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**DETERRENCE AND
STRATEGIC DEFENSE
IN THE 21ST CENTURY**

BY

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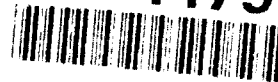
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The United States' experience with a deterrent security strategy is colored by more than 40 years of confrontation with the Soviet Union. Over the Cold War years, American political leadership wrestled with two foreign policy challenges: the threat of communist expansion and the danger of nuclear weapons. With the dissolution of the Soviet Union, communist expansion may be a thing of the past. Nevertheless, nuclear weapons are still with us in large numbers. Of the many challenges facing American statecraft in the 21st century, few are as foreboding as the accelerating proliferation of nuclear weapons and the means for their delivery. Although intelligence professionals cannot confidently predict the 21st century international environment, several trends characterize what we might find. There will still be ideological competitors, in some cases involved in intractable regional conflicts. Furthermore, nuclear and conventional military technologies will increasingly spread, militarizing old regional battles. As new nuclear regimes emerge, their political calculations will be tempered by these longstanding animosities, possibly escalating lower order regional violence to nuclear confrontation. The United States must address the significant issues raised by growing regional nuclear potential adversaries if it expects to influence the international order required to achieve the National Security Strategy's envisioned "Age of Democratic Peace."

USAWC MILITARY STUDIES PROGRAM PAPER

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DETERRENCE AND STRATEGIC DEFENSE IN THE 21ST CENTURY

AN INDIVIDUAL STUDY PROJECT

by

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INTRODUCTION

With a new President in the Oval Office, America's incoming political leadership will re-evaluate both national security strategy and its supporting national military strategy. In an October 1992 article on national security, President Bill Clinton stated, "we must start with a fresh assessment of the new dangers that could threaten our interests and potentially require the use of force ... including ... new threats from the former Soviet republics, should democracy fail, the spread of weapons of mass destruction, and violence (elsewhere) that can spill across borders." The new President continued by calling for the maintenance of nuclear deterrence beyond containment of the former Soviet Union, with emphasis on strengthened institutions of collective security.¹

The fundamental objective of America's armed forces is to deter aggression, and should deterrence fail, to defend the nation's vital national interests against any potential foe.² Currently, American military strategy is based upon four "foundations:" strategic deterrence and defense, forward presence, crisis response and reconstitution.³ The first foundation, strategic deterrence and defense, consists of a reliable warning system, modern nuclear forces, the capability and flexibility to support a spectrum of (nuclear) response options, and a defensive system for global protection against

limited (ballistic missile) strikes.⁴ This exclusively nuclear dimension will be challenged in the 21st century by regional political strife and evolving international relationships.

To deter aggression and defend the American people in the 21st century, the political environment must first be examined for potential threats to our national interests. Next, within the context of national security strategy, the military capability to meet those threats must be built to strengthen deterrence, and should deterrence fail and the United States be forced to fight, to win.

The most pressing challenge the United States will face in the 21st century may be economically balancing competing entitlement, domestic and defense resource needs. Successful execution of U.S. national military strategy depends upon the degree to which the military element of our national power is capable and credible. At risk is adequate investment in the military capability that will be required to deter aggression and insure the security of the American people in a world of changing threats to our vital interests. With many legitimate contenders for available national resources, we may only get one chance to correctly define strategic deterrence and defense in the 21st century. In the absence of a monolithic threat to our security that the American people can see and believe, our government will be pressured to field the least expensive military force that can be rationalized as effective.

In the short term, Senator William Cohen (R-ME) predicts

that the new Congress, while wrestling with many valid and pressing domestic priorities, may find it difficult to do anything meaningful for national defense.⁵ Although the Department of Defense has made some progress in tailoring the armed forces for post-cold war missions, domestic revitalization will continue to exert pressure on defense authorizations and appropriations. Without strong White House support, America's ability to execute any national military strategy may suffer from legislative financial neglect. While fewer dollars generally buy less capability, reduced budgets particularly stress manpower intensive programs and services, in which force structure represents a large part of the budget outlay. As a particularly grim alternative, we may be forced to change our national security strategy because investment in military capability cannot be politically sustained.

DETERRENCE AND THE LESSONS OF HISTORY

Deterrence is a psychological phenomenon. Its object is to master the expectations and fears of one's actual or potential opponents.⁶ Deterrence relies upon both capability and will; the (military) capability to do what has been threatened and the (national) will to act. A deterrent strategy depends on the deterrer's ability to convince his adversary that an attempt to gain his objective would cost more than it is worth, and the cost to the deterrer of applying the deterrent would be less than conceding the objective.⁷ Deterrence assumes a rational, informed opponent.⁸ Irrational opponents and accidents cannot be "deterred."⁹

Unfortunately, the definition of "rational" is always at issue. Opponents with differing value systems, ideologies and political motivations will define "rational" and "irrational" in different ways. What is rational to one may be absolute lunacy to another. Saddam Hussein's decision to invade and hold Kuwait in the face of overwhelming political and military opposition is a recent example. Deterrence also requires both opponents to understand one another. Competing opponents define their objectives based upon their own ideologies and values. In order to deter an opponent from his objective, that objective must be known. Misunderstanding an opponent's ideology and values, his bases of rationality, leaves little hope of properly understanding his objectives.

To predict the nature of strategic deterrence and defense in

the 21st century, it is important to understand the nuclear deterrence lessons of the cold war. Since World War II, the United States Government has been attempting to resolve its two major foreign policy problems-- expanding Communist power and the danger of nuclear weapons.¹⁰ American military power has been used both in the actual conduct of warfare, and as an important element of political power, underscoring and making credible diplomacy in the pursuit of national interests. In pursuit of national interests, policymakers have been sensitive to both domestic and international demands. During times of crisis, international concerns have dominated. When crises have been resolved, domestic interests have regained preeminence. In recent history, the U.S. has attempted to achieve a balance between important domestic values and significant national security values, with equitable distribution of resources as the objective.¹¹ Nuclear deterrent strategy has contributed to achieving this balance.

Military strategy has three elements: first, an objective, or political goal set by the government; second, concepts that support the objective and organize the system; and third, resources of force design and programs to support the concepts.¹² U.S. military forces have assured the security of the American people through a combination of offensive nuclear strength and conventional military capability. Nuclear strength has traditionally been the more visible of the two, because the risks and consequences of nuclear exchange far outweigh those of

conventional confrontation.

FROM REPRISAL TO MASSIVE RETALIATION

From 1945 to 1949, the United States had the only nuclear weapons.¹³ During that period, America consciously reduced its conventional strength. With no public support for a large standing army, American ground forces dwindled from a wartime strength of 3.5 million men to a force of about 400,000 within a year after the Japanese surrender. In 1946, the Soviets moved their armies onto the strategically advantageous eastern German flatlands, while economic and military weakness and political instability plagued the nations of western Europe. Faced with this new Soviet threat and unable to afford both massive aid to European allies and a resurrection of its military strength, the United States embarked upon what Secretary of Defense Forrestal called a "calculated risk" to keep defense expenditures low in order "to assist in European recovery."¹⁴ Despite Soviet expansionist pressure and an evolving policy of containment, the Truman Administration maintained a constant Defense budget of \$13 billion through 1948. To continue funding European recovery through the Marshall Plan, the United States entered the North Atlantic Alliance in 1949 to first politically, and later militarily, contain Soviet influence in Europe.

During the "monopoly" years, the few American nuclear weapons were seen as a counterweight to the Soviet armies in Europe. Many believed the threat of atomic "reprisal" kept the Soviets from occupying Europe. In light of little conventional

capability, the deterrent nature of American nuclear weapons was more psychological than substantive. First, the United States had few weapons and limited access to overseas bases that would be required for bombers to range the Soviet Union. Second, it is not known if the Soviets ever seriously considered an attack on the west. Finally, the Soviets could have probably marched to the English Channel while the United States expended its few nuclear weapons on Soviet cities without significant military effect upon the aggressor.¹⁵ During the entire "monopoly" period, the United States relied psychologically upon sole possession of nuclear weapons, but at the same time failed to establish an explicit doctrine of nuclear deterrence.¹⁶

Between 1945 and 1949, many strategic thinkers believed that the political leverage gained from nuclear bombs was achieved through the threat of offensive action. Jacob Viner and Bernard Brodie argued that the certain loss of nuclear monopoly would not undermine America's security if the United States undertook a strategy of nuclear deterrence. Early deterrent thought held that any nation using a nuclear bomb upon another should be bombed in return. According to Brodie, if such arrangements were made, the bomb could not but prove a powerful inhibition to aggression.¹⁷

After NSC 68, Secretary of State Dean Acheson described the evolving focus of military policy in terms of developing an effective deterrent to prevent, rather than win a war. With the loss of the nuclear monopoly, the Truman Administration believed

in three deterrent factors: retaliatory air-atomic power, reserve potential, and most importantly, ground forces in being, especially in NATO.¹⁸

The Eisenhower Administration considered several strategic alternatives but concluded the general direction of strategic and military policy begun by Truman should continue. Balancing security needs against the health of the American economy, Eisenhower looked to achieve the greatest military capability at the lowest price. He decided to pursue a defense strategy based upon reliance on nuclear weapons in order to reduce the manpower costs of conventional forces. Five aspects of what became known as the "New Look" doctrine influenced the evolution of deterrent thinking throughout the 1950's: the emphasis on strategic retaliation, faith in novel technologies, a "longhaul" perspective, reliance on nuclear weapons, and the depreciation of manpower and conventional capabilities.¹⁹

Secretary of State John Foster Dulles explained the administration's decision in both military and economic terms. Unable to afford the costs of positioning defensive conventional forces everywhere they might be needed, the United States chose to rely on its ability to decisively retaliate at the place and time of its choosing. This strategy of "massive retaliation" required a smaller overall investment in military forces. Additionally, budget pressures helped U.S. policymakers rationalize nuclear forces as an effective alternative to more expensive conventional forces for confronting Communism

worldwide. With "massive retaliation," Dulles extended the deterrent reach of possible U.S. nuclear response beyond general war to include local aggression. By 1954, the Soviets developed long range bombers capable of ranging the United States with thermonuclear weapons. The international community quickly realized that the United States was probably unwilling to risk nuclear exchange over small provocations that did not threaten its own core interests.

ON TO FLEXIBLE RESPONSE

During the second Eisenhower administration, nuclear deterrent thought evolved to consider selective and controlled nuclear reprisal. Understanding "massive retaliation's" irrelevance to limited attacks, some strategists argued for a revision to what they called "graduated deterrence," hoping to weigh the aggressor and his act in order to gradually increase nuclear punishment until the provocation ceased. Nuclear targeting alternatives and nuclear force "sufficiency" emerged as elements of this debate. Some maintained that the greatest deterrent effect would be achieved by the threat to strike enemy cities (a counter-city, or counter-value strategy), while others argued that the greater deterrent was the threat to destroy enemy military installations, in particular his bomber and missile sites (a counter-force strategy).²⁰ Those who argued for a counter-value strategy maintained that a "finite deterrent" of sufficient nuclear forces to threaten those things an enemy most values (his cities, population and industrial capacity) would be

most effective. Counter-force proponents argued that the greatest deterrent value was in targeting an enemy's nuclear forces that directly threatened the United States. Any counter-force posture required more air-missile strategic forces than counter-value "finite deterrence." Additionally, as an enemy enlarged his strategic forces and reduced their vulnerability, a nation embracing a counter-force strategy would be obliged to multiply its nuclear arsenal to maintain the desired target coverage and damage expectancy.

In 1957, the Soviets further threatened the U.S. by fielding Bear and Bison long range bombers and by testing its first long range intercontinental ballistic missile (ICBM). American strategists began to fear possible Soviet preemptive attacks on the European-based B-47 bombers, effectively challenging U.S. ability to retaliate with a small but growing U.S.-based B-52 bomber fleet. Perception that the U.S. lagged behind the Soviets made the "bomber gap" and the "missile gap" major American strategic concerns.²¹ The fear of surprise attack and the sudden improvement in Soviet strategic forces had an immediate and powerful psychological effect upon U.S. policymakers.

By the late 1950's, prominent strategic and military figures both in the United States and the Soviet Union advocated the development of a capacity for preemptive attacks.²² To prepare for preemption, each side would have to build large counter-force capabilities with an instant readiness to fire.²³ The problem with increasing "defensive" counter-force capability was that it

was not distinguishable from an increase in offensive preemptive capability. Defensive moves undertaken by one side could be seen by the other as provocative preparation to pre-empt. A cycle of escalating distrust could then hypothetically lead to war without being connected to the prosecution of any political interest or objective.

After the Kennedy Administration took office, reconnaissance satellite photographs revealed the truth about the missile gap-- it did not exist. The Soviets had fielded only a small number of missiles. During the Berlin Crisis that year, Deputy Defense Secretary Roswell Gilpatric told the Soviets what the new Administration knew about their weakness. In pointing out that the United States could absorb a first strike and retaliate with a second strike as strong as the Soviets could pre-empt with, the surprise attack hysteria of the late 1950's subsided somewhat. None the less, the United States continued nuclear weapons production, achieving significant "superiority" over the Soviets with an inventory of about 4,000 bombs and ICBMs by 1962.

Throughout the 1960's, Defense Secretary Robert S. McNamara brought significant and enduring change to U.S. strategic policy and nuclear force structure. Shortly after the Kennedy inauguration, he led a review of U.S. defense posture and strategy. The new Administration considered a small nuclear force with a "finite deterrence" strategy, a large force with mixed counter-value and counter-force targeting, and a mid-sized force with more "flexible" counter-force targeting. It chose the

third alternative. This new strategy, called "flexible response," was a strategy of both limited strategic war and multiple conventional response options. Its greatest requirement grew from the fundamental criticism of massive retaliation, that it forced the President's hand by providing a lack of alternatives.²⁴ Flexible response alternatives were tailored to Soviet challenges. Multiple options short of general war, maintained for as long as possible, confronted lower order aggression better than the all or nothing strategy of massive retaliation. If general war could not be avoided, flexible response required a robust second strike nuclear force targeting Soviet non-hardened military forces and a hardened nuclear reserve force targeting Soviet urban and industrial centers.

Multiple response options also required a greater variety and number of conventional forces. Delaying the threshold of nuclear confrontation was a key element of flexible response, inferring a U.S. willingness to fight conventionally when necessary. Conventional forces in Europe were strengthened to better confront the Soviet Army. Special operating forces were improved in size and capability to counter Communist sponsored insurgencies.

FROM SUFFICIENCY TO PARITY

To American policymakers, McNamara's strategy seemed both logical in intent and consistent with American values. Unfortunately, the Soviet Union was not convinced. Marshal of

the Soviet Union Sokolovsky, author of the definitive Soviet strategy manual of the time, remarked that any strategy that targeted the forces of an adversary was by definition an offensive strategy, based upon surprise. Marshal Sokolovsky's view was unintentionally reinforced by the U.S. Air Force, who had come to associate counter-force with the capacity to fight and win a nuclear war.²⁵

With the Soviet ICBM and SLBM programs in technical trouble and Prime Minister Khrushchev's emphasis on shorter range weapons targeted at Europe, the Soviets found themselves far behind in intercontinental delivery capability by late 1962. This strategic imbalance provoked Khrushchev to deploy intermediate range missiles to Cuba. Arguably, U.S. conventional superiority in the Caribbean had as much to do with the crisis' resolution as overall U.S. nuclear superiority.²⁶ The Cuban Missile Crisis was an important lesson for policymakers on both sides, highlighting the dangers arising from an imbalance in nuclear capability between the two adversaries. In a June 1963 speech at American University, President Kennedy cited the disastrous nature of nuclear war and called for stabilizing strategic relations with the Soviet Union. Rebounding from an unsuccessful attempt to promote a counter-force strategy, McNamara called the Administration's return to a counter-value strategy "assured destruction."²⁷ Still believing the Americans to be offensively focused throughout the mid-sixties, the Soviets continued to add to their strategic arsenal. The Soviet strategic

debate centered upon the initial stages of nuclear war during the mid-1960's, and moved toward an acceptance of mutual destruction in the late sixties as their nuclear capability approached parity with that of the United States. When the two Strategic Arms Limitation Talks (SALT) delegations met in Helsinki in November 1969, the Soviet side affirmed the "suicidal" nature of starting a nuclear war given the retaliatory strength of both sides.²⁸

When the Nixon Administration came to power in 1969, it also reviewed the strategic policy alternatives. Although Nixon had campaigned on a "security gap" platform, his National Security Council, under the direction of Henry Kissinger, found the sort of nuclear superiority the U.S. had enjoyed in the past was now unobtainable.²⁹ The new Administration settled on a strategy of nuclear "sufficiency," in a conscious attempt to stabilize the arms race. Under sufficiency, the U.S. vaguely alluded to maintaining enough force to both deter attack and prevent Soviet coercion. When Deputy Defense Secretary David Packard was asked what was meant by "sufficiency," he replied: "It means that it's a good word to use in a speech. Beyond that it doesn't mean a God-damned thing."³⁰ The Nixon Administration explored a number of targeting options, including selective options, limited nuclear war and counter-force alternatives. However, its political investment in the SALT negotiations prevented any major realignment of the nuclear component of national military strategy.

The SALT I talks signalled the beginning of a common U.S.-

Soviet understanding of the stabilizing value of nuclear parity as a contributor to mutual deterrence. The SALT talks concluded with an Anti-Ballistic Missile (ABM) Treaty and interim agreements on the limitation of ICBM and Submarine Launched Ballistic Missiles (SLBM) launchers, conversion, and modernization. Although SALT I limited numbers of missiles and launchers, it did not limit the number of warheads that could be employed on each missile, allowing either side to continue the arms race down a different path.

In accepting limits on ABM systems, both superpowers resigned themselves to what they concluded they simply could not change-- a state of mutual vulnerability.³¹ ABMs were seen as dangerous and destabilizing for several reasons. First, they invited preemptive strike while under construction in a "use or lose" view of offensive nuclear arsenals. Second, it did not appear to be technologically possible to field a 100% reliable ABM system. Finally, the side deploying a viable system forced the other into one of three options: accept the imbalance, build more warheads to saturate opposing missile defenses, or build a competing ABM system. All three options were expensive, both strategically and financially. After a frenzied race to rough parity, neither side wanted to underwrite an escalation of the arms race that would disturb the frail stability of the early 1970's.

Over the next ten years, both sides modernized their forces and command and control capabilities, and aggressively fielded

more accurate weapons. The unratified SALT II Treaty limited total Multiple Independently targetable Re-entry Vehicle (MIRV) launchers, numbers of allowable reentry vehicles per weapon, and mobile ICBM's, but was unacceptable to the U.S. Senate. It was argued that there were inadequacies in verification procedures and interpretations of compliance. Throughout the 1970's, American nuclear deterrent thinking continued to be offensively focused with a predominantly counter-force targeting doctrine. Reacting to a more capable Soviet nuclear force, the Carter administration unveiled its "countervailing strategy," a refinement that included flexible targeting during a nuclear exchange combined with emphasis on hardened command, control, communications and intelligence (C3I) facilities.

Intermediate range theater weapons temporarily took center stage in the late 1970's and early 1980's. The Soviets had fielded more than 500 longer range, three warhead SS-20's, achieving substantial theater nuclear leverage in Europe. In December 1979, NATO responded with the "Dual Track Decision," where it stated its intent to meet the SS-20 challenge by modernizing the existing Pershings, fielding new Ground Launched Cruise Missiles (GLCM) throughout Europe, and seeking Intermediate-range Nuclear Force (INF) negotiations focused on these land-based forces.

The 1980's brought fears of a dangerous new stage in East-West relations with the fall of the Shah of Iran, the Soviet invasion of Afghanistan, war between Iran and Iraq, and indirect

Soviet interventions in Angola and Ethiopia.³² These crises prompted the new Reagan Administration to attempt to answer the question, "What should we do should deterrence fail?" With modernization of strategic forces as a focal point, the Reagan team initially looked to refine the instruments of nuclear deterrence to make them more credible.³³ They focused on mixed targeting strategies designed to prevail, new technologies improving weapon accuracy, and hardening and duplicating of command and control facilities. They quickly rediscovered the core argument of assured destruction: the mere existence and destructive power of nuclear weapons deters, not the refinement of targeting, accuracy or yield.

Unable to find political or public consensus on nuclear options, the Administration looked to escape the nuclear dilemma altogether with the Strategic Defense Initiative (SDI). Reagan's objective with SDI was not to protect strategic forces, it was to protect mankind by moving away from nuclear deterrence. Subsequently, he petitioned the Soviets to join him in sharing SDI technologies that would end the nuclear game in mutual assured survival rather than mutual assured destruction.³⁴

From the beginning, SDI faced formidable obstacles. First, bringing SDI to fruition would require decades of political and economic support. Second, the scientific community resurrected many of the same feasibility arguments against SDI that they had used against previous ABM systems. Finally, the proponents of traditional parity-based offensive nuclear deterrence, citing

U.S. obligations to the ABM treaty, were convinced that SDI was nothing more than the gateway to a renewed arms race. Without Soviet support for fundamentally changing the nuclear relationship, SDI wasn't likely to succeed. As the elusiveness of a technical fix to the nuclear dilemma resurfaced, a political solution started to look much more likely.³⁵

The third Reagan attempt to answer the "if deterrence fails" question was a logical extension of SDI. From an excursion into defense dominance, the Administration moved on to a strategy of stable deterrence, secured by arms reductions, with a goal of nuclear disarmament.

Mikhail Gorbachev and subsequently Boris Yeltsin brought new perspective to the security relationship between the two states. Gorbachev, less sensitive to the intrusive verification of arms agreements demanded by the United States, quickly led the Soviet Union to agreements over the elimination of all intermediate range nuclear weapons and deep reductions of both strategic and conventional weapons. The Strategic Arms Reduction Treaties, when ratified by both the U.S. Senate and the involved republics, will abolish all counter-force capable MIRVed weapons, while cutting total numbers of strategic weapons to less than one-third of their 1990 levels.³⁶

DEFENSIVE ALTERNATIVES AS CONTRIBUTORS TO DETERRENT STRATEGY

Consideration of a defensive alternative to offensive nuclear deterrence dates to 1955, with a Department of Defense contract award to Bell Telephone Laboratories to conduct

feasibility studies for a proposed Nike-Zeus (ABM) System.³⁷ In 1958, Secretary of Defense Neil McElroy gave the Army developmental responsibility for an Anti Ballistic Missile (ABM) System, ending Air Force competition in the defensive domain of strategic (deterrence and) defense.³⁸ In early 1961, Defense Secretary McNamara, reinforcing the importance of offensive nuclear capability, killed Zeus ABM production and early deployment. Secretary McNamara's deferred another ABM production decision in the spring of 1963 by ending the Zeus program in favor of a developmental effort called Nike-X. In 1967, the Soviets began fielding their own ABM system around Moscow. McNamara responded by ordering deployment of a fourth ABM variant, the Sentinel.

Throughout the 1960's, the scientific community argued that an effective and reliable ABM system was beyond the reach of technology. Debate on ABM systems became moot with the ABM Treaty of 1972. It limited each side to a few ground based interceptors and sensors, and prohibited development, testing, and deployment of: ABM missiles with more than one guided warhead; sea, space, air and mobile based components; deployment of components based on exotic technologies, capable of performing the functions of ABM system components.³⁹

In March 1983, President Reagan announced his decision to pursue a strategic defense technology development program. Although his "Star Wars" speech included no decision to deploy strategic defenses, his stated intention was to escape assured

destruction's balance of terror. The Strategic Defense Initiative was driven by two truths. First, the Soviets had continued strategic defense work to what Secretary of Defense Caspar Weinberger called well beyond the research stage.⁴⁰ Second, the Administration politically advertised a "needed" investment in ICBM, SLBM and bomber modernization that represented an 18% real increase in the 1982 strategic force budget and a 34% real increase in the 1983 budget.⁴¹ In a reappraisal of U.S. national security policy, Secretary Weinberger characterized a defensive capability as far more in keeping with American democratic ideals than a mutual suicide pact.⁴²

In September 1991, President Bush acknowledged the changing security environment by calling upon the Soviets to agree to a limited deployment of non-nuclear defenses to protect against limited ballistic missile strikes, without undermining existing deterrent nuclear forces.⁴³

In November 1991, the Congress passed the Missile Defense Act (MDA), representing a significant departure from previous opposition to the deployment of defenses and a major step toward a national consensus on missile defense goals.⁴⁴ The MDA both demonstrated a political appreciation of the threat of ballistic missile proliferation, and urged the Administration to engage the Soviet Union in discussions to modify the ABM Treaty to allow missile defenses.⁴⁵ Since the collapse of the Soviet Union, the Russians have shown a sincere interest in the bi-lateral development of such a system.⁴⁶

The January 1992 National Military Strategy of the United States describes a defensive system for global protection against limited strikes (GPALS) as one of the four components of a credible deterrent.⁴⁷ GPALS consists of ground and space-based components, including space-based "brilliant pebble" interceptors that, if fielded, would violate virtually every provision of the 1972 ABM Treaty. While the MDA does not indorse the GPALS program per se, it certainly concurs with the program's underlying purpose.⁴⁸

DETERRENT LESSONS FOR THE 21ST CENTURY

There are several important lessons from the cold war that the United States should take care not to re-learn in a potentially very dangerous 21st century. These lessons cover American experience as a maturing nuclear state attempting to deter the actions of another ideologically different maturing nuclear state. The "Top Ten" lessons are:

1. A deterrent strategy requires a foreign policy problem upon which to focus.
2. A deterrent strategy will be tested from time to time.
3. Nuclear weapons are less expensive than sophisticated conventional forces. The relative economy of offensive nuclear forces may induce American policymakers to weaken conventional forces by choice, leaving the President with reduced military options when confronted by a test of deterrent strategy.
4. The greater the domestic pressure upon the budget, the more American political leadership is willing to rationalize

affordable forces as effective.

5. The existence of deliverable nuclear weapons in the hands of a state tends to moderate the political and military options of competitor states.

6. Nuclear weapons are more politically effective when accompanied by a doctrine for their use.

7. Changes in nuclear force doctrine and force structure will frequently be misunderstood by an adversary. The adversary will generally assume the worst.

8. The psychology of nuclear weapons makes perceptions powerful. Politically, perceived capability is almost as valuable as actual capability.

9. A "strategic imbalance" may raise the level of risk a nation "behind the power curve" is willing to take.

10. The ability to retaliate when pre-emptively attacked is a key deterrent consideration.

THE 21ST CENTURY THREAT

The current National Security Strategy of the United States envisions the end of the 20th century as the beginning of an "Age of Democratic Peace."⁴⁹ The strategy cites complex and ambiguous political, economic and military challenges to this vision, requiring global and regional stability to encourage peaceful democratic political systems, an open trading system which benefits all nations and American leadership to lead any collective response to the world's crises.⁵⁰

At the heart of the American strategy are the ideology and values of democracy and economic freedom. Where shared ideology and values have fostered peaceful economic and political progress, conflicting ideologies and values have provoked competition. There are now, and will be in the 21st century, both traditionally defined nation-states and less conventionally organized regimes whose ideologies, values and interests may run contrary to our own. When such states or regimes also possess military capabilities, diplomatic, political and economic competition may lead to a military confrontation. To narrow an assessment of many potential threats, this analysis will focus only on states or regimes whose current or potential ideologies oppose our own, and that also have or are likely to obtain or develop nuclear weapons and the means to deliver them.

Although the exact nature of what we will face is uncertain, several trends are emerging that will influence the international security environment over the next ten to fifty years. First,

the United States is now, and will be for years to come, the only nation with the influence and national power to lead a combined international response to the world's most serious and destabilizing security crises. We must assume that succeeding administrations will not isolate themselves from that reality. Second, regionalism and ethnicism are "out of the bag." Accordingly, traditional definitions of country, nation-state and sovereignty are less meaningful. Where much regional, ethnic and international competition was once shaped by Cold War relationships, the comfort of a bi-polar world is gone. The absence of superpower competition will require many nations and regimes to redefine their regional and international relationships. As a consequence, many of the more than 6000 recordable religious and ethnic groups that populate the globe may struggle for both influence and identity. As a number of these groups have been in conflict with one another for hundreds of years, we will likely face greater instability and increased regional violence in the next century. Next, the United Nations (UN), in its current form, may be unable to assure peace and stability in the next century. As much as we may hope for its success, the United Nations is truthfully a politically hamstrung organization with no military power base. Unless empowered by its various member states, the UN will fulfill no more meaningful a role than responding to events on a case-by-case basis. In short, it will reactively treat symptoms, but may not be able to pro-actively resolve underlying disputes until they manifest

themselves in conflict. More likely, ad-hoc coalitions of the moment, formed outside the halls of the UN, will join to inflict their will upon those less able to muster the support of others. We have grown comfortable with coalitions of this kind recently, in that they have all operated to further U.S. national interests. In the 21st century, we may not be able to sustain that record, especially as an evolving political order forms new economic and security relationships. In short, we must be prepared to act unilaterally. Finally, evolving national, regional and ethnic relationships may take decades to define themselves. In the face of political evolution and ethnic conflict, our conceptual foundation of strategic defense and deterrence must also evolve to meet threats to our national survival, as well as challenges to both our national and regional interests.

COMPETING IDEOLOGIES

The ideologies that most threaten the peaceful growth of representative democracy are communism, religious radicalism and resurgent nationalism. One quarter of the world's population still lives under communist rule in China, North Korea, Vietnam, Laos, and Cuba.⁵¹ Religious radicals with aspirations of political power flourish where secular governments have failed to satisfy the expectations of the people. Nationalists are active in a number of countries, seeking their state's return to a previous condition of "glory," to include reclaiming lands that were once within its borders. In a regional context, political

change toward or away from any of these ideologies is potentially destabilizing, especially if that change comes to a nation with real or potential military capability.

COMMUNISM

Although communism in eastern Europe and the former Soviet Union has dissolved, it survives in five other nations. Laos and Vietnam have agrarian economies, with more than half their populations involved in subsistence agriculture.⁵² Cuba, with a higher level of agricultural development, depended heavily upon Soviet subsidies to sustain economic well-being. With the dissolution of the Soviet Union and its subsidy payments, Cuban economic output declined 20 % in 1991.⁵³ Unless these three communist countries are able to make significant economic progress over the next ten years, they will be unable to influence other nations in their regions through the exercise of either political or military power.

China and North Korea, the two other remaining communist nations represent another dilemma altogether. Since 1978, the Chinese have more than doubled their aggregate output by moving away from a sluggish Soviet command-style economy to one with more flexible and productive market elements.⁵⁴ The Chinese communist leadership has been careful keep these reforms consistent with communist party led socialism. Nonetheless, their GNP grew 6% in 1991, with industrial growth and productivity especially strong in the coastal areas near Hong Kong and Taiwan, where modern production methods and foreign

investment have been more available.⁵⁵ If China is able to financially and industrially capitalize on Hong Kong's return in 1997, the 21st century may become a golden age for Chinese political and economic influence, both regionally and internationally.

North Korea has retained a command economy with more than 90% of agriculture and 95% of manufacturing under state control.⁵⁶ Growth declined over the past two years, and will likely continue to decline in the future. Both Russia and China now require North Korea to pay market prices in hard currency for imports of raw materials that were once subsidized.⁵⁷ Since Russia began demanding dollars, yearly North Korean oil imports have declined to 25,000 tons from 800,000 tons, and overall two-way trade fell from nearly \$2 billion to \$600 million annually.⁵⁸ Closer Russian ties with South Korea prompted the Moscow government to recently withdraw from the military alliance agreement that forms part of a 1961 cooperation treaty with Pyongyang. In canceling the 32 year old agreement, Valeri Yermolev, head of the Russian Foreign Ministry's Korea Department, called the Korean Peninsula "the only place in the world where one still sees the remnants of the Cold War."⁵⁹ With no Russian subsidies to help modernize or maintain its considerable military strength, a need for raw materials it cannot afford, and an aging popular and charismatic leader, North Korea approaches an ideological crossroads. Both North and South Korea desire the re-unification of the peninsula on their own

terms. With economic pressures sure to grow, and an uncertain leadership situation after Kim Il-song's death, North Korea's future looks grim. North Korean leadership may see itself in a "use or lose" situation. Use military power to reunite the peninsula soon, or be economically disarmed over time.

If war should occur between the two Koreas, the United States may face the possibility of confrontation with China. Because of existing agreements with the Republic of Korea, the U.S. will commit forces in South Korea's defense, resulting in the destruction of North Korean offensive military capability and possibly in the fall of the North Korean Communist government. If China maintains a Communist regime, it may feel uneasy about a re-unified democratic Korea on its eastern border. Korea will likely continue its long term relationship with the United States, and is certain to be a significant economic force in the region. Under these conditions of economic and ideological competition, a new Korea may see a security relationship with the United States and others as vital to deterring potential Chinese aggression. The United States may see an agreement of this kind as important to maintaining a regional balance of power favorable to peaceful international trade and democratic progress. With either North Korean attack or collapse, the U.S. moves closer to confrontation with China.

RELIGIOUS RADICALISM

The Middle East will continue to be the region in which radical religious groups will exert the most influence. If the

Arab-Israeli conflict over a Palestinian homeland cannot be resolved, that influence will grow in the 21st century. Israel stands apart from its neighbors as a regional superpower, in that it enjoys a special relationship with the United States and is believed to have some 200-300 nuclear weapons.⁶⁰ Through its relationship with the United States, Israel has been able to obtain both weapons and weapon technologies that have been unavailable to its Arab neighbors. To balance the perceived "Israeli colossus," Arab governments have felt strong domestic pressure to seek nuclear, chemical and biological weapons and delivery means.⁶¹ Additionally, the Gulf War lessons of superior conventional weapons technology were not lost on the Arabs. Both Islamic and Zionist radicalism threaten the solution of the Palestinian problem. With no resolution to the core conflict in the region, there is little chance of reducing the size or sophistication of the Israeli military machine. With no Palestinian homeland and no moderation of Israeli military capability, Arab states will continue to seek sophisticated arms.

Islam is the world's most rapidly growing religion. Islamic teachings are neither ethnocentric nor political in nature. Islamic radicalism stems from different interpretations of a successor to Mohammed. The secular Sunni moslems see Mohammed as a political leader and prophet of God, who requires no successor. More radical Sh'ia moslems see Mohammed as a leader chosen by God to rule, with present day Imams as his successors.

Islamic radicalism champions a return to the Islamic roots

of the time of the prophet Mohammed, when moslems needed neither westerners nor a modern appreciation of international relationships. Radical Islam is uncompromisingly theocratic, anti-modern, anti-materialist, anti-capitalist, opposes the Middle East peace process, and is adamant in its desire to expand influence, by force if necessary. Political power in radical Islamic regimes is decentralized locally in mosques, where the Koranic law of Sh'aria is applied. Because political power is theocratic, radical Islamic regimes are difficult to reach diplomatically. Iran is a current example.

Radical Islamic movements are active in almost every nation in the Mideast. They tend to gain political legitimacy when secular governments fail to meet the expectations of the people. The movement has spread in recent years from Iran to Sudan, and might have taken hold in Algeria except for a strong military backlash.⁶² Other politically significant groups exist in Tunisia, Morocco, Egypt, Jordan, Afghanistan, Libya and several of the Central Asian republics of the former Soviet Union. The Muslim Brotherhood, Hizbollah, Hamas, Palestine Liberation Front and Islamic Jihad lack political power, but promote terrorism as a means to gain influence.⁶³

Radical Zionism is as destabilizing to the peace process as is radical Islam. Radical Zionists oppose any resolution of a Palestinian homeland that yields lands, including the occupied territories, that they define as part of "Eretz Israel," the land of Israel. The history of Jewish migration to Palestine and the

British Mandate that set the stage for the creation of Israel carry no weight in Zionist eyes. They see the creation of Israel as ordained by God. Radical Zionists are concentrated in Israel, and act to complicate both the Israeli domestic and international agenda. The danger to Mideast peace lies in their coming to power in Israel because of popular frustration with the secular government.

In the 21st century, religious radicalism could manifest itself politically in several ways. If the Arab-Israeli conflict cannot be peacefully resolved, Islamic and Zionist radicals will likely gain power and influence. It is possible for radical Islamic regimes to take power in a number of currently secular Arab and Asian states. Under worsening economic conditions, caused by depressed oil prices over several years, that scenario is most likely in Algeria, Morocco, Tunisia and Libya. Any violent suppression of radicals by secular regimes could result in a transnational radical Islamic alliance, motivated by common theocracy and eager to cooperate in proliferating military technology and hardware.

In addition, continuing population growth will increase competition for control over limited water from regional river systems. Upriver countries may flourish at the expense of those downriver. Conflict is likely over control of the Nile (Egypt and Sudan), the Jordan (Jordan, Syria, Lebanon, Israel) and the Tigris-Euphrates (Turkey, Iraq, Iran). Mediterranean and Red Sea trade routes may also be contested by radical North African

regimes, as control of choke points will translate to freedom to export oil.

Any of these scenarios significantly alters the regional balance of power and threatens both free trade and moderate democratic regimes. If significant parts of North Africa and the Levant fall under radical Islamic political leadership, Israel and Egypt will find themselves surrounded. The violence of radical Islamic-Israeli conflict over Palestine could rise exponentially as sophisticated weapons are proliferated throughout the region. In the Gulf, political scientist Andrew C. Goldberg predicts a religiously and ethnically motivated alliance between several of the Central Asian Republics and Pakistan/Iran.⁶⁴ An Iranian/Pakistani/Central Asian alliance could compete effectively with the Gulf Cooperation Council states for control over shipping lanes and the export of oil. If Kazakhstan, still in control of 104 SS-18's with 1040 warheads, joins Goldberg's "alliance" the global strategic impact would be significant.⁶⁵

NATIONALISM

With the end of the Cold War and the absence of superpower competition forcing many nations to reassess their rightful place, nationalism may return as a force influencing international and regional relationships. Nationalism is dangerous because of its potential to influence currently stable political regimes and their interests and objectives. Nationalistically redefined political identities and renewed

interests over historical boundaries may bring formerly peaceful nations into conflict with one another. Many scenarios are possible in the 21st century.

Although it is difficult to predict where aggressive nationalism might reappear, its potential to incite regional conflict is significant. The break-up of the former Soviet Union represents both opportunity and danger. On one hand, we could enter a time of unprecedented cooperation between Russia and the other republics. On the other, Andrew C. Goldberg hypothesizes a "Weimar Scenario," with a resurgent and aggressive Russia seeking a return to historic geographic boundaries and influence.⁶⁶ A nationalistically motivated "greater Russia" might include Russian designs upon Ukraine, Belarus and Georgia.

In the Middle East, Kurdish and Armenian nationalism could spark conflict between Turkey, Iran, Armenia. With continuing weakness in Algeria and Tunisia, Libyan nationalism could reappear prompting Tripoli to move to reclaim disputed western border lands. In Asia, resurgent Chinese and Hindu nationalism could be particularly dangerous. A revitalized China could demand the incorporation of Taiwan, and press resolution of its boundary disputes with North Korea and India. Hindu nationalists, frustrated with governmental tolerance of a Islamic majority in Kashmir, recently destroyed an ancient Muslim mosque in Ayudhia. India's secular government already blames Pakistan for the backlash of Islamic protest and disorder. Unfortunately, U.S leverage over India is practically nonexistent and, after

severing aid to Pakistan in 1990, the United States has seen its influence there diminish as well.⁶⁷ After fighting three wars with Pakistan over the Kashmir, India has vowed to "eliminate Pakistan as a threat" if Islamabad attacks again. In the 21st century, an Indo-Pakistani war could result in the use of nuclear weapons by both sides.

PROLIFERATION OF NUCLEAR WEAPONS AND DELIVERY MEANS

The threat of nuclear weapons spread across the world has replaced the fear of superpower nuclear conflict on the international agenda.⁶⁸ Peter Zimmerman, a Senior Fellow at the Center for Strategic and International Studies, recently observed that a proliferant nation need not seek to take home the gold medal in the military-technological Olympics in order to acquire a stockpile of weapons of mass destruction and guided missiles for their delivery.⁶⁹ It can strive merely for the bronze medal, using low-tech methods, in order to obtain an arsenal to threaten its neighbors.⁷⁰ The production of nuclear weapons does not require leading edge technology and advanced industrial methods. It only requires a level of industrial sophistication the United States achieved 48 years ago--in 1945. Would-be nuclear states can now take advantage of several fission weapon designs available in open source documents. Simple, "over-engineered" designs like those used by the Soviets or the Israelis almost guarantee that a weapon will detonate properly at the desired yield. With 50 kilograms of plutonium or enriched uranium, the right kind of precision lathing capability, and

knowledge of implosion explosives technology, anyone can join the nuclear club. In fact, no nation need be more than five years from a nuclear weapon, even if it must make the special material indigenously.⁷¹ If the material is provided from an outside source, no nation is more than one year from having a weapon.⁷² The degree of difficulty in designing and building a Third World missile is similar. The model to study is the German A4 (which entered operational service in 1942 as the V2), not the modern American Pershing II.⁷³

The United States has traditionally concentrated on both supply side and demand side restraint strategies in attempting to control the proliferation of destabilizing weapons and delivery means.⁷⁴ Supply-side restraint strategies allow participating parties to target specific classes of weapons and their related technologies. More technologically sophisticated nations with civilian nuclear power industries can build weapons in short order. Developing nations must import the technology and fissable material. Agreements like the Nuclear Non-proliferation Treaty (NPT) of 1970 and the Missile Technology Control Regime (MTCR) have shown it is possible to slow, but not stop weapons and weapons technology transfers. Unfortunately, determined proliferators either do not sign the agreement in the first place, or sign the agreement and cheat. Iraqi and North Korean nuclear weapons programs serve as two recent examples. The Iraqi deception illustrates how the international community has been willing to delude itself.⁷⁵ Despite a 1981 Israeli strike on

the Osirak reactor, Iraq was able to conceal a massive weapons development program employing more than 10,000 people and encompassing every aspect of development from uranium mining through electromagnetic separation enrichment to weapons design.⁷⁶ Demand side strategies attack the reasons for proliferating in the first place. Nations seek arms in a search of military hegemony, parity, or, at a minimum, a reasonable defense posture.⁷⁷ In any case, acquisition is spurred by failure to resolve political disputes through peaceful negotiation.⁷⁸ To be successful, demand-side strategies must successfully resolve the political disputes underlying each nation's motivation to arm. In the 21st century, we must assume neither strategy will work any better than it does today.

Nations seek nuclear weapons because they perceive their national security, regional leverage, or international standing will be improved.⁷⁹ Nuclear devices are highly destructive and confer a political status that tends to psychologically moderate the behavior of non-nuclear competitors. Under many conditions, the perception that a state has a nuclear device will have as powerful a deterrent effect as actual ownership. As proliferators tend to pay a significant international political penalty when their nuclear intentions are discovered, it should come as no surprise that future would-be nuclear states would choose to proceed covertly or shroud their intentions in ambiguity.⁸⁰ Iraq, Pakistan, Israel and South Africa hid their "programs" from inception. Algeria's and North Korea's pursuit

of nuclear technology for civilian purposes (like India's, Argentina's, and Brazil's) may well conceal nascent weapons programs.⁸¹

Beyond nuclear weapons proliferation, the 21st century will bring growth to at least one existing strategic arsenal. The Chinese are expected to deploy a new generation of ICBM, and could have as many as 20 fully operational by the end of the decade.⁸² With Beijing seeing its forces as having a deterrent role, a new SLBM is also possible.⁸³ Unfortunately, Chinese missiles are not subject to the same guarantees against unauthorized launch as those of other nuclear powers.⁸⁴

On another level, the INF and START treaties bring as many challenges as they do solutions. The many thousands of tactical and strategic weapons that must be destroyed to meet negotiated limits will produce tons of weapons grade uranium and plutonium. To eliminate the chance of proliferation, that fissable material must be as closely safeguarded as the weapons from which it came. It is expensive to properly store and process weapons grade material to lower grade commercially usable material. Although the Russians take great national pride in the control and security of their nuclear weapons, the expense and scope of START compliance may make complete control of this material difficult.

For a nuclear device to be a credible threat, it needs a means of delivery.⁸⁵ Would-be nuclear states will consider a variety of delivery alternatives. Weapons built by new nuclear states will tend to be heavier (500+ kilograms) and larger than

the sophisticated "one of a kind" designs the United States has used in its own arsenal. Weapons of this kind are not "briefcase" portable, but could easily be moved in a small truck as Tom Clancy predicted in his book, The Sum of All Fears. Delivery could be accomplished by boat or ship, commercial or military aircraft, or truck. With lower tech means, delivery is not assured. If the weapon is discovered, it can be interdicted and possibly confiscated at significant political embarrassment to its owner.

In developing nations, the numbers of weapons procured or produced will be small. To avoid one of a few weapons being lost "en route," a less risky, but more expensive means of delivery is the ballistic missile. Brigadier General Charles Thomas, Defense Intelligence Agency Deputy Director for Current Intelligence, recently delivered an assessment of ballistic missile proliferation to the Association of the United States Army's Symposium on Space and Strategic Defense. In his presentation, General Thomas predicted that the number of nations with short to medium range ballistic missiles would grow despite the efforts of the MTCR. He identified the Middle East, South Asia and China/North Korea as the three areas in which the threat of ballistic missiles proliferation and use would be most serious over the next ten years. Of collateral concern, General Thomas also cited the ease with which any "customer" would be able to procure commercially available satellite imagery for accurate ballistic missile targeting.⁸⁶

In light of the 1940's technology it takes to build a "Bronze Medal" nuclear device or ballistic missile, and in deference to the sophistication of the Iraqi nuclear program, the proliferation battle appears to be over--the proliferants have won.⁸⁷ Beyond accidental or deliberate nuclear attacks upon the United States, the threat of the future includes regional nuclear micro-powers, targeting not the United States, but each other.⁸⁸ Imagine Iran and Iraq armed with nuclear ballistic missiles striking one another's oil fields, or a Libyan weapon trucked into the streets of Tel Aviv or Cairo and detonated. Major Arabian Gulf oil production and trans-shipment facilities could be destroyed or irradiated. Israel politically and culturally decapitated. The Suez canal closed. Millions of people dead. Untold billions of dollars in trade affected. The world's petroleum economy unhinged. Imagine a nationalistically motivated regional antagonist in Eastern Europe using a nuclear weapon to kill large numbers of an ethnic enemy. The fallout from such a device could irradiate the breadbasket of either Russia or Europe for years to come. Hundreds of thousands of people could be killed and injured by the weapon's effects. Tens of billions of dollars in financial damage could result, added to catastrophic and possibly irreversible ecological damage. Any one of these scenarios is an international nightmare that wholly undermines the U.S. vision of a 21st century "Age of Democratic Peace." A national security strategy based upon promoting regional stability places the United States squarely in harm's

way.

ON DETERRENCE IN THE 21ST CENTURY

The world has lived in the shadow of nuclear war for nearly half a century. During that time, the number of acknowledged nuclear powers has grown from one to six, all of which have become engaged during the same period in some form of military action. Nevertheless, no nuclear weapon has been fired belligerently since 1945. Instead, the nuclear powers have carefully limited their use of military force, occasionally at a considerable price in military and political frustration.⁸⁹

The powerful confrontation between East and West has been pervasive for so long that its psychological dominance over our strategic thinking continues to frustrate the development of a post-Cold War national strategy.⁹⁰ Unfortunately, many of those who are afflicted by this form of Cold War paralysis argue that change is coming too fast to formulate rational responses to a national security strategy.⁹¹

In his campaign statement on national security, President Clinton hoped to depend upon collective security to assist in deterring aggression. Unfortunately, the relatively orderly world of coalition and countercoalition that has been the backdrop to the development and practice of deterrence by the United States is in massive disarray.⁹² The North Atlantic Alliance is struggling for identity while member states reduce military strength at an alarming rate. The strength of the coalition formed to eject Iraqi forces from Kuwait was assured by the military capability of United States, not through the

cooperation of the various members. In truth, collective security tends to unravel when challenged by the hard case.⁹³ In practical terms, the 21st century promises to have a number of "hard cases." America must be prepared to act alone if a militarily capable coalition supporting U.S. interests cannot be formed.

The 21st century's most likely condition is one of increasing regional tension, disorder and conflict. The most dangerous regional conflicts may be ideologically motivated. Conflicts between regimes with like ideologies can frequently be resolved or moderated by diplomatic effort. In these conflicts, solutions tend to be convergent rather than divergent. Diplomacy will work less well between states or regimes with differing values and ideologies. Objectives and solutions, when defined ideologically, tend to be divergent.

When conflict is ideologically motivated, it may be regional only because the military reach of the competitors is finite. When Iran had significant military capability, it chose to engage several Gulf states. Beyond conventional war with Iraq, Iran fired Silkworms at Kuwait, and attacked the oil platforms of several other states. A rebuilding Iran now exports terrorism as its primary means to influence other states, while it accumulates an arsenal of Scuds, submarines and high performance aircraft from North Korea, China and the former Soviet Union. Iraq's Scud attacks on Israel are another lesson of conflict being bound only by military capability. These two examples support a singularly

disturbing prediction: regional combatants may be far less conservative in their policy choices than the Soviet Union ever was during the Cold War. With the nuclear weapon and ballistic missile proliferation battles already lost, American statesmen may face regional nuclear confrontations as one of the most serious foreign policy problems of the 21st century.

Robert J. Art highlights four dangers of a 21st century nuclear spread. First, new nuclear powers are not likely to be as secure from preemptive attack as mature powers, offering regional competitors windows of opportunity to launch preemptive first strikes against an adversary's nuclear forces in order to destroy them. Second, command and control arrangements in new nuclear states are not likely to be state-of-the-art, increasing chances of unauthorized or accidental use, or loss of control. Third, many would-be nuclear states are politically unstable, increasing the risk that weapons could fall into the hands of sub-groups or unstable successor regimes. Finally, many potential nuclear states are involved in implacable regional confrontations in which the politically restraining effects of nuclear ownership may not be strong enough to offset existing hatred, ambition and fanaticism.⁹⁴ As such, regional nuclear conflict involving "saber rattling," micro-power brinkmanship and possible weapon use will fall into one of three categories: a small nuclear state threatening a non-nuclear state; a small nuclear state threatening another small nuclear state; and a small nuclear state threatening a mature nuclear state.⁹⁵

As nuclear weapons and delivery means proliferate and individual states begin to amass larger nuclear arsenals, the United States may face a multi-state variant of its strategic situation with the Soviet Union in the late 1950's and early 1960's. Accordingly, it is wise to heed Winston Churchill's advice in not confusing disarmament with peace. Further deep cuts in America's strategic arsenal are unwise until peace can be assured. That assurance is not possible with many trends toward regional and possibly intra-regional violence on the horizon.

Deterrence served as the dominant organizing concept for the U.S. defense effort in the decades of the Cold War.⁹⁶ Beyond defining the composition of military forces, it also molded the conduct of foreign relations and served as the building permit for significant parts of the governmental bureaucracy. Although some, citing today's power relationships with a seemingly dominant U.S., predict an optimistic 21st century, history cautions otherwise. As has been true for hundreds of years, civilization has lived through peace and war, colored by alternating periods of great power conflict and cooperation. As Colin S. Gray argues, the future of security problems and opportunities will be very much like the past. Ignorance about the future is the fuel of debate among strategists, as it should be a source of the rule of prudence for the defense planner.⁹⁷

Military forces will face the same dollar saving pressures in the 21st century that they have faced in the past. With a defensive contributor to regional deterrence an inescapable

element of the whole, 21st century deterrent systems must politically and militarily connect a smaller general purpose force with central strategic systems. To be useful throughout the evolution of 21st century security and political relationships, American deterrent military forces must also support a larger arms control and arms reduction agenda. Simply put, we must be prepared to build 21st century deterrent forces, then negotiate them away as the political environment demands.

21ST CENTURY DETERRENT STRATEGY

With bronze medal weapons proliferation, political instability and regional conflict as predictable elements of the evolving strategic environment, the objective of 21st century American deterrent strategy should be to prevent nuclear weapons use. Among the free market nations of the world, there exists a community of interest in open and unrestricted trade for continuing economic growth. The potentially devastating economic effects of a regional nuclear exchange may convince the nations sharing this economic interest that they also share an interest in no nuclear use. When possible, the United States should strengthen and formalize the "no use" community of interest through agreements and other arrangements to impose standards of behavior on all nuclear states. Of particular concern, the United States should be especially careful to prevent one regional adversary from using a nuclear weapon to achieve military victory over another.⁹⁸ The military use of a bronze medal nuclear device could have an extraordinarily destabilizing

effect upon the community of nations, convincing many who do not currently seek nuclear weapons that they are essential to survival. If a number of nations pursue nuclear weapons and delivery means under these conditions, the "no use" community of interest will have a far more complicated problem with which to contend.

A 21st century deterrent strategy will challenge the scope and reach of American statecraft in a number of ways. The first dilemma is how to increase the number of "rational" states. The United States approaches this problem from a profound disadvantage. American policy has frequently suffered from ethnocentric miscalculation by failing to understand the motivations and internal forces at work in non-democratic regimes and states. Our relationships with Iran and Iraq are two examples. We frequently become so blinded by our own value system that we fail to understand the motivations and goals of other dissimilar states. That ethnocentric orientation will reduce American opportunities to influence regional relationships as they develop. Tests of deterrence are specific to people, place, time and issue.⁹⁹ To better understand people, place and issue the United States must dramatically improve both diplomatic sensitivity and intelligence gathering. To influence the timing of deterrent challenges the United States must influence either the evolution or application of opposing military capability.

Without a quantum improvement of American diplomatic effort,

the United States may be left with little beyond the coercive diplomacy of Desert Shield/Desert Storm fame as a means to influence regional actors. As imminent regional hostilities will continue to alter the boundary of the American "defensive perimeter," the United States may be unable to avoid "limited" wars in order to contain or deter regional nuclear actors.¹⁰⁰ With so much at stake, these wars cannot be limited by objective. They must be limited instead by a restrained application of military force in proportion to each situation.¹⁰¹ Unfortunately, as Clausewitz observed, fighting has a natural tendency to expand unless checked by other forces.¹⁰² As conflict expands, it becomes more difficult to preserve the connection between war and policy.¹⁰³ The illumination of that connection in order to restore peace and stability might well be a unique American destiny in the 21st century.

The next 21st century deterrent challenge is building regional political stability in an environment of unavoidable nuclear and ballistic missile proliferation. With bronze medal technologies readily available, the United States should seek, with other like-minded nations, to control the transfer of more sophisticated silver and gold medal weapons and militarily leverageable technologies. Understanding that the determined proliferator will generally succeed when seeking to buy weapons or technology from free market economies, a measure of success is difficult to establish. In terms of high abstraction, the goal of anti-proliferation efforts should be the denial of

sophisticated military capability during the political maturation of regimes and states with competing ideologies. In that way, the United States should have time to mature its own diplomatic efforts to influence new regional actors. Additionally, evolving states would be less inclined to sabotage their own growth through armed conflict caused by unnecessarily reckless policy decisions.

Next, with improved diplomatic and intelligence gathering efforts, American political leadership must transmit deterrent "messages" to an increasing number of regional "recipients." These "messages" must be designed to be meaningful to the people, places and issues at hand. Of special importance, visible and internationally understandable U.S. military capability must be developed to credibly support this more challenging brand of regional deterrence.

STRATEGIC, THEATER AND GENERAL PURPOSE MILITARY FORCES

The final challenge of 21st century deterrence returns us to the Reagan dilemma of the 1980's--what to do if deterrence fails. There are many historic cases where mis-perceptions, mistakes, and a lack of communication contributed to an abysmal misunderstanding of an opponent's likely behavior--and hence to the failure of deterrence.¹⁰⁴ In other words, we should not expect complete success from diplomatic and intelligence gathering efforts supporting "designer" deterrent messages. The expected tests and failures of 21st century deterrence will require strategic, theater and general purpose military forces.

The principal consideration in the design of strategic deterrent forces for the 21st century should be the protection and continual modernization of a U.S. nuclear second strike capability. These forces should be survivable, accurate, and controlled in such a manner that rapid flexible retargeting from near real time intelligence data will be possible. The numbers of weapons maintained should be sufficient to deter any emerging power from becoming a strategic nuclear competitor. Additionally, the United States should continue to invest in strategic defense research and development in order to deploy a strategic defense system when necessary. If a number of nations build ICBM's in the 21st century, the deployment of strategic missile defenses may be required to deter belligerent states from using small intercontinental arsenals.

In the 21st century, the doctrine for applying these strategic forces might evolve into a multi-state variant of American flexible response in the mid-1960's. Assuming START II force levels are achieved, the United States will still be one of two great nuclear powers. With cooperation rather than confrontation defining the relationship between Russia and the United States, strategic arms negotiations will likely continue to reduce total numbers of weapons. At some point in the reduction of strategic arsenals, it may become desirable for the two states to agree upon how they will deter evolving strategic nuclear powers from nuclear use. The two dominant nuclear powers might then form the nucleus of a community of states that could

add their collective political and military weight to deter strategic nuclear adventurism. If one aggressor state uses a strategic weapon upon another, this community of states could then decide an appropriate international response. An arrangement of this kind becomes a defacto "nuclear United Nations," able to impose sanctions and military action if necessary to enforce standards of behavior. The long term deterrent power of such an organization could be significant. Its political message to would-be strategic nuclear powers should be the futility of strategic weapon development. Under these circumstances, an evolving intercontinental nuclear power would have to think hard about developing intercontinental weapons in the face of an international coalition determined to deny it the political and military leverage of ownership.

At the theater or regional level, the guiding objective of U.S. military strategy should be to prevent the successful military use of nuclear weapons between regional adversaries in order to keep the political nature of the dispute in focus. This imperative will require both missile and air defense forces as well as offensive missile forces. To deter the bronze medal threat, missile and air defenses should be gold medal systems designed to complicate the military problem of nuclear weapons delivery. By contesting delivery, the United States could force a nation with few weapons to carefully evaluate a decision to attack. If missile and air defenses could prevent a number of those few weapons from reaching their targets, the attacking

nation might unwittingly disarm itself without damaging its opponent.¹⁰⁵ Additionally, by denying a small nuclear state missile and aircraft delivery, that state must either abandon the attack, or compromise military effectiveness through unconventional or terrorist delivery. Countering unconventional and terrorist delivery is a problem unto itself, deserving independent study beyond the scope of this project.

In addition to gold medal defensive systems, 21st century deterrence will also require visible, capable and credible theater missile forces. These forces need not be expensive, and could be Pershing variants with a mix of conventional and nuclear warheads supported by a sophisticated targeting system. Longer range and more accurate American theater missiles could then be used as an additional stand-off deterrent. With targeting appropriate to each situation, a number of deterrent "messages" communicating proportional responses to these regional confrontations could be developed to influence adventurous nuclear actors. As our Cold War adversaries will likely be part of the community of interest in no nuclear use, fielding small numbers of limited range theater weapons based in the United States appears achievable. Understanding our treaty obligations, these weapons could be negotiated back into the inventory, possibly in exchange for strategic weapons. They could be openly stored and intrusively inspected for easy verification of capability and location. Agreements could then be joined to cover notification of deployment for regional deterrent missions.

Ideally, other modern nuclear states might wish to join with regional deterrent forces of their own.

The doctrine for applying regional deterrent forces will differ significantly from Cold War strategic nuclear doctrine. The Cold War took us through massive retaliation and a series of flexible response variants with launch-on-warning counter-force and counter-value targeting. A workable doctrine for applying regional deterrent forces might be described as defensive denial, with offensive options to preempt, destroy opposing forces, or retaliate. As with 21st century strategic doctrine, 21st century regional deterrent doctrine should convince evolving regional nuclear powers that there will be no political or military leverage in nuclear weapon ownership.

Later in the 21st century, the United States may wish to field an extended missile and air defense system in order to militarily isolate nations threatening nuclear use. Conceptually, this system should be capable of intercepting and killing missiles and aircraft over the homeland of the attacking nation. Its purpose would be to deny a moderately sophisticated aggressor the latitude to escalate. By controlling escalation, the United States could provide time for the adversaries to resolve the conflict diplomatically. If political resolution is not possible, the system could also limit the violence of an aggressor's military action.

In returning to the three categories of 21st century regional nuclear confrontation, this new doctrine's deterrent

effect should be significant. In the first instance, a small nuclear state with few weapons threatening a non-nuclear state might be deterred by an ultimatum from several mature nuclear states. If the ultimatum seems likely to fail, missile and air defense forces could be deployed to protect the non-nuclear state from attack. If the small nuclear belligerent persists, offensive missiles could then be deployed into the theater to add deterrent leverage, and if necessary, attack to disarm the offending state. In the second instance, missile and air defenses could be deployed to either or both small nuclear contestants to stabilize an escalating confrontation in order to return the two states to the bargaining table. If one side or the other continues to violate behavioral norms, theater offensive missiles could be deployed and used. In the third possible 21st century regional nuclear confrontation, a small nuclear state could be deterred from attacking a mature state in much the same way it could be deterred from attacking a non-nuclear state. Mature state central strategic systems may have little relevance to a regional contest of wills in that they are neither visible nor is their use proportional to the problem at hand. The more visible and capable regional deterrent forces may be more effective, largely in their versatility to either deter or defend/attack.¹⁰⁶

An issue underlying all three 21st century nuclear confrontation scenarios is whether the offending state should be disarmed. In order to remove a regional aggressor state's

nuclear weapons, general purpose forces might be required. The geography of developing ideological competitor states dictates that conventional military success must be achieved with land forces. To dominate land force combat, the United States must: project and sustain forces; protect forces from air, missile, and weapons of mass destruction attack; win the information war; conduct precision strikes to set conditions favorable to maneuver; and dominate maneuver through superiority of both forces and command and control.¹⁰⁷ To apply the battlefield leverage required to achieve such goals, these forces must be large enough to conduct and support operations, that, when successful, will achieve the political objectives of the conflict.

The general purpose force imperatives above require the United States to maintain a clear technological overmatch in land, air and maritime forces. A significant part of that overmatch can only be achieved through the use of space. In order to fight at the speed and lethality that will be required, the United States must secure unrestricted access to space for intelligence gathering, communications, reconnaissance and targeting, precision navigation, mapping and charting, and although currently prohibited by national policy, possibly the basing of offensive weapons. If engaged with a nation that also uses space for military purposes, the U.S. must develop the capability to deny the enemy the use of his platforms.

In all, deterrence in the 21st century will be far more

challenging that it ever was with our old and comfortable antagonists, the Soviets. There is a sense in which longstanding adversaries train each other.¹⁰⁸ New regional foes will be far more difficult to read, let alone train. Given the poorly communicated nature of many U.S. regional interests, there may be less doubt about American military power than about American will to use it.

CONCLUSION

Deterrence will not come easier in the emerging international environment.¹⁰⁹ The baggage of our Cold War experience with the Soviets may slow the development of coherent 21st century security policy. In spite of what are clearly emerging as serious threats to American security, domestic issues have captured the imagination of the nation's people. In many ways, the United States finds itself where it was after World War II--in a position of having to take deliberate risk by not investing in military capability in order to bring debt and spending under control. Unfortunately, we face a number of potential opponents who will be far more difficult to understand than the Soviets were during the Cold War. Defense planners will have an even more difficult time. They understand the many years it takes from a policy decision to arm, to the creation of a desired military capability. As long as American political leaders wrestle with short term economic programs, American security in the 21st century will be held hostage. The "Age of Democratic Peace" is not a given. Like peace throughout history, it must be earned. Abul Abbas, leader of the Palestine Liberation Front, brings the 21st century threat home in his comments during the Gulf War. "Revenge takes 40 years; if not my son, then the son of my son will kill you. Some day, we will have missiles that can reach New York."¹¹⁰

ENDNOTES

1. Bill Clinton, "The Candidates and National Security," ROA National Security Report (October 1992): 34-36.
2. Department of Defense, National Military Strategy of the United States, (Washington: U.S. Government Printing Office, January 1992), 6.
3. Ibid., 6-7.
4. Ibid.
5. Andrew C. Goldberg, "Challenges to the Post-Cold War Balance of Power," Washington Quarterly 14, no. 1 (Winter 1991): 54.
6. Amos A. Jordan, William J Taylor, Jr., and Lawrence J. Korb, American National Security, (Baltimore: Johns Hopkins University Press, 1989), 33.
7. Jerome D. Frank, Sanity and Survival: Psychological Aspects of War and Peace, (New York: Random House, 1967), 139.
8. Jordan, 33.
9. Ibid.
10. David W. Tarr, American Strategy in the Nuclear Age (New York: The Macmillan Company, 1966), 3.
11. Ibid., 15.
12. Jordan, 221.
13. Carnesale, et al., Living With Nuclear Weapons, (New York: Bantam, 1983), 78.
14. Tarr, 26.
15. Ibid., 42-43.
16. Ibid., 44.
17. Bernard Brodie, "The Atomic Bomb and National Security," in Bernard Brodie, ed., The Absolute Weapon: Atomic Power and World Order, (New York: Harcourt, Brace, 1946), 75.
18. Tarr, 54.

19. Michael Armacost, The Politics of Weapons Innovation: the Thor-Jupiter Controversy (New York: Columbia University Press, 1969), 267.
20. Tarr, 89.
21. Carnesale, 83.
22. Lawrence Freedman, The Evolution of Nuclear Strategy (New York: St Martin's Press, 1989), 163.
23. Ibid.
24. Ibid., 232.
25. Ibid, 243.
26. Carnesale, 87.
27. Freedman, 245.
28. Ibid.
29. Ibid., 341.
30. Ibid.
31. Robert W. Malcolmsen, Beyond Nuclear Thinking (Montreal: McGill-Queens Press, 1990), 35.
32. Freedman, 396.
33. Ibid., 399.
34. Ibid., 415.
35. Ibid., 416.
36. George H. W. Bush, National Security Strategy of the United States, (Washington: U.S. Government Printing Office, 1993). 17.
37. John E. Yanarella, Pentagon Decision-Making and Bureaucratic Politics in the ABM Controversy, 1955-1967 (Ann Arbor, MI: University Microfilms International, 1982), 7.
38. Ibid.
39. Roger P. Labrie, ed., SALT Handbook, New York: 1979, 15-17.
40. Caspar Weinberger, "The Vision of Strategic Defense," The World Affairs Council of Philadelphia (Philadelphia: University of Pennsylvania Press, 1986), 91.

41. Carnesale, 121.
42. Ibid., 91.
43. George H. W. Bush, "A New Era of Reciprocal Arms Reductions," Arms Control Today Vol 21, No. 8 (October 1991): 5.
44. Keith B. Payne, "Strategic Force Requirements After the Cold War," Comparative Strategy, Vol 11., no. 2, (Apr-Jun 1992): 279.
45. Ibid.
46. AMB Henry F. Cooper, Strategic Defense Today, Address to the Association of the United States Army Symposium on Space and Strategic Defense (Leesburg VA: Strategic Defense Initiative Organization), 9 Dec 1992.
47. National Military Strategy of the United States, (Washington, D.C.: Government Printing Office, 1992), 6.
48. Payne, 279.
49. Bush, National Security Strategy of the United States, ii.
50. Ibid., 1,3.
51. Ibid., 1.
52. Central Intelligence Agency, The World Factbook, 1992, (Washington: Central Intelligence Agency, 1992), 192-368.
53. Ibid., 86-87.
54. Ibid., 72.
55. Ibid.
56. Ibid., 185.
57. Adi Ignatius, "Russia Turns Away From North Korea," The Wall Street Journal, 12 Feb 1992, sec. A, p. 3.
58. Ibid.
59. Ibid.
60. Edward B. Atkeson, A Military Assessment of the Middle East, 1991-1996, (Carlisle Barracks, Pa.: U.S. Army War College, 1992), vii-9.
61. Ibid., 9.

62. Ibid., 4.
63. Ibid.
64. Goldberg, Andrew C., "Challenges to the Post Cold War Balance of Power," Washington Quarterly 14, no. 1 (Winter 1991): 54-60.
65. Ibid., 70.
66. Ibid.
67. Juliet A. Swiecicki, "Severing the Ties That Bind: Moving Beyond Deterrence," Comparative Strategy 11, no.2, (Apr-Jun 1992): 298.
68. John M. Deutch, "The New Nuclear Threat," International Affairs 71, no. 4 (1992): 283.
69. Peter D Zimmerman, The Bronze Medal Route to Nuclear and Missile Proliferation: A Technical Assessment (Washington D.C.: CSIS, 1993), 1.
70. Ibid.
71. Peter D. Zimmerman, Iraq's Nuclear Achievements: Components, Sources, and Stature (Washington, D.C.: Congressional Research Service, 1993), 2.
72. Ibid.
73. Zimmerman, The Bronze Medal Technology Route to Nuclear and Missile Proliferation: A Technical Assessment, 2.
74. William H. Lewis and Christopher C. Joyner, "Proliferation of Unconventional Weapons: The Case for Coercive Arms Control," Comparative Strategy 10, no. 2 (Apr-Jun 1992): 301.
75. Deutch, 126.
76. Ibid.
77. Lewis and Joyner, 304.
78. Ibid.
79. Deutch, 125.
80. Ibid.
81. Ibid.

82. BG Charles W. Thomas, International Security Assessment, Text of Address presented to the Association of the United States Army Symposium on Space and Strategic Defense (Leesburg, Va: Defense Intelligence Agency), 9 Dec 1992.
83. Ibid.
84. Ibid.
85. Deutch, 124.
86. Thomas, synopsis of address text.
87. Peter D. Zimmerman, interview by author, 2 April 1993, Washington D.C.
88. The term "nuclear micro-power" is borrowed from CSIS's Peter Zimmerman, who uses it to describe 21st century regional nuclear powers owning but a few weapons.
89. Jordan, et al., 259.
90. E.E. Keel, Jr., "Toward a New National Defense Strategy: Policing the Battlefields of the Cold War," Comparative Strategy 11, no. 2 (Apr-Jun 1992): 358.
91. Carolyn F. Ziemke, "Military Planning Beyond the Cold War," Washington Quarterly 14, no. 1 (Winter 1991): 61.
92. Ibid., 253.
93. Ibid., 250.
94. Robert J. Art, "A Defensible Defense: America's Grand Strategy After the Cold War," International Security 15, no. 4 (Spring 1991): 24-25.
95. Zimmerman, interview with author, 2 April 1993.
96. Colin S. Gray, "Deterrence in the New Strategic Environment," Comparative Strategy 11, no. 3 (Jul-Sep 1992): 247.
97. Ibid. 248.
98. Ibid.
99. Ibid., 259.
100. Stephen J. Cimbala, Force and Diplomacy in the Future (New York: Praeger, 1992), 60-75.

101. Bernard Brodie, The Meaning of Limited War (Santa Monica: Rand Corporation, 1958), iii-6.
102. Carl von Clausewitz, On War, ed. and trans by Michael Howard and Peter Paret (Princeton NJ; Princeton University Press, 1976), Book 1, Chs. 1-2, Book 8, Chs. 4-9.
103. Ibid., 628.
104. Keith B. Payne, "Deterrence and U.S. Strategic Force Requirements After the Cold War," Comparative Strategy 11, no. 3 (Jul-Sep 1992): 276.
105. Zimmerman, interview with author, 2 April 1993.
106. The core thoughts of this paragraph were developed in the 2 April 1993 interview with Peter Zimmerman of CSIS and in conversations with COL Bruce B. G. Clarke of the Army War College.
107. MG Jay M. Garner, Space and Strategic Defense: Relevant to a Power Projection Army, Address delivered to the Association of the United States Army Space and Strategic Defense Symposium (Leesburg, Va.: Department of Army), 9 Dec 1992.
108. Gray, 261.
109. Payne, 279.
110. Ibid., 272.

BIBLIOGRAPHY

- Art, Robert J. "A Defensible Defense: America's Grand Strategy After the Cold War," International Security 15 (Spring 1991). 24-29.
- Armacost, Michael. The Politics of Weapons Innovation: The Thor-Jupiter Controversy. New York: Columbia University Press, 1969.
- Aspen Strategy Group. Balancing National Security Objectives in an Uncertain World. Lanham, MD: University Press of America, 1989.
- Atkeson, Edward B. A Military Assessment of the Middle East, 1991-1996. Carlisle Barracks, Pa.: U.S. Army War College, 1992.
- Blackwell, James. Prospects and Risks of Technological Dependency. Carlisle Barracks, Pa.: U.S. Army War College, 1992.
- Bodansky, Yossef. "Russia's Armed Forces Take a Step Back From Isolation," Defense and Foreign Affairs Strategic Policy (September 1992): 9-11.
- Bobbit, Philip, Lawrence Freedman, and Gregory F. Treverton, eds. U.S. Nuclear Strategy. New York: NYU Press, 1989.
- Brodie, Bernard. "The Atomic Bomb and National Security," in Bernard Brodie, (ed.) The Absolute Weapon: Atomic Power and World Order. New York: Harcourt, Brace, 1946.
- _____. What Price Conventional Capabilities in Europe. Santa Monica, Ca.: Rand Corporation, 1963.
- _____. The Meaning of Limited War. Santa Monica: Rand Corporation, 1958.
- Bunkin, Boris Vasilyevich. "S-300 More Effective Than Patriot," Commonwealth of Independent States Vol. 2, No. 2 (Spring 1992): 45-50.
- Bunn, Matthew. Foundation for the Future: The ABM Treaty and National Security. Washington, D.C.: Arms Control Association, 1990.
- Bush, George H. W. "A New Era of Reciprocal Arms Reductions," Arms Control Today 21 (October 1991): 3-5.

- _____. National Security of the United States. Washington: Government Printing Office, 1993.
- Carnesale, Albert et al., Living with Nuclear Weapons. New York: Bantam, 1983.
- Chayes, Antonia H., and Paul Doty. Defending Deterrence. Washington D.C.: Pergamon-Brassey's, 1989.
- Cimbala, Stephen J. Force and Diplomacy in the Future. New York: Praeger, 1992.
- Clausewitz, Carl von. On War, ed. and trans. by Michael Howard and Peter Paret. Princeton NJ: Princeton University Press, 1976.
- Clinton, Bill. "The Candidates and National Security," ROA National Security Report (October 1992): 29-43.
- Cooper, AMB Henry F. Strategic Defense Today. Address presented to the Association of the United States Army's Symposium on Space and Strategic Defense. Leesburg, VA: Strategic Defense Initiative Organization, 9 Dec 1992.
- Cordesman, Anthony H. Compensating for Smaller Forces: Adjusting Ways and Means through Technology. Carlisle Barracks, Pa.: U.S. Army War College, 1992.
- Deutch, John M. "The New Nuclear Threat." Foreign Affairs. vol. 71., no. 4, 120-134.
- Durch, William J. The ABM Treaty and Western Security. Cambridge: Ballinger Publishing, 1988.
- Frank, Jerome D. Sanity and Survival: Psychological Aspects of War and Peace. New York: Random House, 1967.
- Freedman, Lawrence. The Evolution of Nuclear Strategy. New York: St. Martin's Press, 1989.
- Gaddis, John L. "Toward a Post-Cold War World." Foreign Affairs 70 (Spring 1991): 102-122.
- _____, Strategies of Containment. New York: Oxford University Press, 1982.
- _____, The United States and the Origins of the Cold War. New York: Columbia University Press, 1972.
- Garner, Jay M. Space and Strategic Defense: Relevant to a Power Projection Army. Address delivered to the Association of the

United States Army Symposium on Space and Strategic Defense,
Leesburg, Va.: 9 Dec 1992.

Garthoff, Raymond L. Policy Versus the Law: The Reinterpretation of the ABM Treaty. Washington, D.C.: The Brookings Institution, 1987.

George, Alexander L., and Richard Smoke. Deterrence in American Foreign Policy. New York: Columbia University Press, 1974.

Goldberg, Andrew C. "Defenses and Deterrence," Washington Quarterly 13 (Autumn 1991): 142-45.

_____. "Challenges to the Post-Cold War Balance of Power," Washington Quarterly 14 (Winter 1991): 54-60.

Gray, Colin S. "Geography and Grand Strategy," Comparative Strategy Vol. 10, No. 2 (Apr-Jun 1991): 311-329.

_____. "Deterrence in the New Strategic Environment." Comparative Strategy. vol. 11, no. 2, (Apr-Jun 1992): 247-267.

_____. The Geopolitics of the Nuclear Era: Heartlands, Rimlands and the Technological Revolution. New York: Crane, Russak & Co., 1977.

Guertner, Gary L. Deterrence and Defense in a Post Nuclear World. New York: St. Martin's Press, 1990.

Guertner, Gary L., and Donald M. Snow. The Last Frontier: an Analysis of the Strategic Space Initiative. Lexington, MA: Lexington Books, 1986.

Halle, Lewis J. The Cold War as History. New York: Harper & Row, 1967.

Ignatius, Adi. "Russia Turns Away From North Korea." The Wall Street Journal, 12 Feb 1993, sec. A, p. 10.

Jordan, Amos A. William J. Taylor, Jr., and Lawrence J. Korb. American National Security- Policy and Process. Baltimore, MD: The Johns Hopkins University Press, 1989.

Kaplan, Fred. The Wizards of Armageddon. New York: Simon and Schuster, Inc., 1983.

Keel, Earl E. Jr. "Toward a New National Defense Strategy: Policing the Battlefields of the Cold War," Comparative Strategy Vol.11, No. 4 (Oct-Dec 1992): 357-372.

- Keeney, Spurgeon M. "Limited ABM Defense: Dangerous and Unnecessary," Arms Control Today 21 (October 1991): 11-18.
- Krepon, Michael. "Limited ABM Defense: A Prudent Step," Arms Control Today 21 (October 1991): 15-20.
- Labrie, Roger P., ed. SALT Handbook. Washington, D.C.: American Enterprise Institute, 1979.
- Lawson, Stephanie. "Conceptual Change in the Comparative Study of Regime Change and Democratization," Comparative Politics Vol. 25, No. 2 (January 1993): 183-204.
- Lebovic, James H. Deadly Dilemmas. New York: Columbia University Press, 1990.
- Lewis, William H. and Christopher C. Joyner. "Proliferation of Unconventional Weapons: The Case for Coercive Arms Control," Comparative Strategy Vol. 10, No. 2 (Apr-Jun 1991): 299-309.
- Maksimov, GEN Yuri. "The Strategic Deterrent Forces," Commonwealth of Independent States Vol. 2, No. 2 (Spring 1992): 43-44.
- Malcolmson, Robert W. Beyond Nuclear Thinking. Montreal: McGill-Queens Press, 1990.
- Moss, Kenneth B. Technology and the Future Strategic Environment. Washington, D.C.: Wilson Center Press, 1990.
- Newhouse, John. Cold Dawn- The Story of SALT. New York: Holt, Rinehart and Winston, 1973.
- Osgood, Robert E. The Nuclear Dilemma in American Strategic Thought. London: Westview Press, 1988.
- _____. Limited War. Chicago: University of Chicago Press, 1957.
- Paret, Peter, ed., Makers of Modern Strategy. Princeton, NJ: Princeton University Press, 1986.
- Payne, Keith B. "Strategic Force Requirements After the Cold War." Comparative Strategy. vol. 11, no. 2, (Apr-Jun 1992): 269-282.
- Powell, Robert. Nuclear Deterrence Theory. Cambridge: Cambridge University Press, 1991.
- Quester, George H. The Future of Nuclear Deterrence. Lexington, MA: Lexington Books, 1986.

- Quinliven, James T., George L. Donohue, and Edward R. Harshberger. Strategic Defense Issues for the 1990's. Santa Monica, CA: The Rand Corporation, 1990.
- Ravenal, Earl C. Designing Defense for a New World Order. Washington, D.C.: Cato Institute, 1991.
- Simon, Jeffrey, ed., Security Implications of SDI. Washington, D.C.: National Defense University Press, 1990.
- Smith, COL James. "Engagement: A National Strategy for the 1990's," Comparative Strategy Vol. 11, No. 4 (Oct-Dec 1992): 463-474.
- Snyder, Craig ed., The Strategic Defense Debate. Philadelphia: The University of Pennsylvania Press, 1986.
- Swiecicki, Juliet A. "Severing the Ties That Bind: Moving Beyond Deterrence." Comparative Strategy. vol. 11, no. 2, (Apr-Jun 1992): 283-306.
- Talbott, Strobe. Deadly Gambits- The Reagan Administration and the Stalemate in Nuclear Arms Control. New York: Vintage Books, 1985.
- _____. Endgame- The Inside Story of SALT II. New York: Harper and Row, 1979.
- Tarr, David W. American Strategy in the Nuclear Age. New York: The Macmillan Company, 1966.
- Thomas, BG Charles W. International Security Assessment. Address presented to the Association of the United States Army Symposium on Space and Strategic Defense. Leesburg, VA: Defense Intelligence Agency, 9 Dec 1992.
- Towell, Pat. "Aspin Brings Activist Views To a Changed World," Congressional Quarterly Weekly Report Vol. 51, No. 2 (January 9, 1993): 80-83.
- _____. "With Defense Dollars To Be Spent, Clinton Has Pick of Programs," Congressional Quarterly Weekly Report Vol. 51, No. 2 (January 9, 1993): 84-87.
- U.S. Arms Control and Disarmament Agency. Treaty Between The United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms. Washington, D.C.: Arms Control and Disarmament Agency, 1990.

- _____. Arms Control and Disarmament Agreements: Texts and Histories of the Negotiations. Washington, D.C.: Arms Control and Disarmament Agency, 1991.
- U.S. Department of Defense. National Military Strategy of the United States (Washington, D.C.: Government Printing Office, 1992): 6.
- U.S. Department of State. "Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of Their Intermediate-Range and Shorter-Range Missiles," December 1987. Department of State Publication 9555, Article VI.
- Worden, Simon P. SDI and the Alternatives. Washington, D.C.: National Defense University Press, 1991.
- Yanarella, Earnest J. Pentagon Decision-Making and Bureaucratic Politics in the ABM Controversy, 1955-1967. Ann Arbor, MI: University Microfilms International, 1982.
- Zimmerman, Peter D., Visiting Senior Fellow, Center for Strategic and International Studies. Interview by author, 2 April 1993, Washington, D.C.
- _____. The Bronze Medal Technology Route to Nuclear and Missile Proliferation: A Technical Assessment. Washington D.C.: Center for Strategic and International Studies, 1993.
- _____. Iraq's Nuclear Achievements: Components, Sources and Stature. Washington, D.C.: Congressional Research Service, Library of Congress, 1993.