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for Nuclear Weapons in International Relations

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**Nuclear Deterrence as a Means Toward Peace: A Role
for Nuclear Weapons in International Relations**

By

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The Argument

The purpose of this paper is to provide a proposal for the role of nuclear weapons in international relations. Although the utility of nuclear weapons is limited in regards to attaining foreign policy objectives, ironically, they may provide the means to world peace. Because of the deterring effect of Mutually Assured Destruction (MAD), it is not in the Superpowers' interests to engage in war with one another. If the stability of the current nuclear stalemate can be enhanced, the deterrent effect should be solidified and perpetuated. By increasing stability and decreasing tensions, the Superpowers can securely accept military parity. Once they recognize that a first-strike capability is not desirable, then a comprehensive nuclear test ban and nuclear freeze is feasible. Eventually, significant arms reductions can take place. The Superpowers only need a minimum-MAD capability to maintain the deterrent effect and retain the balance-of-power that exists today. Other countries need only develop a minimum nuclear deterrent to safeguard their respective national securities.

The Assumptions

1) Nuclear Deterrence- A country will not attack another if the costs of aggression outweigh the benefits of victory. Minimum deterrence will create unacceptable costs to an aggressor, while MAD will result in mutual annihilation. Thus, although a country possessing a minimum deterrent could lose a nuclear war, it should never occur in the first place. For countries possessing a MAD capability, the deterrent effect is even stronger, as the instigator will be destroyed.

2) Rational Man- A rational leader will not commit his country to unacceptable losses, especially mutual suicide, if a real or perceived threat of nuclear retaliation exists. This is the rationale behind MAD deterrence.

3) Stability increases the deterrent effect- Because the deterrent effect stems from the ability to inflict unacceptable losses on an aggressor, measures that ensure a retaliatory capability and enhance the current nuclear stalemate are important. Also, measures that reduce tensions and misperceptions should be adopted. A rational man may not make a rational decision if his perceptions of a situation are not accurate.

4) Destabilizing actions diminish the deterrent effect- Clearly, policies that attempt to make a nuclear war fightable, and programs whose purpose is to gain a first-strike capability are dangerous and should be abandoned. The former denies the risk of nuclear escalation and the latter tries to circumvent the nuclear threat by cheating a country out of its retaliatory ability.

5) The Superpowers need only a Mini-MAD capability- Once a country is assured that it can annihilate an aggressor, any additional weapons are costly and purposeless. By reducing their arsenals to the Mini-MAD level the Superpowers perpetuate their nuclear hegemony over the world.

6) Other countries should develop a minimum deterrent- Horizontal and vertically proliferating countries maximize their marginal utilities by accepting a minimum deterrent capability that safeguards national security, costs little (when compared to entering the arms race), and yields political clout, while not upsetting the balance-of-power (if the supplier countries control acquisition). Thus, the likelihood of conventional war may be reduced because of the threat of nuclear escalation. The Superpowers also benefit because their risk of being drawn into an escalating conflict is thereby diminished, and they are not threatened by vertical

proliferation.

A new nuclear power will be deterred from employing its arsenal offensively because its foe(s) will be able to inflict unacceptable damages vis-a-vis its/their own arsenal(s). However, supplier countries must ensure that current military stalemates between unstable, or rival countries are not upset. For instance, a small nuclear country like South Africa is currently able to deter attack, even though it is virtually surrounded by potential enemies, because its enemies do not possess a similar military capability.

Forward

For the first time in man's history, the costs of total war are potentially so great that they outweigh any possible benefits which may accrue from either a pre-emptive attack or a first-strike from strength. For the Superpowers total war has become synonymous with nuclear war, and limited conventional battles have a historical tendency to escalate. Today nuclear weapons are potentially so devastating that man may have finally found the key to peace, through the threat of mutually assured annihilation. Just one of the 10,000 U.S. nine megaton missiles has a greater destructive capacity than all of the bombs dropped in World War II combined, plus the bombs dropped on Hiroshima and Nagasaki. People often cannot even think about what life, if any survives, would be like after a nuclear war. We have made an instrument of death that we cannot stomach. It is too gruesome. Nuclear war is not about chivalry, or bravery, it is war without a face. In

the most horrific sense, nuclear weapons have truly made war hell.

It is not probable that war will ever absolutely cease until science discovers some destroying force so simple in its administration, so horrible in its effects, that all art, all gallantry will be at an end, and battles will be massacres which the feelings of mankind will be unable to endure. (Mayers, 1984, P. 82)

The historical and strategic analyses that constitute the first section of this paper are intended to support my assertions regarding the dangerous nature of limited nuclear war fighting strategies and defensive weaponry, while also providing a means of substantiating the legitimacy of my proposals for the future that will constitute the paper's final section. The second section of this paper will contain measures that will improve relations between the Superpowers and solidify the nuclear stalemate that exists between them. Once a more stable international climate is achieved, many of the potentially destabilizing and threatening policies that are currently being practiced can safely be abandoned. In addition to suggesting a role for the nuclear weapons of other countries, the final section of the paper will suggest ways in which the peaceful climate established in the second section, can be transformed into meaningful treaties between the Superpowers that allow for significant nuclear arms reductions to take place.

I. Historical and Strategic Analyses

Even before the introduction of the atomic bomb against the Japanese during World War II, Americans have been burdened with one troublesome problem: What does one do with a nuclear bomb? Civilian strategists have generally considered that an all-out nuclear exchange is not a really a war at all; instead, it is mutual suicide because the losses on both sides will be so great that no one can win. In contrast, United States military thought revolves around attempts to make the unthinkable, a nuclear exchange, tolerable. In this first section I will attempt to provide historical justification for the following assertions that underlie my major proposals for the role of nuclear weapons in international relations. It is obvious that much of the deterrent effect of nuclear weapons is contingent upon the catastrophic results of their use. (1) Therefore, attempts at minimizing these effects are destabilizing and threaten the balance-of-power that exists between the Superpowers. (2) Consequently, the likelihood of a nuclear exchange is actually enhanced by trying to manipulate the outcome of an exchange. (3) Although limited and prolonged war fighting capabilities, along with the development of defensive weapons systems, are some of the most fervently embraced concepts of U.S. military strategists; they are nonetheless a threat to world peace and should be abandoned as U.S. policy objectives.

Where We Have Been

In order to understand where to go in the future with nuclear weapons, one must first look to the past. Only by examining the interrelated developments of nuclear arms, strategies, and treaties can their respective successes and failures be analyzed and a course for the future be suggested. Although technological developments have played a large role in the formation of nuclear strategies and treaties in the United States, the beliefs of the men in power have played an equally large role. From the 1940s the RAND Corporation has served as a think-tank for U.S. nuclear strategy. The ideas of the RAND corporation have routinely influenced the policies of U.S. Presidents and Secretaries of Defense from Truman to Reagan, and from Dulles to Weinberger. More importantly, because of the enhanced power of the United States after World War II, U.S. nuclear strategy was to necessarily influence the Soviet Union and the world. The predominance of U.S. military and economic might through the 1960s, and its continued strength today, has both intentionally and unintentionally influenced the politics of the world. Therefore, a study of the United State's nuclear development, coupled with the unique perspectives of the Soviet Union and the rest of the world's powers, provides an interesting background for proposals for the future.

The Truman years (1945-1952) were a time of wonder and

bewilderment for the United States. We had unquestioned military superiority after Hiroshima and Nagasaki, the only question was how could this military superiority best be transferred into political influence? The Baruch Plan of 1946 was doomed to failure for the same reason that many of today's political options do not come to fruition: a monopoly of anything is difficult to give-up. The United Nations proposal for an international agency to ensure that atomic energy would be used solely for peaceful purposes was rejected by the Soviets, who wanted U.S. nuclear weapons destroyed before the agency was established. Naturally, the U.S. wanted the international agency before relinquishing sole possession of the bomb. Although the U.S. never actually intended to eliminate its nuclear weapons, Truman apparently saw the possible hazards that could result from the destabilizing effects of an unchecked nuclear superiority.

... the atomic bomb is a means of destruction hitherto unknown, against which there can be no adequate defense, and in the employment of which no single nation can in fact have a monopoly.
(Mayers, 1984, P. 3)

Truman did not have long to worry about the U.S. monopoly because the Soviet Union detonated its first A-bomb during 1949. The Korean War that began the following year precluded any possibilities of disarmament treaties; soon the genie would be irrevocably out of the bottle. In 1952 the U.S. detonated its first Hydrogen bomb. The U.S.S.R. sur-

prised the United States by detonating its own H-bomb in 1953. Apparently, the technology gap was not gaping.

The Eisenhower years (1953-1960) encompassed perhaps the greatest (or worst) of military achievements; the ability to completely destroy the world. Eisenhower said, "... Humanity has now achieved, for the first time in its history, the power to end its history." (Mayers, 1984, P. 5) Unfortunately, this capability evolved during a period of high tensions and poor communications known as the Cold War.

Ike's Secretary of State, John Foster Dulles, indiscriminately used threats of "Massive Retaliation," whereby the U.S. might respond with nuclear weapons to Soviet challenges anywhere in the world. However, the invasions of Hungary and Czechoslovakia demonstrated the difficulty in translating nuclear military might into successful foreign policy objectives. True, the U.S. could have dealt devastating and decisive blows to the Soviets in the 1950s, but the U.S. was not willing to make a nuclear commitment to these countries and the Soviet Union knew this. Thus, the threat was not credible, and the Soviets were not deterred because of their advantage in conventional forces in Europe. The U.S. had learned its first lesson about the limited political utility of nuclear weapons.

To give the U.S. a meaningful edge against U.S.S.R. conventional forces in Europe, tactical nuclear weapons were deployed in Central Europe. They consisted of artillery

shells, bombs and short range missiles. In 1957, the Soviets first tested their ICBM, and the U.S. began to fear a missile gap was developing, despite the fact that the Soviet's ICBM lacked an accurate delivery system and the U.S. now had 6200 nuclear weapons. (Mayers, 1984, P. 6)

By 1955 the Superpowers realized that already built nuclear weapons would be impossible to verify; therefore, attention turned from disarmament to limiting new testing. Ike's Open Skies Plan (1955) was rejected by the Soviets; however, the Antarctic Treaty of 1959 was much more appealing in that it allowed completely open verification of all facilities by all countries, but the it took place on neutral ground.

National Technical Means (NTM), or seismic monitoring, became standard procedure for verification in 1958, and through the SALT treaties it was considered adequate. (Mayers, 1984, P. 75-6) Because countries now felt more secure in their perceptions, a Limited Test Ban Treaty became possible in 1963.

The Kennedy/Johnson years (1961-1968) showed a rapid transition in U.S. nuclear strategy. The limited utility of MAD for achieving foreign policy objectives, and the lack of options it presented for a president involved in a confrontation, led naturally to the development of a "Flexible Response." In this manner, the military forces could deal flexibly with varying levels of Soviet aggression.

In 1961 Kennedy said, "Mankind must put an end to war or war will put an end to mankind." (Mayers, 1984, P. 10) These words nearly became prophetic one year later the Cuban Missile Crisis. The crisis was peacefully resolved as much because of the U.S. conventional naval superiority in the region, as because of the nuclear superiority the U.S. possessed in 1962. Not to be overlooked however, was the face saving, tension reducing option Kennedy gave to Khrushchev. Kennedy promised to remove (the then obsolete) U.S. missiles from Turkey, in exchange for the Soviets removing their missiles from Cuba. Even though Kennedy had planned to remove the missiles anyway, his "trade-off" gave the impression of a bargaining process.

Kennedy's Secretary of State John McNamara rejected the concept of a "Controlled Response"--the targeting of nuclear weapons rather than population centers and factories. Instead, he believed in deterrence by assured retaliatory capability, whereby neither side has the ability to defend itself from unacceptable consequences. As a result of this desire for an assured retaliation capability, the U.S. developed the Triad system of ICBMs, strategic bombers and submarine-launched ballistic missiles (SLBMs) that is still in use today.

After the Cuban scare, both countries were willing to come to the negotiation table. The Limited Test Ban Treaty (LTBT) prohibited atmospheric nuclear tests in 1963. The

Outer Space Treaty (1967) prohibited nuclear weapons in space. However, perhaps the most significant treaty to be signed in the 1960s was the Non-Proliferation Treaty (1968). It sought to halt the horizontal spread of nuclear weapons to other countries, while also striving "... To achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament." (Mayers, 1984, P. 30) Unfortunately, just as the nuclear arena appeared to be stabilizing, single missiles with multiple warheads or MIRVs were developed in 1968, making arms control more difficult.

The Nixon/Ford years (1969-1976) saw a massive build-up of Soviet nuclear forces. When Kennedy took office the Soviets had 20 ICBMs. When Johnson took office the number had risen to 200. By 1969, the Soviets had 800 ICBMs. (Mayers, 1984, P. 13) The Soviet forces had grown so large that a nuclear exchange would devastate both countries. The Soviet equivalent to the U.S. policy of assured retaliatory capability became known as "sufficiency." Nixon and Kissinger now realized that parity was inevitable. Therefore, a lessening of tensions or detente was attempted to avoid confrontation and thaw the remnants of the Cold War.

The first Strategic Arms Limitation Treaty (SALT) was signed in 1972, limiting defensive anti-ballistic missiles (ABMs) development and deployment. Also, the Interim Agreement on Offensive Weapons froze the number of launchers of

ballistic missiles and froze the number of ICBM silos. In 1974, the ABM Treaty limited the U.S. and U.S.S.R. to one site each for defensive missile systems. This move was very important because it helped ensure that a country could not launch a first-strike without suffering grave losses.

By 1974, Secretary of Defense James Schlesinger proposed greater emphasis on a U.S. "counter-force" strategy. He supported selective strike targeting against military targets. Counter-force was a classic example of an attempt to develop an active nuclear war-fighting capability. Limited war theories are flawed in two ways. First, they are based on the assumption that a nuclear exchange can be controlled. This is an uncertain premise at best. Second, making a nuclear war survivable through defensive weapons or selective targeting only decreases the deterrent effect to using nuclear weapons in the first place.

Gerald Ford made an interesting statement regarding the role of the U.S. nuclear force in a 1976 address:

The weapons we hold today, and those we plan for the future, give America a mighty power. But with such power comes a mighty responsibility. We must never forget the purpose for which our arsenal is intended. That purpose is not to terrify the weak, to provoke armed confrontation, nor lay claim to that which is not ours. (Mayers, 1984, P. 13)

The Single Integrated Operating Plans (SIOPs) of the 1970s were valuable in that they coordinated the various

branches of the U.S. Armed Forces under one unified targeting plan to avoid needless duplication of sites. However, the sites selected bore the mark of a counter-force mentality. Small Attacks were planned against military targets, leaving the cities hostage as a bargaining chip to incite negotiations. (Mayers, 1984, P. 16)

The Carter years (1976-1980) are best characterized as good intentions gone awry. SALT II was stalled in 1975/76 over disagreements on cruise missiles and a "no bargaining" policy with the Soviets during the 1976 election campaign. When eventually signed in 1979, SALT II contained much of Carter's "comprehensive package" that limited a wide variety of weapons. Unfortunately, this treaty was never ratified by the Senate because of questions regarding its verifiability. These concerns stemmed from the loss of a valuable Iran post, and the controversial compliance of the Soviets to the SALT I provisions. In addition, the insufficiently specific language of the treaty bothered some Senators. (Carnesale, 1987, P. 307)

A second major event during the Carter era was the policy known as "Presidential Directive 59." It was a strategy for flexible and selective use of nuclear weapons, based on a supposition that the Soviets would start a limited nuclear war. The most easily foreseen circumstances for such an attack would be the long-feared Soviet invasion of Europe. Thus, the U.S. put Pershing II and cruise missiles in Central

Europe to counteract the Soviet's intermediate range SS-20s

I maintain that this was not a stabilizing measure despite its appearances. The Soviet response could be likened to the U.S. reaction to Soviet missiles in Cuba. The U.S. weapons in Europe could reach many of their targets in 6 to 8 minutes. (Mayers, 1984, P. 21) This was an unacceptable advancement that did upset our allies. They realized that they were to be the battlefield upon which the Superpowers would settle their differences. Also, a six minute warning left the Soviet leaders with little time to react to what may be a computer error or accident. Even worse, determining a limited attack from an all-out one, and acting accordingly, was impossible.

Although hard to believe, false alarms do occur and with alarming frequency. From January 1979 to June 1980, 147 false alarms were reported that were so serious they required evaluation as to whether they represented a potential attack. In 1979, ten fighters from three U.S. bases were scrambled and sent airborne and U.S. missiles and submarines were put on higher alert after a NORAD operator in Colorado relayed to other NORAD bases the erroneous message that the U.S. was under Nuclear attack. In 1980, a failed 46 cent chip in a mini-computer relayed a similar message, and this time 100 B52 bombers were readied for take-off as was the President's emergency aircraft. In the Pacific, the airborne command post took off from its base in Hawaii as well. (Mayers, 1984,

P. 35)

The Reagan years (1980-1988) are marked by unprecedented peacetime military expenditures that are a part of Reagan's attempts to gain a "Margin of Safety" over the Soviets. I say "over" because a \$180 Billion five-year strategic modernization program designed to add 7000 new weapons to U.S. stockpiles in the next ten years can only be the result of a plan to gain a military advantage over the Soviets. (Mayers, 1984, P. 23) Besides the waste of money and resources, this plan merely fuels the arms race, because the Soviets are committed to not falling behind the United States. If the Soviets are currently attempting to gain a military advantage and the U.S. is only attempting to close a small gap, the money and resources are still being wasted--so long as the nuclear stalemate is retained. As I will soon demonstrate, any nuclear advantage that may occur from this build-up, in terms of numbers of weapons, translate into no political nor military utility.

Although Reagan has gone the wrong route with weapons, he has done very well in regards to weapons treaties. In 1982, Reagan said, "We must seek agreements which are verifiable, equitable, and militarily significant. Agreements that provide only the appearance of arms control breed dangerous illusions." (Mayers, 1984, P. 23) Although a mutual and verifiable freeze on testing, production and deployment of nuclear weapon systems was passed by the House in 1983, it

did not pass in the Senate. I believe that this proposal should be reintroduced once the Soviets agree to a verifiable, multilateral freeze. A freeze will put an end to the expense of the arms race and will help eliminate the development and deployment of new, destabilizing technology.

Also in 1983, Reagan proposed a Strategic Arms Reduction Treaty (START) that would "build-down" nuclear arsenals. The idea behind this program is to continue to build and deploy so long as more of the existing forces are retired. It has not been adopted, nonetheless it is an excellent way to maintain the current balance-of-power that exists today between the superpowers. In fact, part of the program calls for reductions in each country's military advantages by increasing their respective reductions in those areas. Working toward parity can only increase the stability of U.S. and Soviet relations and increase the likelihood of continued peace.

By playing "hardball" with the Soviets vis-a-vis his "Zero Option" in Europe, Reagan was able to get the Soviets to agree to the INF Treaty in 1987. Reagan wanted the Soviets to eliminate their intermediate SS-20s, SS-4s, SS-5s missiles (approximately 600 total), or else the U.S. would deploy 572 Pershing IIs and cruise missiles in Europe. (Mayers, 1984, P. 26) The initial results of the Zero Option was that the Soviets destroyed some of their weapons and the U.S. did not deploy as many as it had planned. It was in

both countries' best interests to eliminate these weapons entirely in 1987, even though one might argue that the Soviets were giving up more. For the Soviet Union had to dismantle existing weapons, whereas the U.S. had to promise to dismantle some and promise not to deploy more. However, the Soviets did not relish the prospect of U.S. weapons so close to their borders, nor did Europeans embrace U.S. weapons on their soil. Meanwhile, the U.S. did not want to bear the expense of these weapons if they could get the Soviets to dismantle theirs.

Now that the basic developments in strategic thought, nuclear weaponry, and treaties have been placed into a chronological context, I will discuss each of these topics in more depth. In order to understand the evolution of U.S. nuclear strategy, it is first necessary to understand the goals of U.S. nuclear policy:

- 1) basic deterrence: against Soviet attack.
- 2) extended deterrence: for U.S. allies.
- 3) crisis stability: minimum 1st strike incentives.
- 4) damage limitation: minimize attacks effects.
- 5) war-termination: in least damaging manner.
- 6) counter-deterrence: support U.S. foreign policy.
- 7) bargaining chip: support U.S. policies in arms control negotiations. (P. 135, Harvard Group)

The Evolution of Post-War Strategic Thought

During the post-war 1940s, a dangerous concept developed that is still being felt in the policies of the 1980s: The

idea of a controllable nuclear war. Karl Von Clausewitz, the nineteenth-century Prussian military/philosopher, said, "War is a continuation of policy by other means." (Kaplan, 1983, P. 79) One might be led to question whether nuclear war is too violent to be a form of diplomacy, but not the strategists at RAND. Bernard Brodie stated, "War is violence... but it is controlled violence and therefore controllable." Kaplan, 1983, P. 79) Although support for his contention would oscillate for the next four decades, it has never fallen completely out of favor.

A dangerous situation develops when the majority of a country's nuclear strategists are housed together and isolated from "the real world." They developed an attitude that "the RAND way" was the only legitimate way of thinking about the bomb. "During the peak of the Cold War, most of its occupants did little but... dream up new ideas about nuclear war." (Kaplan, 1983, P. 51)

Popular in the 1940s was a theoretical war fighting strategy known as "game theory." The essence of game theory was to find out your opponent's best strategy and act accordingly. "Such a strategy may not get you the maximum gain, but it will prevent you from taking the maximum loss." (Kaplan, 1983, P. 65) It provided mathematically precise methods of determining rational strategies in the face of critical uncertainties; however, game theory did not always reflect reality. After World War II, "It made sense

for both countries to stop building, but neither could have the confidence to agree to a treaty... suspecting that the other side might cheat, build more and go on to win."(Kaplan, 1983, P. 65)

During the 1950s, the U.S. held for the last time, a clear first-strike capability. However, by the end of the decade, this capability was diminishing and U.S. was feeling not only unprepared for war, but vulnerable to a Soviet first strike. In order to understand the beliefs behind counter-force, limited war fighting strategy and intense feelings of vulnerability (i.e. missile gap) where none existed, it is helpful to hear the thoughts of the men of RAND.

Nitze, who wrote NSC-68, said that since the U.S. is "The principal center of power in the non-Soviet world (it) is the principal enemy whose integrity and vitality must be destroyed... if the Kremlin is to achieve its fundamental design."(Kaplan, 1983, P. 139) NSC-68 became a guide for U.S. policy in the 1950s stressing the "Soviet design for world domination." Obviously, the U.S. feared the unknown intentions of its primary adversary, and remarks by Krushchev about crushing the U.S. did not put anyone at RAND at ease. Fears of the unknown manifested themselves in worst case scenarios and imagined or exaggerated threats.

With the outbreak of the Korean War, the U.S. wanted the extra protection of the Hydrogen bomb. Some realized though that "With something so powerful as the H-Bomb, strategic

bombing of Soviet cities made no sense, it was immoral, and it was probably also suicidal." (Kaplan, 1983, P. 81) Others however, did not agree. Albert Wohlstetter of RAND represented the majority of his colleagues with this statement:

We need not assume that this stage is unchangeable or that one country or the other cannot move into a position of relative advantage. The search for 'technological breakthroughs' must continue. (Kaplan, 1983, P. 131)

Wohlstetter, by denying the deterrence of MAD, merely reflects the typical arms race mentality.

By 1952, the U.S. realized that it was potentially vulnerable to a Soviet surprise attack. SAC was perceived as vulnerable because the U.S. B52 Bombers were too close to the Soviet Union (most were on overseas bases) and too densely packed. The Soviets could take away our retaliatory capability by knocking out SAC while the bombers were still on the ground. After Pearl Harbor and the German assaults of World War II, surprise attacks were thought to be the way of aggressors.

In order to understand the development of post-war strategic thought it is necessary to recognize the deep-rooted nature of the belief in the inevitability of a massive surprise attack as the opening shot in any war. (Freedman, 1981, P. 34)

For RAND, 1957 was a year of panic. First, the Gaither Report declared that the U.S. had fallen behind the Soviets

and was now in the midst of a missile gap. It proposed a \$44 billion dollar build-up based on this misperception. Eisenhower was not affected by the report however; "Do you know how much a billion dollars is? Why, it's a stack of ten-dollar bills as high as the Washington Monument." (Kaplan, 1983, P. 147) I can not resist pointing out here that Reagan's SDI program is expected to cost one trillion dollars. Other anxieties existed as well. Simulations showed that SAC was unable to ensure a U.S. retaliatory capability. Also, the dangers of fall-out were first realized. In effect, the nuclear stakes had been raised. Now instead of two million killed by a Soviet attack, it was estimated that the U.S. would suffer losses of twenty million to radiation. (Kaplan, 1983, P. 125) Lastly, the launching of Sputnik alerted the U.S. that if the Russians could put a satellite on top of a rocket, they could possibly also put a nuclear warhead on it and make it come back and hit the United States. (Kaplan, 1983, P. 136)

The "no-cities"="war-fighting"="counter-force" strategy was developed by Bernard Brodie in 1951. Regardless of the name it meant the same thing. If the Soviets attacked West Europe for instance, the U.S. would attack military targets in the Soviet Union, not their cities, at least in the first round. The U.S. would then attack the cities one by one until they gave-up. It is hard to believe that the Soviets would today, sit idly by while we destroyed their cities "one

by one." The difference between then and the current situation is that the Soviets did not possess an effective delivery system for their ICBMs until the 1960s. At this time, the idea of counter-force became less practical. If this strategy were employed today, one would expect an all-out, or at least a like mannered response by the Soviets on U.S. territory. If the Soviets had made the decision to enter Western Europe, they obviously considered and disregarded a possible U.S. response. Deterrence has failed and limited war is not likely to dissuade the Soviets from their objectives.

The support of counter-force appears to have mixed at best. Herman Kahn, in 1956, claimed that by targeting only military targets, merely two million Soviets would die. He also maintained that the U.S. should build a \$200 Billion civil defense system. He claimed that any power that could evacuate a large proportion of its population was in a much better bargaining position, but he fails to recognize how attempts at ensuring nuclear survivability increase the likelihood of a pre-emptive nuclear first-strike. The Weapons Systems Evaluation Group (WSEG) said in 1956 that counter-force would not work, one week into the Kennedy Administration. It said that even if the U.S. destroyed all targetable weapons, the non-targetable ones would kill half the U.S. population. With civil defense, sixty million would be killed. But, this is another instance of misperceptions

creating (then) unnecessary panic because the Soviets had no way of getting the missiles to the U.S. population in 1956. Although Kennedy's Secretary of Defense John McNamara liked most of WSEG-50, he still supported the viability of counter-force.

Bill Kaufman, whom McNamara respected greatly, liked the idea of limited war, only he foresaw it being fought on a conventional level:

Nuclear weapons must, therefore, be avoided in limited war because they are "new and strange." They have about them all and more of the sinister psychological connotations of gas or dum-dum bullets... They have tended to fall into that very arbitrary category of weapons that are regarded as uncivilized to use. (Kaplan, 1983, P. 168-169)

I believe his statement reaffirms my contention that wars are more likely to be fought if the means of destruction can somehow be rationalized. On a infinitely smaller scale it is similar to claiming that hanging is a cruel and unusual punishment for a capital offense, but a lethal injection is tolerable because it does not shock our senses to the same extent. If one finds injections tolerable, is not the likelihood of their occurrence enhanced with the same net result?

During the late 1950s the mistaken belief of a missile gap was more propaganda than substance. The U.S. had U-2 intelligence that the populace did not. In addition, photographs from the Discoverer satellite proved that no gap

existed. Only SAC held out, "For they had a critical interest in depicting an enormous Soviet threat. Without it, they would have a hard time justifying their own plans for thousands of U.S. bombers and 10,000 Minutemen ICBMs." (Kaplan, 1983, P. 288) However, the RAND group feared a "deterrence gap" might be developing whereby SAC might be vulnerable. This, not the missiles, is what they considered most important. By 1961, Kennedy admitted that there was in fact no gap.

To help safeguard the U.S. retaliatory response (a good idea), RAND decided that ABMs should defend Minutemen silos, not U.S. cities (not a good idea). The so called "Safeguard Defense" was terribly vulnerable to a number of counter measures that the Soviets could easily and cheaply prepare: saturation, multiple warheads, decoys, and radar black-outs. Another problem with ABMs is that a defensive build-up would assuredly promote a corresponding increase in the opponents offensive arsenal. "In the race between offense and defense, offense would win, and at a lower cost." (Kaplan, 1983, P. 327) McNamara realized that "damage limiting," as military justification for more weapons would not work.

WSEG and SIOP reflected the polarity of opinion in nuclear strategy of the 1960s. WSEG-53 supported a limited war perspective, while SIOP-62 advocated an all-out nuclear strike. Although the limited war theory was embraced in the early 1960s, it was soon replaced by MAD. Thomas Schelling's

1960 book, The Strategy of Conflict described the purpose of limited war as defeating the enemy's will without compelling him to bring nuclear weapons into play. This idea strongly appealed to those who felt constrained by Massive Retaliation theory. Schelling based his idea on the results of a Zero-Sum game. In pure competition, my win is your loss; however, after two payoffs the net outcome is zero. In a Non-Zero sum game (like a limited war), competition with tacit cooperation yields benefits. (Kaplan, 1983, P. 331)

RAND's Bill Kaufmann saw non-nuclear limited wars as rational because the war would stop when the costs of continuing outweighed the advantages of continuing it. He believed that the purpose of limited war was to achieve a sustained stalemate. Winning was unreasonable, for both sides had unlimited resources and these battles were not meant to bring about a radical redistribution of power. (Kaplan, 1983, P. 199) He advocated large conventional forces, which obviously pleased the military. He claimed that you can blow-up large territories with the A-Bomb, but you need ground forces to occupy territories. (Kaplan, 198, P. 195)

The problem with counterforce that soon became apparent, and should have caused policy shift to stalemate deterrence, was the ability or inability of the Soviets to distinguish the large number of incoming missiles from an all-out attack. If the Soviets could not distinguish between the two, an

all-out retaliatory blow against U.S. cities was feared. Kissinger argued that the Pentagon options were not sensible.

It was the perennial dilemma: how to plan a nuclear attack that was large enough to terrify the Soviets but small enough to be recognized as a limited strike. (Kaplan, 1983, P. 357)

McNamara changed his support from counterforce to MAD in 1963. McNamara realized that counterforce presented no logical limit to the size of the arsenal; that as long as new targets could be found or the Soviets developed new weapons; the U.S. could always claim that it did not have enough. (Kaplan, 1983, P. 316) "The new measure put almost total emphasis on the deterrence, rather than on the fighting, of nuclear war." (Kaplan, 1983, P. 317)

Bernard Brodie described the changing face of war in his 1946 book The Absolute Weapon. He said, "Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them. It can have almost no other useful purpose." (Kaplan, 1983, P. 340) It was not until the 1960s however, that Brodie was forced to conclude that "Nuclear strategy itself--the body of thoughts that he himself had helped formulate-- was something of an illusion." (Kaplan, 1983, P. 342) To Brodie, the very existence of nuclear weapons and an unequivocal policy to use them on the battlefield were the best guarantees against their use in the first place. (Kaplan, 1983, P. 340) Deter-

rence offered the twin benefits of National Security and low cost, but the Vietnam War proved that atomic reliance alone will not deter aggression. A Schelling-like, large conventional force must be maintained for battles of will in a limited war.

Although not rational for nuclear war, counter-force was still a good policy for wars of lesser force. Kaufman's limited war concept was behind the U.S. policy in Vietnam. The enemy was to get "messages" and "accept limitations." The U.S. was hoping for a stalemate by trying to make the costs too great for the North Vietnamese to endure.

By early 1965, McNamara's Vietnam strategy was essentially a conventional-war version of the counter-force/no cities theory-- using force as an instrument of coercion, withholding a larger force that could kill the hostage of the enemy's cities if he didn't back down. (Kaplan, 1983, P. 329)

The 1970s clearly demonstrated that leaders do not always learn from the mistakes of the past. New technological developments threatened the stability of the nuclear stalemate and the U.S. returned to a limited war strategy. Hope springs eternal among strategists that the U.S. can find a practical way to make our nuclear arsenal useable.

In the mid-1970s the Soviets began testing MIRVed missiles. "The age-old red flag of SAC vulnerability could be waved with new vigor." (Kaplan, 1983, P. 374) The MIRV threat was addressed by hardening the U.S. ICBM silos to ensure a

retaliatory response. Despite increased missile targeting accuracy in the 1970s, U.S. strategists considered the ICBMs to be fairly safe because no Soviet or U.S. missile had ever been tested on its actual trajectory over the North Pole's magnetic field, only in an East-West/West-East trajectory. Second, many incoming missiles were expected to destroy themselves in a process known as "fratricide," because of the blast heat, wind, radiation, neutrons and debris. (Kaplan, 1983, P. 375)

Carter originally spoke of eliminating all nuclear weapons, but with Soviet aggression in Afghanistan, soldiers in Cuba, and other real world developments, he saw that this was not advisable. Harold Brown, Carter's Secretary of Defense, was skeptical of counterforce in 1975, saying, "Only deterrence is feasible." (Kaplan, 1983, P. 383) Soon however, he had completely reversed his position in favor of the flexible war nuclear posture advocated by former Secretary of Defense James Schlesinger. Schlesinger supported the NUWEP, NSDM-242, and NU-OPTS plans developed in 1973 by the Odeen Group and Foster Panel. In 1977, Carter reaffirmed support for the NSDM-242 plan of the Foster Panel as part of his Presidential Directive-59 that sought limited nuclear options and a protracted nuclear war fighting capability, primarily by ensuring communications. (Kaplan, 1983, P. 369)

In the 1980s, Reagan's Strategic Defense Initiative (SDI) or "Star Wars" program is merely another chapter in the

ABM game, except now the missiles are to be replaced by lasers. I will discuss this program's negative effect on deterrence, the arms race, stability, and the U.S. economy later. Most of Reagan's military spending increases, SDI aside, have been the result of following Carter initiatives that resulted in higher spending because of his counter-force belief.

Since 1946, nuclear strategy has oscillated with the individuals in power. With nuclear weapons, no one's opinion is sacrosanct. There is no true authority, only informed individuals making educated guesses about the Apocalypse:

The story of nuclear strategy has been the story of intellectuals... trying to make the atomic and later the hydrogen bomb manageable, controllable, to make it conform to human proportions. The nuclear strategists had come to impose order-- but in the end, chaos still prevailed. (Kaplan, 1983 P. 391)

Examining nuclear strategy from a U.S. perspective is useful in understanding many of the nuclear policy developments of the U.S. and other countries, but the United States is not the only nuclear country, nor the only country with a unique nuclear perspective. Surprisingly, or maybe not so, the Soviet Union appears to have a nuclear perspective that most resembles that held by the United States. I make this assertion not because we share a similar world view to the Soviets, but because they are the country whose nuclear capability is most like our own. There is no other country

close. Therefore, to be able to suggest world-wide solutions, requires one to adopt a world-wide viewpoint.

Other States' Perspectives

After one has discussed the superpowers, the focus must naturally turn toward the other nuclear countries. Each has its own motivation for developing a nuclear capability based on its own unique circumstances. Capabilities and ambitions are obviously going to vary from country to country accordingly.

China is currently the only other communist country to possess an independent nuclear arsenal, but it is by no means in the Soviet fold. Although the U.S. and China are currently enjoying good relations, the U.S. was part of the reason that China decided to develop an independent nuclear arsenal in the first place. China felt a strong need for an independent deterrent against threatening nuclear adversaries:

Thrice in eight years she was at the receiving end of nuclear threats from the United States--in 1950, 1953 and 1958. The Taiwan Straits incident of 1958 amply demonstrated to the Chinese that they would not be able to rely for protection on the Soviet nuclear umbrella. (Kincade, 1982. P.

The Chinese have been the most consistent of all in their views of nuclear strategy. Maoist doctrine stresses the importance of the individual as the ultimate determinate of victory. Therefore, it is not unexpected that the Chinese believe in the limited utility of nuclear weapons, clearly and consistently underestimating their destructiveness. Mao explained the Communist Party's stance in 1946 by saying, "The atom bomb is a paper tiger with which the American reactionaries try to terrify the people." (Freedman, 1981, P. 274) Khrushchev once attempted to explain to Mao, to no avail, that "... With the atomic bomb, the number of troops on each side makes practically no difference to the alignment of real power and the outcome of a war. The more troops on a side, the more bomb fodder." (Freedman, 1981, P. 281) This advise would obviously not be taken well by a man in charge of one quarter of the world's population.

Before discussing France and Britain as individual countries, I will briefly elaborate on a more general West European perspective. The Europeans have three primary worries in regards to the superpowers.

- 1) Europe becoming a nuclear battlefield.
- 2) A fear of being abandoned by the U.S.
- 3) A loss of dignity after being world powers for so long, and now being directed on security matter by an upstart United States. (Freedman, 1981, P. 287)

The first two points above are intimately related; the alleviation of one fear seems to automatically increase the

other. The presence of U.S. troops in Europe increases the credibility of the U.S. nuclear deterrent in Europe because it increases the American commitment to its allies. The Europeans fear of becoming a battlefield stems from the fact that U.S. ground forces in Europe, besides helping balance conventional forces with the Soviet Bloc, also could induce a whole-hearted nuclear commitment by the U.S. if American soldiers were killed by invading forces. (Freedman, 1981, P. 290) The fear of desertion stems from the belief that once the Americans became vulnerable to nuclear attack they might attempt to reduce the dangers to themselves even at the expense of their European allies. (Freedman, 1981, P. 301)

The deterrent in Europe is forged as a combination of conventional and nuclear forces. "In hostilities beginning with conventional battles, the U.S. would not have too many qualms about intervening, yet the act of intervention would make future nuclear use more credible, so increasing the deterrent." (Freedman, 1981, P. 297) The difficulty with Europe is how to defend it in the face of a Soviet invasion without destroying what is trying to be protected. German Chancellor Helmut Schmidt described the role of NATO's conventional forces in Europe:

In the interests of maintaining the substance substance of Europe and particularly of Germany, NATO must... have troops and weapons on a scale ample to make non-nuclear aggression appear hopeless, and sufficient in an emergency

to force one of two courses on the aggressor--to halt or extend the conflict. (Freedman, 1981, P. 288)

How to defend Europe with NATO forces was, and continues to be, as big a question as how many forces and of what type should be deployed. Tactical nuclear weapons are only good as a first defense. After targets are among the people of NATO they are of little use. A defensive wall at the border would serve to acknowledge politically the permanence of a divided Germany. Also, the memory of the French Maginot Line in 1940 proves the flaw in the concept. Weapons at the front give nuclear weapons to Germany, which the French are not about to tolerate. Lastly, U.S. backed mobile forces moving to the front, leaves no "line." Germany fears that it might be absorbed by a Soviet advance. (P. 289, Freedman)

French President Charles DeGaulle saw nuclear weapons as a way of providing France with a distinctive identity and a power base from which to criticize the hegemonic aspirations of the United States. Pierre Gallois, the French strategist, foresaw the consequences of the nuclear era. He realized that those who were denied self-protection had to hope they represented a sufficient stake for a superpower protector to risk nuclear war for their security. However, no one state is assured of remaining on the right side of an atomic "bomb-line." (Freedman, 1981, P. 314)

The British did not see an independent nuclear arsenal

so much as a means toward independence, as they saw it as a way to ensure greater political power. In 1958, MacMillan stated, "The fact that we have it makes the U.S. pay a greater regard to our point of view, and that is of great importance." (Freedman, 1981 P. 311) Alec Douglas, MacMillan's successor, called the A-Bomb "a ticket of admission" providing a "place at the peace table." (Freedman, 1981, P. 311) The British, by accepting American Polaris submarine missiles, were combining allied integration and national independence.

Another important reason for a country to want an independent nuclear force is that in time of crisis or conflict, America and Britain might have a different order of priorities in the selection of targets. This independent target selection capability was stressed by Winston Churchill. (Wor Fraser, 1980, P. 132) However, the British arsenal was never meant to be entirely independent. Relevant issues to the U.S. and Britain were treated as matters of shared responsibility. The British nuclear component of NATO was taken for granted. (Freedman, 1981, P. 308)

The Political Utility of Nuclear Weapons

Since the end of World War II the political utility of nuclear weapons has been the subject of great dispute. As I have shown with the cases of the United States and China, the

perceived effectiveness of nuclear arsenals at achieving political and/or military objectives has ranged from tremendous faith on the part of the former in the early post-war period, to tremendous skepticism by the latter. I believe the truth lies somewhere in between these extremes and differs depending on whether one is speaking about relations between the Superpowers, or on foreign policy objectives involving other countries, although these distinctions are rarely absolute.

The Superpowers have confronted several nuclear crises, each of which stemmed from conflictual foreign policy objectives involving a third country. Nearly any actively pursued aberration in the status-quo realm of political influence by one of the Superpowers is bound to disturb the other to some extent. Stemming from the post-WWII power redistribution, the U.S. began a policy of Soviet containment-- fearing the spread of communism. The Soviets however, fearing a third invasion of their country in this century, became quite concerned about what they perceived to be attempts at Western encirclement. Although somewhat of an exaggeration, attempts by one of the Superpowers to influence the politics of other countries has been viewed as either Capitalistic Imperialism or Soviet Expansionism, although the acting country would maintain that their actions were aiding democracy or speeding the "inevitable overthrow of the Bourgeois class" respectively. My point is that although each is trying to influ-

ence other countries with the presence of their nuclear arsenals, conflicts of interest are common between the Superpowers and often produce tense situations.

The Berlin Crisis (1959,1961), Cuba Crisis (1962), and the Middle East Conflict (1973) provide valuable lessons about the political utility of nuclear weapons. In general, "Nuclear armaments yield political utility for cautioning (if not intimidating) opponents, for eliciting respect from allies, for exercising management in crisis, for bargaining from positions of evident strength."(Wong-Fraser, 1980, P. 336)

The Berlin Crisis demonstrated the abhorrence the United States feels about launching an all-out first strike. For in 1961, the National Intelligence Estimate claimed that the U.S.S.R. had only four operational ICBMs. Although Rowen-Kaysen proposed a Counter Force first strike, the unstated belief was that Berlin was not worth it. If ever in the history of the nuclear arms race before or since, one side had unquestionable superiority over the other, one side truly had the ability to devastate the other sides strategic forces, ... the autumn of 1961 was that time. Yet approaching the height of the gravest crisis that had faced the West since the onset of the Cold War, everyone said 'No.'

(Kaplan, 1983, P. 301)

Therefore, the obvious conclusion is that if one is unable to use a first-strike capability, there is really

little political utility in having one. Apparently the U.S. is not the only country to feel this way. The U.S. in 1977, and the Soviets in 1978 claimed that nuclear weapons would only be used for the defense of their respective countries or for the protection of allies under attack. (Epstein, 1984, P. 19)

Today the Superpowers have reached a nuclear parity for all practical purposes, and I say for all practical purposes for a reason. MAD means that, between the Superpowers, a small numerical advantage means nothing--either militarily or politically. Once a blatant first strike capability was unobtainable there could be no superiority that could be exploited militarily. It is hard to imagine how serious political benefits could flow from an unusable military capacity. (Freedman, 1981, P. 360) Henry Kissinger asks, "What in the name of God is strategic superiority? What is the significance of it, politically, militarily, operationally at these levels of numbers? What do you do with it?" (Freeman, 1981, P. 363) It should be possible to have fair and meaningful arms treaty negotiations while bargaining from a position of nuclear inferiority, if one possesses a MAD capability. This is yet another challenge to the arms race mentality that is currently prevalent.

Of the crises I mentioned, the one that perhaps closest represents a direct confrontation between the Superpowers was the Cuban Missile Crisis. It has been said that the U.S. and

Soviet Union were eyeball to eyeball and the Soviets blinked. This may have been the case, but it should not be misconstrued as evidence of the political benefits (in regards to Superpower relations) of nuclear weapons. Although Khrushchev may have feared an American nuclear response, from a practical standpoint, the U.S. had a tremendous conventional advantage in the area that included a working blockade of Soviet ships. Those missiles were not going to be allowed in Cuba regardless of the American nuclear threat.

Although the political utility of nuclear weapons is quite limited in direct confrontations between countries possessing a MAD capability, nuclear weapons can prove to be a valuable tool in foreign affairs if the threat of their use is perceived as being real. Power is the content of a realistic foreign policy but it must be coupled with commitment (or at least perceived commitment), otherwise it will not be credible, nor influential. For non-nuclear countries a nuclear threat is more likely to yield political benefits because they lack the means to effectively deter the aggressor from carrying out the threat if political concessions are not granted. Nonetheless, the threat must still be perceived as credible. The Korean War demonstrated that "Unless a country was formally committed to nuclear intimidation it would not successfully deter an opponent." (Wong-Fraser, 1980, P. 278) Dulles' "Roll-Back" policy of 1952 was a classic example of U.S. dependence on the deterrent effect of

its nuclear arsenal as a foreign policy instrument. As Dulles said, "The only way to stop prospective aggressors is to convince them in advance that if they commit aggression, they will be subjected to retaliatory blows so costly that their aggression will not be a profitable one." (Wong-Fraser, 1980, PP. 278-279) "The outbreak of the Korean War cannot be used as a proof of the failure of nuclear intimidation. It was rather the failure to employ nuclear intimidation which caused it." (Wong-Fraser, 1980, P. 272)

Other factors besides a lack of nuclear commitment do come into play when one is determining the political utility of a nuclear arsenal in foreign affairs. China was directly threatened with the prospect of a U.S. nuclear assault on their country during the Korean War; however, they were not the least deterred from invading North Korea when the U.S. forces crossed the 38th Parallel. The reason was that the Chinese could not have the American enemy so close to their border without fearing for their sovereignty and influence in the region. "Nations will not be deterred by the massive destructiveness of nuclear weaponry if they feel their national security is being threatened." (Wong-Fraser, 1980, P. 279) Likewise, political pressures upon a nuclear country may take away the utility of its nuclear threat. "The use of atomic weapons for marginal cases in Korea or Indo-China was proved to be unacceptable to the Western Europeans, and American global interests ran into conflict with her European

allies." (Wong-Fraser, 1980, P. 222) Lastly, nuclear weapons cannot often be deployed effectively relative to overall military objectives. The Israelis cannot use nuclear weapons on the Golan for fear of polluting the Kennerit; the Iraqis could not use them against Jerusalem without destroying the mosques they seek to liberate. The United States could not use them in South Vietnam without contaminating the countryside of our own allies; the Soviets could not use them against Prague and Budapest without destroying the industries they seek to exploit. (Beitz, 1984, P. 111)

Political Theorist Douglas Lackey claims that even when the U.S. had a large nuclear advantage the effectiveness of nuclear threats as a deterrent to Soviet aggression or Communist expansion was practically non-existent. He supports his statement by describing the invasions of Czechoslovakia and Hungary, the blockade of Berlin, and Chiang Kai-Shek's fall. (Beitz, 1984, P. 110) He contends that today's nuclear parity yields even less political utility, especially in Europe. He attempts to link a possible future invasion of West Germany by the Soviets as evidence of how U.S. nuclear deterrence would not check Soviet expansionism today. However, he fails to recognize the varying levels of U.S. commitment to each of those countries. Whereas the level of U.S. commitment to Hungary and Czechoslovakia was quite low, consisting of primarily verbal support; the Berlin Blockade and Chaing Kai-Shek's ouster drew active U.S. intervention,

but not a nuclear commitment (although threats were made). The difference with Germany, and the rest of the United States close allies in NATO, is that the Soviets recognize that a U.S. nuclear commitment exists. Thus, because the threat is real, so is the deterrent effect and the political utility of nuclear weapons in this instance is also real.

Deterrence Theory

Although I have repeatedly alluded to deterrence and Deterrence Theory, I would now like explain the concept more fully because it is the foundation upon which my proposals will be based. Clearly, credibility is the key to deterrence. Since this theory was developed by John McNamara and his men, I believe it should be described in his own words. "The very existence of nuclear weapons and an unequivocal policy to use them on the battlefield in the event of a large invasion were the best guarantees to prevent war from breaking out in the first place." (Kaplan, 1983, P. 340) Gallois, from France, had a similar viewpoint: If the potential assailant believed that... the opposing side would not hesitate, rather than surrender, to use its nuclear arsenal, he would have to abandon force as a means of persuasion. (Freedman, 1981, P. 315)

In other words, a policy of assured automatic retaliation yields no provocation, while reluctance/hesitation

reduces the deterrent effect for future encounters. Deterrence is not a new concept, although Deterrence Theory has been a product of the Nuclear Age. George Washington told Congress in 1790, "To be prepared for war is one of the most effectual means of preserving peace." (Halle, 1984, P. 25)

A general truth about weapons is that the greater their destructive capabilities, the less certain a deteree has to be that they will be used to be deterred. In regards to nuclear deterrence, perceived commitment is equally as effectual as actual commitment. In the pre-nuclear age credibility resulted from past military performances; unlike today, where no one except the United States has any performance record with nuclear weapons. "Bluffs" are a dangerous practice, though, because if one fails to respond to a challenge, especially likely on smaller objectives, a destabilizing situation could develop where the credibility of a true commitment is doubted. The threats of Massive Retaliation by John Dulles in the 1950s were unrealistic and dangerous because they increased the misperceptions that existed between the U.S. and Soviets during a time of great tension.

While endeavors that undermine one's credibility diminish the deterrent effect, unpredictability--although dangerous to the stability of relations-- can increase the deterrent effect. "That fallible and unpredictable human beings might be faced with a choice between no retaliation to attack or all-out war in response to attack has been the fundamental

uncertainty upon which nuclear deterrence has depended."(Freedman, 1983, P. 391) Although I believe the following suggestion by Andre Beaufre, who wanted several centers of nuclear decision-making, could destabilize the status-quo too much and inadvertently lead to war; his proposal would undoubtedly have his desired effect. "The nuclear threshold has become so stable that it needs to be, so to speak destabilised to restore its deterrent effect."(Freedman, 1983, P. 318)

The following is an example of a typical nuclear scenario. Its function here is to describe the role of deterrence and counterforce in regards to conflicts among the Superpowers. In the unlikely event of an all-out war, or (more likely) a conventional one that has escalated, the aggressor country will target the military forces of the other--to knock-out/diminish a retaliatory response and protect its own population. The aggressor may or may not initially target cities as well, depending on its level of commitment to the exchange.

With the aggressor's missiles launched, a quick decision faces the other country's leader-- either to launch his weapons before they are destroyed, or to accept unilateral annihilation. The leader's only active response, and the more likely one, is to launch a retaliatory strike and knock-out the aggressor's secondary strike capability, and/or target its cities. If the attacked leader were to opt for

cities, the aggressor would probably attempt to respond in kind. However, he may choose to rely on some assured retaliatory capability (for instance, SLBMs). Thus, he could hold the aggressor's cities "hostage" in order to get a cease-fire/treaty. But a leader who has just lost one-half his nation may be loath to call a cease-fire without ever having retaliated. Thus, in most cases nuclear scenarios end in mutual destruction.

For a first-strike, the initial targeting of population centers makes no military sense and is morally apprehensible. The rationale behind MAD, and the targeting of population centers, is only found in a response to a first strike. Country 'A' will, by virtue of a first strike, prevent country 'B' from having the military capability to defeat it; however, 'B' retains the retaliatory capability to inflict unacceptable damages upon 'A'-- through the destruction of cities and deaths of tens of millions of innocent people. Thus, the costs of going to war for 'A' are greater than any possible advantage 'A' might gain from a military victory. Therefore, theoretically, 'A' will be deterred from attacking in the first place. Again however, for the MAD deterrent to work, three criteria must be met: (1) there must be a commitment, or perceived commitment, on the part of country 'B' to retaliate; (2) country 'A' must be aware of this commitment; (3) the leader of country 'A' must be rational enough not to instigate mutual suicide.

Benjamin Lambeth ridicules Assured Destruction by claiming that it is the antithesis of strategy, because it fails to be useful at the brink of war. (Freedman, 1983, P. 260) The truth of his statement is undeniable, but this does not diminish the utility of MAD as a deterrent. A good defense has two parts: 1) A deterrent; 2) The means to save what one is trying to protect. For instance the U.S. refuses to pledge "no first-use," citing NATO's numerical disadvantage in Europe. "For an American public eager for demobilization, nuclear threats provided an appealing substitute for foot soldiering on foreign soil." (Beitz, 1984, P. 109) The result of this inaction is increased deterrence because the Soviets know that a conventional attack will be met by nuclear retribution. However, this alone is a poor defense. A conventional defense is also necessary to protect Europe from becoming a nuclear battleground. It is similarly correct that one "Cannot eliminate the possibility of nuclear war simply by assuring that if it occurs it will be an unlimited catastrophe." (Freedman, 1983, P. 373) However, one must be careful not to accept the usability of nuclear weapons. For if they are more usable, they are more likely to be used. Conventional forces are needed still for conventional warfare.

McNamara's men attempted to calculate the requirements for a nuclear deterrent against the Soviets. Basing their calculations on limited marginal returns resulting from

increased megatonnage, they calculated the following: The Soviets would be sufficiently deterred if we could kill 30 percent of their population and destroy half of their industrial capacity, and further, that this task could be accomplished with the explosive power of 400 megatons. (Kaplan, 1983, P. 317)

Actually, McNamara foresaw an assured retaliatory force consisting of 1200 megatons-- 400 on each leg of the triad. Even though 800 megatons would kill only ten percent more people than 400 megatons. (Kaplan, 1983, P. 317) In 1973, Arnold Schlesinger said that military planning had to assume that deterrence might fail, but it was "Not possible to forecast the situations that would cause it to fail." (Freedman, 1981, P. 379) Contingencies mentioned by Schlesinger included: accidental acts; the escalation of conventional conflict; a challenge to a nuclear test of wills; ill-informed or cornered and desperate leaders; a massive surprise attack. (Freedman, 1981, P. 379) Decreasing the likelihood of these contingencies will be of utmost importance if meaningful arms reductions are to take place. Schlesinger has said that increased emphasis on conventional weapons will raise the nuclear threshold causing "... A diminution of the threat of recourse to nuclear weapons." (Freedman, 1981, P. 386)

In summary, deterrence may not guarantee peace, but it does instill fear. "We are each afraid, very much afraid of

the other's deterrent, whether or not this is a rational fear, and whether it is a fear of a rational strategy, or a fear of an enemy's possible suicidal madness." (Kennedy, 1985, P. 53) Deterrence is not an end in itself; but in current conditions, based on rough nuclear parity, deterrence is a step in the direction of progressive arms reductions. Throughout this paper thus far, I have provided relevant historical background information; now the focus of this paper will describe the means by which a peaceful climate can be achieved and future actions undertaken. The nuclear stalemate has, for the first time in history, made all-out war unthinkable. MAD has created the foundation for eliminating eliminating the misperceptions, threats to peace, destabilizing factors, proliferation, and arms race that threaten the deterrence effect of nuclear weapons. If assured destruction can be accompanied by a climate of stability and clear perceptions, the arms race will not be necessary. In other words, one must try to eliminate the contingencies that may cause the breakdown of deterrence before they occur.

II. Means Toward Peaceful Relations

Eliminating Misperceptions

In his book Why Nations Go to War, John Stoessinger claims that misperceptions of reality are the basic causes of war. He believes that war is an accident, because on the eve of each war, at least one nation misperceives another's power. (1982, P. 212) He recognizes four categories of misperceptions:

- 1) A leader's mistaken image of himself or his role.
- 2) Misperceptions of an adversaries intentions.
- 3) Misperceptions of the character of the adversary.
- 4) Misperceptions of the adversary's power. (1982, P. 23)

Stoessinger claims that "A leader's misperceptions of the adversary's power is perhaps the quintessential cause of war." (1982, P. 212) The utility of Stoessinger's Theory lies in application to Superpower relations. If the parity of the Superpowers is followed by clear perceptions vis-a-vis verification and improved communications, both sides would realize that there would be no advantage in attacking the other. Therefore, if accidental causes of war are eliminated, no rational actor would begin such a war.

His theory is flawed however, in several respects. If countries are of vastly unequal strengths, accurate

perceptions of the other's power could very easily lead to a first-strike in a conflict or a pre-emptive strike by the weaker country. Second, his notion that on the eve of each war at least one country misperceives another's power, seems to indicate a "it takes two to tangle" mentality, whereby both countries are volunteering to fight. Unlike boxers in a ring who each think they can win, a nation may be forced to enter into war against a vastly superior country in order to maintain their very existence. The only other option would be to surrender. Third, real conflicts of interests and objectives do sometimes exist. Lastly, the case studies he uses as evidence for his theory are self-serving. He describes any failed military campaign as being based on misperceptions. However this is unsatisfactory because it negates the influence of chance in deciding military encounters. If the Russian winter had not been so harsh, the Nazis may have defeated the Soviet Union, despite Hitler's misperception of the Soviet resolve. Even if misperceptions do not lead to war they damage the faith one country has in the other and may fuel the proliferation of arms, both vertical and horizontal. "The less one side knows of the other's capabilities, plans, and intentions, the more it tends to react to possibility rather than reality."(Shearer, 1984, P. 4) This is especially dangerous in times of high tension. As I have shown, nuclear false alarms are not at all uncommon. Communications are critical

in such times. The teletype, or "Hotline" between Washington and Moscow was installed after the Cuban Crisis to provide a better means of resolving the other country's intentions in a time of conflict.

The inability to estimate accurately another country's power despite NTM, photo-reconnaissance satellites, and spy planes has resulted in worst case projections of nuclear arsenals in the past and imaginary missile and bomber gaps that only destabilized the balance-of-power by speeding the arms race. "It is important not to threaten a first strike, and not even to allow misperceptions to arise on the other side that it might be preparing for a first strike."

(Fischer, 1984, P. 83) Fear of a first strike capability by an adversary could easily induce a pre-emptive strike in a crisis. In order to decrease the misperceptions that exist over nuclear capabilities and adherence to arms treaties, on-site verification must become a reality. Despite its problems on-site verification will augment the means of verification that already exist, thereby decreasing tensions.

Verification is the attempt to make sure that, through the application of modern intelligence techniques, certain activities prohibited by a treaty are in fact not taking place. There exist three realms of on-site verification:

- 1) (OSI-1) Mildly Intrusive- U.S. black boxes (U.S. seismic monitoring stations that radio information to U.S. satellites) at Soviet missile or nuclear weapons test sites; a U.S. option to challenge inspection in the case of ambiguous events, etc.

2) (OSI-2) Very Intrusive- U.S. personnel outside or at Soviet test sites; random inspections at weapons deployment sites, etc.

3) (OSI-3) Extraordinarily Intrusive- U.S. personnel inside certain Soviet factories or at certain military sites at all times, etc. (Enders, 1983, P. 198)

I believe that verification somewhere between OSI-2 and OSI-3 should be implemented. On-site verification is not without precedent. The Antarctic Treaty opened all installations for inspection by any of the other signee countries. In addition, the Peaceful Nuclear Explosions Treaty (PNET) contains several important precedents for verification including: relatively free access to sites before, during and after explosions; use by the inspecting country of its own equipment in the country to be inspected; the promise of assistance and freedom from interference; and the establishment of a joint consultative committee to resolve verification problems and consider proposals for the joint development of standardized verification equipment. (Shearer, 1984, P. 45) Although this treaty only applies to peaceful nuclear explosions under 150 kilotons, it could serve as a model for comprehensive verification programs. In addition, the recently signed INF treaty provides the most current example of on-site verification between the Superpowers and Europe.

There are many uses for on-site verification that are not possible with NTM: For instance, biological and chemical

weapons storage facilities can be checked; individual warheads can be counted and suspected unauthorized sites and facilities can be checked; make sure medium-range SS-20s have not been converted to intercontinental use--by giving smaller or fewer warheads; SALT II limits ICBM launchers to one missile each and one cannot store other missiles on the site. (Shearer, 1984, P. 28) Although on-site verification can never catch all infractions, increasing the riskiness of cheating-- by making the infraction susceptible to international reaction-- would increase confidence in compliance while also serving to deter cheaters.

As I mentioned however, there are some obstacles in the way of accurate on-site verification. Not the least of which is the "closedness" of the Soviet society despite Glasnost and the improved, yet not entirely satisfactory, verification terms that are included in the INF treaty. In addition, the Soviets already have great access/monitoring capability of U.S. military activities through a myriad of open sources including: Defense Department annual reports, Congressional hearings and reports, the media, professional journals-- Aviation Week, public speeches, etc. (Shearer, 1984, P. 6) In other words, the Soviets do not want nor particularly need on-site verification. There are also several problems with ensuring the compliance to treaties with someone not trusted, regardless of whether or not on-site verification takes place. "No agreement requires a party to demonstrate com-

pliance; rather, what is required is the ability to refute a charge of noncompliance to the satisfaction of the side making the charge."(Carnesale, 1987, P. 304) Also, the verification of banned activities requires evidence that they are not occurring anywhere. This is difficult to ensure because deliberate violations will be concealed. Exact measurements are needed to verify small violations of political significance. In addition, on-site verification requires reciprocal measures and joint operations that involve many details. (Shearer, 1984, P. 16) Another consideration that stems from the discussion of verification is the destabilizing effect confirmed treaty violations would have on Superpower relations.

Soviet violations of arms control agreements could create new security risks... because of the military consequences of known violations, and indirectly by inducing suspicion about the existence of undetected violations that might have additional military consequences. (Carnesale, 1987, P. 303)

Despite the problems associated with on-site verification, there are ways to limit the intrusion and maximize the verifiability of arms treaties. An international inspecting body would help diminish the objections raised by having one's adversary in one's own facilities. An accurate count on weapons produced and weapons destroyed does away with the need for storage and

deployment controls, thereby limiting the degree of intrusiveness necessary to ensure compliance. Lastly, unscheduled inspections are important because scheduling restrictions and limited access defeat the purpose of the visit. However, they should be limited in their number so that they do not become obstructive.

Diminish Threats to Peace

After misperceptions are diminished, the threats to peace can be diminished as well. The most obvious threat of crossing the nuclear threshold comes from a conventional war that escalates in intensity. Other, equally dangerous, threats to peace are defensive weapons and inadequate warning time in the face of a nuclear attack.

Ideally, the best way to avoid crossing the nuclear threshold is to avoid conventional war altogether. Short of this, strong and credible conventional forces are needed to deter a conventional attack. Strong conventional forces also provide a nuclear country's leadership with an option besides nuclear retaliation or surrender. To decrease the likelihood of someone mistakenly or purposely escalating a conventional confrontation to a nuclear level, two safeguards are recommended. One, no one person, not even a country's leader, should single-handedly be able to launch nuclear missiles. This decision should require the concurrence of

several individuals. Similarly to ICBM silos, several keys should have to be simultaneously employed to start a nuclear war. If this safety measure is good enough for one missile, it should definitely be required before a country commits to a nuclear assault. Second, multiple individuals (such as field commanders) should not have the authority to cross the nuclear threshold. The decision to launch nuclear weapons must lie with the individual or individuals who have access to the most information. In other words, centralization of authority should not be delegated to those whose perceptions of reality may be incorrect.

I can see several evils deriving from the development and deployment of defensive weaponry, without perceiving many of the supposed benefits our leaders claim from them. I will discuss each of these in depth. (1) Although research on SDI will provide technological developments that may be useful in other areas, the developments may yield a new technology that is so powerful in its implications that it may disrupt the balance-of-power between the Superpowers and increase the likelihood of war. (2) In addition, defensive weapons have historically proven to be vulnerable, costly, and contributors to the arms race. (3) Also, defensive weapons are destabilizing; they do not stabilize international relations, nor do they make the country safer for having them. For these reasons, Reagan's SDI is as big a mistake today, as ABMs were in the past and its development should be

halted.

Now if every major country had its own nuclear shield there would be no problem, in fact this would be an ideal situation. Unfortunately, not everyone is going to get a shield at the same time. Therefore the as-yet unshielded countries would have to rely on the good intentions of the shielded ones. Even if this were a viable possibility, I am not sure if the current international situation would risk it.

Maxim 835 in the Pubilius Syrus of 1 B.C., said that "It is vain to look for a defense against lightning." (Mayers, 1984, P. 59) Although this statement was not made with nuclear weapons in mind, it is apropos. This does not mean however, that in military and political discussions, rationality always prevails over vanity. In fact, ever since the development of the atomic bomb, countries have sought a means to defend themselves against it. If successful, nuclear nuclear blackmail and non-deterrable first-strike capability will become political realities for the shielded country, with the corresponding reality of a desperate, pre-emptive strike becoming more likely for any unprotected adversaries.

In the past, nuclear defense systems have taken primarily four forms:

- 1) Interceptor Aircraft- Equipped with nuclear and non-nuclear missiles to intercept attacking bombers.
- 2) Surface to Air Missiles (SAMs)- Nuclear and non-nuclear missiles launched from land and surface ships

against bombers and cruise missiles.

3) Anti-Submarine Warfare Forces (ASW)- Ships, aircraft, and submarines used to detect and destroy enemy submarines.

4) Anti-Ballistic Missiles (ABMs)- To destroy incoming defensive missiles. (Mayers, 1984, P. 59)

A related, albeit non-nuclear, threat to defense is Anti-Satellite weaponry. Prototypes of ASATs were tested as early as 1959, but they did not become operational until 1964. The Air Force maintained nuclear tipped Thor missiles, stationed on Johnston Island from 1964-1970. (Carnesale, 1987, P. 139) The Soviets were unwilling to dismantle their orbiting ASAT system, even for a U.S. promise not to build a more advanced direct ascent Miniature Homing Vehicle (MV) that would be launched from aircraft. Carter wanted to ban all ASAT weapons in 1976, but the Soviets wanted to limit, not ban, these weapons. They also wanted to link the Space Shuttle in negotiations. (Carnesale, 1987, P. 145) These negotiations ultimately ended in failure. "The prospect of an enhanced Soviet ASAT was especially worrisome because of the growing U.S. military dependence on satellites." (Shearer, 1984, P. 141) ASATs were dangerous because they had the capability of disrupting communications that would ensure a retaliatory response. Thus, their existence and workability increase the likelihood of war by increasing the likelihood that a first strike would not result in mutual destruction. In addition, as all defensive weapons, ASATs contribute to

the Arms Race. "Any possibility of sanctuary from attack will probably encourage the Superpowers to place more and more threatening satellites in space." (Shearer, 1984, P. 152)

Although ASAT prohibitions failed, ABMs were successfully banned. The ABM was terribly vulnerable to a number of counter-measures that the Soviets could quite easily and cheaply prepare. For instance, saturation, multiple warheads radar black-outs, and decoys could all put an ABM in jeopardy. ABMs should have been deployed to safeguard the U.S. retaliatory response, by surrounding Minutemen silos, not U.S. cities.

The ABM Treaty saved \$711 Million in 1973 by cancelling their construction and deployment. (Shearer, 1984, P. 86) Prior to the signing of the treaty, the U.S. estimated that the Soviet Union might deploy as many as 10,000 ABM interceptor missiles. The treaty, with 1974 modifications, set the limit at 100--with only one site allowed. Later, all ABMs were eliminated, except those around Moscow that provide the Soviet equivalent of Air Force 1; they safeguard the leadership in order to ensure a retaliatory capability. More important than the monetary savings the treaty produced, was the stabilizing effect of the treaty. The elimination of this type of defensive weapon ensured that missiles that survived a first strike would reach their targets. Thus, by eliminating a defensive weapon that automatically brought about an offensive build-up, deterrence was enhanced by

ensuring assured destruction and the Superpowers found themselves safer without them.

Unfortunately, this lesson was short lived as attempts at a perfect defense via SDI became realistic enough to pursue in the 1980s. Reagan's "Star Wars" plan is perhaps the most strategically incomprehensible program ever adopted. It will most likely not work effectively, as recent tests have demonstrated, but even if it does work completely it will still be a no-win proposition with potentially catastrophic consequences.

In support of SDI Reagan said, "Would it not be better to save lives than to avenge them." (Fischer, 1984, P. 72) This is undeniably a noble goal, but it is practically flawed by the inherent limitations of SDI. Reagan wants a gradual evolution toward a defense dominated world, with nuclear weapons being rendered impotent and obsolete, but this is not possible at this time.

Former Secretary of Defense Harold Brown said, "American political and military leaders should publicly acknowledge that there is no realistic prospect for a successful population defense, certainly for many decades, and probably never." (Snow, 1987, P. 51) Physicists and weapons scientists reached the conclusion that a complete defense of the general public against Soviet missiles was not practicable. "Even had a 'leakproof umbrella' against ICBMs been a possibility, this could not defend the American population against cruise

missiles launched from submarines off its coast."(Kennedy, 1985, P. 100)

The reasons these individuals are skeptical of SDI stems from the technological challenge it presents, the cost and especially its vulnerability. It has been estimated that the computer program for SDI will require from 10 to 30 million lines. The cost may be in excess of one trillion dollars. But the primary concern is over vulnerability. SDI may be penetrated by (1) cruise missiles, (2) bomber aircraft, (3) and the clandestine introduction of warheads. (Snow, 1987, P. 50)

Let us presume however, that somehow all of these obstacles are overcome and SDI provides a complete nuclear umbrella for the United States. What are the implications for peace? Retargeting incentives of defensive systems make civilian populations vulnerable.

One side's possession of an effective defensive system makes the other side's missiles relatively less attractive targets--since they can probably be destroyed once fired, if necessary, they need not be attacked on the ground. (Wasserstrom, 1985, P. 388)

As a result, cities are targeted and the defense system can be relied upon to protect against retaliation. This increases the temptation to launch a first strike and make Dulles-like threats of Massive Retaliation. Another consideration is that the side that lacks a defense system will be forced to target virtually all of its missiles on an opponents population centers to insure enough retaliatory damage

to deter attack by its defended opponent. (Wasserstrom, 1985, P. 389) Now, Reagan has offered to share SDI technology with the Soviets after the system has been perfected. Needless to say, the Soviets are not very willing to trust that the U.S. will provide a technological hand-out. The idea that the U.S. will voluntarily relinquish a military advantage that cost them a trillion dollars to research and develop, and that effectively provides them with a first strike capability is not one that the Soviets will accept without reservation.

Indeed, Soviet fears about SDI are already apparent.

"What is clear is that the disagreement about SDI stands as a major--possibly the major--impediment to improving the political and strategic relationship between the Superpowers." (Snow, 1987, P. 82) Many of the Soviet fears are well-grounded, while others reflect worst-case scenario projections of the future that reflect the misperceptions that still exist between our two countries. That the Soviets are uncertain of our ambitions is quite evident and quite dangerous for peaceful relations. (1) They believe that SDI is part of a U.S. plan to gain strategic superiority. From a 1984 Soviet defense document comes this statement:

Washington is pursuing two objectives. The first is to create a comprehensive (total) land and space-based ABM system... The second goal is to simultaneously build up strategic offensive armaments clearly aimed at acquiring a first-strike capability. (Snow, 1987, P. 73)

Soviet public sources have claimed that SDI is intended for offensive, not defensive purposes:

Since 1981, on personal instructions of President Reagan, these matters have been repeatedly discussed... to select the most promising ways of developing effective weapons for destroying targets in outer space and targets in the atmosphere and on Earth from outer space. (Snow, 1987, P. 47)

(2) The Soviets have similar technological aspirations that they fear the United States may realize first. Secretary of State, George Schultz, said that the worst Soviet fear was that "A major American antiballistic missile system could give the United States a possible first-strike capability..."(Snow, 1987, P. 74) (3) The major promise of SDI is control of access to space. Konstantin Chernenko made the following proclamation in 1984:

If the militarization of outer space is not reliably blocked, it will erase everything that has been achieved in the area of arms limitations... and dramatically increase the danger of nuclear war. (Snow, 1987, P. 75)

(4) The Soviets don't fear SDI itself, but the other weapons its research will produce.

The keys to the success or failure of SDI are the technologies of target acquisition, tracking and pointing, and command and control. Sensors, computers, and highly engineered electro-mechanical subsystems--products of electronics and miniaturization--are the linchpins of SDI. (Snow, 1987, P. 76)

(5) SDI will stimulate the U.S. technological base and thereby accentuate the gap between the U.S. and Soviet technological bases. Gorbachev is on record as saying, "Venturing on its own arms race in space (the United States) is now hoping to outstrip us in electronics and computers."(Snow, 1987, P. 77)

The problem with evaluating the legitimacy of these concerns is that two unknowns are missing. First, if the stated intentions of the U.S. are not accurate, or if the Soviets are not conveying their true concerns, they are the only ones who know for sure. But neither can be certain of the position of the other. Second, no one knows if, or to what extent, SDI will work. The first claim suggests that the U.S. is trying to acquire a first-strike capability. This is possible, but SLBMs will not be affected by any SDI shield and the Soviets understand this. Thus, the claim may be accurate but relatively unimportant in regards to the nuclear stalemate. Clearly, the technological benefits deriving from SDI will be immense, so the second and fifth claims may be well-grounded. However, the third and four complaints are less so. The fact that the U.S. cannot currently put a ship into orbit should be evidence enough that it is not about to control access to space. Concerns over controlled access to space and space weaponry are probably more the subjects of propaganda and paranoia than fact.

Thus far, this discussion has only discussed the implications of SDI success or failure. I have attempted to show that either outcome is potentially dangerous for the maintenance of peace. It is also possible that SDI will be partially functional. A so-called Less Than Perfect (LTP) defense does not provide any rationale for deployment either. As has been demonstrated by the ABMs, "The deployment of

defensive weapons can accelerate the arms race just as much as the deployment of offensive weapons."(Freedman, 1981, P. 363) The inutility of a LTP defense system can be recognized when one considers that "The cumulative protective effect for civilians of both sides having 90 percent effective anti-missile defense systems would be much less than that provided by a 90 percent reduction of missiles on both sides (with defenses foregone)."(Wasserstrom, 1985, P. 389)

Promoting Stability

After one has diminished the threats to peace it becomes possible to build upon a relaxed atmosphere by promoting stability--both political and military. These are not distinct categories however. Whenever a major interest is threatened by nuclear weapons, a dangerous political situation is created. Any radical changes in military or political policy can produce an equally radical response. In other words, the current power structure or status-quo between nuclear powers should be maintained as closely as possible. Changes in power relationships are inevitable, but they must occur slowly to ensure a stable transitional period.

From clearer perceptions of another country's capabilities and motivations regarding a shared political or military objective comes an increased trust in the other country,

which when coupled with verification, provides the groundwork for alleviating the worst-case planning that is prevalent among both U.S. and Soviet military planners. "Preparing for the worst means having something more than parity. Both sides preparing for the worst can only fuel the arms race." (Shearer, 1984, P. 5) Now is an ideal time to promote stability because the United States and Soviet Union enjoy relative parity. Verification is crucial because it provides reassurance that neither side is attempting to gain an advantage. In addition, verification reassures the verifying country that it may trust the other country to uphold its agreements. Trust cannot initially be taken too far when the future of the world is at stake. Besides reassurance, verification procedures that allow for accurate warhead counts would remove many of the incentives to deploy highly MIRVed, destabilizing systems. "To the extent that uncertainty sparks worst-case planning, anticipatory reaction, preemption and crisis decision-making, nuclear ambiguity might lead itself more easily to dangerous escalation," (Kincade, 1982, P. 148)

A totally unnecessary, dangerous development is the reduction of warning time by deploying ballistic missiles closer to their target, on submarines or on land (e.g., in Europe). This has increased the danger of accidental nuclear war by shortening the time in which an opponent can identify a false warning as an error, or judge the scale of an attack

and respond accordingly.

Once worst-case planning becomes unnecessary the logical step toward increasing stability is to create treaties that help solidify peaceful relations and dissipate hostilities. This idea is not without historical precedent.

With the conclusion of the SALT I agreements, each side knew the range of strategic alternatives available to the other side, and for the first time could discount its worst fears about the other's future deployments. (P. 82, Carnesale)

The Limited Test Ban Treaty (LTBT) is evidence of how an arms limitation agreement can reduce tensions on both sides. Kennedy's Joint Chiefs of Staff believed that the possible political advantage resulting from a decrease in tensions outweighed any possible military disadvantages the treaty might have. (Carnesale, 1987, P. 14) An in-depth content analysis of Soviet statements six months prior to as well as after the signing of the LTBT points out that from the Soviet side a visible lessening of hostility had taken place. (Carnesale, 1987, P. 16) In addition, in absence of the treaty, technological breakthroughs might lead to a significantly destabilizing situation.

Controlling Proliferation

Although a rough parity exists between the Superpowers and a balance-of-power exists between the East and West,

horizontal nuclear proliferation can be very destabilizing in the near future if it is not controlled by the supplier states. History has shown that some proliferation is inevitable. But the rate of proliferation must be controlled so that regional balance-of-powers are not upset by the introduction of nuclear weapons. In addition, supplier countries must not aid states who are likely to employ nuclear weapons offensively instead of using them as a defensive deterrent to attack. Only in this way can a minimum deterrent capability be achieved that does not destabilize the status-quo either in its implementation or actualization. Otherwise, "Nuclear proliferation is far more likely to hurt than to help international stability. One can oppose proliferation without being either elitist or racist. One should oppose it because it is dangerous." (Harvard Group, 1983, P. 217) A past attempt at slowing the rate of proliferation through the Non-Proliferation Treaty of 1968 has been of some benefit. Even though not all potential nuclear countries signed the treaty, "The NPT has helped to build confidence and a degree of predictability in states' behavior." (Carnesale, 1987, P. 165)

The issue of proliferation is exceedingly involved for everyone: the Superpowers, current nuclear powers, potential and non-proliferators. In a (somewhat large) nutshell, the Superpowers do not want to relinquish their nuclear dominance to vertically proliferating, nuclear nations. Nor do they

want the balance-of-power to be shifted (at least not against them). The nuclear nations do not want to be subject to the nuclear threats of the Superpowers; however, they are not yet willing/able to develop into a superpower themselves. The potential proliferators who see it in their interest/capability to develop some sort of nuclear capability want to safeguard their national securities by deterrence, and they want the political clout that accompanies membership in the "nuclear family." Non-nuclear states can in fact be divided into three categories: those that regard themselves as adequately protected; those likely to find themselves increasingly isolated internationally as time passes; and those countries which may be motivated to acquire a political symbol if not an operational capability. (Wong-Fraser, 1980, P. 339) "Those in the second category (i.e. Israel, South Africa, Taiwan) are the most likely to go nuclear. They need an equalizer equalizer to offset unfavorable military situations." (Wong-Fraser, 1980, P. 340)

I will attempt to demonstrate that horizontal proliferation is not necessarily a bad thing, if it can be managed. I also believe that it is inevitable.

If the existing nuclear states proclaim and justify their acquisition and continued possession of nuclear weapons as a deterrent against any attack (conventional as well as nuclear), is it not inevitable that others should seek to emulate them? (P. 299, Wong-Fraser)

Therefore, the nuclear powers should work with the non-nuclear ones to limit the amount of nuclear arms the proliferators feel is necessary for their national security. A stable international relationship could cause the proliferating countries to accept a minimal deterrent capability, while others may find it unnecessary to proliferate at all. A cessation of the arms race is a prerequisite for alleviating the fears of potential proliferators.

If the provisions of the Baruch Plan had been adopted, the manufacture of nuclear weapons would have been prohibited; no nuclear weapons could have been nationally held; and peaceful nuclear weapons would be under International Authority. Non-nuclear countries would have had no reason for going nuclear. However, the provisions are less likely to be adopted today than when they were put forth in 1946 because of the sheer numbers of nuclear arms and the various commitments to nuclear defense that have evolved.

A double standard applies where nuclear weapons are concerned. It has been described as the Nth problem. Any country with nuclear weapons views the weapons as fully justified, however it would probably see any N+1th power as a threat to world peace. (Freedman, 1981, P. 303) Although there exists a political utility in the possession of nuclear weapons, mere possession is all that is required for this utility. A large arsenal is not necessary; indeed the costs

of such an arsenal could be devastating to the country's economy. In addition, the other world powers do not have the resources to match the Superpowers arsenals. This is should not be a problem for proliferating countries-- a minimal deterrent capability is all that is required for their defense. The ability to prevent an attack is the only moral justification for acquiring a nuclear arsenal. Additional weapons are not additionally beneficial; they are merely a financial burden.

It is necessary however, for countries to feel that they have the capability to defend their national boundaries. This ability should be encouraged, not repressed. But it must occur slowly so as to not be destabilizing. Thus, nuclear countries should not try to "buy off" another country's nuclear option. Israel and Pakistan are examples of countries that have clearly been trying hard to sell their nuclear capability for political gains. "Hawk" SAMs were sold to Israel in 1963. In 1977, 110 A-7 fighter-bombers were sold to Pakistan, and in 1979 Carter offered them F-5 jet fighters. (Kincade, 1982, P. 150) The intent of these endeavors was to dissuade these countries from feeling the need to go nuclear; however, Israel now has a nuclear arsenal and Pakistan is suspected to be developing one. In other words, the Superpowers should not make the nuclear option too attractive because incentives to proliferate may outweigh any disincentives, and when the pay-offs stop, the nuclear option

remains.

The Non-Proliferation Treaty of 1968 is significant both for what it does and does not accomplish. The treaty has six articles that are roughly analogous to the terms of the Baruch Plan.

1. The haves do not aid development of nuclear weapons for have-nots.
2. The have-nots forego such development.
3. The have-nots put peaceful nuclear facilities under international safeguards.
4. Have-nots have access to peaceful technology.
5. Have-nots have access to benefits of peaceful nuclear explosions.
6. The haves pledge to reverse the arms race.

Unfortunately, the failure of the sixth provision has cancelled out any possible benefits deriving from the first five. Understandably, the have-nots are not willing to acquiesce to these limitations on their autonomy if the Superpowers are not going to uphold their commitment. The treaty was not signed by France and China because they felt behind in nuclear testing and nuclear production. It was also not signed by many, then potential, nuclear countries including: Argentina, Brazil, India, Israel, Pakistan, South Africa, and Spain. Limited applicability aside, the treaty still has value. It serves as a symbol--setting forth the

goals of the non-proliferation process. It obligates countries that would otherwise not be bound to open their nuclear operations to International Atomic Energy (IAEA) safeguards. It reduces fears. Signed by 102 countries, committing several potential nuclear countries to not cross the nuclear firebreak, it relieves certain neighbors' fears that could lead to nuclear armament. (Kincade, 1982, P. 198)

The Germans and Japanese are interesting to discuss in terms of proliferation because each has the capability of gaining a tremendous nuclear arsenal, yet neither has showed an inclination to do so. Although they were willing, the whole of world sentiment is against the Germans having an independent nuclear arsenal, especially twice burned France and the Soviet Union. Japan, on the other hand, is relatively content to remain under the United States nuclear umbrella. However, they have recently sought their own nuclear power facilities. Their negative attitude toward a defense build-up is assuredly a by-product of their equally negative experience with nuclear weapons in World War II. However, they are accruing an additional benefit from not going nuclear. The money they are not spending on defense has allowed their economy to flourish, perhaps foregoing a military war with the U.S. for an economic one. "Although the Germans and Japanese may not have clear plans to develop nuclear weapons... their adherence to the NPT has helped solidify anti-nuclear attitudes in both coun-

tries."(Carnesale, 1987, P. 186)

The failure of the Superpowers to obey the preamble and sixth provisions of the NPT has caused the non-nuclear signees to call for a new treaty. Alva Myrdal, the Swedish disarmament negotiator who was instrumental in drafting the treaty, was moved in 1976 to observe that "The NPT is now in much disrespect and its practices in great disarray."(Kincade, 1982, P. 197) In 1980 the Second Review Conference on NPT was held. "It ended without the adoption of any substantive final declaration or even formal reaffirmation of the importance of an support for the Non-Proliferation Treaty."(Epstein, 1984, P. 51) The non-nuclear countries were already peeved by the upward spiralling arms race and the lack of a comprehensive test ban, but the U.S. decision not to resume trilateral negotiations for a comprehensive test ban in 1982 clearly demonstrated the lack of resolve on the part of the nuclear signees to uphold their obligations.

It would appear that preventing proliferation would be in the best interests of the United States; however, they consistently vote against any test ban agreements, while the Soviet Union has often favored a comprehensive test ban. One interesting theory that explains this apparent paradox is that the United States favors proliferation. Professor Robert Strausz-Hupe believed "... That because the Soviet Union distrusted its satellites and did not want them to go

nuclear, the United States might benefit if some of its allies got nuclear weapons."(Carnesale, 1987, P. 174) Indeed the Soviet example of withdrawing nuclear cooperation from China in 1959 and the attempts by the United States at a Multilateral Force (MLF) involving Germany in 1963, each lend credence to his assertion. McNamara stated that rather than resist the tide of proliferation it could be harnessed through MLF. (Freedman, 1981, P. 328)

I will now digress briefly and describe some of the reasons countries have for going nuclear, then I will describe how their proliferation can be managed. There are basically two types of proliferators: "Garrison" or "pariah" states like Israel, South Africa, Taiwan, and South Korea-- which have aggravated security problems, and "prestige" states (India, Brazil, Argentina) that are the most advanced among Third World countries. (Kincade, 1982, P. 36) As previously mentioned, garrison states have the greatest causation for proliferating. The level of indigenous nuclear development achieved in each garrison state is directly related to (1) the degree of international isolation and vulnerability; (2) the duration of the garrison situation. The longer the garrison situation exists, the more independent and sophisticated their nuclear weaponry becomes. (Kincade, 1982, P. 95) The U.S. must try to reduce garrison tensions in order prevent a nuclear "domino-effect" in their respective regions. Another reason nuclear weapons provide

an attractive option for some garrison states is that they ease the burden on defense. For instance, Israel spends a large percentage of its GNP on defense. Nuclear weapons provide "More bang for the buck," defense with fewer men, and security at a lower cost.

The spread of proliferation can best be managed by a combination of four means: (1) supplier guidelines; (2) IAEA verification; (3) sanctions against proliferators; (4) the establishment of nuclear free zones. The spread of proliferation has been slowed by the Third World's reliance on Western supplies of enriched uranium, heavy water and reprocessing plants. "India is under strong pressure from both the United States and the U.S.S.R. to accept full-scope safeguards and its nuclear programme is in the doldrums through dependence on the U.S.S.R. for heavy water and the U.S. for enriched Uranium." (Kincade, 1982, P. 39) In other words, many of the have-nots lack the technology to go nuclear. In the past however, suppliers have been more than willing to aid a would be proliferator in the name of profit. Indeed the spread of proliferation is regularly traceable to Western suppliers.

Proliferation's Spread:

India- U.S. "heavy water," Canadian research reactor.

Pakistan and South Korea- France sent sensitive nuclear facilities

Brazil- Germany sent reactors, enrichment plants, and reprocessing plants.

Argentina- Threatened by German/Brazil deal, stepped up own development of sensitive nuclear facilities.
Japan- U.S. gave permission for a reprocessing plant. (P. 179, Carnesale)

The London Suppliers Guidelines (1976), signed by 17 nations including the U.S., Britain, China, Soviet Union, Canada, France, West Germany and Italy, provide excellent restrictions for recipients. Recipients (1) cannot use nuclear equipment for weapons; (2) must accept IAEA safeguards; (3) cannot re-export to third parties unless under same terms; (4) must provide adequate safeguards against theft or sabotage. Supplier policies must be consistent, as must regulations; but, each recipient has unique circumstances that must be treated on an individual basis (with regards to its ambitions, motivations, capabilities, etc.). "Each decision affecting the development of nuclear power is made within a particular security context and with a particular set of energy policy objectives in mind. Therefore, solutions cannot be legislated across the board." (Kincade, 1982, P. 227)

The IAEA inspectors do not have unlimited access during their inspections, and IAEA safeguards are not designed or intended to search for undeclared or clandestine facilities, but they have been successful nonetheless. "The IAEA inspection system, although far from perfect, seems good enough to have deterred countries from using civil nuclear energy

programs to advance their military programs." (Carnesale, 1987, P. 187) It is a monitoring group, not a police force.

Sanctions against countries that do not follow the guidelines set forth by the suppliers, or do not accept minimal deterrence as a limit to their proliferation, may help curb their behavior. In addition, sanctions avoid frequently futile political and military attempts at buying-off a country's proliferation option. Allow proliferation, but only if guidelines and restrictions are adhered.

While sanctions cannot be absolute (since other diplomatic interests will persist), they can be used to show that proliferation is costly and to deter further steps up the proliferation staircase. (Harvard Group, 1983, P. 231)

Many nuclear yes/no questions are answered by a country's national security and the affect nuclear arms would have on regional interests. The establishment of nuclear free zones would allow entire regions to be relatively secure in their conventional defenses, and the fact that an enemy has not gone nuclear may eliminate the incentive for a country to go nuclear. In 1967, the Treaty of Tlatelolco established a no-nuclear policy for Latin America. Unfortunately, Brazil (being a potential nuclear power) did not sign. The problem with nuclear-free zones is that they are most likely to be adopted where the threat of proliferation is the least. Nuclear countries or "nuclear ambitious" countries lack

incentives to sign. As a result, regions with high technological abilities may experience a nuclear "domino effect" when the other countries try to "keep up with the Joneses." Nonetheless, "Diplomacy at the regional level deserves special effort, since that is the level where incentives and disincentives are strongest." (Harvard Group, 1983, P. 230)

Establishing and Accepting Parity

Establishing parity is the last step toward creating the peaceful climate in Superpower relations that will facilitate an arms freeze and eventual arms reductions. Right now a nuclear stalemate exists that effectively prevents either country from attacking the other. "The nuclear stalemate remains in place. It will take a truly revolutionary technological innovation or a massive exercise of human stupidity before this stalemate is seriously threatened." (Snow, 1987, P. 128) However, this does not stop the Superpowers from trying to break the stalemate. Insecurity exists in the minds of those in power, who recognize the inevitability of parity, yet refuse to accept it. Fortunately, reducing misperceptions, reducing the threats to peace, and promoting stability provide a basis for the acceptance of parity. A revised version of Reagan's START/"Build-down" program is a logical means to translate a nuclear stalemate into parity because it reduces the advan-

tages that each country possesses over the other. But the arms race must be halted first.

The arms race today is a futile waste of money and resources. Overkill is worthless, whether in terms of number of warheads--where the U.S. possesses an advantage, or in nuclear throw-weight--where the Soviets lead. For instance, the 60 Megaton bomb the Soviets tested in 1961 would not have much greater damage capability than a 5-10 Megaton bomb.

(Mayers, 1984, P. 34)

Paul Warnke, the Chief SALT II negotiator for the Carter Administration stated:

In previous eras, great powers could continue to arm and consider themselves to be stronger and more secure. As the nuclear arms race developed, both the United States and the Soviet Union recognized that this simple principle no longer necessarily applies. The more each side armed with nuclear weapons, the less secure each might become. (Mayers, 1984, P.88)

Both the United States and Soviet Union have long recognized the inevitability of parity. Nixon and Kissinger foresaw that parity would one day exist. Thus, through a policy of detente, they attempted to lessen the high level of tensions that existed between the two countries. Leonid Brezhnev in 1978 made the following statement of the Soviet position:

As for the Soviet Union, it considers that approximate equilibrium and parity are enough for defense needs. We do not

set ourselves the goal of gaining military superiority. We also know that this very concept loses its meaning with the present enormous stockpiles of nuclear weapons and systems for their delivery. (Mayers, 1984, P. 18)

Although complete parity, with diminished misperceptions, will greatly facilitate the arms negotiation/treaty-making process, the benefits deriving from approximate parity are already being felt. "The evidence suggests that negotiation of SALT II was possible because neither the U.S. nor the Soviet Union appeared to have absolute strategic superiority. Rather, a condition of asymmetrical parity existed." (Carnesale, 1987, P. 131)

The difficulty in determining parity is that the forces of the U.S. and Soviet Union are indeed asymmetrical. This is however, a technical matter and is not insurmountable. Approximate equivalency can be determined. In general, most experts agree that the U.S. leads in number of warheads; the Soviet Union in megatonnage. In addition, the U.S. leads in long-range bombers, cruise missiles, missile accuracy, and has better submarine-launched ballistic missiles and missile carrying submarines. These experts also agree that the Soviet Union leads in number of land and sea-based missiles, the lifting power (or throw-weight) of those missiles, the explosive power (megatonnage) of their nuclear weapons, as well as the number of nuclear submarines. (Mayers, 1984, P. 43)

To verify a nuclear balance, one can look to either a simple count or a strategic count of nuclear capabilities. A simple count involves a mechanical counting of the number of missiles and warheads, payloads, size of warheads, hardness of silos, etc. A strategic count involves the determination of relative nuclear missile survivability, reliability, and equivalent megatonnage. (Baugh, 1984, P. 123) Perhaps the two most popular methods of measuring strategic equity however, are lethality and equivalent megatonnage. Lethality measures a country's counter-force potential, while equivalent megatonnage acknowledges that destructive power does not grow proportionately with yield and indicated counter-city potential. (Freedman, 1981, P. 369) The difficulty in measuring a balance comes as much from unknown or unquantifiable factors (accuracy, tactics, reliability, yield, etc.), as it does from inadequate verification. Greater cooperation is needed on the part of each country to assure the other that parity does exist.

III. Proposals for the future

Whereas the first portion of this paper dealt with historical considerations, and the second with means toward a more peaceful atmosphere between the Superpowers; the last section of this paper will consist of the proposals that I feel should be adopted (and a couple that should not). A comprehensive test ban, a nuclear freeze, and arms reductions should all be adopted. On the other hand, the strategies of limited war fighting and disarmament should be abandoned once and for all.

Proposals to Abandon

Allow me to start with the latter first. Since the development of the atom bomb, there have been those who have advocated a limited war fighting capability. This attitude has been jointly shared by military leaders, strategists, and politicians. This is understandable, because if you have a nuclear capability, the natural tendency is to make it practical and useable. I have attempted to demonstrate throughout this paper my disdain for this reasoning and the destabilizing effect it has on international relations. In a Foreign Affairs article from 1982, McGeorge Bundy, George Kennan, Robert McNamara stated "No one has ever succeeded in advancing any persuasive reason to believe that any use of

nuclear weapons, even on the smallest scale, could reliably be expected to remain limited."(Kennedy, 1985, P. 28) In addition, what cannot be overlooked is the fact that there has never been a nuclear war, and nobody knows for sure what one would mean. Unilateral restraint may encourage a "low-intensity" response, if it is in the other country's interest to restrain itself (because of cost, danger, etc.). But if the other country's interests are not the same, the other country may seize the opportunity to gain a unilateral advantage. Most strategic arguments are disputes of faith rather than fact. But some outcomes of nuclear warfare are factually known. The reality of a "nuclear winter," discovered by Carl Sagan and other leading scientists, was totally unexpected only five years ago. Their research indicates that even a limited nuclear war could trigger a nuclear winter and effectively terminate mankind's existence. By destroying the ozone layer and blocking sunlight with a layer of smoke and debris, temperatures would drop to 13 below zero, photosynthesis would stop, and radiation from the sun would become deadly. (Mayers, 1984, P. 90)

Disarmament, whether unilateral or multilateral, should also be avoided because the disadvantages of this action far outweigh the advantages. The net result would be a much more dangerous world without nuclear weapons, than with them. Nuclear knowledge is irreversible. I do not believe that any country that is losing a conventional war that threatens its

very existence will hesitate to put this knowledge to use in its desperation. Although this situation always exists, disarmament eliminates the deterrent effect of MAD, which greatly increases the likelihood of a conventional war-- especially for states that have been restrained from action by the risks of nuclear war. Conventional wars once again become winnable, and the redevelopment and employment of nuclear weapons becomes the best option for a country in desperate circumstances.

In addition, the vast numbers of nuclear weapons now in existence virtually guarantee that a country will "cheat" and hide some in case of an emergency, or out of fear of the other country doing the same. Also, if the Superpowers were to give up their nuclear arsenals, a clandestine nuclear build-up, by an otherwise militarily inconsequential country, could completely upset the balance of power that currently exists. Recently, Israel has been found to possess approximately 100 nuclear explosives, including hydrogen bombs. It was not known for sure before that Israel even possessed a nuclear bomb, much less that they had one hundred. In the current world situation this fact merely upsets the balance of power in the region surrounding Israel. If disarmament had occurred, a non-disarming country could launch nuclear first strikes against the Superpowers, crippling them because of their diminished military capabilities.

As bad an idea as multilateral disarmament is for world stability, unilateral disarmament is worse. Unbalanced, that is one-sided, reductions are dangerous and can lead to pre-emptive strikes and political blackmail. "Unilateral disarmament might perhaps make our hands a little cleaner and save us some disagreeable expense; but so far from reducing the risk of war it might actually bring it nearer." (Kennedy, 1985, P. 54) Some individuals argue the inverse of "better dead than red" is true, that it is better to be red than dead. Though most would concede that the consequences of nuclear war are worse than the consequences of communist domination, unilateral disarmament presents a much greater risk of communist domination than the maintenance of deterrence presents of nuclear war. Thus, when the likelihood of the options are weighed, nuclear deterrence remains justifiable. In addition, the presence of multiple nuclear powers provides increased disincentives for unilateral disarmament because the opportunities for cheating are greater.

If only two nations have nuclear weapons, nuclear disarmament by one may provoke nuclear disarmament in the other... But if many nations possess nuclear weapons, disarmament by one can hardly be expected to provoke disarmament by all of the others. (Beitz, 1984, P. 149)

Although it has been argued that nuclear disarmament is better than the current nuclear stalemate because it costs less to maintain; the risk of non-nuclear aggression increases. It does not stay the same. Disarmament is simply

the potentially destabilizing to be adopted other direct, existing or potential nuclear weapons would prove to be equally as deadly as nuclear weapons, if the nuclear deterrent is removed. The maintenance of chemical and biological weapons strategies along with the future utilization of the laser would be as deadly as nuclear weapons, giving a country a first-strike capability without fear of retaliation. The United States has stockpiled about 90 million kilograms of nerve gas. This fact needs to be put into perspective when we consider that nerve gas causes death in quantities as low as 1 milligram (Thomas 1991, p. 20). We would need to substitute the means of exhibition for another after forty years of deterrence. The legislation to that end would be great especially for some powerful countries that were made aware before World War II and countries that begin to bring world peace but were stopped by an unfavorable military situation.

Proposals to Amend

There are three proposals that I feel should be adopted as soon as possible. (1) A comprehensive law that will give the prohibition improvements in various ways that would speed the process of peace. (2) A similar law will prevent the duplication of any weapons that would also be destabilizing. (3) If the first two proposals are adopted, then meaningful

arms reductions in the form of a revised START/"Build-down" will be possible.

The idea of a nuclear test ban is not a novel idea. It has been a separate agenda item in the United Nation's General Assembly every year since 1957. It has generally been accepted that the idea is a good one by the world community, but the United States has consistently voted against the proposal because it does not consider the test ban to be in its best interests. By contrast, the other permanent members of the U.N. (including the Soviet Union) tend to favor it. I will attempt to explain the concerns of the United States and show how they may be alleviated so that the test ban may become acceptable to all.

- (1) Proposal 17/72 (by Mexico)- The United States and United Kingdom cast the only negative votes.
- (2) Proposal 17/71 (by Australia)- The U.S. cast the only negative vote.
- (3) Proposal 17/85 (by U.S.S.R.)- The U.S., China, France and United Kingdom voted against. (P. 40, Epstein)

The United States is in violation of the intent of the LTBT preamble that they signed. The preamble states that each party will seek "To achieve the discontinuance of all test explosions of nuclear weapons for all time." (House of Representatives Committee, 1985, P. 29) In NPT '68, "It was generally accepted that the cessation of the nuclear arms race would require, among other steps, the cessation of the testing of nuclear weapons." (Epstein, 1984, P. 39) Perhaps

the INF treaty's results-- the removal of intermediate missiles from Europe--will provide the impetus for a comprehensive test ban. U.N. Ambassador Stoessel suggested in testimony, the following:

The complete cessation of nuclear weapons is entirely rational only in an environment in which our dependence on nuclear weapons is reduced by agreements which successfully achieve substantial reductions of deployed nuclear weapons.
(House of Representatives Committee, 1985, P. 96)

The danger of not agreeing to a comprehensive test ban stems from the destabilizing effects of new technology on the nuclear stalemate that currently exists. If the stalemate becomes an advantage for one side, the deterrent effect of parity may be lessened or removed entirely, depending upon the significance of the qualitative improvement. Thucydides, an Athenian military thinker, correctly reasoned long ago that the development of radically new weapons is always accompanied by a disruption of the rules that govern international society. (Halle, 1984, P. 75) During the Middle Ages chivalric rules defined legitimate behavior, but these rules were no longer applicable with the advent of missile warfare. In a like manner, nuclear weapons have replaced the rules of conventional warfare. Further qualitative improvements can only throw the international system into more disarray. The Final Document of the 1978 U.N. Special Session on Disarmament includes the following conclu-

sion:

The cessation of nuclear-weapon testing by all states... would be in the interest of mankind. It would make a significant contribution to... ending the qualitative improvement of nuclear weapons and the development of new types of such weapons and of preventing the proliferation of nuclear weapons. (Epstein, 1984, P. 42)

Clearly, the test ban is not likely to be realized in the near future because of the opposition of the United States. However, in analyzing the reasons the U.S. gives for not supporting the test ban, one realizes that their primary concerns stem from correctable fears regarding verification and parity. Moreover, the United States refuses to abandon its desire to make nuclear war acceptable/fightable, through qualitative improvements in nuclear weapons.

Since 1957, the United States has wanted on-site verification of Soviet nuclear tests; however, the Soviets maintained that national technical means were adequate. A common U.S. complaint is that it does not know who is actually ahead in the critical area of tactical weapons that the U.S. is supposed to hold an advantage. National technical means are incapable of complete observations of nuclear tests under 5000 tons, below 1000 tons NTM is ineffective. (House of Representatives Committee, 1985. P. 336) This is justifiable complaint because most tactical weapons fall within this yield range. Alone, this may have

been sufficient reason for the U.S. to not support a nuclear test ban, in that they had no accurate means of verification. However, in 1962-63, The U.S.S.R. acquiesced to three on-site inspections a year, but the U.S. demanded seven and no accord was reached. "In refusing to accept the other side's proposal, or to reach a compromise, reflected a greater desire to continue testing than to reach an agreement to stop testing." (Epstein, 1984, P. 40)

There may be another reason why the U.S. is loath to end the arms race--ideologically it makes the United States look good to the world. The United States is effectively keeping the Soviet Union an economically Third World nation by forcing them to expend a much higher percentage of their G.N.P. on defense than the United States. By accelerating the arms race, knowing the Soviet Union is committed to respond in kind, the U.S. perpetuates an economic advantage that translates directly into world influence. Whereas the United States typically gives aid in the form of money and food to other countries, the Soviet Union only has the resources to influence countries with cheap, military weapons. As a result, much of our aid comes from farm surplus, while the Soviet aid takes the place of domestic consumer goods.

The United States is trying to make nuclear war fightable by technologically improving nuclear weapons through nuclear testing. Scientists believe that the atomic bomb is not the ultimate weapon. In the last fifteen years

the atomic bomb has undergone a number of improvements: explosiveness has been increased a thousandfold; weight has been reduced; costs have decreased; and radioactivity has been diminished. The defense department gives the following justification for continued testing:

A reduction of the weight of the explosive would reduce the weight of the rocket which has to carry the explosive. By relatively inexpensive research and by nuclear experimentation which is called testing, we can establish reliable defenses and incidentally save a national effort which is represented by a figure of perhaps \$10 Billion. (House of Representatives Committee, 1985, P. 334)

In addition, new tactical weapons do not produce excessive radioactive contamination. "Further research would make it possible to reduce this contamination to an insignificant level." (House of Representatives Committee, 1984, P. 337)

My response to these improvements is twofold. First, they are not necessary. Second, reducing the risks and costs of nuclear war can only increase the likelihood that such a war will be take place. When two hundred bombs can destroy 40 percent of the Soviet population and we possess over 5000, the bombs do not need to be any stronger. In addition, our defenses are already reliable. In the future, when the materials in the warheads begin to deteriorate physically, I propose that the test ban should allow for periodic testing of random samples of existing weapons to ascertain that they still work. Replacements can come from brand new versions of

the existing models. Thus, much of the research and development costs can be eliminated, while parity is maintained. Reduced radiation is not a humanitarian development; it merely allows aggressor troops to occupy another's territory soon after a nuclear exchange.

Just as I would make an exception in a nuclear test ban for the testing of aging, deployed missiles, I believe that the peaceful use of nuclear weapons should also be excepted. "Project Plowshare" is the name of a program for the future that will utilize the new low-radiation nuclear weapons to dig canals, move mountains of dirt, create mine pits, etc. However, these tests should be put under international authority, with all countries having access to the information resulting from any developments. Also, all countries should have inspection privileges for any "plowshare" project.

Although stopping the development of new nuclear weapons and qualitative improvements on existing ones is necessary before arms reductions can take place, equally important is a "nuclear freeze" that would prevent additional weapons or improved weapons from ever being deployed. It only seems reasonable that the arms race must first come to a stop before it can be reversed. A nuclear freeze would prevent the introduction of some destabilizing new weapons systems. For example, ground-based cruise missiles are almost impossible to verify once they have been deployed. They are

only eighteen-by-two feet in size. They have already been developed; therefore, the only way to ensure that they are not used to upset the balance-of-power is provide that they are not be deployed. Obviously, trust with on-site verification would go a long way toward helping the passage of a nuclear freeze. Regardless, it is supported by the vast majority of Americans. A New York Times (May 30, 1982) poll found that 72 percent of the American public favored a nuclear freeze. In fact, a mutual and verifiable freeze was passed by the House of Representatives in 1983, but it did not pass in the Senate.

Those opposed to the freeze argue that it would serve to perpetuate the instabilities of today's forces. I believe that the stabilizing measures I have already described will eliminate this concern. It is more likely that modernization without a freeze will result in new generations of weapons even more dangerous than those already deployed. It is just as likely that any current instabilities would increase as decrease with new deployments. The importance of the arms race to the military and those in military-related industries cannot be underestimated. Johan Galtung once said, with slight irony, that "The military establishments of the United States and the Soviet Union are each other's best friends--neither can exist without the other." (Fischer, 1984, P. 65) There are primarily five reasons for the perpetuation of the arms race that need to be recognized in order to be overcome.

The first, is more applicable to the U.S. than the Soviet Union.

- (1) Internal arms race- between the branches of the service (Army, Navy, etc.) are jealous of one another.
- (2) Curiosity of Scientists- to develop new and more sophisticated weaponry.
- (3) Suppress domestic opposition movements
- (4) External threat to peace or perceived external threat
- (5) Profitability- of weapons sales to government (better than to private business). (Fischer, 1984, P. 13)

Arms reductions is a goal onto itself because of the tremendous amount of money that is spent each year on defense. "In the same world that spends about \$1 million a minute on weapons, 800 million people (about one fifth of the world's population) live in desperate poverty." (Turner, 1983, P. 1)

Economic dislocations will occur, but the decline in productivity that will accompany a gradual reduction in nuclear arms (not conventional forces) will be justified when one considers the possible benefits of nuclear arms reductions.

The money required to provide adequate food, water, education, health and housing for everyone in the world has been estimated at \$21 Billion a year. It is a huge sum of money... about as much as the world spends on arms every two weeks. (Turner, 1983, P. 9)

In addition to the monetary savings deriving from nuclear arms reductions, are the societal benefits that will occur when the focus of science turns from destruction to production. "At least one scientist and engineer in every four is employed in devising and testing new weapons systems." (Turner, 1983, P. 1)

I believe that a revised version of Reagan's 1983 START/ "Build-down" program would meet the following criteria for arms reductions proposals and should be adopted in the future.

Checklist For Arms Control Proposals:

1. Deterrence stability
2. Arms race stability- maintain predictability.
3. Crisis stability- maintain/lower incentives for nuclear use.
4. Negotiability- agreement possible in a reasonable time.
5. Verification- can adequate verification procedures be devised? (Harvard Group, 1983, P. 204)

The version of START that was introduced to Congress involves both the reduction of existing missiles and a concurrent build-down mechanism that, in the future, will retire more weapons than it replaces. Eventually, the build-down is to reach a level of roughly one-half the 1984 totals for either the Frye or Kent destructive capacity measure--a level suggested by many Congressional supporters. (Congressional Budget Office, 1984, P. 68) Specifically, the Congressional Bureau Office (CBO) has the following assump-

continue while allowing modernization. "These early retirements would save the United States a total of about \$20 billion in operating and support costs through the end of the century" (Congressional Budget Office, 1984, P. 41). START would also reduce the vulnerability of retaliatory nuclear weapons. More modern systems are more survivable when deployed. Because there are less weapons to be replaced they must be made more survivable. Consequently, fixed hard-target warheads are to be decreased less than other warheads (Congressional Budget Office, 1984, P. 9). As a result, the nuclear balance is stabilized and the incentive to launch a first strike is diminished.

Whereas members of Congress are aspiring to a one-half reduction in the respective destructive capabilities of the U.S. and Soviet Union, I believe that the reductions should eventually go further. "Still lower levels of destructive capability than would result from START/"Build-down" could be achieved in the mid-1990s by implementing some form of double build-down." (Congressional Budget Office, 1984, P. 68) However, one must not destabilize the nuclear balance by proceeding too quickly. Edward Teller, speaking on arms control, voiced this concern by saying, "I think we might repeat the tragic mistake of the 1930s where war was not a consequence of an arms race, but the consequence of a race in disarmament." (Carnegie, 1987, P. 15)

The Future

The reduction of offensive arms is compatible with both the proposals of Reagan and Gorbachev for the future, but for different reasons. In fact, they each foresee one-half reductions in offensive weapons by 1995. In addition, both Reagan and Gorbachev envision that nuclear weapons will be abolished by the year 2015. (Snow, 1987, P. 70) However unwise this goal is in terms of stability, it will never occur because of the incompatibility that exists in the area of defensive weaponry. Whereas Reagan envisions that nuclear disarmament will be possible because of the perfection of the SDI, the Soviets are adamant in their position against "space-strike" weaponry. They see SDI as an offensive weapon. Gorbachev not only wants complete nuclear disarmament, he wants a ban on space-strike weapons as well. (Snow, 1987, P. 71)

Minimum Deterrent For Other Countries

For potential nuclear powers and the current nuclear countries (excepting the Superpowers), I advocate the adoption of a minimum deterrent capability. It may not be fair to restrict other countries' vertical proliferation, but these countries must not be allowed to upset the balance of power by expanding their arsenals beyond a defensive

deterrent. Right now, there exists two poles of power, if a third country were to develop a large arsenal it could "gang-up" with an ally and upset the nuclear stalemate-- taking away a Superpower's MAD retaliatory capability. Thereby, taking away that country's deterrent. This may not be as hard for the other nuclear powers to accept as it first seems. It is clearly in their best economic interests not to try to compete with the arsenals of the Superpowers. In addition, it is not necessary to protect their national security. "A country... whose only aim is to deter a nuclear attack, does not need a large and highly accurate missile force. A small but survivable arsenal can provide more than adequate deterrence."(Fischer, 1984, P. 91) Similarly, the concept of proportionality supports the same conclusion. George Bundy said, "The losses that would be sustained in receiving an attack of 100 megatons far outweigh any 'gains' in delivering ten times as much to an enemy."(Fischer, 1984, P. 91)

Before the Soviets had reached a MAD capability in the late 1950s, they basically relied on a minimum deterrent arsenal to prevent an attack by the United States. Even though the Soviets aspired to equity in nuclear arms, the U.S. could gain neither significant political nor military advantage from their first-strike capability because the Soviet's (then meager) nuclear arsenal yet provided too much of a deterrent. Some advocates of a "massive overkill"

capability (i.e. the status-quo) argue that "If each side had only a minimum deterrent... then a technological breakthrough in ABM, ASW, or some other vital area could transform that minimum deterrent into no deterrent at all." (Ehrlich, 1985, P. 94) I believe that in the current international system this would be a valid objection; however, the comprehensive test ban, nuclear freeze and intrusive on-site verifications that I recommend be enacted before a minimum deterrent position is widely adopted greatly lessen the likelihood of such an occurrence. Moreover, if a technological breakthrough were to occur, it is by no means assured that a country would be able to find the moral justification to kill millions without extreme provocation. In addition, any would be provocateur would likely back-down if faced with unacceptable losses, even if victory were likely.

From our discussion of proliferation it is clear that many more countries will eventually develop the technology and motivation to create their own independent nuclear arsenals. However, they need not enter the arms race to ensure their own safety and have a say in international politics. Minimum deterrence capability, limited by international accord and subject to extensive international verification, should be encouraged by supplier nations. But violations should subject a country to harsh international sanctions. Fortunately, most countries that want nuclear weapons for peaceful defense will accept minimum deterrence as a

cost-effective, politically enhancing, way to safeguard their nations' security.

The British and French governments have, by virtue of the size of their independent nuclear forces, given their seals of approval to the concept of minimum deterrence. However, that position, while credible for 'supporting players' in a potential nuclear conflict is not supportable for the superpowers. (Ehrlich, 1985, P. 94)

Mini-MAD For the Superpowers

So far, I have advocated deterrence, in the form of Mutually Assured Destruction (MAD), as a means toward peace for the Superpowers. But I also support significant arms reductions. This seeming paradox can be reconciled by my proposal for the Superpowers' future. I have referred to it as Mini-MAD. This pseudo-acronym stands for Minimum Mutually Assured Destruction. The basic conclusion of deterrence theory is that once one has an assured retaliatory capability that ensures the virtual destruction of the aggressor, the costs to the aggressor of attacking would be greater than any advantage that could be accrued from fighting. Thus, MAD provides a means toward peace. In addition, our discussion of the utility of nuclear weapons has demonstrated that a nuclear advantage provides no real political or military advantages when a nuclear stalemate exists, and the Superpow-

ers' present commitment to the arms race practically assures that a first-strike capability will not be reached again in the future (and should not be attempted because of its destabilizing effect). Therefore, all weapons above a Mini-MAD level are superfluous and should be eliminated. Khrushchev could have been speaking about Mini-MAD's utility when he said, "The reason why states maintain armies is precisely to have power that can withstand a possible enemy and either restrain him from attacking or repulse him if he tries to attack." (Freedman, 1981, P. 263) Clearly, what constitutes a Mini-MAD capability would be the subject of great debate; nonetheless, it provides a theoretical basis for discussion.

In summary, holding each other hostage--through the terror of nuclear deterrence--is not a great moral answer to the quest for a peaceful world; nevertheless it is strategically the best answer right now. In addition, "The longer it remains effective, the more custom forms and hardens, until at last norms of behavior have become established that exclude the resort to violence." (Halle, 1984, P. 112)

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