory. It is acceptable for defensive forces to protect offensive forces until the offensive blow can be delivered. However, the warfighters are

not willing to divert resources from offensive forces to enhance strategic defense, as the offensive punch is all important. For the nuclear warfighter strategic defense does not need to be perfect, as long as it enhances the survival of the retaliatory force.<sup>11</sup>

#### ASSURED SURVIVAL

The above discussion has presented the role of offensive nuclear weapons in the deterrence equation. To be sure the role of strategic defensive systems has been hotly debated since the inception of nuclear weapons. Recent events in Iraq have made the public aware of the ballistic missile threat and the value of defense when deterrence fails. Henry Kissinger wrote in the April 2, 1991 Washington Post, "limitations on strategic defenses will have to be reconsidered in light of the Gulf War experience; no responsible leader can henceforth deliberately leave his civilian population vulnerable."<sup>12</sup> Yet, this is precisely what the U.S. deterrence strategy has allowed.

The purpose of deterrence is to prevent war or aggression. MAD deters by the threat of mass death on an enemy population. Nuclear warfighting deters by the threat of destroying the armed might of a nation and combines denial of objective and punishment. Defense-reliant strategy works when the adversary perceives that his forces are rendered impotent. Defense on both sides reduces the incentive and pressure to preempt by making a potential first strike ineffective. "The incentives and pressures for a 'Pearl

Harbor type' attack only exist when that attack could mean the difference between victory and defeat."<sup>13</sup>

But what if deterrence fails? A defense-reliant deterrence strategy is the only strategy which can deter and assure survival. Assured survival is a defensive concept of damage limitation after deterrence fails. Damage limitation conflicts with MAD and nuclear warfighting strategies, which hold that society must ultimately be at risk in order to make war unthinkable. Can a country afford to trust in deterrence when dealing with the Saddam Husseins of this world? The objective of defense should be to "establish a trend where every increase in deterrence also results in increased survival should deterrence fail."<sup>14</sup> Offensive based deterrence does precisely the opposite.

#### STRATEGIC DEFENSE AND THE ABM TREATY

When President Reagan announced the Strategic Defense Initiative (SDI) in March 1983, he summoned a picture of a perfect defensive system capable of defeating a full scale nuclear attack on the U.S. or its allies. In effect his intention was to deny all elements of the Soviet nuclear strategy by making the weapons obsolete. His vision had captured the essence of a defense reliant strategy of deterrence. His approach to deterrence had a basis in the writings of Sun Tzu, who advocated attacking and denying the enemy his strategy to avoid confronting him on the battlefield. By combining a non-nuclear defense with arms control measures, Reagan's vision of strategic defense provided a solution to a

dilemma that had faced every President since Truman, how to deter nuclear weapons and get rid of them. Without an effective defense system, offensive nuclear weapons would continue to serve as the basis of deterrence for both MAD and nuclear warfighting.<sup>15</sup>

Although several administrations have pursued the research and development of defensive systems in the form of anti-ballistic missile (ABM) forces, only one battery was brought to full operation in Grand Forks, North Dakota. Placed into operation shortly after the signing of the 1972 ABM Treaty between the U.S. and the Soviet Union, it was deactivated in 1975 for not being cost effective for its limited capability. The Strategic Defense Initiative has had to face the same two hurdles as the first ABM battery: "(1) political-ideological opposition, which has leaned in the main on supposed U.S. obligations under the 1972 ABM Treaty with the Soviet Union that constrains the development, let alone deployment, of missile defenses; and (2) the issue of the costs of building such defenses, particularly in a period of an increasingly limited U.S. defense budget."<sup>16</sup>

The U.S. continues to strictly adhere to the provisions of the 1972 ABM Treaty, which we have interpreted to permit only one ABM site, limit size and location of additional radars, limit development and testing, and bar deployment of ABM sensors in space. The ABM treaty has been a major political hurdle for development of SDI and its limited successor. There are some compelling reasons for the U.S. to change the terms of this treaty, either by renegotiating with the apparent successor of the Soviet

Union or by unilateral action.

First, the Soviet Union does not exist. Many of the reasons for the original treaty disappeared with them. Second, the old argument that strategic defense will precipitate an offensive-defensive arms race is impossible. The CIS is economically incapable of any kind of arms race in the near future. Third, before the Soviet Union dissolved former Premier Gorbachev expressed interest in U.S. proposals for a "...joint ABM and early warning system to prevent unauthorized or terrorist operated ballistic missiles." Additionally, he indicated that the Soviet Union was "...prepared to consider a U.S. proposal on a non-nuclear anti-missile defense system."<sup>17</sup>

Last but not least, the Soviet Union systematically used or violated the provisions of the treaty to reduce their vulnerability. The Soviet Union accumulated a fully operational ABM system around Moscow, a superb air defense system, 2800 strategic defense weapons, the best civil defense in the world, and built over 10 years the Krasnoyarsk long range phased array radar (the size of an Egyptian pyramid).<sup>18</sup> One can only wonder why the U.S continues to adhere to this anachronistic treaty in today's changed political environment.

Political and economic realities have changed the face of SDI as originally conceived by the Reagan administration. Gone are the concept of stopping a full scale Soviet attack of 10,000 warheads and the advanced technology of x-ray lasers, particle beams and giant orbiting mirrors. The next chapter will explore the evolving

scope of strategic defense as outlined recently by the Bush administration and translated into the National Military Strategy.

CHAPTER III  
MILITARY STRATEGY AND DEFENSE

NATIONAL MILITARY STRATEGY

The 1992 National Military Strategy reaffirms deterrence as its primary and central motivating purpose. It also reflects the shift in focus from the threat of global war to regional threats to U.S. vital interests. A credible deterrent is defined as "a reliable warning system, modern nuclear forces, the capability and flexibility to support a spectrum of response options and a defensive system for global protection against limited strikes." Of particular interest are the emphasis on the roles of nuclear forces and strategic defense "...in maintaining a modern, fully capable, and reliable strategic deterrent as the number one defense priority."<sup>19</sup>

"The purpose of nuclear forces is to deter the use of weapons of mass destruction and to serve as a hedge against the emergence of an overwhelming conventional threat. The need for nuclear deterrence is a continuing one whether the nation is at peace or our troops are responding to a contingency in some region of the world." Weapons of mass destruction refers to both the thousands of nuclear weapons in the former Soviet Union and to those weapons which might become available to potentially hostile states as a result of proliferation.<sup>20</sup>

Concerning strategic defense the National Military Strategy says the following:

"The threat posed by global ballistic-missile proliferation and by an accidental or unauthorized launch resulting from political turmoil is on the rise. Because of these trends, the SDI program has been redirected to pursue a system provoking Global Protection Against Limited Strikes (GPALS). GPALS offers many potential advantages: The U.S. would be protected against limited strikes by ballistic missiles; our forward deployed forces would be better defended against missile attacks; and our allies could also be better protected. GPALS will be based on technologies pioneered by SDI, but would be both smaller and less expensive than the initial deployment originally projected for SDI."

From the above statement it is clear that the Bush administration intends for strategic defense to play a complimentary role to nuclear forces in deterring a limited threat. What is that threat and what is the complimentary role.

#### THE THREAT

The perceived threat has changed considerably since the dissolving of the Soviet Union and the demise of Soviet sponsored

Communist movement. From the shadow of a super power bipolar world numerous regional powers have emerged to fill the power vacuum, and many old ethnic and nationalistic issues have been reawakened. The following are the current and projected ballistic missile threats confronting the U.S. and its allies:

1. Threat of full scale nuclear attack by the Confederation of Independent States (CIS) or Russia under the control of a totalitarian regime. The instability of the government and economy are cause for continued concern, but a scenario of attack on the U.S. seems remote.

2. Unauthorized or accidental launch from the CIS, China or any other nation with ballistic missiles. The stark reality of this threat was observed by the world during the abortive coup attempt in Moscow in 1991 when nuclear civil war seemed possible. Deficient command and control procedures or unauthorized terrorist access in the third world environment lend credibility to this threat.

3. Some third world nation acquires long range ballistic missiles and weapons of mass destruction and deliberately attacks the U.S. or its allies. Already 14 third world nations have ballistic missiles with the potential of 24 within 10 years. Most of these nations have chemical weapons programs, 4 have nuclear programs and 7 have biological programs. By the year 2000, 6 are expected to have missiles of greater than 3000 km range.

4. An enemy might launch tactical ballistic missiles, such as the Iraqi Scuds, against U.S. or allied forces during a regional

conflict.<sup>22</sup>

These threats could have far reaching impact on the U.S. in its diplomatic and political efforts to remain engaged throughout the world. Left unchecked the threat or use of ballistic missiles could terrorize the population of the U.S. or its allies, constrain U.S. foreign policy, weaken security guarantees, interfere with coalition military options, deter U.S. intervention in our own vital interests, or challenge our regional influence.<sup>23</sup>

#### OWN COURSES OF ACTION

The courses of action available to the U.S. to counter the evolving ballistic missile threat fall into three broad categories: deterrence, preemption and comprehensive defense. Deterrence through the threat of massive retaliation has been discussed at length on the strategic level and will doubtless remain effective against the remote threat of a reconstituted CIS massive attack. However, deterrence becomes questionable in a third world scenario (Gulf War comes to mind) when the requirement for a rational adversary to weigh the costs of aggression may not be forthcoming. Additionally, one could ask if the U.S. would ever actually launch a nuclear attack against a small third world state, regardless of provocation. Deterrence seems to lack credibility in the regional contingency setting.

A second course of action is preemption to disarm an offending nation's means of waging a war of mass destruction. This would probably be a conventional attack similar to Israel's attack on

Iraq. This lacks credibility as one considers the 24 potential victims of such unilateral action. Even if politically acceptable, preemption is not operationally feasible when hardened targets, mobile launchers and hidden stockpiles are considered. Realistically, all of the threats are safe from a preemption countermeasure.

The last course of action against the evolving ballistic missile threat is a comprehensive defense, such as the system proposed in the National Military Strategy. To meet all of the threats the system would have to intercept ballistic missiles without regard to time and location of launch and ultimate target. A point defense system like Patriot is too limited for a global scope. The only near term solution, which can be developed to meet the projected threat, is the ground and space based technology started under SDI. Only the full scale threat would be beyond the proposed defensive systems capability, although adequately deterred by our nuclear arsenal.<sup>24</sup>

#### GPALS CONCEPT AND SYSTEMS

Global Protection Against Limited Strikes (GPALS) is a descriptive name for a smaller, less costly successor of SDI. In the words of Ambassador Henry F. Cooper, director of the Strategic Defense Initiative Organization, "the GPALS system is designed to give forward-deployed American forces, friends and allies and the United States itself a highly effective defense against deliberate or unsanctioned attacks. These attacks could involve as many as

200 ballistic missiles or reentry vehicles." More specifically the concept has three elements to defend against limited ballistic missile attacks.

1. Theater Missile Defense (TMD) for U.S. forces and allies.
2. Ground-based defensive systems to defend the U.S. against accidental and unauthorized ballistic missiles from any source.
3. Global space-based systems to intercept ballistic missiles with ranges greater than 600 km.<sup>25</sup>

The TMD could be operational by 1996 in the form of one site at Grand Forks, North Dakota. This initial system will conform to the current requirements of the 1972 ABM Treaty. An additional 6 sites will eventually be necessary. The remaining ground and space-based systems could be operational by the year 2000.

GPALS is a complex weapons system with many new terms. However, like simpler systems all of the equipment serves to assist a combatant commander in the detection to engagement sequence. All weapons systems require three basic components: sensors, weapons and battle management. Weapons are also described by their coverage capability, in this case: global, theater or area (hundreds to thousands of miles across), and point (for individual defensive positions). For GPALS to provide an effective defense these components must be stationed both on the ground and in space in a multi-layered system.

Why space? The key to an effective defense is to be able to

operate within most of the battle space through which an aggressor is attacking. The longer offensive forces are held at risk, the greater their attrition. Ballistic missiles spend most of their time in space. Only by operating in space can the defense control most of the battle space. Therefore, space operations are the key to an effective defense as conceived for GPALS.<sup>26</sup>

## SENSORS AND WEAPONS

The simplest way to describe the multi-layered approach of the GPALS system is to proceed through the detection to engagement sequence of events as a ballistic missile travels through the battle space. The ballistic missile starts in the boost phase, where it produces a highly visible and hot rocket plume.

1. The first sensor to detect the launch will be one of the three Defense Support Program (DSP) strategic surveillance satellites in geosynchronous orbit. The heat plume will be detected by infrared sensors, and the launch site transmitted through Defense Satellite Communications System (DSCS) satellites to ground stations under the control of the U.S. Space Command. This system was used effectively to detect Scud launches from Iraq.

2. Simultaneously, Brilliant Pebbles, a satellite sensor and weapons station, will detect the heat from the boost phase and will immediately engage the missile with guided "kill vehicles." The kill vehicles will be kinetic energy devices about the size of an oatmeal box, which will slam into the

missile at high speed. Brilliant Pebbles will be limited to ballistic missiles with ranges greater than 600 km, because they must enter space.

3. Next Brilliant Eyes, a satellite sensor station, will activate to identify and track targets in the ballistic phase of flight. Brilliant Eyes will relay targeting information for missile interceptors.

4. To cover any gaps in satellite coverage the Ground-based Surveillance and Tracking System (GSTS) will be fired into space. GSTS will deploy heat detecting telescopes to assist with the targeting and discrimination between warheads and decoys.

5. Ground Based Interceptors (GBI) will be launched to intercept the missiles prior to reentry. GBI will have its own seeker and fire kinetic energy kill vehicles without warheads. Although, the GBI will be very fast and have unerring accuracy, it will be unable to distinguish between warheads and decoys. Since it will engage both, more will be needed. Ultimately, 750-1000 in 6-7 sites in the U.S. are envisioned.

6. Finally, Endoatmospheric/Exoatmospheric Interceptors (E2I) will be fired to intercept the missiles as they enter the atmosphere. E2I will use an infrared seeker to guide itself to the reentry vehicle. Any decoys will have been burned up during reentry. The need to use nitrogen cooling for its own IR seeker will make this missile expensive."

GPALS will include theater-based defenses small enough to be air lifted to a war zone. Theater Missile Defense will include:

1. Ground Based Radar (GBR) will be employed to support high altitude interceptors. In the near term GBR could be used to upgrade the Patriot system.

2. Theater High-Altitude Air Defense (THAAD) will intercept targets in the upper atmosphere. It should be able to cover an area 1000 miles square and travel so high that exploded chemical and biological substances dissipate before reaching earth. Currently, technology testing and deployment of THAAD is prohibited by the ABM Treaty.

3. Extended Range Intercept Technology (ERINT) will cover an area three times as large as Patriot with 16 vice 4 missiles per launcher. ERINT will be an impact missile to destroy the target completely. Reactive materials to burn chemical/biological agents are being researched.

4. Patriot will continue to be used as a point defense system.<sup>29</sup>

## BATTLE MANAGEMENT

The Battle Management system to employ either the global or theater level sensors and weapons will be extremely complex. One of the easiest methods of extending the area coverage of a weapons system is to provide universal targeting information from all the sensors. The biggest challenge beyond complex technology will be sharing the space and ground sensor information in real time and

ensuring it has sufficient quality to support targeting. Only by early identification, discrimination and assignment of targets will the effectiveness of the weapons throughout the battle space be achieved. Delays in this process will permit overwhelming of the defense.

The command and control organization will have to be reconciled with the organization outline in the Unified Command Plan. The nature of the threat and the multi-layered approach are guaranteed to cross both geographic and functional lines of responsibilities. It would seem appropriate to have the U.S. Space Command coordinate and employ all space based assets plus GSTS and GBI. However, it isn't clear that SPACECOM should control a dual system such as E2I, although most of the targeting information for weapons assignment will come from his assets. The situation gets even trickier when confronted with a combatant command theater threat. Certainly the combatant commanders will want to control the positioning and employment of TMD. Although THAAD and ERINT will be atmospheric systems, they will receive targeting information from SPACECOM and the CINC's GBR. All of these systems will need to be coordinated with the planned use of point defense systems.

The hierarchy of the command and control organization will drive the design of the command and control hardware. Certainly, for continental U.S. defense a centralized control system would be in order. For theater operations the choices seem to be between receiving processed information from the centralized

location in the U.S. or parallel information from the full spectrum of sensors. The execution process would be the same with the CINC adding local sensor information. The most redundant form of command and control would permit the receipt of information from a central location or direct from the sources. The simplest of system architectures will be infinitely more complex than anything in existence today and will no doubt tax an already overloaded world-wide communications system.

#### CAPABLE OR NOT

Many critics argue that GPALS will be vulnerable to a host of countermeasures including decoys, a nuclear detonation in space to blank all the sensors, anti-satellite systems, and multiple reentry vehicles. Additionally, ballistic missiles could be altered by using fast-burn boosters or low trajectory flight paths. It is possible that some or all of these might be used to the detriment of GPALS performance, but that does not negate the value of the system. Many of these countermeasures are associated with a full scale attack on a global level, the least likely scenario and the one most deterred by our offensive nuclear weapons. The multi-layered design of GPALS should enable it to counter all but the most determined threat which can overwhelm the defense. Of course that is not the limited role of GPALS as outlined in the National Military Strategy.

For each of the offensive countermeasures above there is a defensive counter unless no defensive system is ever deployed.

GPALS represents the beginning of an iterative process which could ultimately lead to the elimination of the need for strategic nuclear deterrence. Once the technology is deployed, it will be a natural step to enhance the capability to eliminate the only threat to U.S. survival. The first step is to render impotent a limited number of the worlds weapons of mass destruction by fielding a non-nuclear strategic defense.

CHAPTER IV  
CONCLUSIONS

The U.S. has used its strong nuclear forces to deter attack by the Soviet Union for over 40 years. Deterrence between the two super powers stemmed from a rational perception of the other sides ability to inflict punishment or deny objectives. Most of the world was influenced sufficiently by the two supers powers that a stable situation existed. With the collapse of the Soviet Union half of the controlling influence has been lost and host of regional, national and ethnic animosities have surfaced. From the resulting instability and uncertainty a new threat has emerged which may not find nuclear deterrence credible. The only viable alternative to our past deterrence strategy is a defense-reliant strategy which will deter and assure survival if deterrence fails.

The National Military Strategy calls for complimentary roles for nuclear forces (deterrence) and for strategic defense (protection). Global Protection Against Limited Strikes can provide a sound beginning for a strategic defense. Its multi-layered approach will capably handle limited ballistic missile threats from any source. It will not be capable of defeating the old full scale type of Soviet attack. It will be able to defeat unauthorized and accidental attacks or the desperate act of a third world "rogue."

There are some significant political and operational hurdles to be overcome before the system will become operational. Perhaps the most important will be renegotiating more realistic terms for

the 1972 ABM Treaty or unilaterally ignoring it. It is a relic of a bygone deterrence equation and has outlived its usefulness. The old fears of the MAD advocates about instability caused by strategic defense are no longer valid in today's political environment. GPALS will die on the vine in 5 years unless the ABM treaty is changed.

There are still many uncertainties about the futuristic weapons system called GPALS. Capabilities, technology, and command and control structure are all very much dependent upon the resources applied to the development process. Funding will be a function of how the Congress views the role of strategic defense in a world where the only certainty seems to be that proliferation of weapons of mass destruction will increase. I must agree with Henry Kissinger that no responsible leader or government can intentionally leave the population unprotected.

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