Shall America Be Defended?

SALT II AND BEYOND

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Introduction

On the face of it, the question "Shall America be defended?" appears to be totally rhetorical. The answer one would expect is an unequivocal "Yes, of course." Common sense can discover no reason why the free inhabitants of any country should do other than put up the best defense they can for their lives and homes against armed attack from abroad. Research of times before our own yields no example of polities who have ever believed that political independence could be maintained without military defense, or that there was a reasonable alternative to defense short of simple surrender. History records countless polities where life was far less pleasant than in America, and which were confronted by enemies relatively more powerful, who defended themselves fiercely and well. Certainly, if the question "Shall America be defended?" were to be put to every American, all but a handful would react with incredulity. The question would be treated as more than a little strange. Of course, many Americans in recent years have expressed unkind opinions of their country, and have pointed to its real or imagined insufficiencies. Yet, one may fairly suppose that all but a few of these critics would answer with the bulk of their fellow citizens—of course America ought to be defended. Who ever thought otherwise? Besides, why have we been paying billions of dollars for soldiers and weapons except to "provide

for the common defense"? The only argument, the questioner would be told, is how to make plans and purchases so that, in case of war, the American people could enjoy the best protection that money can buy.

Yet in governmental and official circles, questions regarding the "common defense" of the United States have not been addressed by common sense for a generation. After the end of the second world war influential academics, journalists, politicians, "policy analysts" and even some military men came to believe that any future war involving nuclear weapons would result inexorably in the end of life on this planet. In the nuclear age, war—especially its defensive aspects—made no sense.

"We will all go together when we go." Thus the lyrics of the humorist Tom Lehrer express a feeling that, by the 1960s, had acquired the status of conventional wisdom no polite person would dare challenge. America could not be protected, no matter how one tried. In America, discussion of war lost all connection to reality. If "the balloon goes up," so convention has dictated, the nuclear powers would quickly disgorge their nuclear arsenals upon the world, destroying it so thoroughly that the very pilots of bombers destroying the enemy's country could not hope to come home to anything but piles of radioactive rubble. Once "the war" started, everything would be over, finished forever, for everyone alike. If "the war" ever started, Americans, no more or less than the rest of mankind, would have lost it already. Nuclear war is supposed to be so total as to produce only total losers. A generation of American leaders has not considered the possibility that either the United States or the Soviet Union could actually *use* nuclear weapons against the other to defend itself or any of its interests. Nuclear weapons are supposed to be useful precisely because they are so terrible that no one would ever actually use them. For a generation, American leaders have deemed the threat of nuclear weapons so efficacious as to practically eliminate the possibility of war between the U.S. and the Soviet Union. According to the wisdom prevailing among American leaders, major war would be banished from the world so long as both the United States and the Soviet Union were able to destroy one another and, conversely, neither could protect itself. All of this was summed up by President Carter in his address on the State of the Union January 18, 1979. Only one American missile-firing submarine, he said, could destroy every large and medium-sized city in the

USSR. According to President Carter and to eminent men of his persuasion, the safety of the world and of the United States is the direct result of its complete defenselessness.

This kind of thinking, though far from widespread, has shaped our armed forces. As a consequence they have neither the weapons nor the plans to actually protect the United States in case a nuclear war with the Soviet Union should prove unavoidable. Indeed, one of the chief tenets of this approach is the belief that if either the United States or the Soviet Union builds any weapons or makes any plans meant to reduce damage to itself in case of war, those very weapons or plans will increase the level of international tension, make war more likely and thus defeat their own purpose in a massive way. Therefore for years official U.S. government circles have answered the question "Shall America be defended?" with a clear (if none too loud) "NO." Going against the grain of common sense, they have judged that nothing would so endanger America as an attempt to defend it against Soviet nuclear weapons.

In official circles at least, the question "Shall America be defended?" seemed to be closed. Those who disapprove of this approach to nuclear weapons have been largely banished from official circles over the years beginning about 1965. In 1960 Herman Kahn, in the first edition of *On Thermonuclear War,* wrote that the American people had been largely oblivious to the formulation of the nation's nuclear strategy. Everyone had heard of "the bomb," but few had paid attention to the debates among the "experts" on how it ought to be used. During the 1960s the debate on nuclear weapons became well nigh impossible to follow because a whole class of academic and governmental analysis fenced itself in with impenetrable jargon. During 1969–70 the debate almost broke out of its professional confines while the Senate deliberated on whether to build missiles capable of shooting down—and therefore of defending against—incoming missiles. For the first time since the mid-1950s, more than a handful of Congressmen and journalists were discussing whether and under what conditions it would be possible to actually frustrate an enemy attack on the United States. But debates require at least two sides. The military proponents of antimissile missiles had the misfortune of being led by President Richard Nixon and his adviser Henry Kissinger. During the 1960s the latter had joined the professional consensus that safety lies not in defense but in doing as much harm unto

others as they can do unto us. Since in 1970 everyone agreed that, at least until the next election, the United States could go eye for eye and tooth for tooth with the Soviets in terms of *offensive* nuclear weaponry, the debate fizzled.

Since about 1974, however, the debate has become livelier and more widespread than ever. The fundamental reason is that, undeniably, the United States can no longer inflict as much harm on the Soviet Union as the Soviet Union can inflict on the United States. Indeed, no one denies that the Soviets have built missiles that, once deployed in sufficient number, will be able to destroy a goodly chunk of the American force, and thus will be able to limit sharply what we would be able to do to the Soviets in retaliation. In January 1979 the growing recognition of this fact led Henry Kissinger to the unprecedented (for him) act of admitting publicly that he had been wrong.

The debate itself is not over what each Soviet or American weapon can do—there is widespread agreement on that. No one disputes the proper use of any given nuclear weapon. Each side would simply employ any given weapon in a way calculated to keep itself as little damaged as possible, while damaging the other's military forces as much as possible. By analogy, a man confronted by an armed assailant and his unarmed wife would not try to deter the assailant by aiming his own weapon at the wife, about whose relationship with the assailant he was unsure. Rather one would aim at the man holding the gun, while putting on a flak jacket and calling for an ambulance to stand by. It would seem, then, that there should not be much debate at all on the most reasonable way for either side to use its weapons in war. The debate in fact is over whether what is rational regarding the use of any *single weapon* is rational regarding the use of large *nuclear forces.*

Up to the mid 1960s there was a fairly lively debate within the executive branch of government and within the U.S. military establishment over questions of nuclear strategy. Up to the mid-1960s the question of balancing offense and defense was still open; as was the question of whether offensive forces existed to limit damage to the United States in case of war, or merely to heap destruction on the cities and peoples of the Soviet Union. This debate was debilitated and finally stifled by a combination of factors: first, the McNamara approach to defense matters, which replaced the military emphasis on strat-

egy with the businessman's emphasis on immediate return for the dollar (offense alone is of course cheaper than offense *and* defense); the fixation within the U.S. Air Force on the "ultimateness" of strategic bombardment; and the complacency of intelligence toward Soviet capabilities and intentions stemming from a long period of U.S. strategic superiority.

By the early 1970s the clearest voices to be heard speaking out against the prevailing complacency and voicing alarm at the shift in strategic power to the Soviets came from outside official circles. Some resistance was displayed by men still in government. James Schlesinger (who lost his job in large part thereby), Fred Ikle (who warned of the potential of Soviet strategic weaponry others chose to ignore as "nonstrategic"), Leo Cherne and his colleagues on the President's Foreign Intelligence Advisory Board, and a vocal minority of U.S. intelligence officers tried to point out the ominous shifts of military power in favor of the USSR and the glaring inadequacies of U.S. military doctrines. However, the focus of opposition was outside government, voiced by prestigious academics such as Albert Wohlstetter, formerly of the University of Chicago, Richard Pipes of Harvard, Eugene Rostow of Yale, and William Van Cleave of the University of Southern California.

These men and others, joined by outspoken retired military men increasingly demanded that common sense be applied to military matters. They have argued and still argue that our present strategy of deterring attack by threatening reprisals involves an unreasonable use of our weapons—so unreasonable, in fact, as to be unbelievable. They claim that while the Soviets are arming and planning in ways that will enable them to fight and win a nuclear war, we are doing things that are playing right into the Soviets' hands.

To put it briefly, then, the "officials" say that America cannot and should not be defended, and that America can rely for its safety on the fact that nuclear war is too horrible to happen. Many "outsiders," whose knowledge is not inferior but who are not in positions of power, argue that America can and should be defended. Moreover they argue that if the United States is not prepared to fight, survive and win a nuclear war, it will not be able to frighten the Soviet Union out of starting one. They go on to claim that any country that believes it will not be able to prevent itself from being wiped off the face of the earth will

not be able to resist threats of nuclear war and will be bullied into submission.

There is more than a little irony in the way both sides are discussing the question. The "officials" tend to deal in cataclysmic words. Because they see nuclear weapons as "absolute" weapons, their plans for nuclear war at least on the surface are simple: annihilate the other side while America is being annihilated. Yet they couple talk of disaster with expectations such as "a world free of the specter of nuclear war," and "a new stable world order based on mutual deterrence." In other words, the people in charge of the nation's defense deal in an intellectual currency which is simple, full of absolute fears and laced with very optimistic expectations. The "outsiders" are basing their case on the specific effects of nuclear weapons, and on the reasonable—if admittedly awesome—uses to which they can be put. They point out that even if every nuclear weapon in the world's arsenals were to be exploded, humanity would not end. But, above all, they point out that it makes an enormous difference how nuclear weapons are used. They realize the Soviet arsenal will soon be capable of carrying out the Soviet leadership's longstanding contingency plans: destroy much of the American nuclear force with only a small portion of the Soviet force, then deter the Americans from using what forces they have left. The "outsiders" worry about concrete threats. They make no promises, but instead point out that it makes an enormous difference to a country if a war results in ten million or one hundred million dead, in the preservation or the destruction of its institutions and governments.

At this point the reader may be tempted to believe that the "officials' " position has been presented unfairly here. Reasonable men can hardly help but be drawn to the positions ascribed here to the "outsiders." How *could* responsible officials neglect them? Are they straw men? They are not.

The reader should be aware that the phenomenon of highly educated, well-intentioned professionals who fail to see facts as plain as the nose on their face is anything but new. From time-out-of-mind people have noticed that professionals trained to see their subject—from economics to agronomy and medicine—according to strict academic discipline forget what they had known of the subject before, and become incapable of learning anything new about it except in the terms they have been taught. Thus are professionals often undone by new devel-

opments which they have been rendered incapable of understanding.

There is even a name for this phenomenon: "Educated Incapacity." The term was first adapted by Herman Kahn from an earlier formulation by Thorsten Veblen. Kahn has described the symptoms of the condition, not the causes. These lie in the fact that since Descartes science has made excessive use of artificial definitions. But they are far beyond our scope here. Suffice it to say, along with Kahn, that very bright people engaged in the task of differentiating between shades of gray can easily make themselves unable to distinguish between black and white. The list of examples of educated incapacity could be lengthened at will. But let us be satisfied with a few examples of official judgments of the U.S. Government, which have been shown wrong.

> "Minimum wage laws improve the lot of the lowest paid workers."
> "In Vietnam, military victory is impossible for either side."
> "Racial integration of schools improves the performance of minority pupils."

But surely the most significant example of educated incapacity is the American Establishment's treatment of nuclear weapons. This is why the extension of the debate over them, which began in 1974 and which promises to widen even further, is so significant. How this is so may be gauged by an incident that occurred after a lengthy speech by Paul Warnke, former director of the U.S. Arms Control and Disarmament Agency, before an audience of civic leaders in a major city. After Mr. Warnke had explained why Americans ought not to be concerned about the character of the Soviet strategic forces and their growing superiority because of the absolute character of nuclear weapons, an unknown voice commented that he hoped Soviet party leader Brezhnev was as sophisticated as Mr. Warnke "or else he'll kick the sh-- out of us." Judging from the audience's reaction, educated incapacity is not a very infectious disease.

The immediate cause of the debate's spread is the U.S. Senate's consideration of the second strategic arms limitation treaty between the U.S. and the Soviet Union, popularly

known as SALT II. Long before the Carter Administration had signed the treaty, the Senate had turned its attention to it informally but seriously. There are several differences between the debate over strategic arms brought on by the SALT II treaty and previous editions of the debate. Above all, the SALT debate is over how to deal with a specific, clearly visible Soviet capability to defeat the United States, whereas in previous years the debate had dealt with rather uncertain threats to our military superiority that lay several elections away. Just as important, those who are taking part in the debate of 1979 recognize for the most part that the decisions at stake are irrevocable. If, on the threshhold of the 1980s and in the face of changing technology, the United States were to hold fast to the orthodoxy of the 1960s—that safety lies in vulnerability—it could not hope to reverse its decision a few years hence. The Soviet Union would have amassed enough power to prevent it. The United States' future would depend exclusively on the validity of the strategic doctrine of the 1960s. On the other hand, were the United States to reject the doctrine of safety-through-vulnerability, it would have to scrap some old weapons, building new and expensive ones. Once that were done and the American people had the feeling of being protected, a return to the old doctrine would be impossible, politically as well as materially. This is the fundamental choice at stake in the debate surrounding SALT. The treaties and agreements which have come out of the SALT negotiations are important only insofar as they bear on this choice.

Therefore, this book is not simply about SALT. It is a summary of the vast field of facts and arguments surrounding the central question "Shall America be defended?" The final chapters do lay out the details of the SALT I and SALT II treaties, as well as the controversies surrounding those details. This author's opinion is that the details of these treaties spell serious trouble for the United States and make the defense of the American people much more difficult than it need be. Yet in this author's view, the *details* of the SALT agreements do not harm American defense irreparably. If a wise American President, backed by an equally wise and willing Congress, were disposed to use every possible opportunity allowed by the SALT agreements to defend the United States, an effective defense *might* well be built within the constraints of these agreements. But this author is certain that the significance of SALT lies not

so much in the details of treaties as in the *spirit* with which American officials have approached both our nuclear weapons programs and the negotiations to limit them. That spirit is the doctrine that safety for both the U.S. and USSR lies in the absolute vulnerability of each to the other's weapons. As long as American officials entertain this doctrine they *will not want* to take advantage of the opportunities for defense afforded by technology or by treaties. The SALT II treaty, for example, would allow the U.S. to build and deploy 820 MX missiles, even on a crash basis. However, there are no plans to build more than 200 MX's, while the biggest concern is not how quickly they may be built but how they will affect the environment of the desert where they will be installed. It is therefore almost useless to argue about what this or that provision of a treaty allows the U.S. to do, so long as American officials are bound by a doctrine which tells them not to do anything which would limit damage to the United States. This doctrine, if adhered to into the 1980s, would harm the United States irreparably. This book, then, is primarily about the *spirit* in which American officials have approached nuclear weapons and SALT.

This book is intended to show the reader how the invention of nuclear weapons affected the military strategy of the United States, and how the United States came to adopt the above mentioned peculiar doctrine regarding their use. It also describes how the Soviet Union came to regard nuclear weapons, and outlines the strategy and the forces it has developed for winning wars in the nuclear age. The book then explains the basic facts of life and death concerning nuclear weapons. They are tools with limited, though awesome, effects. It will become clear that different weapons are suited to vastly different purposes. This book means to lay to rest the widespread notion that no defense is possible against nuclear weapons. Unfortunately, and most ironically, the chief examples of efforts to protect civilization from nuclear war must be taken from the plans and practices of the Soviet Union. Only then will the reader be asked to look at the history of our negotiations with the Soviet Union on limiting strategic arms. That history is not so much one of Soviet duplicity as it is one of American self-deception. Throughout the late 1960s and 1970s the U.S. enjoyed a false sense of security. The Soviets certainly tried to foster it. But they were not its main authors. Deception seldom succeeds if the party that is deceived does not cooperate. American officials

so entangled their own thoughts in the SALT process that they have, in effect, told the Congress and the people that America need not worry about Soviet violations of agreements and understandings so long as these do not result in massive disadvantages for the United States, and, on the other hand, that America has no right to worry about Soviet moves which result in massive disadvantages for the United States as long as these moves do not violate any agreements or understandings. The reader, equipped with the basic facts, and keeping a normal quotient of common sense, should be able to understand the SALT process better than most of our American SALT negotiators.

Essentially, this book argues that defense of the United States in the nuclear age is both possible and desirable. It is possible because technology has given our superior economy the wherewithal to do it. It is desirable because unless we can plan to come out of any war less damaged than the Soviet Union, we will not be able to escape such a war—except by surrender. Consider: If, given the state of our armed forces, the Soviets would be better off by carrying out a surprise attack, why should they not do it, or at least threaten to do it? If the United States becomes liable to such an attack or such a threat, which nations of the world would stand with the U.S.? If the U.S. cannot keep itself from harm in war while the USSR can, how can the U.S. expect to keep even Europe and Japan as allies? Above all, it is desirable to defend the United States of America because it is perhaps the most decent polity and society the world has ever known. In a world where decency is becoming scarcer by the day, America becomes ever more precious.

The question of whether America shall be defended lies at the heart of the SALT II debate. Fundamentally the issue is this: Can the United States continue to stake its security on arms control agreements with the USSR under the risky assumption that the Soviets share the view that nuclear weapons are too destructive to be used in actual warfare? The essence of the issue is distilled in the titles of two films put out by organizations who take opposite sides in the debate over SALT. The American Security Council produced an educational film titled "The Price of Peace and Freedom." The disarmament lobby represented by the Coalition for a New Foreign and Military Policy put out a counter film titled, "There Is No Defense."

The first film points out the tremendous Soviet efforts to achieve global military superiority and decries the deliberate dismantling of U.S. defenses; the second dwells on real and imagined terrors of nuclear war and declares all defense to be vain.

Despite sophisticated arguments which attempt to blend both pleas for stronger U.S. defense *and* the notion that nuclear war is unthinkable and unwinnable, SALT II if ratified will be the result of the political pressure from those who would abandon the proposition that America can or should be defended. It would signal another seven years of military decline for the United States. If SALT is *not* ratified it would probably be the result of growing public awareness, reflected in the Senate, that America faces an ominous and growing military threat from the Soviet Union which can be and must be met with American strength, not fragile agreements. Nonratification of SALT II should only be based on the belated realization that the Soviets believe nuclear war to be both thinkable and winnable, and have backed their conviction with an unprecedented buildup of forces, offensive and defensive.

One need not quote the opponents of SALT II to find the proof that a good defensive posture can drastically reduce the destructive effects of nuclear war and that these effects are nurtured by the doctrinaire insistence that "there is no defense." A CIA study, of July 1978, "Soviet Civil Defense" reveals the stark reality. If the Soviets attack the United States after putting their civil defense system into operation, U.S. retaliatory strikes would produce some 10 to 20 million Soviet fatalities. Meanwhile, as the U.S. Government concedes, the undefended American population would suffer 140–160 million fatalities. This awesome imbalance in results of a nuclear exchange, verified by the Carter Administration itself, derives precisely from the Soviets' long-standing rejection of the doctrine that nuclear war is unthinkable and unwinnable. They are well along the road to creating a military reality in which a nuclear war, World War III, would do less damage to the Soviet Union than the conventional World War II.

Typical of the tenacity with which self-deceit persists in officialdom, however, is the CIA summation of its estimate: *"We do not believe that the Soviets' present civil defenses would embolden them deliberately to expose the USSR to a higher risk of nuclear attack."* Closely examined, this summation is rather

meaningless. It cleverly dodges the real question: Would the imbalance of results of nuclear war embolden the Soviets to face the US down in a series of crises far more important than the Berlin Crisis or the Cuban Missile Crisis? Of course, it would! This summation is another example of policy consideration destroying the value of intelligence. After citing the alarming facts gleaned from photographic and other evidence which shows clearly the Soviet determination to win a nuclear war, the CIA (no doubt in part because of the necessity to coordinate the results with the State Department and the Arms Control and Disarmament Agency) adds this final judgment *based on speculation only* that says, "but don't worry about it."

As might be expected, the one sentence of the summation quoted above has been cited incessantly by the Administration and the arms-control lobby. The only other position of the CIA study that has been given wide publicity is a figure of 113 million Soviet fatalities. Gene R. Laroque's Center for Defense Information, fountainhead for *anti*-defense information, insists in its February 1979 issue of the *Defense Monitor* on this figure as representing Soviet fatalities in nuclear war. The figure derives from a scenario in which the United States President decides one day, in the absence of a crisis, to launch the entire U.S. nuclear force against the USSR—not striking military targets, but in a deliberate attempt to slaughter the maximum number of Russian civilians. This attack would indeed kill 113 million people in the USSR. Of course, since such an attack would leave Soviet forces intact, 140 to 160 million Americans would perish shortly thereafter. That the pro-SALT lobby would base their case on the results of this incredible and obscene scenario is a measure of the intellectual and moral bankruptcy of their position.

This book is an attempt to describe the realities of military situations, the doctrines that have led us into serious military vulnerability, and their relationship to the SALT II debate.

1.

The Dawn of the Nuclear Age

The American Tradition and the U.S. Military

It is not difficult to understand why Americans have treated nuclear weapons as they have and why the Soviet leaders have treated them differently. Although each side's behavior was not foreordained by its characteristics, and although Americans and Soviets could have come to conclusions that differ substantially from their predispositions, still it is instructive to examine some of the basic characteristics of Americans, and of Soviet Marxists, which have affected their actions in the nuclear era. Having done so, we will look at each side's basic military attitudes, as well as at how they first reacted to the invention of nuclear weapons.

Volumes have been written on the American character.[1] But any American who has lived abroad, especially outside the areas that have adopted American ways, can report what the American character consists of. For example, hardly an American will refuse a deal simply because that deal would also benefit someone beside himself. That illustrates the belief of most Americans that the different interests of different people are usually compatible. One man's gain is not *per se* another man's loss. John Locke's *Second Treatise,* James Madison's

Federalist No. 10, the writings of Herbert Spencer, Horatio Alger, the teachings of Dale Carnegie courses, of basic capitalist economics, have taught Americans that prosperity is the result of cooperation, and that a "good deal" for one side is probably a good deal for all. The Yankee trader was taught to drive a hard bargain, but also that he could never hope to get rich unless he satisfied his clients in the long run. The most successful, we are taught, are those who best find how to hitch their own particular interest to the interests of the greatest number of their fellow men. Americans are well acquainted with conflicts of interest. But their peculiar characteristic is to look beyond the conflicts. For in Locke's system, in Madison's Constitution, in the American way of life, there are to be no losers except the lazy, mean-spirited and short-sighted.

Nowhere as in America has war seemed so foreign to the human condition. The United States has been at war almost as often as other nations. But Americans have looked at war in a unique way. First, Americans regard war as unnecessary. If people would only forget ancient hatreds or immediate cupidity and look at the balance sheet, they would find that neither domestic nor international conflict pays. Through the mid-twentieth century the American statesman's standard response to trouble abroad (and at home as well) was to offer grand schemes for development—recall President Johnson's plan to develop North Vietnam's economy—and money, as incentives to "look beyond" the conflicts of the moment. Most conflicts, in the standard American scheme, are caused by short-sighted reactions to deprivation. As the wag in *West Side Story* said of a juvenile delinquent: "He's depraved on account of he's deprived."

But Americans have also accepted the fact that sometimes, rarely, people are so blind or so evil as to wholly disregard their own interests. Then they have decided these aberrations must be utterly destroyed. Then another facet of the American character has come into play; that expressed in the third stanza of the "Battle Hymn of the Republic":

> I have seen a fiery gospel, writ
> in burnished rows of steel. As
> ye deal with my condemners, so
> with ye my grace shall deal.
> Let the hero born of woman crush

the serpent with his heel,
As God is marching on.

This facet of the American character made possible episodes such as Sherman's march to the sea, the bombing of Dresden and Hiroshima. The messianic streak in American history has sometimes been so strong that the American people have believed that if only one particular evil were wiped off the earth, mankind would thereafter live in endless tranquility. The Civil War was shot through with expectations that liberation of the negroes would lead to a perfect world. Therefore the slave states had to be punished severely. World War I was presented to the American people as a crusade against monarchy in Central Europe. Its abolition in favor of national democracies would "end all wars." World War II soon became the war of the United Nations against the barbarians. Once these were utterly defeated, the UN would govern the world by majority vote. The unnecessary slaughter brought about by these sentiments pales in significance before the mischief they wrought after these wars were over. We have not wholly overcome the discord between sections and races caused by a civil war fought for unlimited ends. Central Europe has not overcome the disaster of the abolition of the Habsburg monarchy. The world is a long way from feeling the last ill-effects of our ill-advised total trust of the "United Nations" in World War II.

America thus expects, nay demands, final just solutions to international problems. As befits a commercial people, it tends to define justice as the keeping of treaties—including their "spirit." Americans are ever ready to demand that disputes be submitted to arbitration and that all parties define the results of judicial proceedings as justice. In the American view, to refuse to submit to law, to cross any border or break any treaty, is the mark of immorality. All parties must negotiate their disputes, and the negotiations must succeed. This inflexible demand for success of negotiations and arbitration brings forth devices all-too-familiar to Americans schooled in positivism.[2] If two nations are at loggerheads about absolutely fundamental matters—i.e., if they hate each other for racial, religious, ideological or historical reasons—Americans, as likely as not, will refuse to recognize that the two parties' *purposes* are mutually incompatible. They will break the "problem" into "issues" which may be more easily resolved, and will assume that these

"issues," which are, after all, the American's own artificial constructs, add up to the totality of the "problem." Americans then "resolve" these issues and, by their own definition, resolve the "problem." Of course this sort of thing amounts to self-deception. Sometimes, especially since World War II, American negotiators have sought agreement on intractable matters so eagerly that they have resorted to an even more radical device. They have worded agreements specifically so that different sides could understand them differently. This sort of solution is a testimony to the power of the will over that of the mind. Positivism, like Marxism, also teaches that states of mind are produced by external conditions. Change conditions, and minds will change also. Therefore Americans have believed that attitudes can be improved by improving economic conditions.

This is not to suggest that the American character must inevitably produce an unequivocally foolish approach to foreign policy. The Founding Fathers of the United States were influenced by the same features of the American character (except positivism) as Americans two-hundred years later. But the Founding Fathers resolved these influences differently. They believed that the cause of America, in Franklin's words, is ". . . the cause of all mankind . . . assigned us by Providence."[3] But they had no illusions about the adjustability of all conflicts. Jefferson, perhaps the chief pacifist among them, wished for the day, not long distant, when "We may shake a rod over the heads of all which may make the stoutest of them tremble."[4] But the Founding Fathers, and their successors in the nineteenth century, picked their conflicts carefully and won them. They swung neither to "moralism" nor to "pragmatism."[5] They were eminently sober men, who advanced their country's safety and its view of "inalienable rights" in a prudent manner. The Declaration of Independence called on America to be a beacon to the rest of the world—not its conqueror nor its social worker. During the founding period, as two-hundred years later, the American character, and therefore American foreign policy, was up for grabs. Now as then there are heated discussions over what is to be done. Both the American character and its approach to the problems of war and peace depend on the outcome of such discussions. De Tocqueville noted that free America is under the absolute, if fickle, tyranny of public opinion.

These traits of the American political character have ex-

pressed themselves in American military and strategic thought. The United States lacks a history of grand strategy, in the Continental European sense of the integration of political, economic and military assets in the pursuit of defined national objectives.

In the first decades after independence, the United States developed what one observer has identified as the gap between "dream and design" in American foreign policy. The United States was spared the task of resolving this dilemma during the nineteenth century by its geostrategic position and by the Pax Britannica which ensured that the Atlantic remained a protective moat. Therefore, when the U.S. finally entered the world of great powers, it did so without the sobering experiences of conflict and defeat which other nations had suffered and with its messianic vision intact. In a sense, the United States missed the great age of European statecraft. The United States was ill-prepared to deal with the realities of permanent and persistent conflict, that is, with the essence of interstate relations, particularly in the twentieth century.

In a passage familiar to most students of American foreign policy, John Spanier has noted this Wilsonian view of war, peace and democracy:

> . . . undemocratic states are inherently warlike and evil; democratic nations, in which the people control and regularly change their leaders, are peaceful and moral. Power politics is thus a temporary historical phenomenon which will be eliminated as authoritarian and militaristic governments disappear and are replaced by democratic, or "peace-loving" governments.[6]

Deeply imbedded in the American character is the view that war and peace are diametrically opposed conditions to be governed by wholly different considerations and sets of rules. There follows a reluctance to think of military force as a political tool. Foreign policy in peacetime is to be conceived and executed with minimal concern for consideration of military power. It must be noted however, that at the end of the nineteenth century, America's most influential strategic thinker, Alfred Thayer Mahan did, of course, develop a strategy for sea power fully in consonance with America's strategic position at

the time. No strategist, however, came forth after World War II to define a similar role for Americans in the nuclear age. In Spanier's words, "The result of this depreciation of power and moralistic approach to foreign policy is the inability of the United States to relate military power to political objectives."[7] In the nuclear age this way leads to a fitful and absolutist approach to military strategy. The United States is seldom prepared for war. In a state of blissful isolation, unmindful of the need for security felt by other nations and believing military spending to be "wasteful," the U.S. has refrained from maintaining large peacetime forces. The lack of forces-in-being has also led America to rely upon high technology and its unique industrial capacity in order to defeat its enemies. Before World War II, America (likewise the European Allies) neglected its forces until the foreign menace had become so obvious that it could no longer be ignored. Even then the United States apparently required the horror of Pearl Harbor in order to mobilize.

Slow to anticipate war, however, the United States has tended to commit itself totally when fighting. The abnormal condition of war profoundly and dramatically reverses the American character. Force becomes supreme and supremely justified by abstract moral principles. America turns her full vengeance on the aggressor and maximum righteous force is applied until there is unconditional surrender. As one student of American strategic thought has noted:

> At least since General Grant, American strategy has rested on the proposition that the most certain path to victory in war lies in maximizing the amount of military power brought to bear on the enemy in a conclusive military engagement.[8]

Attempting to explain why American policy frequently oversimplifies the "complexities, conflicts and crises" of the world, Stanley Hoffman has remarked that:

> The strategic design may be confused, the relevance of the act to the objectives may be dubious, and yet there goes into the undertaking not merely a puritan sense of duty but an exuberant

(albeit disciplined) sense of mission and aptitude—in a word, a calling . . .[9]

With an almost unique regard for individual life and therefore extremely sensitive to the number of its own casualties, the United States in particular preferred capital-intensive rather than labor-intensive wars. American wars are to be won with technology, not lives. Vastly increased firepower, which made high-technology, low-manpower warfare possible, has of course, another aspect: indifference to the casualties inflicted on the enemy. As Richard Pipes has noted:

> Paradoxically, America's dread of war and casualties pushes it to adopt some of the most brutal forms of warfare, involving the indiscriminate destruction of the enemy's homeland with massive civilian deaths.[10]

Stanley Hoffman has argued correctly that these apparent contradictions can not be explained as the result of hypocrisy or deceit on the part of Americans, rather they stem from a deeper influence: the fact that the nation's values "point simultaneously in opposite directions." Hoffman attributes this once again to peculiar American views of the nature of conflict:

> Yet at heart, America—proud of its unique harmony, its lack of ideological stances, its capacity to absorb and fuse diverse experiences and peoples, its repudiation of power politics—dislikes the very violence that is its spontaneous response: horrendous proof of the fragility of the dream it likes to think it lives. Americans believe that violence is evil, perhaps because of their admirable, if slightly startling, conviction that tragic conflicts of ends are not a necessary part of life, and because force gives to clashes that ought not to exist a sharper reality . . . And it is this lingering awareness of the evils of violence that lessens the role of force in American history. So the only excuse for violence is provided by high principles, but these in turn release in full the passion for unbridled violence. In the last analysis, violence is justified by only one ideal, which subsumes all those

> principles: not merely the final elimination of force from history, but the final ironing out of conflicts of ends.[11]

This characteristic tendency to shift from reliance on ideals alone to reliance only on the threat of war, together with the belief in the basic dichotomy of peace and war has prepared the way for acceptance of the nuclear bomb as the absolute weapon and the conviction that nuclear weapons have little or no political utility but nevertheless may be capable of ushering in a "new era" of peace.

In America, dislike for war has often translated itself into dislike for the military and its ways. However, the worst features of American military thought were produced not by American soldiers but by civilians. Moreover they resulted from the civilians' very dislike of things military. Samuel Huntington has noted that:

> The professional military mind is concerned with military security not military victory. The very points most emphasized by critics—unconditional surrender and [in World War II] the rejection of the Balkans in favor of western Europe as a scene of operations—were political decisions supported by almost all the political leaders of the government and virtually required by the prevailing complexion of American public opinion.[12]

By the late 1950s the antimilitary view had been transformed into an explanation for what was perceived as a nuclear arms race between the United States and the Soviet Union. According to this hypothesis, senior military officers trying to protect the particular "organizational essence" of each service were seeking increasingly larger budgets and increasingly more sophisticated weaponry not out of any real need to defend the nation but rather to increase their own prestige and influence. The professional military, by nature war-like and holding simplistic and extreme views of the international capabilities of the Soviet Union, were allegedly joined by the weapons merchants of the military-industrial complex and congressmen voting pork-barrel legislation for their home districts. Discussions

of this widespread and popular view often replaced debate over strategic issues.

American military thought was profoundly affected by the development of air power which culminated in the strategic bombing campaigns waged by the allies against Germany and Japan in World War II. The development of the theory of strategic air warfare began in earnest in the years after World War I. First articulated by the Italian General Giulio Douhet and British Air Marshall Trenchard during World War I, "air power" soon found a number of advocates in the U.S. World War II, of course, saw the introduction on both sides of the massive aerial bombardment of cities in attempts both to destroy certain strategic war industries and to weaken the morale of the hostile nation. Although it appears that in the early days of World War II the United States was more committed to a "careful counterindustry" bombing campaign than were the British, by the end of the war, American B-29s were being stripped of all unecessary equipment so that they could carry more incendiary explosives for the fire-bombing of Japanese cities. The Strategic Bombing Survey which was critical of the European strategic bombing campaign concluded nevertheless that it had been wise to try to bomb Japan into wanting to surrender. Attacking industry became synonymous with attacking cities.

George Quester has shown that the concept of deterrence itself developed simultaneously with theories of strategic bombing and that the theory of using "pain-inflicting" (countervalue) weapons actually antedates the development of those weapons.[13] In fact the implications of the strategic consequences imposed by bomber aircraft actually were apparent long before 1945. Quester has stated that "early in the twentieth century . . . the introduction of aircraft systems . . . first led governments to *assume* the bomb-delivery capabilities that only now exist."[14] After World War II, nuclear weapons fulfilled those assumptions and lent substance to the deterrent, punishing and disabling capabilities of air power. Moreover it was assumed that the offensive disabling capability of air weapons dictated an advantage to the attacker, who could expect to impose higher losses on the enemy forces than could possibly be suffered by the attacker's force. The possibilities raised by a condition in which both sides possessed a capability for "rapid

and severe pain-infliction," and the perceived superiority of the offense over the defense were also addressed in the pre-1945 period. In 1942, Alexander de Seversky argued in *Victory Through Air Power* "the rapid expansion of the range and striking power of military aviation makes it certain that the United States will be exposed to destruction from the air, within a predictable period, as are the British Isles today."[15] His vision awaited only the long-range bomber and the nuclear bomb. The perception that no defense was possible was also to be confirmed by the new weapons in the minds of Americans. In Bernard Brodie's words:

> The effectiveness of strategic bombing as a way of war could no longer be questioned. It at once became, incontrovertibly, the dominant form of war. A strategic-bombing program could be carried through entirely with air forces existing at the outset of a war, and at a speed which, however variously estimated, would be phenomenal by any previous standard. Also, because any payload sufficient to include one atomic bomb was quite enough to justify any sortie, strategic bombing could be carried out successfully over any distance that might separate the powers involved. If the limited ranges of the aircraft made a refueling necessary, it was worthwhile. These conclusions represented change enough from the conditions of World War II. They served, among other things, to end completely American invulnerability.[16]

These historical trends in American strategic and military thought therefore prepared the way for Americans to accept the nuclear bomb as the absolute weapon, to believe that the horror of the possibility of nuclear conflict had finally divorced force and politics, and to believe that the "new era" could be brought about within a balanced budget.

The Russian Tradition and the Soviet Military

Life in Russia has never encouraged exaggerated expectations about human benevolence, or about the compatibility of

human interests. Russian historical memories are full of images of Russian slaves being carried off eastward by Tartars and of Russians bringing home the loot from Poland. Mild slavery or quick death were the very best consequences one could expect to follow the loss of a battle against external or internal foes. The cruelties of Ivan the Terrible stand at the beginning of modern Russian nationhood somewhat as the Pilgrims' sufferings at Plymouth Rock stand at the beginning of America's. But while the latter teach the lesson that pain may be banished from all by cooperation, the former teach that only the powerful enjoy precarious safety.

The Marquis de Custine, visiting Russia in 1839, observed a society which came closer to Hobbes' description of the State of Nature than anything he could have imagined.[17] Health and wealth depended on political power. Rank meant everything. Food, clothing, shelter came from political connections. Those on any given level derived their livelihood and their satisfaction in life from lording it over their subordinates. Even traffic in the streets of St. Petersburg flowed according to the position in the pecking order of those who happened to be on them at any given time. Of course, that was the capital, and ways of the court were not followed so stiffly throughout a vast land. There is more to Russian history than mutual depredation. Nevertheless, the political system set the tone for Russia, as did the invasions by each and every one of Russia's neighbors over the centuries: Swedes, Prussians, Turks, Mongols, French, Germans, all have invaded the country. Russia, in turn, has invaded each and every country which borders it, and more often than not has stayed on. For Russia, even more than for Germany, international relations means conflict, and conflict means taking or being taken. One need only compare Russia's behavior in the territory it occupied in World War II with America's. Russia took everything that was not bolted down, and much that was. America rebuilt its defeated foes.

Marxism is congenial with part of the Russian tradition. The fundamental tenet of Karl Marx is that no man's interest is compatible with any other's, and that, therefore, the basic human relationship is that of exploiter and exploited. Slavery, says Marx, is latent even in the prototype of human society, the family.[18] Friedrich Engels elaborated this theme in *The Origin of the Family, Private Property and the State.*[19] Because individuals necessarily exploit whom they can, any and all ex-

change of goods or services amongst individuals can only result in exploitation. For Marxists, the only differences between family and society are ones of scale. The means of intercourse are different. Nonetheless, someone, necessarily, is skewered. Whether in the family, the farm, factory, city, nation, or world, one man's gain is another's loss. The notion of the class struggle follows directly from this. As Marx pointed out, most clearly in his *Critique of the Gotha Programme* (1875), no state can be the neutral arbiter of the class struggle. All states are, and cannot help but be, oppressor states. The only question is who will oppress whom. Once the working class takes political power, said he, its proper role is to crush all other classes beneath the overwhelming weight of its numbers and claims, so as to annihilate all classes but itself. Thus would the classless society be created. Lenin's principal work, *State and Revolution,* explains how political power can be used to establish literally the last word in oppressive class regimes—the class-state which is so exploitive that it will end exploitation. Lenin's other well-known book, *Imperialism,* argues that nations also behave according to the "laws" of the class struggle. In this founding work of Marxist-Leninist international affairs, Lenin states that "imperialist" nations, like the bourgeoisie within nations, are in a state of war with the peoples they oppress, and that, sooner or later, the conflict between nations must end as the class struggle must. The imperialist nations will lose the struggle and be exploited so completely as to be wholly purged of their imperialist character.

To Russians, then, Marxism-Leninism was not wholly foreign. To be sure, atheism is wholly repugnant to the deeply religious Russian people. Nevertheless, despite their Christianity, Russians had become inured to cruelty, and to the belief that life is a zero-sum game. The Communists' declaration that the average Russian had been stolen blind by his leaders, that Russia itself was not getting its due from the world, and that the average Russian has the right to demand and to take from both near and far, proved to be effective politics as well as good Marxism.

Therefore, for reasons both Russian and Marxist, the Soviet Union does not draw a sharp distinction between peace and war. Any visitor to any large Soviet city can see buildings festooned with what appear to be——and are—exhortations to battle: PEOPLE, RALLY AROUND THE PARTY!, CRUSH IMPERIALISM!

The battle is foremost against religious belief and political deviation at home. Second, it is against deviations in the Socialist camp. Third, it is against the "Imperialists." The means by which the Soviet Communist Party fights these battles are of secondary concern. The first concern is that the battle be carried on at all times. As Machiavelli has counseled, every man is regarded as an enemy at any time, and plans for defeating such enemies must be pursued as circumstances allow. External behavior will differ from time to time, but the mind must remain at war. For the Soviet Union, conflict at all times in all places, until the end of history, is the essence of life. War is merely one form of that conflict.

If one were to examine Soviet policy toward any nation without looking at Soviet policy as a whole, it would be difficult (though not impossible) to distinguish it from the sort of policy described by classic writers such as Thucydides. To be sure, one would notice that the Soviets carry on their foreign policy by "total" means. Whereas the typical foreign ministry at the turn of the century (staffed with men steeped in international law and without substantial power over their own societies) was its country's sole agent for international affairs, the Soviet foreign ministry commands the international relations of the whole Soviet economy. Moreover, the Foreign Department of the Communist Party of the Soviet Union plays an important role by orchestrating the actions of about 8 million foreign communists around the world. The KGB, the Soviet agency for intelligence and covert action, is a full partner in international affairs, helping causes favorable to Soviet interests from Jamaica to Afghanistan. The Soviet Union employs these means without ideological predilection for any of them, but strictly according to its judgment regarding how various means might be combined most effectively at any given time. But this is also true of classical foreign policy. Indeed, it is no more or less than what flows from sobriety. Classical foreign policy, too, has been known to make use of sympathizers in foreign nations, of spies and agents, and of trade as a political weapon. The difference between Soviet foreign policy and classical foreign policy is that the latter's purposes are limited in time and geographic scope. But while the Soviet foreign policy is admirably sober in a retail sense, it is intoxicated beyond reason with regard to its ends.

As we will see below, the basic tenets of Soviet military doctrine and strategy for the nuclear age were formulated in the period 1953–1960. A few basic ideas underlie this doctrine and this strategy:

- Western "imperialism" is the implacable enemy of Soviet "socialism" no matter what temporary accommodations may be reached.
- Nuclear weapons do not invalidate the Marxist-Leninist ideology of history.
- The USSR cannot make the world safe for "socialism" by destroying it.

The USSR is duty bound to do whatever it can to hasten the destruction of "imperialism" by the most effective and least violent means possible. By Leninist definition, "imperialism" is the highest state of "capitalism." Consequently "imperialism" is the dedicated, implacable and devious, if sometimes confused, foe of "socialism." In this tautological world view, "imperialism" driven by "class hatred," is prone to war in general, and dedicated to the destruction of "socialism" in particular. The USSR cannot plead with U.S./NATO "imperialists" for peace. It must force peace on the "imperialists" by the threat of "socialism's" superior military forces.

Imperialism is devious. When the "imperialists" say "peace" they mean "war." The publicly announced changes in Western strategic concepts and policies are deceptive slogans designed to mask unchanging aggressive intentions and aspirations, although such changes in the imperialist line also may reflect the realization that their prior policies had failed and that their position has become weaker. Nevertheless, the imperialists continue to plot surprise attacks on the USSR.

Since 1950 at least, the imperialist threat has been proximate: overseas U.S. bases, NATO, and other U.S. alliances. By the late 1960s the Soviets counted some 6,700 U.S. and allied military bases and facilities, most of them located in Eurasia. Imperialist forces are viewed as large and technically formidable.

It is fashionable to dismiss such Soviet perceptions and concepts as "rhetoric" for public consumption. This is a mistake. The Soviets believe these perceptions are validated by history, that the "imperialists," Russia among them, started World

War I and that England, France and the U.S. did their best to induce Hitler to attack the USSR. The Allies delayed the second front for two years in order to bleed Germany and the USSR. All armed conflicts since World War II have been initiated or instigated by the "imperialists."

On occasion the destructiveness of nuclear weapons has shaken the Marxist-Leninist ideology. Tremors reoccur from time to time. In 1953 Malenkov said that nuclear war would be the end of civilization. The statement was censored after the fact. Subsequently the official position has been that a nuclear war would be a catastrophe, it nevertheless would not be the apocalypse. Although destruction would be unprecedented even by the disastrous standards of World War I and World War II, a nuclear war still can be fought and won if properly prepared for and conducted. Contrary evaluations surface now and then, but there is no reason to doubt the seriousness of the official position. As we will see below, the Soviets have acquired too much weaponry designed not just to deter but to fight and "win" a nuclear war, and have expended far too large a portion of their national product each year for such weaponry for us to dismiss the official position as rhetoric. The Soviets are deadly serious about their objectives, even though for several decades their capabilities fell far short thereof.

Serious as they appear to be about fighting a nuclear war for self-preservation and for worldwide hegemony (no Chinese connotation intended) of "socialism," the Soviets do not believe in destroying the world in order to save it from the further ravages of the "imperialists." This has been one of the sorest points in Sino-Soviet polemics; Mao is reputed to have said that saving the world from imperialism is worth half the world's population. Whether from ideological conviction or the bitter experience of World War II, or both, the Soviets have found such thinking repugnant. They have always rejected initiation of nuclear war (surprise attack "out of the blue") merely to accelerate the Marxist-Leninist dialectic. In addition, their concept of nuclear operations always has been to destroy the enemy's military forces and top political leaders, not the enemy's population and socio-economic infrastructure. Nihilistic, apocalyptic, nuclear targeting is for the "imperialists."

Short of this, however, anything and everything that can be done to hasten history on its appointed course is fair game. This has been a constant in Soviet conduct from the beginning. It is,

however, generally a very prudent constant. The "imperialists" must not be goaded too much. "National liberation" movements, revolutionary client states and the like must be assisted, but such assistance must be carefully calibrated from crocodile tears in *Pravda* to massive assistance, depending upon the existing "correlation of forces." In no circumstances must such assistance run serious risk, as best such risks can be weighed in the Kremlin, of precipitating a nuclear attack on the USSR or even serious risk of spilling Russian blood. Aid and provocation to the limit of prudent calculation is a duty; beyond that lies inexcusable adventurism. Which is which in any given circumstance no doubt is the subject of much heated debate in the Kremlin.

In general, the Soviets have been rather candid about their objectives and intentions. Americans, however, are so preoccupied with themselves that they don't listen, or refuse to understand, or both. At this writing, the Soviets are engaging in some strategic deception, as Khrushchev had done in the late 1950s to early 1960s, but that is understandable. America's structural naiveté is too tempting to resist.

America and the Bomb

The bombings of Hiroshima and Nagasaki seized American public opinion. They were inexhaustible fuel for talk. Here was a newly discovered principle of nature. Here was power for good and evil. The war had been ended. Clearly some sort of new era was beginning. How new would it be? The answers regarding the future varied, and, of course, none could be proved. But the arguments in favor of greater newness tended to drive out the opinion that men had merely invented one more tool. The United Nations had won the war. There need be no more enemies. Everyone was eager for the long-deferred pleasures of peace. One bomb now could "wipe out" a city. This was new. It should therefore be possible to use this instrument to lengthen the peace—perhaps indefinitely. On the other hand, if "the bomb" should ever be used against us, it would be "the end." A glance at the American press, media, advertising in the late 1940s is enough to reveal infatuation with things "atomic."

The U.S. Government's first official policy with regard to nuclear weapons was to place the "secret" of atomic power

under the UN's tutelage, so that "the bomb" should never be an instrument of any nation's policy. The plan for doing so, devised by Bernard Baruch, would have required all nations engaged in nuclear research to turn over control of their nuclear facilities to the United Nations, which would have fostered the peaceful use of the atom, kept a small stock of weapons, and punished any nation which tried to develop its own nuclear arsenal. The United States would have been safe under the arrangement, it was argued, because the vast majority of the UN's members were then either democracies or otherwise friendly to the United States. For that very reason, however, the Soviet Union refused to have anything to do with the Baruch plan.

The Baruch plan's failure should have killed American hopes that the atomic bomb's mere existence would bring about a safer international environment. But those hopes lived on, though in another form: Nuclear war is so awful it will never happen. Among the scientists who had worked on the Manhattan project, which had developed the bomb, some were moved by feelings of guilt to spread the notion that their invention really *is* a contribution to perpetual peace, though in an awfully backhanded sort of way. Thus J. Robert Oppenheimer founded the pretentiously named *Bulletin of the Atomic Scientists* which, for over thirty years has propounded one nonscientific theme above all others: Nuclear war would be the end of the world.

The atomic bomb was so interesting that both journalists and professors in large numbers entered the field of military analysis, heretofore reserved for military men. Their influence has done nothing but increase since 1946. As publicists, they are better able to present their case to the public and to politicians. Among the disadvantages of analyses done by civilians is that all but a few highly classified ones are literally irresponsible in the sense that they seldom assume the responsibility—even on paper—for the consequences of their recommendations.

The first and indeed the most influential civilian treatise in this field was *The Absolute Weapon,* edited by Bernard Brodie and published in 1946.[20] One may read it today without guessing it was not written in 1979. Indeed, in 1977 Bernard Brodie replied to Richard Pipes' attack upon the book[21] by claiming that his theses of 1946 are now simply orthodoxy, and that therefore a heavy burden of proof lies upon anyone who would

dispute them.[22] The book expresses a number of attitudes, and makes a number of claims, not all of which are consistent with one another. On the one hand, its authors are clearly aware that nuclear weapons have finite effects, though they exaggerate them. They are also aware that defensive measures can reduce the number of weapons which could reach their targets, and that proper planning for civil defense could reduce the damage inflicted by an attack by orders of magnitude. Most significantly, they are aware that, to the extent a nation prepares itself to limit the damage it could suffer in war, that nation discourages any other from attacking it. True, they assume gratuitously that nuclear attack would be directed at cities and (or) industry, but they realize that wars, even nuclear wars, are finally won by invasions, and that therefore the United States ought to have forces capable of repelling a Soviet invasion, and of invading the Soviet Union.

On the other hand, the book contains eight propositions which make up the following argument. Even one plane-load of atomic bombs could make all of New York into "complete chaos and horror." Therefore "before we can speak of a defense against atomic bombs being effective, *the frustration of the attack for any given target area must be complete*"[23] (emphasis his). But such complete frustration is well-nigh inconceivable, because the attacker has the incentive to apply vast resources to getting each weapon to the target, and vast numbers of intercontinental airplanes and rockets can be built. Moreover, technology will probably never find a good defense against the atom bomb. "Superiority in airforces . . . fails to guarantee security,"[24] because no matter how much harm we could do to the Soviet Union, we could not thereby prevent it from doing great harm to us. Therefore "superiority in the number of bombs is not in itself a guarantee of strategic superiority,"[25] because "if 2,000 bombs in the hands of either party is enough to destroy entirely the economy of the other, the fact that one side has 6,000 and the other 2,000 will be of relatively low significance."[26] Finally, it matters little that the USSR is a totalitarian state. That will not induce it to use any superiority it might gain in nuclear weapons politically or militarily, if that would mean taking a chance of absorbing an American nuclear strike, because" . . . in no case is the fear of the consequences of atomic bomb attack likely to be low."[27]

What, then, did the book conclude? Should Americans work

as hard as possible to build the best possible defense against enemy missiles and bombers? Should American scientists search for ever newer defensive devices? Is nuclear war possible or not? Is superiority in nuclear forces meaningful or not? Is civil defense worthwhile? What would be the most rational way for the Soviet Union to attack the United States? What would be the most rational way for Americans to defend themselves? There are facts and arguments in the book which would support a variety of answers. But the book's thrust was a fatal mixture of attitudes, among which exaggerated hopes and fears acted as catalysts. Over the years the ambiguities in the position set forth in *The Absolute Weapon* were resolved by those catalysts, as civilian analysts urged upon the United States a strategy which made a virtue of vulnerability and which reassured them that, although the U.S. could make costly mistakes in pursuit of nuclear superiority, it would likely run few risks by allowing superiority to slip away. In time this view filtered into the military. Thus, by 1956, General Maxwell Taylor wrote:

> The avoidance of deliberate general atomic war should not be too difficult since its unremunerative character must be clear to the potential adversaries . . . a nation need only feel reasonably sure that an opponent has some high-yield weapons no matter how indefinite their exact number, to be impressed with the possible consequences of attacking him.[28]

The statement is not false, but it gives the wrong impression by begging all the precise military questions the author should have addressed. What if an attacker can reduce his victim's arsenal by striking first? What if he can manage to reduce his own vulnerability to retaliation? How heavily would x or y percent casualties weigh in the attacker's balance against the prize of world power? How can the prospective rational use of nuclear superiority cover an ambitious policy of conventional military and political conquest?

During twenty years of overwhelming strategic superiority, the United States failed to develop an adequate strategic doctrine for its nuclear arsenal and continued to exhibit the characteristic American failure to reconcile military force with international politics. Indeed, as this book suggests, America

has yet to resolve this most vital question of national security. The profound difficulties which the nuclear age presented for American strategy were apparent from the very beginnings of the Cold War. It is commonplace to note the revolution in world politics and particularly in American foreign involvement which occurred in the postwar world. But while The New York Times could remark editorally that "the epoch of isolation and occasional intervention is ended and is being replaced by an epoch of American responsibility," it was by no means clear that the United States was closer to bridging that gap between "dream and design" in foreign policy that had existed throughout its history. Indeed, the initial American response to the postwar world was a desire to once again withdraw to the normalcy of isolation. The illusion that great power cooperation, especially with the Soviet Union, could build a stable and peaceful international order on the ruins of the old soon encountered the challenge posed by the expanding threat of the Soviet Union to the security of the West. Cold War battles were soon joined.

The Truman and Eisenhower years saw the development not of a nuclear strategy prepared to answer the Soviet challenge, but rather of a doctrine of nuclear deterrence which by the end of the Eisenhower years, had become incredible to friend and foe alike.

The immediate postwar period, saw the dramatic demobilization of American forces (from 12.3 million men in 1945 to 670,000 by 1947) only to be followed by a slow rearmament brought on by the confrontation and conflict of the developing rivalry with the Soviets. During the period before Korea, the United States in all likelihood did not possess "in being" the massive nuclear striking force which is today assumed to be necessary to assure destruction of a hostile power. The U.S. had only one nuclear bomber group. Some observers estimate that in 1947, the U.S. had fewer than 100 nuclear bombs. Nevertheless, this force represented an unchallengeable military superiority. However, not until the Eisenhower Administration did the U.S. attempt to define a strategic doctrine for its new power. Not surprisingly this development, known as the "New Look," placed increased reliance on strategic nuclear power and was born of a marriage of the familiar themes of minimal defense expenditure and reliance on technological advantage. The Eisenhower Administration was committed to a balanced

budget, impressed by the possibilities of the long-range air power of the Strategic Air Command (B-47 jets were coming into substantial force by this time) and hopeful that new tactical nuclear weapons could redress the imbalance of conventional forces in Europe. It thus decided to base its military strategy on the ability of nuclear weapons to retaliate against aggression. The catch phrase was "more bang for the buck" ("maximum safety at minimum cost" as Eisenhower had originally formulated it). The President explained:

> With the shift in emphasis to the full exploitation of air power and modern weapons, we are in a position to support strong national security programs over an indefinite period with less of a drain on our manpower, material, and financial resources.[29]

Observers generally agreed with Eisenhower's analysis:

> The theory of nuclear deterrence was particularly attractive to the new Administration, which felt that it owed its election largely to the unpopularity of the protracted ground combat, long casualty lists, and high defense expenditures of the Korean War. It was claimed that the threat of nuclear retaliation, requiring mainly air power and nuclear weapons, in which the United States, at that time, enjoyed a tremendous advantage over the Russians, would offset the manpower advantage of the Communist world, thus reducing defense costs and limiting the number of young men who must sacrifice several years of their lives to military service.[30]

Given American superiority, the strategy with which the New Look would be implemented was one of pure deterrence. Indeed, as one observer has argued, nuclear deterrence had not been seriously questioned initially:

> The idea of atomic deterrence was accepted because it seemed so obvious: What else was stopping the Red Army from marching to the channel? The means of deterrence were a legacy from World War II . . . no substantial new effort was required to supplement it

> or even to maintain it. Deterrence was easy and uncontroversial, an accident of history not a creature of policy.[31]

The relationship between nuclear doctrine and American foreign policy goals remained difficult, however. In January 1954, Secretary of State Dulles announced the new strategy of nuclear deterrence: The U.S. would now be prepared to meet aggression with the threat of instant and massive nuclear retaliation. The best way to deter aggression was "to depend primarily upon a great capacity to retaliate, instantly, by means and at places of our own choosing".[32] Moreover, the threat of massive retaliation by U.S. nuclear forces was intended to deter not only nuclear attack on the United States and its allies, but a broad range of lesser conflicts as well. Said John Foster Dulles,

> A potential aggressor must know that he cannot always prescribe battle conditions that suit him. Otherwise, for example, a potential aggressor, who is glutted with manpower, might be tempted to attack in confidence that resistance would be confined to manpower. He might be tempted to attack in places where his superiority was decisive.[33]

The basic military fact of the New Look was overwhelming U.S. superiority in numbers of nuclear weapons and the means of their delivery. "It was thus in harmony with the singularly American view that technology, especially air power, was this nation's best weapon."[34] When the Eisenhower Administration took office, the USSR's strategic force consisted of a few hundred propeller-driven medium-range bombers, which could not seriously threaten the continental United States. By most estimates, the U.S., on the other hand, "with its fleet of B-47s, its overseas bases, its large stockpile of improved fission bombs, and the increased readiness and competence of its crews . . . could have effectively destroyed the Soviet Union with little likelihood of serious reprisal against the United States".[35] The targeting doctrine of the era reflected the World War II counterforce orientation, although in the public mind "destruction of the Soviet Union" presumably included a nuclear attack on Soviet cities. But the new doctrine, which by its reliance on

tactical nuclear weapons as a substitute for conventional force levels also raised the disturbing possibility of limited nuclear war, failed to answer the uncomfortable question of how the U.S. might pursue its goals of containing Soviet power and also avert nuclear war. Eisenhower and Dulles attempted to resolve this dilemma by a further refinement of the declaratory policy: The United States was now prepared to go to the "brink of war" rather than accede to Soviet military moves and political demands. The administration believed that a clearly declared resolve to risk nuclear war, even if it meant mutual annihilation, would deter the Soviet Union (and the Chinese) from aggressive acts.

Strategically, massive retaliation and brinkmanship differed little from the deterrent policies of the previous administration. The reasons are clear. During both administrations, American superiority permitted the United States the luxury of not thinking seriously about the utility of nuclear weapons or about the role of strategy in deterrence. Few in the West challenged this view except senior Army and Navy officers who saw over-reliance on strategic air power as a threat to a continued U.S. military capability to meet challenges inappropriate to nuclear response. Dulles approvingly cited Winston Churchill's term—the "supreme deterrent"—in describing U.S. nuclear capability. Churchill himself expressed the prevailing view when he declared in 1949:

> It is certain that Europe would have been communized and London under bombardment some time ago but for the deterrent of the atomic bomb in the hands of the United States.[36]

The development of the hydrogen bomb increased significantly the amount of bang the nation could get for its buck and, together with the awesome increase in destructive power promised by thermonuclear weapons, served to further confirm the deterrent value of the weapons. At the same time, however, this quantum jump in destructiveness combined with knowledge that the Soviets also possessed fusion weapons, appears to have hastened the American perception of a nuclear stalemate.

Hyperbole became the order of the day for senior American officials. In commenting on the first American hydrogen bomb test in November 1952, President Truman, in his last State of

the Union Message, described the H-bomb as providing a "new order of magnitude" of destruction and concluded that all-out war would "destroy the very structure of civilization."[37]

"There is," as Winston Churchill declared in March, 1955, "an immense gulf between the atomic and hydrogen bomb. The atomic bomb, with all its terror, did not carry us outside the scope of human control or manageable events in thought or action, in peace or war."[38]

Popular themes that nuclear war would mean the end of life on earth were also common during the 1950s. Novels and motion pictures such as *On The Beach,* combined with extreme but selective public secrecy on U.S. nuclear weapons tests to produce a popular image, shared by the political leadership, of nightmare weapons and science-fiction-like nuclear holocausts. Concern over the effects of radioactive fallout from weapons tests, together with the Soviet "peace offensive," strengthened these views.

Although during these years the U.S. nuclear strike capability increased from a handful of atomic bombs deliverable by piston-powered B-29s to—by 1955—some 200 B-36s and over 1,000 B-47s, as well as a growing carrier-based nuclear strike capability, American officials were disposed to believe that a period of nuclear parity was just around the corner. As early as 1951, Secretary of State Acheson had stated:

> . . . We have a substantial lead in air power and in atomic weapons. At the present moment, this may be the most powerful deterrent against aggression. But with passage of time, even though we continue our advances in this field, the value of our lead diminishes . . .[39]

In his first year in office, President Eisenhower spoke of the "atomic armaments race which overshadows not only the peace, but the very life of the world," and claimed that no one should think that:

> The expenditure of vast sums for weapons and systems of defense can guarantee absolute safety for the cities and citizens of any nation. The awful arithmetic of the atomic bomb does not permit of any such

> easy solution. Even against the most powerful defense, an aggressor in possession of the effective minimum number of atomic bombs for a surprise attack could probably place a sufficient quantity of his bombs on the chosen targets to cause hideous damage . . .
>
> Surely no sane member of the human race could discover victory in such desolation. Could anyone wish his name to be coupled by history with such human degradation and destruction.[40]

It was left to Winston Churchill to describe the new era. Describing the new "balance of terror," Churchill stated that by "a process of sublime irony" the world was now facing a situation "where safety will be the sturdy child of terror," and "survival the twin brother of annihilation."[41]

By the mid- and late 1950s, concern over the efficacy of the massive retaliation doctrine became public in the writings of Henry Kissinger, Alastair Buchan, Albert Wohlstetter and others who doubted its credibility. By the late 1950s the arguments over a broad range of possible nuclear strategies had been well rehearsed among the new group of defense intellectuals and it remained only for the Kennedy Administration to give life to the struggle among them.

The Soviet Union and the Bomb

When President Truman told Stalin about successful American testing of a nuclear weapon he thought he was letting Stalin in on a great secret. According to Truman, Stalin showed little interest, but expressed the hope that the U.S. would put the weapon to good use against the Japanese.[42] Stalin, of course, knew a great deal about the U.S. nuclear weapons program from espionage. In fact, the researches of Soviet scientists had probably alerted Stalin to the potential of nuclear weapons before Dr. Einstein's letter to President Roosevelt that led to the Manhattan Project. The following milestones on the early Soviet nuclear weapons program are taken from an article describing Communist Party (USSR) weapons acquisition policy by two political officers in the General Staff Journal, *Voennaya Mysl'* (Military Thought).[43]

- Nuclear physics "work" began on "a wide front" in the 1930s.
- By the beginning of World War II academicians A. F. Ioffe, I. V. Kurchatov and L. D. Landau, their students and "other outstanding Soviet scientists and engineers had outlined the main directions in the resolution of the nuclear problem."
- The German attack stopped the program. Major laboratories in Kharkov and Leningrad were lost or evacuated. Kurchatov and a great number of his co-workers were put to work on "antimine defense of ships."
- Kurchatov was put back in charge at the end of 1942. "At his command, scientists were recalled from the Army and other military assignments, from blockaded Leningrad and *places of occupation.*"
- At the beginning of 1943 a Central Committee decision directed Kurchatov to organize "a new scientific establishment designated for research on the uranium problem" in Moscow. Scientists and engineers of the most varied specialties were attracted to research in the field of the creation of nuclear weapons."
- After Hiroshima and Nagasaki "the Party Central Committee outlined the primary state task—to eliminate in the shortest period of time the monopoly of the United States in nuclear weapons . . ."
- To coordinate and direct the scientists, engineers and industrial plants the Soviets had "a specially created government organ" headed by B. L. Vannikov assisted by A. P. Zavenyagin, V. A. Malyshev, M. G. Pervukhin and Ye P. Slavsky.
- Development of nuclear propulsion systems for ships and submarines was carried on "simultaneously" with the development of nuclear weapons."

No doubt the Soviet program was accelerated by the information provided by Fuchs and others, how much we probably will never know. It is clear, however, that the Soviets realized the potential of nuclear weapons in the late 1930s; an article in the *Saturday Evening Post* in 1939 described (for the layman) the first fission experiments at the Kaiser Wilhelm Institute and the potential of uranium isoptopes as weapons with explosive power of thousands of tons of TNT. Stalin knew what his scien-

tists were exploring before World War II began. The extraordinary authority given Kurchatov in late 1942 when the program was re-established could only have come from Stalin, as did the 1943 Central Committee decision referenced above.

Feigned disinterest to Truman at Potsdam and the subsequent playing down of their military significance was a sham which Stalin adopted while he was doing everything he could to overcome the Soviet lag in weapons production and delivery systems. The USSR was not behind because Stalin did not appreciate either the political significance or the military potential of nuclear weapons but because Soviet technology and industry simply could not compete with the U.S. in translating scientific experiments into usable hardware.

U.S. achievements added urgency to Soviet efforts to develop nuclear weapons, but the Soviets did not start their program in reaction to the U.S. In addition to nuclear weapons, Stalin gave high priority to the development of long-range delivery systems, both aircraft and missiles, and to a variety of other technologies for the nuclear age. Contemporary sources ascribe it all to the collective, the Party, but we know what that meant in Stalin's day. (Not that things are all that different even now.)

In order to have an initial delivery system for nuclear weapons, Stalin personally gave Tupolev just thirty-six months to fabricate a production prototype of the U.S. B-29 from several aircraft that had landed in the Soviet Far East. Somehow Tupolev met the schedule, and the Soviets produced more than a thousand of these aircraft—the TU-4.

Stalin saw the ballistic missile as the delivery vehicle of the future and took the necessary decisions to transform foresight into fact:[44]

> At the same time with creation of nuclear weapons, the most effective means of their delivery to targets was being sought. The Party Central Committee opportunely defined the significance of rocket weapons and took measures for their development and improvement.

In addition to the development of nuclear weapons and ballistic missiles, the "Party Central Committee ensured the development of Russian radio electronics and automation, jet aviation, radio navigation, means of long range communication".[45] Nu-

clear propulsion for ships and submarines also date to Stalin's time,[46] as does the civil-military organization which manages the development of ballistic missiles. In 1946 the first ballistic missile unit was formed from two Guards Katusha regiments.[47] At least six senior military men, including Marshals of the Soviet Union Zhukov and Malinovskiy, and two civilians who have been promoted to Marshal of the Soviet Union: L. I. Brezhnev and D. F. Ustinov, served as Tsars of the missile program in the post-World War II years. They were supported by design bureaus headed by S. P. Korovlev, M. K. Iangel, V. P. Glushko, G. N. Babakin, and others.[48]

According to Khrushchev, research and development on defenses against ballistic missiles (ABM) began even as long-range ballistic systems were being conceived.[49] General Batitskiy has corroborated that the Soviet ABM program began at the end of World War II, and was approved by Stalin along with all of the other Soviet nuclear strategic defensive programs—interceptors, SAMs and radars.[50]

While long-range ballistic missiles took many years to develop, Stalin was able to move much faster with aircraft, although the principal fruits of his efforts did not appear until after his death. The rapidity of Soviet development of jet-powered medium and heavy bombers surprised the U.S. and led to talk of a "Bomber Gap." As soon as Tupolev had finished copying the B-29, Stalin ordered him to develop long-range jet aircraft. To understand Stalin's role in preparing the USSR militarily to enter the nuclear age, one must look at the origin of the Soviet nuclear targeting strategy. First formulated by (or for) the Long-Range Air Armies,[51] this strategy is used by all Soviet missile units. In order of priority the targets for Soviet nuclear weapons, are the enemy's:

- nuclear delivery systems, weapons storage and fabrication sites;
- military installations and units in the field;
- military and selected essential industries, transport and communications facilities;
- centers of politico-military administration.

As is readily apparent, this listing of targets is designed to fight a war. As far as can be determined, from Stalin's time the Soviets have rejected targeting of population and industry per

se as militarily counterproductive and politically immoral.

When one looks at Stalin's decisions to acquire nuclear weapons, delivery systems, and other advanced (for the time) weaponry, one must disagree with a host of American observers and conclude that he understood very well the military utility of nuclear forces. George Kennan casts Stalin's understanding of nuclear weapons entirely in political terms: the U.S. had them; the USSR could not afford to be without them.[52] In Kennan's interpretation, nuclear weapons had little military utilitity to Stalin because "the nuclear weapon could destroy people; it could not occupy territory, police it, or organize it politically." Hence Stalin, who "was entirely rational in his *external* policies" (emphasis added) would have preferred no nuclear weapons in anyone's arsenal had it not been for the issues of international inspection to ensure compliance. But Stalin planned and procured nuclear weapons to fight a war in a rational military manner, and to avoid "slaughtering people indiscriminately." More likely than not, therefore, Stalin appreciated the military as well as the political potential of nuclear weapons as well as his successors, and better than most of his American critics.

However, one must explain why Stalin, if he understood the military potential of nuclear weapons, stifled discussion and formulation of military doctrine and strategy for the nuclear age. A reasonable hypothesis is available—Stalin's megalomania and his desire to cover up his responsibility for the military debacle of the summer of 1941.

The number of victims of Stalin's megalomania and paranoia from 1928 until his death in 1953 probably rivals the number of casualities in all the recorded wars of modern history prior to World War I. That Stalin appointed himself as chief and only interpreter of Marxist-Leninist dogma is well known. Apparently he also appointed himself chief military strategist of the Soviet Union. An article in the Soviet *Military History Journal* in 1967, cited by Harriet Fast Scott, provides some necessary insight:[53]

> In 1935 at the Frunze Military Academy, a military history department was formed. According to the Department head, a 32-hour course of lectures was envisaged on the theory of strategy. The Deputy Commandant, in looking over the program, asked:

> "What is this strategy course? Strategy is Comrade Stalin's personal occupation and it isn't any of our business."[54]

The article goes on to say that the Academy Commandant, Marshal B. M. Shaposhnikov, overruled the Deputy and ordered the lectures on strategy prepared. However they were never read. Little wonder, therefore, that after World War II Soviet military officers were not permitted to discuss, at least publicly, the implications of nuclear weapons for Soviet military strategy.

Stalin had another reason for downplaying the importance of nuclear weapons: their great destructiveness offered the potential for a truly decisive surprise attack, accomplished in a few hours. This issue could not be discussed because Stalin had refused to heed the warnings of German preparations to attack the USSR in 1941, as a result of which the Germans achieved both strategic and tactical surprise and very nearly won the war in 1941. This, of course, Stalin could not admit. Hence the debacle of Soviet arms in the first months, the vast loss of territory and population, became one more example of the infallible leader's wisdom to defeat the Germans by withdrawing to Moscow and Stalingrad while preparing the victorious counteroffensive. Stalin did not need any discussion of how nuclear weapons coupled with long-range bombers and missiles could do in a few hours what German panzers and tactical aircraft almost accomplished in a few weeks.

While the U.S. was formulating its nuclear doctrine in terms of retaliation against Soviet society with little thought of any rational outcome in a nuclear war, the Soviets were coming to different conclusions. When the initial Soviet debate of 1953–54 was summarized by the editors of the General Staff Journal, *Military Thought,* in March 1955, three central concepts had been established:[55]

1. As in any other war, the objective was "victory."
2. "Victory" could be achieved only by decisively defeating the enemy's military forces through military operations.
3. Defeating and destroying the enemy's military forces requires a unified strategic concept and coordinated operations of all types of weapons and branches of the armed services.

Relatively little information is available on the discussions during the period from 1955 to 1960. It is quite clear, however, that, as Soviet sources have stated, the new Soviet military doctrine and strategy were hammered out in the period 1953–1960. In the period 1960–1962 Soviet nuclear doctrine and strategy were set forth publicly in five publications:

N. S. Khrushchev, *Disarmament—The Road to Consolidating the Peace and Insuring Friendship Between Peoples* (Moscow, 1960).
Marshal Rodion Malinovskiy (then Minister of Defense), Speech to the XXII Congress of the CPSU, *Stenographic Report,* Vol. 2.
Col. G. A. Fedorov, ed., *Vigilantly Stand Guard Over the Peace* (Moscow, 1962); *Marxism-Lennism on War and the Army,* 2nd Edition (Moscow, 1961).
Marshal V. D. Sokolovskiy, ed. *Military Strategy* (Moscow, 1962).

From these publications, the following comprehensive doctrine may be distilled:

1. A war between the USSR/Warsaw Pact and the U.S./NATO would be the third and decisive conflict between Soviet "socialism" and Western "imperialism" to determine which social system will inherit the Earth.[56]
2. Such a war would be a "just" war for the USSR but "unjust" for the West. Like previous wars it would be the continuation of politics by violent means, but because a world nuclear war would be so destructive, the USSR would not be justified in initiating it unless circumstances demanded it by making it rational. The Soviets, therefore, reject any unprovoked surprise attack ("out of the blue") on the "imperialists".[57] Revolutionary movements and "just" wars of national liberation," however, deserve and will receive Soviet support.
3. The growing power of the USSR and its allies makes it possible to deter a U.S./NATO surprise attack, hence, war is not "fatally inevitable." Nevertheless, deterrence may fail, in which case the USSR and its allies must and will win the war by completely defeating the enemy.[58]

4. To win the war Soviet forces must limit damage to the USSR with counterforce strikes by strategic offensive forces and operations by strategic defensive forces—air, missile, space, ASW and civil defense.[59]
5. "Quantitative and qualitative superiority" is the objective of the Party's "military-technical policy," which provides guidelines for weapons acquisition. (The Party's military-technical policy appears in Party Resolutions and Joint Party-Government Decrees drafted by the defense department of the Central Committee and approved by the Defense Council/Politburo.)[60] [61]
6. Soviet strategic nuclear strikes—principally by the Strategic Rocket Forces (SRF)—will be decisive but cannot defeat the enemy completely, or occupy Europe. Hence the initial strategic exchange will be followed by combined arms—Ground Forces, Frontal Aviation and Navy supported by the SRF, Long-Range Air Armies (LRA) and Navy SLBMs—against enemy forces in the Eurasian theater of operation and at sea.[62]
7. Soviet forces must be ready and able to preempt a U.S./NATO attack, on warning, at any level of conflict. Preempting, seizing and keeping the initiative are the preferred options. At the same time, the Soviets recognize that they may not be able to preempt and that a preemptive strike can destroy only a portion of the enemy's forces. Hence Soviet strategic forces also must be able to survive an enemy attack and deliver subsequent strikes.[63]
8. The priority targets of all Soviet nuclear forces—strategic and tactical—are the enemy's nuclear delivery systems and weapons, followed by administrative centers, essential industries and transport, communication facilities. Military and other selected targets must be destroyed or neutralized, but minimum yield weapons are preferred in order to limit collateral damage to population, urban infrastructure and other industries. The Soviets do not target the general population but they may target selected elite groups. Similarly the Soviets do not target all industry but only selected industrial elements.[64]
9. All of these tenets and objectives of Soviet military doctrine and strategy are intimately related to the Soviet concept of deterrence. To the Soviets, the best deterrent is a force posture designed to fight and win a nuclear war,

not just punish the enemy for starting the war. In the Soviet view, the more the West perceives that the USSR has such forces, and knows how to use them to fight and win, the more the West is deterred.

10. Winning a nuclear war with the U.S./NATO coalition means three things to the Soviets. First, the USSR will survive the initial nuclear exchange and will continue to carry on military operations. Second, all U.S./NATO military forces will be either destroyed or rendered incapable of further military action by the initial exchange and subsequent military operations in which USSR/Pact forces will occupy Western Europe. Third, the USSR will recover from U.S./NATO nuclear strikes with the assistance of occupied Europe.[65]
11. The political content of victory is the destruction of "imperialism" and its worldwide replacement by "socialism." As a 1969 *Military Thought* editorial put it, "Victories of the Soviet Army are not simply victories of one force over another, but an expression of the triumph of that which is new and advanced over that which is old and reactionary; a victory of true humanity and humanism over imperialist robbery and atrocity."[66]

Soviet capabilities to acquire forces compatible with their doctrinal and strategic concepts have been subject to a number of constraints. While the Soviets emerged from World War II as the strongest nation on the Eurasian continent, for which they are understandably proud, ideological pretensions notwithstanding, they were far behind the U.S. both economically and technologically. When Europe recovered from World War II the Soviets also were still as far behind it technologically, as they had been for many centuries, but they had posted many relative gains in comparative output of basic heavy industries —coal, petroleum, iron, steel and the like. Meanwhile the pace of technological advance and innovation was accelerating. At the basic research and laboratory stages of technology the Soviets were able to compete quite well; indeed they overcame much of their so-called "backwardness" in these stages of research and development (R&D) rather rapidly. But the processes of translating laboratory experiment into volume production were, and still are, comparatively tedious and very expensive in the USSR.

The Soviets refer to the period since about 1960 as a "revolution in military affairs" brought about by a triad: nuclear weapons, missiles and computer technology. As the Soviets attempted to structure their forces to meet the threat posed by U.S./NATO along the lines specified by their strategic concepts, they repeatedly found themselves on a treadmill. As soon as (or even before) they developed a solution for one threat and began to field it, the U.S. developed an even more technologically taxing threat or tactic. By the late 1960s the Soviets were facing technological lags of five to fifteen years in the revolutionary triad of strategic weapon system technologies with the prospect that unless something was done the lags would persist or even lengthen in the 1970s.

There is no evidence that the Soviets entered the SALT negotiations to exchange their concepts for those of the U.S. or to recast their strategic forces in the U.S. image.

2.

The McNamara Era and the Adoption of Mutual Assured Destruction

It is difficult to overstate the determining effect which Robert Strange McNamara's seven-year incumbency as Secretary of Defense has had upon American nuclear strategy and upon the increasingly perilous strategic situation in which the U.S. finds itself today. The conscious elevation to orthodoxy of the doctrine of Mutual Assured Destruction and the concomitant decline of American defenses from acknowledged nuclear superiority which began during his tenure must be counted among the most radical revolutions in the history of military affairs. So radical is the chief legacy of the McNamara era, the doctrine of Mutual Assured Destruction, that over ten years after McNamara left office, it still inhibits serious consideration of measures by which the decline in American power might be reversed. Indeed, Mutual Assured Destruction, whose suggestive and apt acronym is MAD, has steered official American thinking away from any kind of strategy. That is, under Mutual Assured Distruction the reasons for war, preparation for war, and the waging of war do not matter, because weapons are but means of causing fright and objects for arms-control talks. Today arms control is the point of reference for American military and foreign policy; as President Carter puts it, the "centerpiece." The U.S. stands without a credible doctrine for safeguarding itself while the Soviet Union pursues a military

strategy in the classical mold. In order to understand how it could have come to pass that the last three administrations, populated by men who presumably have meant their country well, could have brought our nation to its present strategic dilemma, it will be necessary to examine the McNamara era in some detail. This chapter examines how American officialdom came to accept the desirability of MAD, and to trace the measures by which these leaders hoped to assure its grip on American strategic thought.

When Robert S. McNamara assumed office as the nation's eighth Secretary of Defense in January 1961, the United States enjoyed an unchallenged strategic nuclear superiority over the Soviet Union. Despite the suggestions of inadequacy raised by the bomber and missle "gaps" of the middle and late '50s, by the Eisenhower Administration's policy of nuclear self-denial, and by clever Soviet propaganda and bluff in nuclear matters, there is little doubt that nuclear war in 1961 would have meant the military destruction of the Soviet Union. Additionally, the Eisenhower Administration, although rejecting calls for a massive increase in American defense spending, nevertheless had initiated important qualitative improvements to the American strategic posture, including the development of the Polaris and Minuteman systems. The new Kennedy Administration, reacting to a perceived inadequacy in the level of defense spending, as well as to serious concern over the credibility of the Eisenhower-Dulles doctrine of massive retaliation, adopted a new damage-limiting counterforce strategy and markedly increased spending for strategic systems. As a result, after less than four years in office, McNamara was able to describe the U.S. arsenal as "an aggregation of force without parallel in human history," adding that "to appreciate the full extent of this force, we must contrast it to that of our principal adversary. By such a test, our strategic superiority is uncontestable."[1] Moreover, during the 1961–63 period while the new targeting doctrine of damage-limiting counterforce was being publicly expounded, the Cuban missle crisis dramatized to all the efficacy of possessing ultimate nuclear advantage. McNamara's initial calculations did not neglect defensive systems. During his first year in office he ordered development of a missile system (NIKE-X) to protect the U.S. population against enemy aircraft and missiles. He also advocated a large-scale civil defense program. In short, by 1963 the United States

could look forward to a strategic capability which could deter a nuclear attack on the U.S., and protect our allies as well as other vital interests abroad. Indeed, much of the élan with which the New Frontiersmen pursued flexible response around the world was born of the knowledge of American superiority. This meant they knew that in the unlikely event that deterrence should fail, the Soviet Union would be severely damaged, while damage to the U.S. would be limited, and a program of civil defense would protect millions of American lives.

Yet by 1968 when Secretary McNamara left office, the strategic situation was radically and fundamentally different. By 1968 American orthodoxy required that the Soviets could, should, and would adopt the premises of MAD, which Americans believed flow from the very nature of nuclear weapons. U.S. policy, reflecting a supreme American intellectual arrogance, had become devoted to the notion that the Soviets could be tutored, forced, or negotiated into abandoning their professed war-winning strategic concepts in favor of MAD. But while this policy did not constrain the Soviets, it restricted the numbers and types of American weapons, especially those designed to protect American lives should deterrence fail. This orthodoxy required that intelligence of Soviet developments not in consonance with MAD be overlooked, denied, or explained away each year's National Intelligence Estimate. But by 1968, when the Johnson Administration realized that the Soviet Union could gain the upper hand, American policy-makers had become intrigued by the possibility that arms-control talks would somehow provide escape from the looming problems which had been caused by unilateral restraint.

It is essential to understand how this came to pass.

The Early Counterforce Option: No Cities

After John F. Kennedy's victory in the election of 1960, the declared strategy of the U.S. changed from "massive retaliation" to "flexible response." As has been noted, the Eisenhower Administration had steadfastly refused to accept the premise that the "bomber gap" and the launching of *Sputnik* demanded a massive increase in the U.S. strategic forces. However, following *Sputnik* and the early Soviet ICBM deployments, and Nikita Khruschev's continuing "rocket-diplomacy," critics in

Congress, along with a small group of defense intellectuals, charged the administration with allowing a "missile gap" to develop and questioned the credibility of America's commitment to massive retaliation. However, President Eisenhower, who believed strongly in a balanced budget and who doubted the existence of a missile gap, decided not to order large-scale production of the first generation of liquid-fueled Atlas and Titan Intercontinental Ballistic Missiles (ICBMs). Instead, Eisenhower chose to accelerate development of second-generation solid-fueled weapons: Minuteman and Polaris. Controversy over the "missile gap," however, became a major issue in the 1960 presidential campaign. The Democrats pledged to change both the doctrine of massive retaliation and the nature of American strategic forces. Senator John Kennedy had been a leader among the Democratic critics of the administration's defense policies. Since 1958 he had charged that the President had allowed budgetary considerations to dictate strategic policy. "Eisenhower," said Kennedy, "tailored our strategy and military requirements to fit our budget—instead of fitting our budget to our military requirements strategy."[2] Kennedy called instead for budgets driven by strategy, and for a strategy which, unlike massive retaliation, offered controlled and flexible responses, graduated to meet a variety of levels and forms of aggression. Kennedy selected McNamara as Secretary of Defense and charged him with developing a force structure adequate to meet the nation's military requirements without regard to predetermined budget ceilings. The new administration recommended a major increase in both strategic nuclear and conventional forces costing many billions in additional expenditures.

The new doctrine required clear American nuclear superiority, especially in numbers. The Kennedy Administration's first budget proposed increasing spending on strategic systems by $30 billion over five years. A sizable buildup of strategic and conventional forces began immediately, and programs developed under the previous administrations were accelerated dramatically, especially Minuteman and Polaris.

> I have instructed the Secretary of Defense to reappraise our entire defense strategy—our ability to fulfill our commitments—the effectiveness, vulnerability, and dispersal of our strategic bases, forces and

warning systems—the efficiency and economy of our operation and organization—the elimination of obsolete bases and installations—and the adequacy, modernization and mobility of our present conventional and nuclear forces and weapons systems in the light of the present and future dangers.[3]

The administration's new doctrine meant the end of "optimum mix" targeting, which had allocated American weapons to Soviet targets so as to wipe out Soviet society and its military forces in one great spasm. Robert McNamara also rejected the contention that the U.S. could rely on small but supposedly invulnerable forces targeted only on Soviet cities. In perhaps the most extreme formulation of this latter doctrine, known as minimum deterrence, it was argued that, "if the Russians had ten thousand warheads and a missile for each, and we had ten hydrogen bombs and ten obsolete bombers . . . aggression would still be a folly that would appeal only to an insane adventurer."[4] This view, which McNamara later adopted, resurfaced in almost identical words in President Carter's address on the State of the Union in January 1979. However, McNamara initially rejected this view. McNamara's initial policy was to deter both nuclear and conventional wars by flexible and determined responses which would be "suitable, selective, swift and effective," and would be based on overwhelming capability to destroy enemy forces and on greatly increased conventional and tactical nuclear forces capable of dealing with other kinds of aggression. Although first applicable to strategic forces, flexible response was soon expanded to imply that the U.S. would respond to any tactical nuclear or conventional attack at the level at which it was offered, and would fight and win at that level.

Very early in his tenure, Secretary McNamara described the dramatic doctrinal transformation which had occurred.

> The defense establishment we found in 1961 was based on a strategy of massive nuclear retaliation as the answer to all military and political aggression. We, however, were convinced that our enemies would never find credible a strategy which even the American people did not believe.
>
> We believed in a strategy of controlled flexible re-

> sponse, where the military force of the United States would become a finely tuned instrument of national policy, versatile enough to meet with appropriate force the full spectrum of possible threats to our national security from guerrilla subversion to all-out nuclear war.[5]

The new American strategic force was as impressive as the new doctrine: half-again the number of Polaris Ballistic Nuclear Submarines double the production capacity of Minuteman; and a large number of the 1,700 bombers on fifteen-minute alert. It was even more impressive because shortly after assuming office, the new administration discovered that the "missile gap" of the presidential campaign of 1960 was in fact an Intermediate Range Ballistic Missile (IRBM) gap, which placed Europe in danger. But the new intelligence showed that the Soviets were much inferior in ICBMs and were hardly capable of threatening the U.S. at all.[6] This knowledge, together with the new strategy, led to further refinements in U.S. targeting doctrine with an emphasis upon less than all-out responses to Soviet agression, and eventually to the option of striking only military forces, the so-called "no-cities" counterforce doctrine.

In a speech delivered at Ann Arbor in June 1962 defining this doctrine, McNamara sought to strengthen the deterrent value of the American force and to devise a "rational" way in which to employ nuclear weapons should deterrence fail. He declared:

> . . . [W]e believe that the combination of our nuclear strength and a strategy of controlled response gives us some hope of minimizing damage in the event that we have to fulfill our pledge. The United States has come to the conclusion that to the extent feasible, basic military strategy in a possible general war should be approached in much the same way that more conventional military operations have been regarded in the past. That is to say, principal military objectives, in the event of a nuclear war . . . should be the destruction of the enemy's military forces, not of his civilian population.
>
> The very strength and nature of the [NATO] Alliance forces make it possible for us to retain, even in

> the face of a massive surprise attack, sufficient reserve striking power to destroy an enemy society if driven to it. In other words, we are giving a possible opponent the strongest imaginable incentive to refrain from striking our own cities.[7]

Most importantly, the new strategy acknowledged that the overwhelming U.S. capability could not guarantee that nuclear war would not occur. It conceived that nuclear war could occur as the result of an irrational act, by escalation from a smaller conflict or through misunderstanding. McNamara observed that

> the mere fact that no nation could rationally take steps leading to a nuclear war does not guarantee that a nuclear war cannot take place. Not only do nations sometimes act in ways that are hard to explain on a rational basis, but even when acting in a "rational" way they sometimes, indeed disturbingly often, act on the basis of misunderstandings of the true facts of a situation. They misjudge the way others will react and the way others will interpret what they are doing.[8]

The new doctrine addressed the question raised by a possible failure of deterrence: how to limit the impact of a nuclear war on the U.S. population. First, it argued, the number of fatalities of both sides resulting from a nuclear exchange could vary significantly depending upon which targets were selected. Secondly, the U.S. could seek to limit damage to itself by attacking remaining Soviet bomber and missile sites before they could launch their weapons. Thirdly, an active antibomber and missile defense together with a passive civil-defense program could further reduce American casualties. Finally, the U.S. would give the Soviets every incentive not to attack the U.S. population by avoiding deliberate attacks on Soviet cities and by holding a portion of the U.S. force in reserve to threaten those cities. In addition to the improvements already in motion, the administration announced steps specifically designed to enhance the no-cities option, including efforts to geographically separate U.S. weapons from populated areas.

The new administration also believed that the ability to limit

damage to the U.S. made the American commitment to NATO more credible.

The Ann Arbor speech is noteworthy also because by it a businessman serving as the American Secretary of Defense presumed to "educate" the Soviet general staff—composed, as Richard Pipes has so aptly noted, of professional soldiers who twenty years before had defeated the Wehrmacht—on the desirability of a strategy which protects one's homeland. Ironically, of course, the Soviets, had adopted such a strategy fifteen years earlier. More ironically, Mr. McNamara himself would soon loose faith in counterforce under the impact of a hostile reaction from critics who challenged damage-limiting counterforce in 1962 even as they do today.

Critics charged that weapons fit for damage-limiting counterforce can be used as well for a disarming first strike, and are therefore so provocative and "destabilizing" in crises as to give the Soviets the incentive to attack first. Secondly, critics charged, again as they do today, that a doctrine with emphasis on reducing damage makes nuclear war more "rational" and thereby more likely. Both of these important issues will be discussed at length in later pages, but it is instructive that administration spokesmen initially met these criticisms directly, defending the new doctrine with sophisticated and compelling arguments. One of McNamara's supporters, Morton Halperin, argued that whether or not the U.S. went first or second in a strategic nuclear war, it should not attack Soviet cities unless the Soviets had previously destroyed American Cities.

> It is very difficult to argue that one prefers a strategy whereby the U.S. would attempt to kill a large number of Soviet citizens even though this did not reduce the expected damage to the U.S. In fact, it would probably work in the opposite direction, while contributing neither to the effectiveness of the American military strike nor to the possibility of bringing the war to an end before the total military power of both sides had been used.[9]

However, as the Soviets increased their force and it appeared that American nuclear superiority would be increasingly expensive and more difficult to attain, the will to protect Ameri-

cans lives waned, and arguments hitherto judged weak began to gain exponents. By 1963, the trends within the McNamara Pentagon that were to culminate in MAD were already well delineated.

The Bureaucratization of Defense Planning

Robert McNamara brought to the Pentagon a number of skills from his position as president of the Ford Motor Company. An accountant by training, McNamara had specialized in statistical control during World War II and had become expert in the new "science" of operations research. At the Pentagon McNamara surrounded himself with a number of "whiz-kids" of similar technical background. Advisors with military backgrounds were noticeably absent. McNamara set about to "rationalize" the system by which American strategic plans are made and weapons purchased: "The Defense Department we found in 1961 was one in which each military service made its own independent plans,"[10] and these plans according to McNamara were in many cases either redundant or resulted in serious shortages in required forces.

Introducing the Planning-Programming-Budgeting System (PPBS) and an office for "systems analysis," McNamara directed that weapons would be chosen and deployed according to the same criteria used to judge business investment—"cost-effectiveness." Under McNamara the budget in effect was the defense policy of the U.S. "I equate planning and budgeting, and consider the terms almost synonymous," he said. This emphasis on cost analysis and budgetary control was foreign to purely military considerations, especially as expressed by uniformed officers. The Secretary of Defense spent his day, not with military officers schooled in combat and the writings of Clauswitz and Jomini but rather with civilian budget analysts "evaluating efficiencies of allocation" and with RAND thinkers who shared Brodie's views on minimum deterrence. Robert McNamara changed the Pentagon's terms of reference from those of the military strategist to those of the cost accountant. After McNamara, it became commonplace to talk of "buying" so much deterrence to attain a desired level of security. While the new approach corrected a number of serious shortcomings in the mechanics of previous defense planning, it neglected the

higher need for serious strategic thought. Strategy, defined in the classical sense, could not help but be ignored as defense issues were reduced primarily to questions of which weapons system would provide the most effective deterrent force at the lowest cost. The manager and the accountant had supplanted the military professional with the result that, as Richard Pipes observes,

> Under McNamara the procurement of weapons, decided on the basis of cost-effectiveness, came in effect to direct strategy, rather than the other way around, as had been the case through most of military history. It is at this point that applied science in partnership with budgetary accounting—a partnership which had developed U.S. strategic theory—also took charge of U.S. defense policy.[12]

Having substituted program analysis for strategic thought, U.S. officials came to view foreign and military policy in terms of the very management categories they had established. Programs I/II/III, categories in PPBS, corresponded to Strategic Offensive and Defensive Forces and General Purpose Forces (theater nuclear and conventional). These administrative categories soon came to define how senior policy makers conceived the threat to the nation's defense.

It is not surprising that Robert McNamara and his principal civilian aides soon developed an intellectual bias and a social class contempt of military men. This bias resulted in a failure to fully understand just how different the confused and wasteful realism of war must be from the precision of "game simulations" and cost analyses. The "civilian scholars of strategy" that surrounded McNamara, Colin Gray has observed, were "overimpressed with the potential transferability of theory to the world of action."[13] For example, in describing the Pentagon which he had found in 1961, McNamara complained that

> we found a weapons' inventory completely lacking in certain major elements required for combat readiness, but which also contained 270 per cent of the necessary 105 mm towed howitzers, and 290 per cent of the necessary 4.2 inch mortars. We believed in balanced, integrated, military forces equipped to re-

spond with a level of power appropriate to the type aggression mounted against us.[14]

This remarkable passage illustrates the extent to which McNamara misunderstood his job. A planner might decide he had too much of some things and not enough of others. But only an ideologue could presume to know in advance that he had 290 percent of the mortars necessary to fight a war, without knowing how, when and under what circumstances such a war might be fought. This failure to acknowledge the peculiar nature of war is perhaps the greatest conceptual flaw in McNamara's budgeting scheme and a first-rate example of educated incapacity.

By 1963 the growth of increasingly invulnerable Soviet strategic power, especially the prospect that the Soviets too would soon have a "secure" second-strike capability, led McNamara to question seriously the ability of the U.S. to contain a Soviet attack on the United States to an "acceptable" level of damage. It also appears that the Cuban missile crisis had a profound effect on McNamara's view of the utility of nuclear weapons. At this time, McNamara's thinking shifted against the virtues of superiority.

McNamara then embraced the concept of deterrence. American forces could save the country only if they were never used. But in order to make sure they wouldn't be used, they would have to be targeted on cities. The "no-cities" option had marked only an interlude in the development of McNamara's strategic views. By 1965, McNamara had further refined his views and had personally decided that MAD should be the American policy. The subsequent demands which the Vietnam War made on American resources allowed him to acquiesce to strategic nuclear parity with the Soviets without having to convince the American people.

Development of the Concept of Mutual Assured Destruction

Beginning in 1963, even as the U.S. was achieving a massive counterforce capability, and just after the effectiveness of that capability had been demonstrated in the Cuban missile crisis, Robert McNamara became convinced that an irreversible nuclear stalemate was developing between the U.S. and the Soviet

Union. In testimony before Congress during the period 1963–65, McNamara spoke less about defending the United States and more about the merits of the doctrine of second-strike assured destruction. Simultaneously he proclaimed U.S. strategic superiority and denigrated the military significance of superiority in nuclear weaponry. Increasingly he described damage limitation (which had figured so prominently in the earlier counterforce doctrine, and which he had cited to the NATO allies as a guarantee of the credibility of the American deterrent) as not cost-effective. He warned that in a nuclear war with the Soviet Union the U.S. could not escape massive destruction. The futility of nuclear war became the overriding theme of his statements. Assured destruction soon became, in the words of John Newhouse, "the supreme doctrine of the ascendant branch of the defense and arms-control communities." In 1968 McNamara summed up his doctrine:

> Having wrestled with this problem . . . I am convinced that our forces must be sufficiently large to possess an "Assured Destruction" capability. By this I mean an ability to inflict at all times and under all foreseeable conditions an unacceptable degree of damage upon any single aggressor, or combination of aggressors—even after absorbing a surprise attack. One can add many refinements to this basic concept, but the fundamental principle involved is simply this: it is the clear and present ability to destroy the attacker as a viable 20th-century nation and an unwavering will to use these forces in retaliation to a nuclear attack upon ourselves or our allies that provides the deterrent, and not the ability partially to limit damage to ourselves.[15]

Unacceptable damage, in turn, was defined in terms of the "values" that would be destroyed in retaliation, hence the curious term "countervalue target." True to the techniques of systems analysis, McNamara believed that he could identify and quantify such values, and thereby define deterrence.

> Thus, the first quantitative question which presents itself is: What kind and amount of destruction must we be able to inflict upon the attacker in retaliation

> to ensure that he could, indeed, be deterred from initiating such an attack?
>
> As I have explained . . . in previous years, this question cannot be answered precisely . . . In the case of the Soviet Union, I would judge that a capability on our part to destroy, say, one-fifth to one-fourth of her population and one-half of her industrial capacity would serve as an effective deterrent. Such a level of destruction would certainly represent intolerable punishment to any 20th-century industrial nation.[16]

Although the announced formula for assured destruction has varied somewhat over the years and has been expressed in other terms (for example, 400 one-megaton nuclear bombs delivered on the Soviet Union) the essence of this deterrent strategy consists in credibly threatening another nation with such a terrible level of destruction to its population centers and economic assets that it would not dare to attack under any circumstances. City targeting replaced city avoidance as the basis for deterrence with a premium on attaining a certain level of death and destruction.

When both sides possess such a credible deterrent force, a nuclear stalemate exists and a condition of stable strategic equilibrium obtains: Mutual Assured Destruction. In Robert McNamara's words:

> To put it bluntly, neither the Soviet Union nor the United States can now attack the other, even by complete surprise, without suffering damage in retaliation. This is so because each side has achieved, and will most likely maintain over the foreseable future, an actual and credible second strike capability against the other. It is precisely this mutual capability to destroy one another, and, conversely, our respective inability to prevent such destruction, that provides us both with the strongest possible motive to avoid a strategic nuclear war.[17]

The primary, indeed exclusive, purpose of national security policy and the military capabilities which support it in the age of MAD then, is to prevent wars, not to fight them. Nuclear war is no longer a rational policy option because no nation could

possibly win such a war. Compare Brodie's words: "Thus far the chief purpose of our military establishment had been to win wars. From now on its chief purpose must be to avert them. It can have almost no other useful purpose."[18] The unthinkable nuclear horrors of the '50s had returned. By the second half of the decade, McNamara had come to embrace a vision of nuclear horror more simplistic than that of the 1950s. In his Fiscal Year 1969 posture statement, McNamara quoted at length from the writings of the Eisenhower defense officials whose views he had earlier found so seriously wanting. To bolster his argument on the inevitability of MAD, McNamara recalled that

> in January 1956, Secretary of Defense Wilson noted that, "... independent of what year it might happen, within a reasonable number of years we are almost bound to get into a condition sometimes described as 'atomic plenty' or a condition where the two parties could, as a practical matter, destroy each other." In the following month, Secretary of the Air Force Quarles was even more explicit. He said, "I believe it will mean that each side will possess an offensive capability that is so great and so devastating that neither side will have a knockout capability, and, therefore, a situation in which neither side could profitably initiate a war of this kind... This has been frequently referred to as a position of mutual deterrence, and I believe we are moving into that kind of a situation."
>
> Indeed, as far back as February 1955, a distinguished group of scientists and engineers, frequently referred to as the Killian Committee, had concluded on the basis of a comprehensive study of our continental air defense that within probably less than a decade a nuclear attack by either the United States or the Soviet Union would result in mutual destruction. "This is the period," and the Committee's report stated, "when both the U.S. and Russia will be in a position from which neither country can derive a winning advantage, because each country will possess enough multimegaton weapons and adequate means of delivering them, either by conventional or

> more sophisticated methods, through the defenses then existing. The ability to achieve surprise will not affect the outcome because each country will have the residual offensive power to break through the defenses of the other country and destroy it regardless of whether the other country strikes first."[19]

McNamara no longer raised questions regarding how nuclear weapons could affect politics, questions which had so troubled him as a critic of massive retaliation in the 1950s. Were the Soviets seeking to "catch up" with the U.S.? Could the U.S. "stay ahead" of the Soviets? These questions were no longer significant now that the age of strategic equality was dawning.

The nuclear-tipped intercontinental missile has divorced force from politics. Anticipating the later celebrated outburst by Henry Kissinger as to the values of strategic superiority, Alain Enthoven, head of the Systems Analysis Office under McNamara argued that

> we should design forces and set levels of megatonnage, warheads, and missiles to match U.S. objectives . . . not against Soviet objectives or Soviet weapon characteristics . . . [T]he relationship of . . . "superiority" to U.S. military and political objectives is unclear . . . notions of nuclear "superiority" are devoid of significant meaning . . . such "nuclear superiority" as the United States maintains is of little significance, since we do not know how to use it to achieve our national security objectives. In other words, since the Soviet Union has an assured-destruction capability against the United States, "superior" U.S. nuclear forces are extremently difficult to convert into real political power. The blunt, unavoidable fact is that the Soviet Union could effectively destroy the United States even after absorbing the full weight of a U.S. first strike, and vice versa. Nor do we see that this is likely to change in the future.[20]

MAD assumes that all that is required for deterrence is the assured capability for destruction (the attainment of which technology has made both inevitable and relatively easy) and

the openly expressed will to use it. Indeed, with both sides possessing this capability, the danger of nuclear war is reduced. It is therefore to the advantage of both to foster this state of things. Beyond the number of weapons required for assured destruction, attempts to increase the numerical size of one's forces are not only futile and wasteful, but destabilizing as well since they cause unease to the other side. Therefore, both sides would be well advised to save money and to increase their security by limiting their weapons. In particular, each side must never appear to threaten the other side's assured destruction capability in any way. To try this would be futile and contrary to the principles of MAD, which dictate that each side must minimize the vulnerability of its own deterrent and the threat to the opponents' deterrent while maximizing the threat to the others' society and doing nothing to limit the vulnerability of one's own. Again, the arguments came from *The Absolute Weapon*: "Neither we nor the Russians can expect to feel even reasonably safe unless an atomic attack by one were certain to unleash a devastating atomic counterattack by the other."[21] To protect cities detracts from strategic stability while protecting counter-city weapons enhances it. Or as John Newhouse reminds us, to MADmen "Offense is defense, defense is offense. Killing people is good, killing weapons is bad."[22]

The balance of terror must continue until arms control agreements can finally reduce the danger brought on by these terrible weapons.

The MAD postulate rests on a number of auxillary propositions. The first of these is the assumption that a final technological plateau has been reached. With the development of the nuclear powered ballistic missile submarine, and of ICBM silos dispersed and "hardened" to withstand several thousand pounds of peak blast overpressure, no combination of increased numbers, increased accuracy or defensive systems, it was assumed, could negate either side's deterrent. This assumption rejected the possibility of future technological innovations in antisubmarine warfare, or of ballistic missile defense which would neutralize the opponent's assured second strike capability. To be sure, of course, the technology of the early 1960s did favor the MAD standoff: ICBMs carried a single relatively inaccurate warhead, and the nuclear submarine was for all practical purposes immune from detection and attack. The side which targeted enemy cities at least had confidence that it

could destroy its target list while any attacker which attempted to destroy its victim's weapons by a first strike could not be assured of doing so, due to his own weapons' inaccuracy.

Even today many American officials appear to believe that technology has never left the plateau of the 1960s. As some observers predicted a decade ago and the present administration openly admits, at some point in the early 1980s, the Soviets could eliminate the bulk of our ICBM silos in a first strike and still retain a large number of warheads in reserve with which to threaten the United States with a credible "third-strike" capability. Despite this fact, and a number of equally alarming developments which are addressed in later chapters, American officials nevertheless find themselves practically stuck with MAD though they have begun to discount its worth. While the President of the United States declared (to the plaudits of most of his aides) that a single American submarine could destroy the hundred largest Soviet cities, Secretary of Defense Brown in his *Annual Report* on the defense budget (FY 1980) observed that

> the threat to destroy some number of cities—along with their population and industry—will serve as an all purpose deterrent . . . *unfortunately, however, a strategy based on assured destruction alone no longer is wholly credible.* A number of Americans even question whether we would or should follow such a strategy in the event of a nuclear attack on the United States itself especially if the attack avoided population centers and sought to minimize the collateral damage from having targeted military installations. (Emphasis added.)[23]

At another point, however, he stated that

> even a surprise Soviet attack would have no prospect of disarming us—any more than we could expect to disarm the Soviets if we struck first. Not only would our surviving forces be very large; they could now readily penetrate Soviet defenses and destroy thousands of military and non-military targets either immediately or—if we choose—over an extended period of time . . . Even without Minuteman, our

> surviving second-strike capability would remain large—in the thousands of warheads. Not only could we still destroy a wide range of targets; we could also cause catastrophic damage to the Soviet urban-industrial base. It is difficult, in the circumstances, to see how the Soviets could expect to gain any meaningful advantage from starting such a mortal exchange.[24]

These passages suggest that the conceptual difficulty which Soviet strategic innovations have caused for American officials who advocate MAD remain as formidable today as in the 1960s.

Nevertheless, in the early 1960s these advocates of MAD believed that a second-strike capability was relatively easy to define, acquire and maintain. In the words of two of McNamara's systems-analysis planners, Alain Enthoven and K. Wayne Smith, the requirements of strategic forces were something of a cinch to calculate:

> The problem of calculating strategic force requirements was simplified. Indeed, in sharp contrast to most other types of military requirements, those for strategic forces lend themselves to calculation. At least the task presents a problem of definite dimensions, measureable in terms of the number and type of weapon systems required to do the job under various sets of conditions . . . Each of these factors involves uncertainties, but it is possible to introduce reasonable allowances for them in the calculations.[25]

Strategic deterrence is simply an extension of systems analysis; it is reduced to the same analytic techniques which are used for other planning decisions. The question became, in the catchphrase of the McNamara Pentagon: How Much is Enough? Deterrence, like any other goal of management can be reduced to its components, analyzed and "bought." Under this insidious logic, one quantifies the number and type of forces needed to "destroy" the Soviet Union by computing the optimum return in damage which one can obtain for a given number of dollars. The point at which this return becomes marginal, at which the "cost-effectiveness" curve levels off, defines assured destruc-

tion, since further expenditures bring proportionally less damage. All further analysis centers on how to obtain the given level of damage most cheaply.

This breathtaking confidence in the ability to define deterrence in percentages of Russians killed and industrial floorspace destroyed suggests the second major premise of MAD: deterrence rests far more on a clearly articulated determination to employ nuclear weapons when threatened than on the size of one's nuclear stockpile. Only the will to retaliate if attacked can make the deterrent credible. "This capability to destroy him even after absorbing his surprise attack must be a virtual certainty and clearly evident to the enemy. This is the foundation of U.S. deterrent strategy."[26] So persuasive has this argument seemed that, until most recently, MAD adherents have openly and repeatedly declared American willingness to absorb the full consequences of a surprise nuclear attack (to "ride-out" such an attack in the argot of this theory) *before* retaliating. In order to ride-out an attack, a country's missiles must depend on the "hardness" of their sites and on the attacking missiles' inaccuracy. In 1969 McNamara specifically rejected the possibility that the U.S. might protect its missiles by launching them once it was learned that they were under attack. He termed these procedures destabilizing and dangerous.

> Obviously, it would be extremely dangerous for everyone involved if we were to rely on a deterrent missile force whose survival depended on a hair-trigger response to the first indications of an attack.[27]

Ironically, the Soviets had adopted launch-on-warning doctrine in the early 1960s to compensate for their gross nuclear inferiority. Even today, declaratory U.S. policy seriously questions the credibility of such strategic postures. At the threshold of the 1980s—and of American nuclear inferiority, Secretary of Defense Harold Brown pointed out that the Soviet planners must consider the possibility that the U.S. would "launch-on-warning," but admitted that

> we have not made "launch under the attack" a matter of policy for a very good reason: such a decision would be a very grave and difficult one to make, even

> if our sensors gave clear and unequivocal indications of such an attack.[28]

Thirdly, MAD proponents believe that should deterrence fail for any reason, the resulting nuclear war could not be limited or controlled in any way. In the view of many MAD advocates the explosion of a single nuclear warhead violates a threshold which spells the doom of all mankind. "Spasm" nuclear holocaust is the result of any use of nuclear weapons whatever, regardless of the target or yield of the weapon. MADmen answer Herman Kahn's prophetic question of "Whether The Survivors Will Envy the Dead" in the affirmative. It follows, then, that to achieve a stable world, strategic (and arms control) policy should be directed at maintaining and supporting MAD. For those who believe in it, MAD takes the place of military strategy: Believers make decisions on the structure and size of forces, not on the basis of what these forces should do in case of war, but rather on the basis of whether or not they enhance MAD.

Nevertheless, the key tenets of the MAD postulate as developed under McNamara are seriously flawed, both in logic and as they purport to describe reality. To borrow a phrase from James Burnham, MAD advocates may be described as "mistaken in their predictions, false in their analyses, wrong in their advice, and through the results of their actions, injurious to the interests of the nation."

In the first place, it is by no means self-evident that because nuclear war would have consequences of unprecedented horror, one ought to make no plans to fight, survive and win it should it occur. Indeed U.S. officials ought to make such plans precisely *because* nuclear war would be so horrible, even if the chance that deterrence might fail is quite small. As one observer has noted,

> a belief that war is impossible rests on assumptions concerning the rationality and benevolence of world leaders about which history gives us few reasons to be sanguine; aside from the possibility of war through miscalculations, even a five percent chance that an ambitious, ruthless, or even insane conqueror may appear once again on the stage of history is a contingency which merits precautionary steps.[29]

If nuclear war, however remote, is possible, a troubling prospect is raised: Under conditions of Mutual Assured Destruction the United States would have to choose between two alternatives—surrender or suicide. Robert McNamara's question from Ann Arbor returns: Is it therefore in the interest of the U.S. to attempt to make nuclear war, if it occurs, as destructive and horrible as possible? Here is the paradox: if deterrence fails it would not be logical or indeed rational to carry out the threat upon which the entire concept of deterrence is supposed to rest. In the event of an attack upon the United States, of what possible benefit could it be to execute a policy whose only result at that point would be the slaughter of millions of innocent Russians? The dilemma lies in the fact that the threat of retaliation is only meaningful if executing it offers some advantage. A threat the execution of which would do no one any good begins to lose its impact the moment one begins to think about its results. Therefore critics charge that MAD is too simplistic and, in the final analysis, is incredible precisely at the point at which it is to be put into practice. These critics focus on the crucial differences between deterrence, which is in the first place a peacetime objective, and defense, which is a task for wartime. Glen Snyder stated the obvious in his classic study of deterrence and defense published before McNamara assumed office.

> The crucial point is that after the enemy's attack takes place, our military forces perform different functions and yield wholly different values than they did as deterrents prior to the attack . . . That combination of forces which appeared to be the optimim one from the point of view of deterrence might turn out to be far inferior to some other combination from the point of view of defense should deterrence fail. In short, maximizing the enemy's cost expectancy may not always be consistent with minimizing our own.[30]

As another writer on strategic affairs has posed the question: "If deterrence fails would a President push the button? Of course not."[31] He would not do it not because he would lack the courage, but simply because it would make no sense.

Since the 1960s critics of MAD have also raised the moral issues involved in this posture. They pointed out that MAD

rests on the threat to carry out an act of vengeful mass-murder, wholly unrelated to any morally worthy end.

Since the 1960s, critics have also rejected the arguments implicit in Robert McNamara's MAD postulate that active defenses must be 100 percent effective in order to be worthwhile; that limited protection is not worthwhile; and, in fact, can be worthwhile only to the extent it contributes to deterrence. (On grounds of cost-effectiveness McNamara had rejected arguments for increased damage limitation or defense which provided only "marginal" security benefits). Critics argue, as did McNamara himself in 1962, that although nuclear war would be a catastrophe, there is a meaningful difference between 5, 10, 20, 50, 100 and 150 million American causalties. Moreover critics of MAD believe that MAD theorists have grossly exaggerated the actual destructive effects of a nuclear war. They reject the *On the Beach* syndrome, which does not differentiate between attacks on weapons and attacks on cities, which sees all nuclear exchanges as leading ultimately to the end of life on earth. They therefore reject McNamara's notion that beyond a certain point, additional weapons have no significance, even if those weapons have the capability to limit damage to one's own country. Finally, critics reject the argument that a damage-limiting counterforce posture must be perceived as the equivalent of a capability to carry out a disarming first strike. These critics have been quick to point out that if in fact the second strike against cities is as powerful a deterrent as is claimed, then no provocation whatever should be able to overcome it. Above all, they point out that second strikes are as liable to be deterred as first strikes, and that deterrence at any given time depends on the balance of force at that time.

A massive literature exists in this field. An entire discipline has developed around the concept of deterrence, and volumes have been written exploring facets of deterrence such as "compellence," and "disuasion." Techniques such as "game theory," "conflict resolution" and the psychology of bargaining have beguiled bureaucrats and made a living for thousands. But it is not clear that America is any better off because of this—quite the contrary.

The United States has gone to great lengths to study the tactics of nuclear war. U.S. targeting doctrine as expressed in the SIOP (Single Integrated Operations Plan) is continuously war-gamed against the U.S. perception of the Soviet equivalent

(RISOP). Despite these efforts, however, it is by no means clear that we know very much about what it is that deters the Soviet Union from attacking the United States. The McNamara doctrine of MAD, however, supposes that we know precisely what will deter the Soviet Union. What can be said of this? First, what may deter the Soviets on a sunny day in June when all is well, may not in fact deter them when Soviet and NATO troops are locked in combat on the North German plain. As Herman Kahn has argued:

> Is our deterrent powerful enough to withstand all the stresses and strains of the Cold War, all the sudden and unexpected changes, the possible accidents and miscalculations, the satellite revolts, the limited wars, the crises in Berlin and elsewhere, the optimists, gamblers, or logicians who believe in proper plans, the reciprocal fear of surprise attack and any other kind of tense or unstable situations? . . . it would be a dangerous mistake to try to calculate the minimal force required to deter in some ideal circumstance . . . our posture should provide insurance against unforeseen contingencies.[32]

Nevertheless, the numbers and characteristics of American forces have been planned meticulously to meet precise requirements for deterrence.

Secondly, the notion of "unacceptable damage" is necessarily speculative and subjective, and decidedly incapable of being the cornerstone of any strategy. It follows that a policy of assured destruction could not properly be called a strategy at all. Richard Pipes has cited a telling analysis of precisely this question:

> Although commonly called a "strategy," assured destruction was by itself an antithesis of strategy. Unlike any strategy that ever preceded it throughout the history of armed conflict, it ceased to be useful precisely where military strategy is supposed to come into effect: at the edge of war. It posited that the principal mission of the U.S. military under conditions of ongoing nuclear operations against [the continental United States] was to shut its eyes, grit its teeth, and reflexively unleash an indiscriminate

> and simultaneous reprisal against all Soviet aim points on a preestablished target list. Rather than deal in a considered way with the particular attack on hand so as to minimize further damage to the United States and maximize the possibility of an early settlement on reasonably acceptable terms, it had the simple goal of inflicting punishment for the Soviet transgression. Not only did this reflect an implicit repudiation of political responsibility, it also risked provoking just the sort of counterreprisal against the United States that a rational wartime strategy should attempt to prevent.[33]

In short, the pursuit of assured destruction as if it were a strategy is in essence a peacetime declaratory policy meant to put off war. However, whenever it is actually applied, whether as a criterion for the procurement of weapons, or for actual military operations, MAD represents the very *negation* of strategy.

Finally, critics of the minimal deterrence position argue that the specific percentages that Robert McNamara used to define assured destruction i.e., 20–30 percent population fatalities, and one-half of the Soviet industrial capacity, are not derived from any understanding of Soviet strategy, values and perceptions of deterrence, but rather from the dictates of systems analysis. MAD has replaced strategy with computerized body counts. Alain Enthoven, McNamara's chief systems analyst, set out this latter point in a remarkably candid passage in a chapter entitled "Yardsticks of Sufficiency":

> Basically, U.S. strategic offensive forces were sized according to their ability to destroy the Soviet Union as a viable nation in a retaliatory strike. The level of destruction required—20 to 25 percent of the Soviet population and 50 percent of Soviet industry, commonly called our "assured-destruction" capability—was based on a judgment reached by the Secretary of Defense and accepted by the President, by the Congress, and apparently by the general public as well. That judgment was influenced by the fact of strongly diminishing marginal returns . . . beyond the level of around 400 1-megaton-equivalent deliv-

> ered warheads . . . [D]elivering more warheads would not significantly change the amount of damage inflicted. Indeed, doubling the number of delivered 1-megaton-equivalents from 400 to 800 would increase the destruction of Soviet population and industry by only 9 percent and 1 percent, respectively. Such increases would have little if any additional deterrent effect. In other words, once U.S. programmed bomber and missile forces reached the level where we could, with high confidence, deliver 400 1-megaton weapons on the Soviet Union in a retaliatory strike, the gain from having more bombers or missiles to deliver still more warheads would be very small compared with the cost. Thus, the main reason for stopping at 1,000 Minuteman missiles, 41 Polaris submarines, and some 500 strategic bombers is that having more would not be worth the additional cost. These force levels are sufficiently high to put the United States on the "flat of the curve"—that is, at a point where small increases in target destruction capability would require enormous increases in forces, and therefore in cost. The answer to the question of how many strategic offensive forces are enough rests heavily on such flat-of-the-curve reasoning.[34]

The doctrine as expressed by Alain Enthoven became absolute: "Once we are sure that, in retaliation, we can destroy the Soviet Union and other potential attackers as modern societies, we cannot increase our security or power against them by threatening to destroy more."[35] Implicit here is the belief that if the Soviets are presented with such a deterrent threat with its guarantee of specific destruction, they will surely be deterred.

Such calculations are, of course, not strategy, the legitimate purpose of which is the weighing of risks and costs and the choices between them. In an almost off-hand dismissal of the central issues of strategy, a friendly student of McNamara's PPBS has explained just how narrow a space was reserved for strategic planning and for the views of the Joint Chiefs of Staff within a Department of Defense dominated by professional managers who believe in MAD:

> As such, the JCS requirements document represents the sole opportunity within the PPBS framework for senior military leaders to express their view of forces and other resources needed to properly perform the defense job which they have been assigned.[36]

Thus the American military was largely excluded from precisely the questions of risk and objective forces that are the stuff of strategy, and were largely confined to the calculation of how many megatons might be required to destroy a given number of targets assigned them by MAD wisdom. Or as one strategic analyst, currently on the National Security Council has remarked: "Unfortunately, strategy is more like politics than like science."[37]

After that it is but a simple proposition to determine what level of damage the U.S. can threaten cost-effectively. In 1967, Harold Brown, who was then a key aide in the McNamara Pentagon, and is now Secretary of Defense, was of two minds as to whether strategy or technology should guide planning for the procurement of weapons:

> Whether strategy or technology comes first is (perhaps fruitlessly) debatable . . . yet, if we examine how our strategy got to be what it is, clearly technology had a big part in getting us there . . . it is easier to produce military hardware than it is to know what policy to follow.[38]

This misuse of the word "strategy" to describe managerial decisions influenced by the ideology of MAD continues to influence the debate over defense policy today.

The essence of the MAD postulate is the belief that nuclear weapons manifest an "iron law" unto themselves which is binding on all, including the Soviets. To be sure, by definition MAD requires that it be accepted by both sides. It is ironic that advocates of MAD, who so often attribute the cause of war to misunderstandings between states have so far failed to grasp the importance of the fact that the Soviet Union understands "strategy" in the way dictionaries define it. Surely here is a big misunderstanding. In an insightful passage one observer has summarized the central fallacy of the MAD approach to strategy:

> Above all . . . the assured destruction approach to strategy at its core constitutes an almost classic example of mirror-imaging in political analysis. It rests ultimately on the assumption that there is a natural, inevitable "logic"—or logical approach to policy—inherent in weapons of mass destruction that will become obvious to anyone who thinks seriously about deterrence. Whatever their preferences, in this view, Soviet and American policymakers alike will be driven inexorably toward acceptance of the assured destruction position. Deterrence is thus larger than life, immune to the vagaries and influences of politics, history, culture, social and economic forces, and differences in political institutions and systems. What is sufficient to deter American decisionmakers will surely be sufficient to deter Soviet decisionmakers also . . . This is an astonishing claim.[39]

It is indeed an astonishing claim since it rests on a view of Soviet perceptions for which the evidence has always been to the contrary. Neither in Soviet military writing, nor in the behavior of military and political leaders can the equivalent of this doctrine be found. As will be seen, apart from whatever theoretical difficulties the Soviets find in the MAD strategy, the kinds of weapons they have built suggest that they are not willing to depend on a MAD deterrent strategy for the defense of their homelands. In short, from the beginning, Soviet words and deeds have impeached the relevance of MAD.

A detailed examination of Robert McNamara's views on MAD reveals at bottom a belief that nuclear weapons technology leads to a competitive arms race through misperception and misunderstanding. This action-reaction phenomenon of "two apes on a treadmill," in the phrase made infamous by Paul Warnke, is supposed to be both the driving-engine of the arms race and the ultimate rationale for MAD. For, in the absence of MAD, this competition is supposed to lead inevitably to nuclear war.

But the logic of MAD also dictates the solution to the dilemma of the nuclear age: arms control. To understand how McNamara came to see arms control as the salvation of the United States, it is necessary to analyze his views on the arms

race and the degree to which he believed that the Soviets shared his strategic doctrine.

While denying the utility of the increasing supply of Soviet weapons, McNamara traced the Soviet strategic buildup to American overreaction to the "missile gap" of 1960 and to Soviet misreading of America's true motives. McNamara concluded that the Kennedy Administration in its initial response to the "missile gap" had overstated the Soviet threat. "The Soviets," said McNamara in 1962, "simply did not build the kind of long-range missile force they were expected to build."[40]

On this point he was partially correct; by the early 1960s Soviet ICBM deployments had not reached the levels forecast earlier. The Soviets had concentrated on deploying lesser-range strategic missiles against Western Europe. At the time of the Cuban missile crisis the Soviets had only four liquid-fueled SS-6 ICBMs on nonhardened launchers. The SS-6 was dangerous above all to those who had to load it with super-flammable fuels. (The Soviet ICBM force increased rapidly after this time, reaching well over 400 ICBMs and Submarine-Launched Ballistic Missiles (SLBMs) by 1966. By 1969 U.S. superiority in numbers of ICBMs had vanished.)

In any case Robert McNamara's perception that the U. S. had overreacted became fixed. In his famous "Mad Momentum of the Arms Race" speech delivered in San Francisco in September 1967, McNamara propounded his view:

> In 1961, when I became Secretary of Defense, the Soviet Union possessed a very small operational arsenal of intercontinental missiles. However they did possess the technological and industrial capacity to enlarge that arsenal very substantially over the succeeding several years.
>
> Since we could not be certain of Soviet intentions —since we could not be sure that they would not undertake a massive buildup—we had to insure against such an eventuality by undertaking ourselves a major buildup of the Minuteman and Polaris forces.
>
> Thus, in the course of hedging against what was then only a theoretically possible Soviet buildup, we took decisions which have resulted in our current

> superiority in numbers of warheads and deliverable megatons.
>
> But the blunt fact remains that if we had had more accurate information about planned Soviet strategic forces, we simply would not have needed to build as large a nuclear arsenal as we have today . . .[41]

Not only had the U. S. misperceived Soviet actions, but in overreacting had, in fact, been the cause of the later Soviet buildup.

> Furthermore, that decision in itself—as justified as it was—in the end, could not possibly have left unaffected the Soviet Union's future nuclear plans.
>
> What is essential to understand here is that the Soviet Union and the United States mutually influence one another's strategic plans.
>
> It is precisely this action-reaction phenomenon that fuels an arms race . . . We both have strategic nuclear arsenals greatly in excess of a credible assured destruction capability. These arsenals have reached the point of excess in each case for precisely the same reason: we each have reacted to the other's buildup with very conservative calculations. We have, that is, each built a greater arsenal than either of us needed for a second-strike capability, simply because we each wanted to be able to cope with the "worst plausible case." . . .[42]

But it is not only mutual worst-case planning that leads to the arms race. In part this phenomenon is also psychological and is the result of the inexorable push of technology.

> There is a kind of mad momentum intrinsic to the development of all new nuclear weaponry. If a weapon system works—and works well—there is strong pressure from many directions to produce and deploy the weapon out of all proportion to the prudent level required.[43]

Though no evidence ever existed to support these assertions, they became for Robert McNamara the corollary to his belief

in MAD. And as with MAD, McNamara's belief in the arms race was an article of blind faith, immune to factual or rational refutation. As with many other complex notions which are accepted as conventional wisdom, the concept of an arms race is often abused. Albert Wohlstetter thus described the popular legend of the arms race to which McNamara subscribed:

> Systematic overestimation of future adversary strategic forces is the driving engine of the arms spiral on our side: We invariably expect the Russian programs to be larger than they turn out to be: We compound this overestimate by "worst case" analysis, cautiously over-designing our programs to meet a Russian threat greater even than the one we expect—only to find, when the Russian threat turns out to be less than expected, that we have irrevocably committed ourselves to new and higher levels of spending on strategic forces. So according to the received doctrine.[44]

But, upon examining the real world, Wohlstetter concluded that McNamara's view is false. Wohlstetter compared the United States estimates of the numbers of Soviet ICBMs, missile submarines and bombers made during the 1960s with actual Soviet deployments and found that, instead of systematic overestimation, the U.S. has, in fact, consistently *underestimated* Soviet nuclear deployments.

Therefore, one can only conclude that if American weapons programs were driven by what Americans thought was happening in the USSR, they were indeed driven by very little. Reality is the exact reverse of the stereotype of the "apes on a treadmill."

According to Wohlstetter, U.S. strategic budgets and the destructive capability of U.S. strategic forces actually went down, not up, during the period of the alleged arms race. With respect to the "missile gap," Wohlstetter confirms that it was a gap in Intermediate Range Ballistic Missiles (IRBMs), and that U.S. overestimates of the number of Soviet ICBMs corresponded almost exactly to our *under*estimates of Soviet deployment of IRBMs and Medium Range Ballistic Missiles (MRBMs) aimed at America's forces and America's allies in Europe. The same cannot be said of the USSR, however. Though the Soviets could

see clearly that the United States had stopped increasing the size of its forces, they increased theirs. Had they been "driven" by the U.S., they would have stopped.

Robert McNamara's view, of course, was quite different. He judged that the Soviets:

> . . . have decided that they lost the quantitative race and they are not seeking to engage us in that contest. It means there is no indication that the Soviets are seeking to develop a strategic nuclear force as large as ours . . . [and] their rate of expansion today is not such as to allow them even to equal, much less exceed, our own 1970 force.[45]

As Soviet force levels increased, McNamara deprecated their meaning. In his San Francisco speech in 1967, he asked:

> Is the Soviet Union seriously attempting to acquire a first-strike capability against the United States?
>
> Although this is a question we cannot answer with absolute certainty, we believe the answer is no.[46]

When the evidence mounted that the Soviets were indeed building such a capability, McNamara was struck not with alarm, but with a sense of the futility of weaponry in the modern age.

> Now, in strategic nuclear weaponry, the arms race involves a particular irony. Unlike any other era in military history, today a substantial numerical superiority of weapons does not effectively translate into political control, or diplomatic leverage . . .
>
> We do not want a nuclear arms race with the Soviet Union—primarily because the action-reaction phenomenon makes it foolish and futile . . . we would much prefer to come to a realistic and reasonable riskless agreement with the Soviet Union, which would effectively prevent such an arms race.[47]

When it became unmistakable that the Soviet Union was building arms irrespective of American intentions, McNamara

judged that the U. S. should not match the Soviets, but rather should educate, cajole, and if necessary enforce the logic of MAD on the Soviet Union, which through misperception of *American* intent, has mistakenly followed the technological imperatives of the arms race.

Robert Strange McNamara's belief in MAD was not confined to theory. His decisions on force posture and weapons requirements flowed directly from his strategic view. McNamara determined to educate the Soviets by declaratory policy and by the example of unilateral American restraint. Beginning in 1963, McNamara refused to accede to demands from the military and from certain Congressional quarters for further increases in U.S. strategic forces. In 1963 McNamara ordered the elimination of the early Atlas and Titan I missiles, most of which had only recently been deployed. In 1964 McNamara publicly scheduled the destruction of the B-47 fleet. McNamara resisted pressure to build anywhere from 1,200 to 10,000 Minuteman missiles. On November 5, 1964, the current number of U.S. land-based ICBMs was frozen at 1,054 although deployment was not completed until 1967. The number of SSBNs was held at 41, with 656 launcher tubes. The number of B-52s peaked at 639 in 1962 and was down to 460 by the mid-1960s. No strategic ASW program was developed, so as not to threaten the Soviet assured destruction capability.

Continuing reductions in America's air defenses and civil defense were seen as methods of tutoring the Soviets in MAD by example. McNamara's Antiballistic Missile (ABM) decision, discussed later, is the classical example of this effort.

In new programs as well, Robert McNamara sought to demonstrate conscious restraint while supporting those weapons which added only to assured destruction. All weapons with a counterforce capability were resisted. Even Multiple Independently Targeted Reentry Vehicles (MIRV) were put to the service of restraint, becoming a rationale for discouraging other more capable and numerous systems. Small MIRV warheads could penetrate any Soviet ABM, but were not truly capable of counterforce. McNamara purposely restrained yield and accuracy on the new Poseidon and Minuteman III improvements to the U.S. missile forces, choosing to arm Poseidon with 10–14 small inaccurate warheads rather than the recommended 3 large, accurate ones. McNamara's decisions were intended to

strengthen MAD and prevent a U.S. counterforce capability. These decisions, together with his conclusion that arms-control negotiations were the solution to the American strategic dilemma, led directly to SALT I.

3.

Meanwhile in Moscow

In the 1960s, while Robert McNamara and the U.S. defense intellectuals were undergoing a metamorphosis from advocacy of damage limitation to Mutual Assured Destruction (MAD) and city-busting, the Soviets were doggedly pursuing the opposite course. Overall, strategic nuclear inferiority had forced the Soviets to rely on the threat of city-busting for deterrence while their doctrines stoutly maintained that destruction of military targets was the only logical use for nuclear weapons since they had not changed the nature of war, but had merely altered the means available to accomplish the Clauswitzian object of war —the destruction of enemy armed forces. They continued to reject the view of Western nations that new weaponry had made nuclear war unthinkable and unwinnable—this they dismissed as "bourgeois naiveté."

The problem for the Soviets was to build up their forces to escape dependence on an irrational nuclear doctrine of targeting cities; while in Washington the problem became one of paring down U.S. military capabilities excess to the minimum required for MAD.

From the outset of the nuclear age, the Soviets had refused to abandon the Clauswitzian view of war (which they ascribe to Marx and Lenin, of course, not to Clausewitz). War is the continuation of politics by other means; the objective in war is the

destruction of opposing forces. Nuclear weapons may cause a revolution in the *art* of war, but not in its nature or its objectives. The continuation of such military orthodoxy in the face of the vast increase in the destructive power of weaponry was only in part the result of a serious and structured approach to strategy in the Soviet General Staff. Such orthodoxy was reinforced by Marxist-Leninist tenets that would have made revision of military doctrines an act of political heresy.

A Marxist-Leninist cannot concede that the capitalist world is capable of creating military power superior to that of the Socialist Camp. Nor can he admit to a world in which the "class struggle" cannot erupt into violence and war because of some technological advance in weaponry. Thus the Soviet military Establishment, in full agreement with the Communist Party, refused to concede to the Western argument that nuclear weapons had so altered the international scene that major wars were no longer winnable or even thinkable.

To Western analysts, the Soviet attitude seemed bizarre. The Soviets insisted that war would be prolonged, nuclear weapons notwithstanding. They insisted on the continued necessity for "multimillion man armies," and poured billions of rubles into air defenses—guns, interceptors and later Surface-to-Air Missiles (SAM). American Intelligence analysts, thoroughly imbued with notions such as balance-of-terror and spasm nuclear war, found it incredible that the Soviets seemed to ignore those "realities." Thus, Soviet military doctrines were contemptuously ascribed to a cultural lag—a systemic inability of the Soviets to adapt to new strategic dimensions—or to mere whistling in the dark to avoid panicking in the face of U.S. superiority.

But by the early 1960s the Soviets had already proved by their actions that they were quite serious about their doctrines. The Berlin Blockade, the Korean War, and the Cuban Missile Crisis provided ample evidence that the Politburo did not believe that military force had been excluded from international relationships by the advent of nuclear weapons—even if their opponents held an outright nuclear monopoly or an overwhelming superiority. Further, Soviet military forces were structured as best they could be to fight and win a major war with the West. Since the Soviet Union lacked intercontinental reach, a "war" had to be confined to Europe. In the face of Western nuclear superiority, the Soviets would have to rely on

nuclear-resistant conventional forces, sacrificing staying power for speed of movement, and in sufficient quantity to withstand the attrition that would be inflicted by nuclear weapons. These forces must be ready to go or be mobilized quickly and move swiftly into Western European territory where the use of nuclear weapons by the United States would be inhibited. The USSR itself would be defended by the best air defense technology could produce and damage to the homeland would be reduced by civil-defense measures.

Despite Soviet conventional arms superiority and the demonstrated reluctance of the United States to use nuclear weapons even in the most serious situations of the Korean War, the Soviets assumed until the 1960s that a war in Europe would be nuclear. Here was a case where the Soviets "mirror-imaged" their views into U.S. military thinking. They simply could not conceive of the West foregoing employment of its primary military advantage in a major conflict, despite evidence to the contrary. Thus, they assumed that the U.S. would strike all prelocated garrison areas of their divisions, i.e., *military,* not civilian targets—and went to great lengths to ensure that these divisions were moved out of their normal barracks *before* they were mobilized. Reservists reported to spots in the woods, *not* to the garrison.

Despite a clear doctrinal commitment to military victory regardless of modern weaponry, the Soviets entered the 1960s saddled with a balance of strategic nuclear power which made their Europe-only war-winning concepts sound hollow to the West and in part to themselves. In Marshal Sokolovskiy's compendium of Soviet strategy published in 1962, the focus was almost entirely on war in Europe. The possibility of the U.S. strategic nuclear superiority being brought to bear was discussed only in the vaguest of terms. In obeisance to Leninist ideological constructs, the authors maintained that the Soviet Union would emerge triumphant in any case because of the "superior morale of the Socialist Bloc."

But the Soviets realized that winning a war with the West was a dubious enterprise until U.S. nuclear superiority was overtaken; this realization was amply evident in their military programs. The acquisition of Soviet intercontinental nuclear strike forces was constrained from the outset by inadequacies of technology. Until the early 1960s Soviet strategic nuclear

systems reflected these constraints. Enormous resource outlays went into medium-range bombers and medium-range ballistic missiles. By 1964 Western Europe was threatened by nearly 2,000 nuclear delivery vehicles of this category—more than half of which *did not even have nuclear weapons to deliver.* Western analysts were astonished to learn through clandestine means that many of these Soviet "strategic" systems were to deliver toxic chemical warheads. This nuclear poverty was reflected in the curious tendency of Soviet military spokesmen and writers to use the more generic term "weapons of mass destruction" rather than "nuclear weapons" when discussing strategic matters.

During the early to mid-1960s the tenets of Soviet military doctrines were refined, but little changed. Only two significant modifications to doctrine and strategy appear to have been made: allowance for the possibility that a conflict between USSR/WARSAW Pact and U.S./NATO might have an initial, nonnuclear phase, and adoption of launch-on-warning by the Strategic Rocket Forces (SRF). Both modifications occurred in the mid-1960s.

The 1960s were a very difficult period for Soviet force planners; the requirements of doctrine and strategy went far beyond the capabilities of the Soviet economy and technological base; U.S. strategic forces were growing rapidly in numbers and technological sophistication; the convolutions in U.S. declaratory policy were bewildering. Nevertheless, the Soviets pushed on with a wide array of strategic programs, adapting to changes in the enemy's posture as as best they could, given the constraints under which they labored

Before proceeding to survey these developments, let us look briefly at the doctrinal modifications focusing on how the Soviet military's assessment of the "correlation of forces" probably influenced Soviet SALT policy.

Until the first SS-9, SS-N-6 and SS-11 launchers became operational in 1966–67, Soviet strategic nuclear forces were very vulnerable. All the basic decisions on deployment of the earlier missiles (SS-4, SS-5, SS-7 and SS-8) were taken when the Soviets thought the U.S. would not be able to locate the launchers. Hence, prior to the SS-9 and SS-11, virtually all of the Strategic Rocket Forces' launchers were soft and concentrated. American Atlases, Titans and Minuteman Is, inaccurate as they

were, could have destroyed such very soft targets. Consequently, until about 1968 the U.S. had a *de facto* counterforce capability that it had not sought.

Thus, in the mid-1960s the Soviets were probably concerned about the American Forces' capabilities for counterforce attacks. They probably neither anticipated nor subsequently believed that the U.S. would deliberately design its MIRVed missiles so that they would be ineffective against Soviet silos. Therefore, during the period of their forces' vulnerability they considered the possibility that they might have to launch their missiles if they were attacked.

Adoption of launch-on-warning was broadly hinted in a 1966 article by Marshal Sokolovskiy and Gen. Maj. Cherednichenko. Marshal Krylov, Commander-in-Chief, was very explicit in an article in *Military Thought* in 1967:

> With the presence in the armament of troops of launchers and missiles which are completely ready for operation, as well as systems for detecting enemy missile launches and other types of reconnaissance, an aggressor no longer is able suddenly to destroy the missiles before their launch in the territory of the country against which the aggression is committed. They will have time during the flight of the missile of the aggressor to leave their launchers and inflict a retaliatory strike against the enemy. Even in the most unfavorable circumstances, if a portion of the missiles is unable to be launched before the strike of missiles of the aggressor, as a result of the high degree of protection of the launchers from the nuclear explosion, these missiles will be retained and will carry out the combat missions entrusted to them.
>
> Thus in nuclear conditions, with the presence of a system for detecting missile launches, an attempt by the aggressor to inflict a sudden preemptory strike cannot give him a decisive advantage for the achievement of victory in war, and, in any case, will not save him from great destruction and human losses. Moreover, in a number of cases the aggressor will have to pay with even greater amount of destruction of victims.[1]

The Soviet Military Predicament In the 1960s

In order to understand the Soviet approach to SALT it is necessary to examine the status of Soviet strategic forces circa 1969 and the capabilities of these forces to meet Soviet objectives. It is also necessary to trace decisions which the Soviets took in the mid-1960s resulting in Soviet weaponry in the early '70s.

Classifying Soviet forces into the categories of "strategic offensive" and "strategic defensive" does no violence to Soviet concepts. Given Soviet organization and mission assignments, however, it is more useful for the purposes of this discussion. Look at Soviet strategic forces by branches of service: Strategic Rocket Forces (SRF), National Air Defense (PVO Strany), the Red Navy and the Long-Range Air Armies (LRA). All land-based strategic missile forces—IR/MRBMs as well as ICBMs—are in the SRF. PVO Strany has interceptors, SAMs and an extensive ground equipment for warning, tracking, interception and battle management to defend the country against hostile airplanes, cruise missiles and ballistic missiles. The Red Navy has both strategic offensive forces—SLBMs—and strategic defensive forces—surface ships, submarines and aircraft. These forces are fit for strategic antisubmarine warfare and for operations against U.S./NATO aircraft carriers. Surface ships are the first priority targets. The LRA has a large force of medium bombers and a modest number of heavy ones, which are assigned to strategic offensive forces in all Theaters of Military Operations (TVDs) and which also assist the Navy in its antishipping missions.

In 1968–69 the several branches of the Soviet Armed Forces were in widely varying states of readiness and at different stages of modernization.

Strategic Rocket Forces (SRF). From their formation in 1960 until 1968 the SRF consisted mostly of IR/MRBM units for strategic operations in Eurasia. In 1957–58 the Soviets had committed themselves to building a large IR/MRBM force—some 750 launchers and probably about 2,000 missiles were deployed—and a modest number of ICBMs—a token number of SS-6s and some 225 SS-7s and SS-8s were deployed.[2]

Almost all of these missiles were deployed in soft launchers,

evidently because the Soviets believed they could deny the U.S. surveillance of Soviet air space and hence the ability to target the missiles. Moreover, in 1957–58, the feasibility of engineering missile silos may have been open to question.

By the beginning of the 1960s many of the assumptions upon which the earlier decisions had been made were no longer valid. The Soviets may have learned enough from technical analysis of the U-2 brought down in May 1960 and from their own space program to realize that they could not deny U.S. surveillance for long. Any lingering doubts presumably were dispelled when the U.S. officially informed the Soviets in September 1961 that we knew they had only a few ICBMs, which in effect also told the Soviets that we could locate and target all of their strategic missiles. Being concentrated as well as deployed mostly in soft launchers, the entire Soviet strategic missile force was very vulnerable to U.S. counterforce strikes. Given the lead times involved, little could be done to rectify the situation until the late 1960s.

Priority deployment of IR/MRBMs, however, did provide complete coverage of strategic targets in Europe and Asia in the early 1960s. In these areas the number of strategic targets was fairly stable, even declining somewhat, as American Strategic Air Command (SAC) bombers were being withdrawn from overseas bases. Most military targets in Eurasia were soft, and remained so until the end of the decade. On the other hand, the number of strategic targets in the U.S., "the transoceanic theater," was growing rapidly and the upper limit could not be forecast with confidence. Moreover, many transoceanic targets were "hard," as the U.S. began to base its ICBMs in silos. With Soviet missile accuracies of around one nautical mile, even yields of around 2–5 megatons (MT) did not suffice to make the SS-7 and SS-8 ICBMs effective against U.S. silos.

It is possible that the Soviets' original (1957–58) plans for the SS-7 and SS-8 provided for deploying more than some 225 launchers. But the Soviets apparently soon judged that these inaccurate missiles, deployed in a "soft mode," were not rational weapons. In the preemptive or first strike role they would not be effective against hardened American silos. Further, they were of doubtful value in the second strike role because they would not survive. By 1961 the sensible Soviet course of action was to restrict deployment of these ICBMs even if it meant prolonging the "missile gap." It may or may not be a coinci-

dence that the SS-7 and SS-8 programs were terminated at about the same number of launchers as the U.S. Atlas and Titan ICBM programs.

The SRF's principal challenge to rapidly changing U.S. capabilities were the SS-9 and SS-11 ICBMs. The Soviet Navy responded with the SS-N-6 SLBM in the Yankee class SSBNs. With accuracies of 0.4 to 0.7 nautical miles and a warhead yield of 18 to 25 MT, the SS-9 was effective against either Minuteman silos or launch control centers.[3] With an accuracy of .8 nautical miles and a yield of 2 MT the SS-11 was effective only against soft targets.[4]

Predictably, these systems had been designed for hard and soft targets respectively. The 3:1 ratio of their deployment (three SS-11 to one SS-9) represented approximately equal cost programs (in dollar terms). This was consistent with the equal emphasis on preemption and retaliation found in Soviet military strategy at the time.[5]

During this period the Soviets also developed a Fractional Orbit Bombardment System (FOBS) in an evident attempt to circumvent the radars meant to warn the U.S. of an attack. This is an ICBM that goes the "wrong way" around the globe to reach U.S. targets from the south. But they apparently deployed the FOBS only in limited numbers or not at all. FOBS may have had technical difficulties and also became outdated when the U.S. developed over-the-horizon radars for warning purposes. It was certainly very inaccurate.

The timing of Soviet decisions on the SS-9 and SS-11 ICBMs and on the SS-N-6 SLBM, is the subject of both uncertainty and controversy. In general, there are three interpretations of Soviet decisions on these programs:

1. Development and deployment of all three systems were responses to Soviet humiliation in the Cuban missile crisis.
2. Development of these systems was initiated sometime in the early 1960s, not necessarily in response to the Cuban crisis, while the decisions for rapid and large scale deployment date from Khrushchev's replacement by Brezhnev-Kosygin.
3. Initial schedules for all three programs were decided long before both the Cuban crisis and Khrushchev's fall, probably no later than the XXII Party Congress in October

1961. Design and construction leadtimes are such that Brezhnev and Kosygin could have done little else than continue programs already underway (or cancel them, which they did not do).

Although these alternative hypotheses about the genesis of the SS-9, SS-11 and SS-N-6 programs are central issues in U.S. historical perspective of the Soviet strategic force buildup, any attempt to resolve them is beyond our scope. It is sufficient here to set forth the alternative interpretations and to mention that this book follows the third hypothesis because there really is no evidence to support the first hypothesis, while the second hypothesis is contradicted by construction leadtimes and the straight line, unbroken buildup in SS-9, SS-11, and SS-N-6 launchers.

It is generally agreed that by 1969 the SRF had eliminated the U.S. quantitative advantage in the number of ICBMs while maintaining their large advantage in strategic missiles for operations in Eurasia. However, this Soviet progress was about to be negated by the American MIRV programs which would soon give the U.S. an even greater advantage in the number of warheads carried by U.S. strategic forces than the advantage the U.S. previously had enjoyed in single warhead ICBMs and SLBMs. However, the Soviets had long since laid further plans. In the mid-1960s they had started their own MIRV program in conjunction with development of their fourth generation of missiles: SS-17, SS-18, SS-19 and SS-20.[6] But in 1968–1969 as the Soviets were deciding what to do about SALT, they knew that these new missiles would not be ready for flight tests until around 1972 and would not be fully deployed until after 1975, or some five years behind the U.S. MIRV program. MIRV programs for Soviet SLBMs were even further behind the U.S. pace. (It has been convincingly argued by Dr. Miles Costick in his small volume, *The Strategic Dimension of EAST-WEST Trade*, that the Soviet Lag in MIRVs was curtailed by the U.S. sale of critical technology to the Soviets.)

Modernization of (LRA) the Soviet Long-Range bomber force, proceeded at a modest pace during the 1960s: one new medium bomber (TU-22 Blinder) and a family of Air-to-Surface Missiles (ASMs) designed to attack carriers, ships and electronic emitters rather than just large ground targets. But in the late 1960s the LRA was in no position to make up the difference between

the Americans' superiority and the Soviet SRF's inferiority.

Strategic Defense (PVO Strany). Soviet strategic defenses presented a much grimmer picture in 1968–1969. Here the Soviets were not five years behind the U.S. but at least ten to fifteen years behind. Most of the Soviet Union's vast effort in air defenses had been directed against high-flying bombers. But even these defenses—3,000 interceptors, over 10,000 SAMs and 6,000 radars for detection and tracking—were by no means airtight.[7] However, the Soviet high altitude defenses were sufficiently formidable to force the U.S. to adapt its bombers to low altitude penetration and to develop air-to-surface stand-off missiles to replace gravity bombs. It probably is impossible to detect and track bombers at low altitudes well enough to have an effective air defense with only ground-based radars. Airborne radars are required, and this means very complex and sophisticated radars that can "look down" through the clutter and missiles that can be launched at high altitude to intercept penetrators at low altitude near the earth's surface. Intercepting standoff missiles that can be used both to penetrate and to suppress the air defenses is in some ways a more challenging technological problem than intercepting long-range ballistic missiles. In 1968–1969 the Soviets were ten to fifteen years away from the airborne radar technology needed to track and to attack bombers at low altitudes and from developing SAMs that could even begin to cope with standoff missiles such as SAC's Hound Dog.[8]

Soviet Antiballistic Missile (ABM) programs also had a long history. The Soviets had sunk a lot of money into ABM defense by the late 1960s, but as in the case of low altitude air defense, the Soviets were far behind the U.S. in 1968–69. In 1961 Krushchev told Arthur Sulzberger that the USSR initiated development of an ABM system at the same time work started on the first Soviet ICBM, and there is no reason to doubt him.[9] Marshal Batitskiy, Commander in Chief of National Air Defences (PVO Strany) since 1966, suggests that Soviet ABM R&D began shortly after World War II.[10] Soviet interest in ABM was an independent initiative not a reaction to U.S. programs.

From the available evidence in the public domain, four programs can be identified as associated with antiballistic missile development: two possibly and two certainly. For convenience, these programs are labeled ABM 1 through 4 as follows:

ABM-1, the system associated with the Griffon missile.
ABM-2, the SA-5 air defense system which has been the object of much U.S. suspicion because of periodic testing in some sort of ABM role even though the ABM capabilities of the SA-5 appear inadequate at best.
ABM-3, the system defending Moscow, symbolized by large phased array radars and the Galosh interceptor.
ABM-4, the system currently under development, apparently much akin in design to the U.S. Nike-X system.

The system designated ABM-1 was developed in the period from the mid-1950s to the early 1960s. The missile was displayed in a Moscow parade in 1963 and initial deployment at Leningrad evidently was terminated around the same time.[11] This system could have represented a Soviet attempt to combine high-altitude air defense with a limited ABM capability.

The SA-5 air defense system may have represented a similar attempt to develop a defense against high-altitude supersonic aircraft, which would also intercept air-to-surface missiles and ballistic missiles. If so, the Soviets realized early on the system's ABM potential. However, this capability was limited and the Soviets deployed it as an air defense system to counter the U. S. Hound Dog Short-Range Attack Missile (SRAM) and any high-altitude supersonic aircraft threat that the U.S. might choose to maintain.

Some observers have tied development of the Griffon to the U.S. B-70 and then wondered why the Soviets continued to deploy the Griffon's follow-on, the SA-5, after the U.S. canceled the B-70.[12] The explanation may not be difficult, even if somewhat strange to U.S. concepts. First, the Hound Dog, as well as the B-58 and the SR-71, presented high-altitude, supersonic threats that strained or exceeded the capabilities of the SA-2. While the B-58 was phased out some time ago, Hound Dog was in the inventory through the early 1970s and the SR-71 will be around for a long time. Secondly, the Soviet approach to air defense planning may be likened to the problem of repairing a dike with several leaks. The Soviets plug each leak as fast as resource and technological constraints permit. Once they plug a leak, they do not unplug it simply because the constraints prevent all the leaks from being plugged simultaneously. Hence, the Soviets deployed the SA-5 to deal with supersonic

high-altitude penetrators that the SA-2 could not handle, and to keep the high altitude approaches covered. After all, the new U.S. bomber, B-1, was designed for both supersonic, high altitude and subsonic low-altitude penetration operations. If the Soviets had optimized their defenses for low altitude, they would have been wide open to the B-1 at high altitude.

Given the information and analysis available, the SA-5 probably does not have an ABM capability when provided with tracking and predicted impact data from older Soviet phased array early warning radars. But if, as dozens of tests in recent years have indicated, the SA-5 is provided with such data from the new large phased array radars under construction in the USSR, the SA-5 might have some capability against US missiles. It is unlikely that the Soviets would rely on the SA-5 to defend the country against large-scale ballistic attack. But they might employ some portion of the force in an ABM role on the grounds that not all of it will be required to engage U.S. bombers and any attrition of U.S. missiles that could be achieved is worth the effort.

The system deployed at Moscow, designated the ABM-3, apparently was developed at the same time as the SA-5, and overlapped development of the ABM-1 to a considerable degree as well. The Galosh missile was displayed in 1964 and the decision to deploy it at Moscow must have been made about 1961.[13] If Krushchev's statement in July 1962 about being able to "hit a fly in outer space" is taken at face value, the Soviets may have had high hopes for this system at one time.[14] But by the mid-1960s they probably realized how limited the system was; and did not deploy it beyond Moscow.

In the mid-1960s the Soviets evidently were well informed on U.S. ABM developments, on U.S. evaluations of ABM technical problems and what it would take to solve them. The Soviets understood that the U.S. Nike-Zeus system had two basic defects: It could engage only small attacks because its radars were too limited, and it was vulnerable to countermeasures, primarily the use of decoys.[15] By 1968 the Soviets understood that the United States planned to remedy both defects in the Nike-X system by adding the Sprint missile to catch missiles which had leaked through and substituting large phased array radars for earlier dish types. Whether the Soviets appreciated the even greater advances in computer and data processing capabilities

between Nike-Zeus and Nike-X systems is not clear but they had a good appreciation of Nike-X design.[17] As early as 1964 they expected a U.S. deployment decision on Nike-X in 1966–67, a very accurate assessment.[18]

Although the Soviet ABM-3 being deployed at Moscow at the time incorporated some large phased array radars, the system as a whole obviously was far less effective than the US Nike-Zeus design, which did not meet U.S. expectations. Indeed, Soviet ABM technology overall lagged that of the United States by at least ten years, probably twenty years.

The Red Navy

The Soviet Navy has both strategic offensive and defensive strategic missions. SLBMs represent the strategic offensive mission while strategic defense has two components: aircraft and submarines to combat U.S./NATO carrier task forces; surface craft, submarines and other components to combat U.S. SSBNs—strategic Antisubmarine Warfare (ASW).

Although the Red Navy was the first to go to sea with an SLBM circa 1956, this mission evidently had low priority until some time in the early 1960s when the decision to mass produce the Y-Class SSBN with the SS-N-6 missile was taken. As was indicated in the discussion of Soviet decisions on the SS-9 and SS-11 ICBMs, the timing of the decision on the Y-Class program is uncertain but probably preceded the Cuban Missile Crisis. By 1968–69 the program was in full swing with construction running at about 8 SSBNs per year but the operational force was still small.[19] Whereas the SRF already had about as many ICBM launchers as the U.S., the Red Navy could not equal the U.S. in number of SLBM tubes until the mid-1970s. Whereas the SRF had its MIRV program underway and was about only five years behind the U.S. in this technology, the Navy was ten to fifteen years away from matching the U.S. in SLBM MIRV systems.[20] The first of the Red Navy's two strategic defensive missions, combat against U.S./NATO carriers, other naval vessels and shipping, was in better shape.

In the late 1950s and early 1960s while the U.S. built 41 Polaris SSBNs, the Soviets only built 9 H-Class SSBNs with short-range missiles more suitable for operations in the Eurasian TVDs than in the "transoceanic theater." At the same

time, however, the Soviets built 32 E-Class SSNs armed with SS-N-3 cruise missiles for strategic defensive operations against U.S./NATO carriers and navies. In addition, the Soviets built 16 J-Class diesel-powered boats for the same mission. To cooperate with these cruise missile submarines, Soviet Naval Air Forces had a fleet of TU-16 Badger medium bombers equipped with ASMs and a number of TU-95 Bear heavy-bomber aircraft for reconnaissance. And as previously noted, supporting the Red Navy's anticarrier and anti-ship operations had become a major mission of the LRA.

Modernization of these forces also was well underway in 1968–69 in the form of the C-Class nuclear submarine equipped with new cruise missiles and the Backfire bomber. Indeed the range of the latter may have been primarily determined by Navy requirements for the anticarrier mission because the TU-16 really is short ranged for this purpose.

Things were not so well with the Red Navy's second strategic mission, antisubmarine warfare (ASW), which evidently dates from the late 1950s. Strategic ASW has been the primary mission of every major ocean going combatant commissioned in the Red Navy since the early 1960s. ASW apparently is the mission of at least five nuclear attack submarine classes (SSN) as well.[21] In the mid-1960s Soviet admirals writing in *Military Thought* outlined the advantages of an advanced ASW submarine capable of operating at depths of 600 to 1,000 meters.[22] Such a submarine would need a hull of space-age alloys, probably Titanium. The enigmatic Alpha class appears to be the only available candidate for a sub of this type, if one has been built as yet.[23] Strategic ASW, however, is a tougher mission to fulfill than air defense because SSBNs in the open ocean are harder to locate and track than even aircraft (or cruise missiles) at low altitude.

As the Soviets deliberated the objectives to be sought in SALT in the late 1960s they were not very far along in acquiring an ASW fleet, to say nothing of an effective capability. Several conversions and the first of the two Moskva class helicopter cruisers had joined the fleet, as has a number of Victor class SSNs at sea. However, Soviet strategic ASW capabilities in the late 1960s were limited essentially to their coastal waters.

Civil Defense

Civil defense was alive and well in the USSR in the late 1960s even if it had virtually disappeared from the U.S. perception of the Soviet strategic posture. Despite many uncertainties and imperfections, Soviet civil-defense capabilities came closer to requirements than almost any other Soviet strategic program in the late 1960s. In 1969 the Soviets published a civil-defense manual which claimed that the Soviet civil-defense program could reduce Soviet casualties from a U.S. attack from 90 to 5–8 percent of the Soviet population.[24] Similar estimates were independently made in the U.S. at about the same time, although Soviet civil defense attracted little attention in the U.S. until the mid-1970s. During the heyday of the U.S. declaratory policy of "assured destruction" of Soviet population in the 1960s, Soviet civil defense was systematically excluded from U.S. official analyses. All such estimates are subject to large uncertainties and require several favorable circumstances—adequate warning time, efficient execution of evacuation and shelter occupancy, fairly soft soil for temporary fallout and shelter construction and substantial stocks of necessary supplies where they would be needed—but at least something approaching requirements could have been achieved by the Soviet civil-defense program under *some* plausible scenarios.[25]

Skeptics of USSR civil-defense programs often allege that adequate stocks of supplies do not exist to support evacuation. The facts are: (a) stacks of "clothing, provisions, footwear and other emergency requirements" do exist—in State reserves, MOD depots, and civil defense organizations—for evacuation and other civil defense purposes;[26] (b) no one in the U.S. knows whether these stocks are adequate or inadequate, could or could not be distributed efficiently. The tone of Olshevskiy's and Galitskiy's article, particularly the former, suggested that much had yet to be done, and the appointment of General Altunin as head of Soviet civil defense in 1971 apparently was made to reinvigorate the program. Soviet civil-defense capabilities should not be overdrawn but neither may they be dismissed as inconsequential. In 1968–69 civil defense probably was one of the more reassuring Soviet damage limiting measures.

In sum, as of 1968–69, as the Soviets pondered their response

to the U.S. initiative on SALT, they were making great efforts but had a long way to go. One Soviet writer noted:

> Strengthening of its defenses is now the foremost political function of the socialist state . . . Never before has the internal life of the country been subordinated to a war so deeply and thoroughly as at the present time.[27]

Another noted that the 8th Five Year Plan, 1966–1970, was providing larger numbers of more technologically advanced weapons,

> for maintaining a military superiority over imperialism in the field of principal and decisive types of weapons, and first of all nuclear-rocket weapons.[28]

These frank statements, of course, escaped the notice of the U.S. intelligence community which in 1967–68 was still in a state of euphoria about Soviets accepting strategic inferiority. Great as the Soviet efforts were, however, they were far short of what was needed. The following sections will develop this theme in the context of the challenge posed by U.S. MIRV and ABM programs.

4.

A Snapshot in Time: When MAD Seemed Real

"Stay, O moment, you are so lovely." Thus did Faust express the all too human yearning which has led so many to perdition. It seems that the more emotional capital, the more personal stake, one has committed to a static plan which depends for its success on the existence of certain conditions, the easier it is to convince one's self that these conditions will come to stay. When, moreover, one sees that circumstances beyond one's control are producing something very like the hoped-for conditions, one tends to forget the possibility that the happy state of things might be transitory. Sometimes, like Faust, one may be willing to forget a great deal to affirm that a fleeting moment in time is the end of history.

In 1967, Americans who were committed to achieving the condition of Mutual Assured Destruction looked at the world with satisfaction. The United States' Minuteman and Titan missiles were in hardened silos, and Polaris was safely aboard submarines. Neither was vulnerable to any weapon the Soviets had. The Soviet Union, for its part, was furiously building SS-9s (which looked like Titans) and SS-11s (which looked like Minuteman) and putting them into hardened silos; and it was building "Y" class ballistic missile submarines, which looked like models of the American Ethan Allen Class SSBN. The Soviets only had about half the missiles the U.S. had, but now few

doubted they would catch up. The Soviets' forces were indeed becoming more powerful, but they were also becoming "safer." The SS-9s and SS-11s, unlike the SS-6s, -7s, and -8s, were invulnerable to attack by American weapons. Minuteman and Polaris-Poseidon had been engineered not to threaten them. If the Soviets wanted to, they could ride out an American attack. With invulnerable weapons, it was reasoned, the Soviets would now have less incentive to strike first. No matter that in 1965 Secretary Robert McNamara, backed by the CIA, had declared that the Soviet leaders had "decided they have lost the quantitative race, and they are not seeking to engage us in that contest." Now that the Soviets were building in ways so apparently parallel to America's, it was clear to McNamara, to Henry Kissinger, to Cyrus Vance—indeed to the American Establishment—that the Soviet Union's purposes must be just like America's. How could their purposes differ? Had not Dr. Jerome B. Weisner of MIT, the President's Science Advisor, declared in 1963 that the "scientific revolution" had "stabilized," and that technology applicable to weapons stood on a plateau? The Soviets were simply climbing onto that plateau. Now American cities were vulnerable, just like Soviet cities had been. But since both sides had secure, second-strike capabilities, the certainty of Mutual Assured Destruction made the world truly safer than ever. Soon, safety would grow into confidence. Now that the Soviets were equals, of sorts, they could afford, for the first time in their history, to stop being paranoid. They could safely relax and think about what the world truly offered them. The state of things envisaged in *The Absolute Weapon* had been realized. Military history had come, if not to an end, at least to an indefinite halt. Attempts to gain military superiority would deny the Soviets true partnership with the United States. How could they refuse such partnership? After waking up to the cold dawn of mutual vulnerability, both nations would experience a long, sunny day.

The proponents of MAD had but one apprehension. Although neither nation could escape from MAD, either or both could *try*. Neither could increase its security by trying, but both could find themselves stuck with unneeded weapons, with economies stunted by the cost and with relations poisoned by mutual suspicion. The United States, in this view, was most likely to cause trouble, because the United States had technology sufficient to build an antiballistic missile system, the NIKE-X, capa-

ble of handling dozens of incoming warheads at once. The Soviets' systems, the Griffon and the Galosh, could hope to handle only a small fraction of that number at once. But either side's offensive forces could generate many hundreds of warheads. ABMs, it was reasoned, could not offer protection to either side, but could be a first step in a vain competition which could only spoil the promising mood which the achievement of the balance of terror was creating. Therefore, if both nations could bring themselves to ban ABMs, they could then settle down to following the peaceful logic of MAD.

But the "lovely moment" never existed fully. Even in 1967, neither the U.S. nor the USSR actually targeted the bulk of their weapons on the other's civilian population. Had a nuclear exchange occurred in 1967, American civilians would have suffered only collateral damage, primarily from Soviet attacks on airbases. Even when the Soviets had few warheads, they preferred to assign them to minor American military targets rather than to major American industries. The Soviets' practice of targeting was consistent with declared Soviet policy, and with the Soviets' vociferous disdain for MAD. The American case is more interesting. In 1974, James R. Schlesinger, then Secretary of Defense, reported to the Congress that the United States had never really aimed its weapons at the Soviet population *per se.*[1] Indeed, it has been reported that, even at the height of MAD, some four-fifths of American weapons were assigned to "soft" military targets such as airbases, army camps, naval ports, and military factories, while the remainder was assigned to key industries and "centers of command and communication," i.e., "downtown." Doubtless, a surprise American attack on these targets would have killed millions of people. But it would have done so incidentally, and would have put only a small dent in the Soviet population.

Why the discrepancy between declaratory and actual policy? Probably because something so monstrously stupid as MAD is difficult to superimpose on an essentially rational world. The military men who actually did the targeting doubtlessly argued with their civilian superiors that if only so many warheads were available for, say, the Leningrad area, they ought to be laid down on the suburban industrial complex instead of on the rows of apartment buildings close to downtown. They argued that, if the U.S. were ever to strike the Soviet Union, it ought to do it some real harm, and not kill a lot of civilians while

leaving intact military forces and the industries which support them. American leaders talked Armageddon. They publicly scorned Herman Kahn's commonsensical observation that there is a big difference between suffering damage from which a nation can recover in five years and damage which will take fifty years to repair. But the military men nonetheless targeted the Soviet Union in the most rational manner possible, given the irrational weapons they had available, and the irrational precepts of MAD.

But the primordial fact about the military situation at the time when MAD seemed closest to being a reality is that it was changing rapidly in ways that bode ill for MAD. Of course, the great prospects for technological change were visible to all interested Americans. But few Americans in official positions were willing to admit that the very technological trends which had created the mutual invulnerability of strategic forces would cancel it out in the foreseeable future. At odds were those who believed that America's military posture could and should remain essentially static, exclusively offensive and aimed at parity; and those who believed that in both technology and military strategy a nation either strives for supremacy or condemns itself to defeat. Thus 1967 saw the beginning of a great debate in the United States.

It cannot be stressed enough that this debate took place among Americans, and that the Soviets were not at all involved in it because they never wavered from the belief that balances of power are way stations to the superiority and victory of some, and to the inferiority and ultimate defeat of others. Ironically, the central dispute in the American debate which began circa 1967 was over the Soviet Union's capabilities and intentions regarding armaments for the coming decade or so. A dozen years later, what the Soviets actually did is no longer at issue. Yet it is instructive to review the opposing American arguments because, a dozen years after 1967, thoroughly similar ones are being advanced. Let us examine two of the most salient.

The first of these arguments was over what importance one should assign to the throw-weight available to a nation—that is, the amount of weight its missiles can lift—and what importance to the number of warheads a nation possesses. The argument began when Americans realized that each Soviet SS-9 could lift ten times the weight that a Minuteman I could, and

that the Soviets appeared to be deploying 300 SS-9s. Three hundred such missiles could carry nearly three times the payload of 1,000 Minutemen. There was reason to worry, said the American Security Council and *Fortune* magazine.[2] There was not, according to the *New York Times* and Robert McNamara's Department of Defense. They explained that Minutemen were more accurate, and that in order to destroy a city or an industrial complex one did not need the twenty megatons that an SS-9 could carry. But, they pointed out, neither Minuteman nor the SS-9 could destroy a silo. Given their lesser accuracy, 300 powerful SS-9s were no better than 300 Minutemen. The SS-11s were somewhat inferior. So, on balance, once the Soviets had deployed all their missiles, they would be equal to the U.S. The worries were not so easily dispelled, however. Large missiles may be crude ones, but they don't have to remain that way, given the will to refine them. The ability to lift large payloads can offer a variety of opportunities. Technological improvements yield disproportionately good results on missiles with large throw-weights.

Almost immediately, the Soviets placed three nonindependent Multiple Reentry Vehicle (MRV) warheads on the SS-9, each with a yield of up to five megatons. By landing in a pattern, the three would destroy a larger area than would a single twenty-megaton bomb. The increased coverage made up for the missile's inaccuracy, so that the SS-9 might well have posed a threat to the 100 Minuteman launch-control centers. About that time, however, the U.S. changed the wiring on its silos to allow each one to fire independently, thus negating the threat to the launch-control centers. But some Americans had been sobered. The Soviets had shown that they were obviously striving for a capability to destroy the U.S. ICBM force in a first strike. These Americans now questioned the administration's claims that the Soviets would need 1,000 of the huge SS-9 missiles to launch such an attack. They reasoned that 300 such missiles with multiple independently guided warheads (MIRVs) could present such a counterforce threat. The Soviets would but need to place ten warheads on each missile, each yielding a megaton or so, and make each accurate to one-tenth of a nautical mile. Impossible, wild talk, said the Establishment. Who could imagine the crude Russians doing such a sophisticated thing? Besides, were the Soviets to attempt it, they could not count on the U.S. not reacting and wiping out

the gain by superior technology. In 1978 the Soviets carried out the last in a five-year-long series of tests of the SS-9's follow-on, the SS-18, which have met those exact specifications. All of this occurred without countervailing moves by the U.S.

The Soviets' exploitation of their large missiles' throw-weight was not a triumph of extraordinary proportions, but rather another example of Soviet scientists and technicians turning ideas into hardware, and another demonstration of the homely truth that, given the will, much is possible that the unwilling cannot even conceive.

The second argument concerned the possibilities of defense against ballistic missiles. As of 1967, the only active defenses on the technological horizons of both the U.S. and USSR were highly imperfect. But the superiority of the American Spartan missile over the Soviet Galosh was not so salient as the attitudes of official Washington and Moscow on the subject. The defense intellectuals in the Pentagon were embarrassed by the lead they had, sought to negotiate it away, and pursued research amidst bureaucratic controversy. The few who thoroughly believed in MAD turned the majority of policymakers—who did not—against the ABM on the ground of technical imperfection and uncertain performance in demanding environments. Since the treaty limiting ABM, the U.S. has conducted some research—in a stinting, half-hearted manner—and has thoroughly abandoned the old Spartan missile.

The Soviet leaders, on the other hand, did not take their inferiority in technology as a reason to forego trying to improve it. They hungered for more effective technology and the time in which to develop it. The story is often told that Khrushchev used to keep on his desk a piece of steel which had been scarred by a laser to impress upon his visitors the promise of Soviet science. But, as we shall see, while the Soviets have been working hard on an antimissile system based on beams of directed energy, at the same time they have been refining the older antimissile missile technology as well. On dozens of occasions during the mid-1970s, they violated Article II of the SALT I treaty and tested the radar associated with the Galosh "in an ABM mode" to track objects reentering the atmosphere from space. This attitude may be compared to that of a businessman who, on his way to closing a multimillion dollar contract, parks his car illegally in order to make a few dollars by avoiding the garage fee. The Soviets, like that businessman, may be de-

scribed either as foolish or as single-minded in the pursuit of their ends. In sum, since 1967, the Soviet Union has exploited every means, no matter how limited, that could provide any degree of protection against American missiles. No Westerner can be sure what they have achieved. But it is clear that what they have is better than nothing, and that they are prepared to accept the opportunities that the defensive technology of the 1980s will likely give them.

In 1967 Robert McNamara told a British television audience about MAD that ". . . technically it's a relationship that's very difficult for either of us to move out of unless the other simply fails to act in a rational fashion." But in the years following 1967, the American leaders' conception of rationality was restricted by the desire to hold on to the fleeting prospects for MAD. The American scientists whose job it was to tell policymakers what could and could not be done were allowed to consider only systems that responded to "clearly defined" threats. In practice this meant they could only think about defending against what the Soviets already had, and not about anticipating what would be needed to fight and win a war in the future. Thus, in 1967, Dr. Harold Agnew, head of the Weapons Division of the Los Alamos Scientific Laboratory complained that national policy was "stifling innovation." In December of 1979, as he resigned that post, he confirmed that innovation had been stifled.

The lesson of 1967 is that MAD, the balance of terror, became possible for a few years because technology permitted ballistic missiles to fly intercontinentally, but not yet accurately enough to destroy each other, and because technology temporarily placed defensive forces at a disadvantage. But while the United States based its policies—indeed bet its existence as an independent nation—on the proposition that these conditions would not change, the Soviet Union based its drive for supremacy on a determined effort to change them.

The great pity of the late 1970s is that the legacy of the few years in the late 1960s, when MAD seemed real, persists. The national debate over SALT II is at the core a debate between those who have recognized the collapse of the MAD concept and those who insist that MAD is still alive and well—even in the hearts of the Soviet leaders who denied its existence from the beginning.

5.

The Real World

This chapter deals with the effects and the uses of nuclear weapons. To some, the task of distinguishing between the effects of a thousand nuclear bombs of one kind, and a thousand of another kind will appear as arrant nonsense. As we have seen, we have been taught to associate even the slightest accident at a nuclear power plant with Armageddon. Clearly, anyone who will not distinguish between the effects of a hundred bombs exploding on remote military bases and ten thousand blasting centers of population will find this chapter incomprehensible, and may even accuse the author of taking catastrophe lightly or of allowing for nuclear war in "his" world. The answer is simply that neither this world nor the weapons in it are of the author's making, that only by an ostrich-like act of will can one ignore what these weapons can and cannot do, and that one would have to ignore both morality and common sense in order to treat catastrophes of different sizes as if they were all alike.

Those who continue to hold tenaciously (if not fanatically) to the precepts of MAD are unwilling to deal with the world as it really exists. They perceive a world in which their own terror of nuclear conflict is equally active in the minds of the Soviet leadership. Unwilling to face the realities of the nuclear age, they cling to science-fiction descriptions of the effects of nuclear

war and attempt to terrorize everyone else into accepting their pacifist point of view. Theirs is the vision of a postnuclear-war world of mutants and perpetual radioactivity, a burnt out cinder of a planet wheeling lifeless through space. The very words "nuclear" and "radiation" trigger in them apocalyptic reactions.

Regrettably, the gospel of nuclear terror has not been ineffective. The sophomoric allusion to nuclear explosive power being able to "kill everyone in the world five times over" is standard fare in most public discussions of nuclear weapons. (There are, of course, enough revolver bullets—even rocks lying about—to kill everyone five times over.)

The effect on public opinion of these apocalyptic visions is reinforced by political literature disguised as scientific treatises; by widespread ignorance of the facts concerning nuclear weapons; and by the myriad science-fiction tales, written and dramatized, which draw on the theme of a total, global calamity brought on by nuclear war.

Those who wish to argue the case for common-sense nuclear strategies have first to cause the discourse to focus on the real world. This puts the proponent of rationality at an extreme polemical disadvantage. For in the process of dispelling the fantasies of the apocalyptic view, one runs the risk of appearing sanguine about the truly awesome features of nuclear conflict.

Nuclear war cannot destroy the world, but may conquer it less damaged than Europe and Japan were damaged by World War II. That is so because nuclear weapons and the systems by which they are delivered, far from being all-powerful and all alike, have their own peculiar capabilities and vulnerabilities. Though it is true that the world's nuclear arsenals have a combined yield of several tons of TNT for every man, woman and child in the world, it is physically impossible to distribute these weapons' effects in a way that would achieve anything close to the end of mankind or even of any large nation. Moreover, no one has the slightest military or political incentive to even try. If there were such incentives, nuclear weapons would not really be needed to pursue them. In the ancient world cities were extinguished forever by sword and fire. Carthage was finished off by plows, followed by soldiers who spread salt. The bombing of Dresden caused 135,000 fatalities. Neither act made sense militarily. Nuclear weapons can also be used in a senseless manner, but one should realize that these weapons'

characteristics lend themselves to certain rational uses. Above all, these weapons' effects depend upon the targets at which they are directed, and on the strategy which they serve. Let us therefore put aside loose terms such as "total destruction," "nuclear holocaust," "cease to exist as a modern nation," "devastating retaliatory strike," and consider just what nuclear weapons can do.

The destructive power of nuclear weapons is measured by the weight of TNT which would have to be exploded in one place to create equivalent effects. The smallest nuclear weapon publicly known to exist is the warhead for the Navy's *Harpoon* antiship missile. It yields only one-tenth kiloton (0.1KT); that is, an explosion such as would be produced by 100 tons of TNT. Blasts of 500 tons of chemical high explosive—five times this warhead's yield—have taken place without public notice. The biggest nuclear weapon is a device set off in the upper atmosphere by the Soviet Union in 1963, which yielded fifty eight megatons (58 MT). That is, it was the equivalent of *fifty eight million tons* of TNT. The fireball from that blast may have been eight miles in diameter. The United States has never tested such a big device, and doubts its military usefulness. The largest warheads common in the American arsenal are between 1 and 2 MT on the Minuteman II ICBM. The largest Soviet warheads are about 25 MT. The most common warhead in the American arsenal is 40 KT, on the Poseidon submarine-launched missile. The most common Soviet warhead beginning in 1980 will be between 1 and 2 MT on the SS-18 ICBM. The relative destructiveness of these weapons is not measured directly by their TNT-equivalent. That is, a 1-MT warhead does not destroy an area a thousand times as large as is destroyed by a weapon yielding only 1 KT. Rather, the area of destruction increases by the *cube root* of the yield. Thus, a 1-MT weapon destroys only ten times the area as a 1-KT weapon. Thus many small weapons spread their effects over a larger area than a single very large weapon. Yet big warheads have their own peculiar uses. Since each concentrates enormous amounts of energy in a relatively small area, it is most likely to destroy even a target which is very well protected—providing it is close enough. Nuclear weapons release half their energy as blast (50 percent), less in the form of heat (30 percent) and even less as nuclear radiation (20 percent).

Radiation is the most widely feared and talked-about effect

of nuclear weapons. But that fear is unjustified both because the other effects are more fearsome, and because these weapons are *least* likely to be used in a way that would expose huge numbers of people to lethal doses of radiation. If the explosion takes place outside the atmosphere, where radiation can travel without being hindered by air, X rays and gamma rays can be exceptionally destructive. But, within the atmosphere, a person who has escaped the blast and heat of a nuclear explosion is unlikely to die of radiation. The dose of radiation that is allowed to X-ray technicians in dentists' offices and to workers in nuclear power plants is 50 roentgens in any ten year period. Before 1960 that dose was 150 roentgens in any ten year period. If a healthy person is exposed to 100 or more roentgens over a twenty-four hour period, he is likely to feel discomfort, as if he had an internal infection. If he receives between 300 and 500 roentgens in twenty-four hours, he will probably be so sick as to require at least a month's care. If he receives between 500 and 1,000, he may die within two weeks. Three-fourths of any nuclear bomb's radiation is given off within the first fifteen seconds or so. It is attenuated immediately by the surrounding air and by obstructions, both natural and man-made. Air alone reduces the X and gamma rays from a 10-KT explosion to below the sure-sickness dose of 100 roentgens just .7 miles away from "ground zero." A 1-megaton bomb, however, pushes a lethal dose of 1,000 roentgens out to 1.8 miles from the center of the blast. But just four-tenths of a mile farther out, the dose is down to 100 roentgens. At such distances from "ground zero," blast and heat pose a danger to human life far greater than does radiation. Moreover, radiation is cut in half by a half inch of lead, or by four inches of concrete, or by six inches of earth. If one is far enough away from an explosion, or is otherwise sheltered against its blast, he will not die from radiation.

With the sole exception of the enhanced radiation weapon—the so-called "neutron bomb"—nuclear weapons were never meant to kill by radiation and even the "neutron bomb," though deadly to troops attacking in the open or in tanks, is harmless to troops and civilians dug in defensive positions or shelters or even in buildings. With the above-mentioned exceptions, radiation is not very useful as a military tool for three reasons. First, as we have mentioned, it is the least lethal of the three effects, especially against military personnel, who are likely to have some protection against it. Second, radiation has

little effect on military equipment—which must be the primary target in modern war. Long ago both the U.S. and the Soviet Union apparently rejected plans for building the "cobalt bomb," which releases much of its energy as highly radioactive fallout, because there is no military utility to poisoning enemy cities. (For that matter, neither is it useful to blast them or burn them.) Third, radiation is especially irrelevant to the targets which are most likely to be struck by nuclear weapons: the "hard sites" which contain intercontinental ballistic missiles. These, incidentally, are far from centers of population, so strikes against them cannot expose large numbers of people to direct radiation. Residual radiation, or "fallout," can be very dangerous indeed. But its toxicity is spread thin over wide spaces, and diminished by time, so that one week after an explosion, well over 90 percent is gone. After a massive nuclear exchange the long-term effects of fallout on health and on genetic mutations would certainly be statistically noticeable. Life expectancies in the U.S. and the Soviet Union might be reduced by 5 percent or so, and perhaps one-fourth more birth defects would occur after an attack than occurred before.[2] These effects would be serious. But since they would be both deferred and diffused, their military relevance is doubtful, as is their capability to incapacitate, let alone destroy a nation's population—especially if reasonable defensive action is taken.

Heat is of greater military use. A nuclear explosion's fireball may be as hot as 10,000 degrees centigrade. A 20-KT weapon will send out thermal radiation for three seconds, while a 10-MT weapon will radiate heat for over twenty seconds. This pulse is measured in calories per square centimeters. Four to ten calories per square centimeter will damage exposed human skin like a severe sunburn. More than 10 calories per square centimeter (cal/cm^2) can cause fatal burns. A 100-KT airburst will produce 6 cal/cm^2 3.7 miles away, while a 1-MT airburst will produce the same heat ten miles away. Soldiers in battle gear can get somewhat closer in relative safety, while those in armored vehicles can get as close to the fireball as their vehicle's design will permit. Thermal radiation, however, can ignite fuel, supplies, etc. In general, heat is not very effective against spread-out armored forces. It is not effective at all against hard targets such as missile silos. It truly disastrous only against cities, because it is sure to start a multitude of fires, which could well become a firestorm.

Nuclear weapons are militarily useful primarily because of their explosive effects. In the atmosphere, blast is measured by the greatest number of pounds per square inch of air pressure caused by the shock wave resulting from an explosion.[3] One pound per square inch (PSI) of overpressure is enough to do some damage to frame houses. Five PSI is enough to demolish some brick houses. Other objects are not so fragile. The human body, for example, can bear up under about 10 PSI. But wooden boxcars are smashed at 7.5 PSI. At Hiroshima, people in buildings survived where the overpressure in the open was 15 to 20 PSI. Concrete runways can resist about 400 PSI. Tanks are similarly tough. The silos which contain ICBM's are toughest of all, and some are able to stand 2,500 PSI. Of course, everything except buildings—people, stores of food, industrial machinery, etc.—can be hardened to resist any overpressure one wishes to defend against. More on this below.

A 20-KT airburst will cause 30 PSI overpressure in a circle with a radius of less than two-tenths of a mile. Less than eight-tenths of a mile from the center of the blast, the overpressure will be below 10 PSI—enough to do severe damage to buildings, but not enough to destroy, say, a locomotive, or indeed anything which is protected at all seriously. A 1-MT blast will damage steel-frame office buildings up to two and one-half miles away, and will impose over 50 PSI within a half mile—enough to destroy all structures above ground in that area.

What, then, is the rational way to use such weapons? For the moment, let us put aside the question of what sort of nuclear threat may achieve which purpose, and consider only how, if threats failed, rational governments would actually employ the weapons. Incidentally, the worth of any threat cannot but be based on what he who threatens is actually capable of doing in his own interest. What is the *least* rational way to use nuclear weapons should be immediately clear. If a 1-MT weapon can destroy all buildings in an area about eight square miles, and since New York City occupies 365 square miles, one would have to use about 45 1-MT weapons to level the five boroughs. The Los Angeles area spreads over about 3,000 square miles, depending on how one defines it. Up to four hundred 1-megaton bombs would be required to level it completely. The natural dispersion of the Soviet population—only 33 percent live in the 200 largest cities—would require more weapons than we could make. Just to begin such calculations is enough to show that

it is impossible to thoroughly raze every city in the U.S. or in the USSR—assuming anyone would want to. As we have seen, Robert McNamara, the best spokesman for the notion that nuclear weapons ought to be targeted on cities, settled on one-fifth of the Soviet population and one-half of what the U.S. judged key Soviet industries as the maximum destruction which the U.S. could inflict on the USSR at a rational cost to itself. That cost was defined as some two thousand warheads. But when American defense planners asked themselves what rational purpose would be accomplished by striking Mr. McNamara's target list, they could find no good answers. The question had to be reshaped as follows: Assuming we want to hit cities, what is it in cities that we wish to destroy most? The best answer found was that it would be in America's interest to deprive the USSR of certain industries, so as to keep the USSR from recovering from a war more quickly than could the United States. Thus, during the Ford Administration, the Department of Defense changed its targeting doctrine so that Soviet industry would now be struck, instead of targets less related to military capacity.[4]

But, one may reasonably ask, what does it really take to destroy an industrial operation? Or, more specifically, what is it about any industrial operation that we would wish to destroy most? Clearly, it is not enough to knock down the buildings, because they are the most easily replaceable parts of the whole. Indeed, in World War II the Soviets assembled aircraft out in the open. Basic shelters are easy to build. The most difficult assets to replace are trained workers and machinery. Interestingly enough, the Soviet Union has long made preparations to protect these assets in case of war. The things we would most wish to destroy happen to be the ones which would be hardest to destroy. The Soviet civil-defense manual has been translated, and is available from the U.S. Government Printing Office.[5] Its precepts are simple and easy to follow. Each factory is to have a blast shelter for the skilled workforce. When the warning is given, workers turn off machinery, drain fuel and corrosives away into holding tanks, then "harden" the machinery by piling bags of earth or metal chips over and around them. The shelters' hardness has been variously estimated at about 100 PSI. This will not protect the occupants from a direct hit, but would reduce the lethal radius of the most numerous large warhead in the American inventory (175 KT, carried on

the Minuteman III ICBM) to about one-third of a mile. The most numerous American warhead, indeed the one most likely to be assigned to the job of destroying Soviet industry, the 40-KT warhead on Poseidon, would pose little danger to such protected key workers unless it were to explode within about 500 feet. Interestingly, it has been reported that these warheads are fused to explode between 1,000 and 200 feet above their targets. That would mean that, at ground zero they would cause no more than thirty PSI! That would be of little military significance. It is publicly known that the Soviet Union has built extremely hard shelters for about 110,000 top leaders and hard shelters for about 19 million "key workers," about 15 percent of the urban population. Construction of shelters is continuing. There may well be other shelters. Moreover, Soviet subways have the capability to shelter millions. In sum, the Soviet urban population is most important to making the Soviet Union a world power and would be very hard to kill with American weapons.

The machinery would be even harder to kill. The Boeing company tested the Soviet civil-defense manual's directions with regard to machinery, covering several kinds with the prescribed thickness of earth bags, and setting off 500 tons of TNT near enough to cause the overpressures which would result from nuclear explosions. In so doing, Boeing followed the standard procedures used for testing the hardness of American ICBM silos.[6] Previous nuclear testing had shown that unprotected machinery would be destroyed by as little as 10 PSI. Yet Boeing showed that even at the peak overpressure achieved by its explosion (1,300 PSI), industrial machinery set on Styrofoam® and packed with dirt remained operable. Finally, two industrial buildings were subjected to 200–300 PSI. One was protected by Russian methods, the other was not. The unprotected shop was destroyed beyond repair "while the protected shop was returned to nearly full productive capacity within the equivalent of four days."[7] This means that in order to destroy what really matters in a nation's industry, an extraordinarily high number of high-yield weapons would have to be used. The conclusions of the Boeing study are that "It would take eight 1-MT yield weapons on target to achieve 70 percent damage on the industry of a city the size of Leningrad, even with *no* industrial civil-defense protection. If the machinery were hardened to an average of 40 PSI, it would take 24 1-MT

weapons to achieve 70 percent damage . . . Minuteman III and the cruise missile have warheads in the 200-KT range. It would take 56 of these to achieve 70 percent damage. If one uses the most numerous warhead in the U.S. arsenal, the Poseidon SLBM warhead (40 KT), 111 weapons on target would produce only 40 percent damage."[8] But it must be remembered that the Poseidon warhead is quite inaccurate and therefore, although fit for "city busting" could not easily be targeted on protected industrial machinery. To get the effect of 111 Poseidon warheads on target, one would have to use more.

As the Congressional Budget Office (CBO) has noted, whereas in 1968 Robert McNamara had judged that 400 one-megaton equivalents would be sufficient for an American retaliatory strike on the Soviet Union, the "new targeting doctrine" requires at least 8,500 warheads arriving on targets, *not just in inventory!* The CBO goes on to note that the change is explained not by what has happened in the Soviet Union, but by different American conclusions about what nuclear weapons can really do.[9] As studies such as Boeing's have shown, the closer one looks at what is required to "bomb 'em back into the stone age," the more remote the goal appears—and the more criminally foolish. That is because as one thinks in detail about how nuclear weapons may be used to reduce an enemy's relative power—for that is ostensibly the purpose of striking his industry—one easily comes up with targeting plans which include few industries and no citizens *per se.*

In military terms, the most threatening parts of an enemy nation are its ICBMs in place, its ballistic missile submarines, and long-range bombers. Next to these, even the factories which manufacture them are not nearly so threatening. Soviet industry has never turned out more than 2 ICBMs every three days. Production of long-range bombers has been under 4 per month, while the USSR's production of ballistic missile submarines has been 8 to 10 per year. In contrast, the U.S. has some 2,000 of these strategic systems already deployed, and the USSR some 2,500. Any military man who wished to reduce his adversary's power would be foolish not to strike these deployed systems before striking at the factories. In World War II, it became fashionable to believe it was easier to destroy the factories which produced tanks, airplanes and field guns rather than the systems themselves. Given the high rate at which these systems could be produced, and their mobility once they were

produced, there was some reason to believe this. But modern systems for delivering nuclear weapons are different. They are so complex as to be difficult to turn out in large quantities. Once deployed, they are relatively immobile. Even nuclear submarines spend about half their time in port. Moreover, these systems are more destructive than their counterparts of World War II. Thus, reason demands that they and nothing else be each others' targets of highest priority. If one wishes to reduce the enemy's capability to strike one's own country, there is no alternative to destroying his weapons. Indeed, the moment one ceases to think of nuclear weapons as a means of *punishing* the enemy and begins to think of them in terms of lowering his ability to do harm, one must begin to think less of killing the enemy's people and more about safeguarding one's own. The logic of reality then leads inescapably to targeting the enemy's weapons.

Operational weapons are by far the most urgent targets because, once they are destroyed, the factories which build them may be attacked at leisure or blackmailed into inactivity. True, some deployed strategic weapons are "hardened" to a high degree. But, as we have seen, those parts of industry that matter most are almost as well protected.[10] Moreover, there are many more industrial targets than there are deployed strategic weapons. In the U.S. there are 1,054 ICBMs, and about fifty bases for B-52s. Around the world there are about twenty-five places where American missile-firing submarines may be found, and about fifty key command-and-control points. That adds up to less than 1,200 targets. If American bombers were to disperse, about another 150 targets would be added. By contrast, American industry is far more fragmented. The known Soviet strategic inventory is larger and more widespread—about 1,420 ICBM launchers, 400 possible bomber bases, plus about the same number of submarine bases and four times the number of command-and-control centers as the United States. Soviet industry is about as widespread as American industry, and better protected.

What, then, is required successfully to attack hardened strategic weapons? In simple terms, one must be able to generate tremendous overpressures—in the case of Soviet ICBM silos, these pressures must exceed 3,000 PSI. That can be done only by putting a nuclear weapon very close to the silo. How close it must get in order to knock it out depends on how powerful

the weapon is. So what is needed is a peculiar combination of power and accuracy. Improvements in accuracy have a proportionally greater effect than increases in yield, but large yields make up for small errors and are fit for a variety of uses.

The accuracy of a weapon is measured in terms of the radius of a circle (centered on the target) within which half of the warheads from such weapons are likely to fall. This measure is called Circular Error Probable (CEP). To say that the American Poseidon missile has a CEP of one-half mile is to say that half of the Poseidon warheads are likely to fall within a half mile of their target. In order to generate the perhaps 3,000 PSI needed to dig up a super-hardened missile silo, a 1.5-MT weapon—such as found on the Soviet SS-18—would have to explode on the ground no farther than about 1,400 feet away.[11] In order to make sure that nearly all warheads fell within that circle, a weapons system would have to have a CEP of about 600 feet—.1 nautical mile (NM). Latest published reports credit the new SS-18 with a CEP of .1 nautical mile.[12] This means that just about every SS-18 warhead which is successfully launched will kill a silo. Now, the Minuteman III ICBM also has a CEP of .1. However, its warheads generate only 170 KT—about one-tenth of the SS-18 warhead's yield. If half of the Minuteman's warheads fall within 600 feet of superhardened silos, perhaps fewer than half of those which do would fall close enough to the silo to kill it. This means that only about a fourth of Minuteman III's successfully launched warheads would kill a silo. Even when the Minuteman is fitted with the new Mark 12-A warhead, which will yield 350 KT, it will still have no better than a fifty-fifty chance of killing a silo. The American Poseidon warhead, at 40 KT, would have to land directly onto the silo in order to be effective. But its CEP is such that only an insignificant percentage would do that. Missiles launched from submarines are inherently less accurate than land-based missiles, because the submarine as it launches its missile, cannot be as certain of its precise location on the earth's surface as can an ICBM launcher, fixed in the ground. A decade ago the United States developed techniques to provide submarine-launched ballistic missiles in flight with stellar navigational data to increase their accuracy but we declined to install it in order not to even appear to threaten Soviet silos. The Soviets are trying to do the same. In the future, therefore, one may expect Soviet SLBM's to be capable of killing silos. As we have seen, however,

the United States has heretofore chosen not to deploy this capability.

Submarines themselves are made to sustain tremendous pressures. At or near the surface, they should be as hard to kill as silos, unless explosions cause them to collide with other objects. Bombers at their bases are very soft targets. Their survival depends on getting airborne and away from their bases before an attack strikes.

Another outstanding feature of the real world is that not every missile and bomber in a nation's inventory can be expected to deliver its weapon on target according to factory specifications. Even if the environment is permissive, any of thousands of parts may malfunction. Modern Soviet missile systems are guessed to have something over 80 percent chance of functioning according to specifications. The reliability of American missiles is expected to be somewhat better. Therefore, when striking targets as important as enemy silos, prudent planners assign two warheads to each target, even if each could be expected to do its job alone.

But of course, wartime conditions are anything but permissive. Therefore, in order to consider the effectiveness of a weapon, especially against hard targets, one must consider what can be done to a weapon before it reaches its target.

Discussions of this topic are inevitably replete with assumptions. It cannot be otherwise here. But let us try to make those assumptions clear. The most significant assumption regards the initial attack's timing, for an attack "out of the blue" will destroy many more weapons on the ground than one which comes during full alert. Neither possibility should be dismissed. Though it is often assumed that a nuclear strike would come at the height of a "crisis, it seems useful not to neglect the figures which would result from a "bolt out of the blue." This is because although a country might very well make the decision to strike another at the heighth of a crisis, and having considered how great a leverage it would gain by abstaining from the attack until its opponent had relaxed its guard, such a nation would be well-advised to await the first opportunity for a strike "out of the blue."

Bombers are most vulnerable. Of the 330-odd American B-52s, none are on airborne alert. Some 25 to 40 percent are on strip alert. Since bombers cannot stand more than about two to four PSI, a surprise attack would doubtless destroy all the

60–75 percent which would not be on alert. The ones on alert would be far from certain to get very far. It has been reported that a B-52 on alert can be off the runway five minutes after it has been ordered to "go." Three minutes or so later it would be out of harm's reach. But there is doubt that American bombers —and their KC-135 tankers, without which they are of little use—would have eight full minutes to escape. That is because the Soviet Union is unlikely to shoot at American bomber bases with ICBMs whose flight-time is thirty minutes and whose launch can be detected immediately by American infra-red sensors in space. ICBMs would give American decision-makers about ten minutes to launch bombers. But submarine launched ballistic missiles, fired from close to the American coast, and flying low trajectories, could reach their targets less than fifteen minutes after launch, and some ten minutes after detection by coastal radar. This would give American decision-makers two minutes or less to perceive, evaluate, and react to the threat . . . Under the best conditions, less than 100 American bombers would get airborne.

Until about 1982, any American bomber that got off the ground would have to either overfly his Soviet target in order to drop gravity bombs, or approach within 100 miles of it to fire a SRAM missile at it. Awaiting this maximum of, say, 100 or so American bombers would be 6,500 Soviet air-defense radars facing in every direction, 12,000 antiaircraft missile launchers, and nearly 3,000 interceptors. Neither gravity bombs nor SRAMs are good against hard targets.

By 1985 there should be some 2,400 cruise missiles (ALCMs) on some 120 American bombers. These would carry 200-KT warheads, and be so accurate as to be quite good against hard targets. Indeed the principal studies done by the executive branch of the U.S. government to compare the American and Soviet capabilities to kill hard targets *assume* that all these 2,400 American warheads would survive an initial Soviet strike and go on to reach their targets.[13] Both assumptions are unwarranted. Any Air-Launched Cruise Missile (ALCM)-carrier that got off the ground would probably face a Soviet barrier defense before he could launch his missiles. This would consist of ships carrying a version of the SA-10, and of long-range Soviet fighters, ferried out over the polar region by Soviet airborne tankers or simply committed on one-way missions to intercept B-52s prior to launch of their missiles. If, neverthe-

less, the ALCMs were launched, they would be by no means sure of reaching their targets. American defense officials point out with some satisfaction that though the Soviet SA-10 is capable of shooting down cruise missiles, Soviet radars and computers will not be up to the task of identifying and tracking them before about 1985.[14] But then again, the American ALCMs may not be deployed until then. At any rate, as ALCMs approach their targets and become visible, they will encounter point-defenses. How many ALCMs would reach their targets is anyone's guess. But it is silly to equate an ALCM's reliability as a counterforce weapon with an ICBM's. Therefore a clear distinction must be made between weapons able to kill hard targets quickly and reliably and forces that could do so only after long hours and high percentages of attrition.

Perhaps American planners confuse prompt counterforce with slow counterforce because American defenses against bombers and cruise missiles hardly exist. The Distant Early Warning line of radars in northern Canada, built in the 1950s to provide warning of high-flying bombers, is easily penetrable by modern, low flying ones. Moreover, the DEW line looks in one direction only. Once through it, Soviet bombers would be detected only by chance. There are no Surface-to-Air Missiles (SAM) protecting American cities, and only a single military installation at Anchorage, Alaska is protected. The Defense Department closed down the next to last American SAM site, in Florida, in 1979. The U.S. has six regular squadrons of F-106 interceptors, the last of which was manufactured in 1961. The tactical air command's F-14s and F-15s could be called upon, and reserves could be called up. But slow counterforce would succeed against the U.S. as indeed would any attack by the Soviets against soft American military targets after an initial strike.

Another reason for the confusion between prompt and slow counterforce is that some American planners have thought that they could partially compensate for the vulnerability of American land-based missiles by announcing the intention to launch them when they were attacked but before they were destroyed. But the Launch-Under-Attack (LUA) doctrine neglects an essential fact and two important variables. The fact would be that the Soviet Union would have struck first and prepared itself to minimize its own vulnerability. If American leaders were to launch their threatened missiles with a few minutes' notice, they could not pick their targets and would

find slim pickings of their preprogrammed ones. Soviet submarines would be at sea, all bombers would be dispersed and on alert, and many ICBMs—the U.S. would not have time to tell *its* ICBMs which ones—would be in flight. The first variable is the size of the warheads "launched-under-attack." Because of their size, Minuteman warheads could expect to damage less than one-fourth of the hard targets they shot at. That total would be diminished because some of the targets would be gone. In short, LUA would not do much good against military targets. The second variable is time. While it is impossible to make rational choices of targets during the flight time of an attacking ICBM, it is quite possible to make rational choice during the *hours* which cruise missiles require to reach their targets. In sum, launch-under-attack, which makes little sense for American forces attacked by Soviet ICBMs, makes eminent sense for Soviet ICBMs attacked by American cruise missiles.

Defense against ballistic missiles fired from submarines is more difficult, but not impossible. It is somewhat easier to speculate on the locations of American submarines and of Soviet Yankee-class subs than of the Soviet Delta-class subs. That is because the former carry missiles of such short range that they are obliged to frequent certain operating areas next to enemy coasts. Nevertheless, conventional techniques of antisubmarine warfare could not be expected to threaten a large percentage even of these ships. Given present technology, however, the submarine's Achilles' heel is its need to come close to the surface, and put out an antenna in order to communicate with its home base. The U.S. has developed a method which would keep submarines from exposing themselves—a grid of cables laid over hundreds of square miles of rock in Michigan. But is has never built this system because of political opposition. Once a submarine's general location is gathered by electronic monitoring of its communication—perhaps by a satellite—it would be possible (theoretically for both U.S. and USSR, but only the Soviets have enough weapons to do it) for an ICBM to deliver multiple nuclear depth bombs to the area. If the targeting of the missile were done within twenty minutes of the time the submarine had been detected, the missile could lay down a barrage which would destroy any submarine some fifty miles from its center.

Thus far we have discussed but two means of defense against ballistic missiles—counterforce strikes and "hardening."

There is a third, largely decried and neglected in American official circles: active defense, the destruction of attacking missiles in flight. During the early 1960s, the United States, and later the Soviet Union, learned how to make defensive missiles fast enough and accurate enough to destroy incoming ones. The technical difficulties of Ballistic Missile Defense (BMD) lay not in the individual intercept, but in the ability of a BMD system to handle a large-scale attack. One could always postulate a number of attacking missiles in a given target area deploying several real warheads and a number of decoys which could degrade the defense. There are enormous difficulties in building radars and computers which can scan a large number of targets instantly, instantly discriminate the real warheads from the decoys, and direct the interceptors to their targets. There are enormous costs as well. But, as we have seen in Chapter 2, the objections to BMD flowed less from these technical considerations than from the ideological preference for Mutual Assured Destruction and from the absolutist tenet that a defense less than perfect is wholly worthless. As we will see below, technology has improved the effectiveness of BMD. But even the systems of the early 1970s can be very effective, *providing the dimensions of the threat are scaled down.* Suppose, for example, that one side had reduced the other's missile force to about one thousand warheads by counterforce attacks. If that side had emplaced several hundred missile interceptors around targets of high value, such as missile fields or military factories or the capital city, it could count on reducing damage to those targets quite substantially. Most important, that side could have some confidence that its opponent, finding itself with few weapons and learning that these would not be very effective, would not use them. Such a partial BMD system could be mounted by the Soviet Union rather quickly. Even if one believes the CIA's statement that the large phased-array radars now being built in the Soviet Union have only a limited ability to manage a battle involving many thousands of incoming warheads, one cannot but realize that such radars have substantial ability to handle a smaller battle. The radar associated with the SA-5 surface-to-air missile, when used in the ABM mode, is anything but foolproof. But it could handle dozens of targets. The SA-5 missile is old. But the Soviets are building a new ABM, the ABM-4. Since they have not deployed it, they have not violated the treaty of 1972. But the United

States has no idea how many antimissile missiles the Soviet Union is building. American satellites can see how many are deployed, not how many are built. If many were built, they could be deployed on mobile launchers more quickly than the U.S. could do anything about them.

So, as we have seen, although nuclear weapons are indeed destructive, a nuclear war can result in widely different degrees of damage depending how countries prepare for war and on how they actually use their weapons in war. Size, accuracy and relative invulnerability of weapons are factors to be considered, as are measures of active and passive defense, and the decision whether or not to strike first. But the paramount factor affecting the final effect of nuclear weapons in war is strategy—the purposes and plans with which the possibility of conflict is approached. It is not surprising that the Soviet Union, determined as it is to prevail, has put together means which, overlaid one upon another, would afford substantial though not total protection to its weapons and to the bases of its power, while the United States, deeply committed to Mutual Assured Destruction for many years, has developed the capability to kill millions of Soviet citizens who could do it no harm, but finds that its own military forces, as well as its citizens, are becoming ever more vulnerable.

In the coming years changes in technology are very likely to alter the real world in ways that will give even greater importance to decisions regarding how nuclear weapons may best be used and defended against, and they will make the outcome of nuclear war more dependent than ever on factors within human control. These changes will affect both offense and defense.

The offense will be aided by continuing improvements in accuracy and in yield-to-weight ratios. In 1945 the first atom bomb could barely be lifted by a B-29. In that same year, had the guidance system of a German V-2 been placed on an intercontinental missile, it would have produced a CEP of 50–100 miles. In 1980, the first American Mark 12A warheads employing the NS20 guidance system are expected to weigh under 800 pounds, to yield 350 KT and to have CEP's of .1 nautical miles. Once placed on the MX missile, the MK-12A would have a CEP of .07 nautical miles and become a true hard-target killer. There is reason to believe that in future years larger yields may be packed into smaller warheads, and near unanimity that,

given the will, CEP's can be reduced to near zero, if by nothing else then by terminal precision guidance. This will have two results. First, all fixed "hard targets" will become absolutely vulnerable. The very existence of such targets will be powerful incentive to strike first. Hardening will lose all value, while the value of *deception* will be even greater than at this writing. Second, the number of warheads which may be packed on top of existing missiles will increase drastically. If the Soviet Union is, as it appears, to be on the verge of the technology of the Mark 12-A and the MX, it could soon put some twenty mighty accurate weapons on a single SS-18. As a consequence, a nation so inclined may attempt a disarming first strike with an even smaller portion of its forces than it would need at this writing. The premium for striking first and for avoiding civilian targets cannot but increase. These developments diminish even further the relevance of claims such as President Carter's that a single American ballistic missile submarine can devastate the Soviet Union's 100 largest cities.

By the late 1980s technology may well serve the defense better than the offense. Since the early 1970s, phased-array radars and computers, the design of interceptors and space-based surveillance of missile launches, have improved radically. At this writing the technology exists to build systems to detect the launching of a missile attack, to track the incoming missiles before they reach the highest point in their trajectories, to send antimissile missiles with multiple warheads to intercept them in midcourse, and to defend against the warheads that get through by means of interceptors that accellerate three times faster than the Sprint missile of the early 1970s (300 Gs against 100 Gs). The effectiveness of such new interceptor missiles can be sharply increased if the targets to be defended are missiles deployed in a deceptive mode. If, for example, 200 MX missiles were deployed randomly in 4,000 shelters, the Soviets, assuming they wanted to attack, would have to commit warheads against all 4,000. But the U.S. would not have to pay attention to any but the warheads heading for the 200 shelters it knew were occupied. The Soviets would waste 3,800 warheads, and have a high percentage of the other 200 intercepted. The attack would certainly fail, and, therefore would not be tried. Even without deceptive basing of the targets, interception of incoming warheads will become easier in the coming years.

These changes are congruent with the Soviet Union's strategic views and policies, but run against the grain of the policies adopted by the United States. One need but consider the increased importance of deception. No nation is less capable of practicing it on others than the United States. The number and characteristics of missiles and other weapons the U.S. produces are known to every reader of Congressional publications and of trade magazines such as *Electronic Countermeasures* and *Aviation Week and Space Technology.* The Soviet Union does not need satellites to monitor the production or deployment of American weapons. But the United States, despite its excellent imaging systems and electronic wizardry, is unsure of the quantity and quality of Soviet weapons.

Perhaps the part of reality which has been hardest for American leaders to grasp of late is that nuclear power is relevant to nonnuclear conflict. Many Americans reason that, because the U.S. did not often use nuclear superiority when it had it, the Soviet Union could not use it in the future. This belief may be partially explained by the fact that, during the period of American nuclear superiority (1945–1968), the Soviets enjoyed a substantial advantage in several elements of conventional forces. Consequently, the U.S. could not have gained cheap conventional military victories even if it had wanted to. But in the forthcoming period of American nuclear inferiority, the balance of conventional forces will not favor the U.S. Rather, American general purpose forces will be more inferior than ever in just about every category. Here are a few examples. In 1979–1980, the U.S. will produce about 400 to 500 fighter-type aircraft. The Soviets will produce about 1,100. The Soviet Union will produce some 3,600 tanks, to between 690 and 820 for U.S. The forces-in-being resulting from such rates of production are similarly unbalanced: 45,000 tanks to 10,000; eight airborne divisions to two, 2,600 interceptor aircraft to 300. This means that the Soviets will be able to engage in conventional armed operations, and present the United States with the unattractive choice of losing on the conventional level or of introducing nuclear weapons and losing worse.

A reputation for success, Hans Morgenthau once wrote, is as necessary to a nation's existence as any army. If a nation is deemed by others to be incapable of success, it will find enemies and neutrals aplenty, but no allies. Heroes excepted, people do not wait to have their actions forced by irresistible power.

Rather, they anticipate its exercise and bend themselves to accomodate what they decide its demands might be. The broad hints of accomodation to the Soviet Union given by the Saudi royal family, by German Chancellor Helmut Schmidt, and French President Giscard d'Estaing do not in the least indicate that either Islam or German Social Democracy or French Nationalism have discovered new virtues in Soviet Marxism. They mean only that these statesmen inhabit the real world, and that they are beginning to adjust to the adverse trends place in America's possibilities for success.

Some Americans, recognizing the failures of American foreign policy in the late 1970s, believe that it will not be necessary to build armed forces capable of defeating the Soviet Union—and which might provoke the Soviet Union—in order to improve America's position in the world. They agree that the Soviets will try to exploit their looming military superiority. But, they believe, well-crafted, unflappable American foreign policy should give no credence to Soviet threats—which the Soviets do not want to carry out—will continue to support America's key allies in the world, and will encourage defections among the Soviet Union's allies. The trouble with this view is that America's key allies in the world do not wish to hold their lives and prosperity hostage to an America incapable of guaranteeing them. One successful Soviet venture after another, especially against Europe's and Japan's oil supplies, would leave the United States alone in the world. But surely, so goes the argument, in such circumstances the United States would rearm massively! One must examine that argument in the military circumstances of, say, 1982. Given Soviet forces then, how would the American people react to a Soviet admonition that American rearmament would be considered an act of war and that the Soviet Union would punish it accordingly? At such a time, regardless of one's doctrine, one would be forced to look at Soviet forces and ask, "What can they really do to us?" and at ours, asking "What can we really do to protect ourselves?"

It is fitting that this discussion should end with a description of Secretary of Defense Harold Brown's fiscal year 1980 report to Congress on American military posture. It is the most interesting such statement in years despite the fact that, for the second year in a row, it gives no data on Soviet forces—e.g. on the accuracy of Soviet missiles—which might embarass the administration's attempt to sell SALT II to the Senate. Never-

theless, the statement is revealing. Gone are the self-assuredness, the bravado, and much of the jargon of previous years. The 1980 statement is a Hamlet-like soliloquy by a corps of officials that no longer has confidence in Mutual Assured Destruction, but that is genuinely trying to understand the consequences of MAD's failure. Moreover, this corps of officials is stuck with a military force designed for MAD purposes. Most important, these officials represent an administration that is still officially committed to MAD and which deems ratification of a SALT II treaty, which makes no sense except in terms of MAD, essential to its own political survival. Consequently, the FY 1980 statement is full of painful contradictions. It points out the necessity of "being able to cover hard targets with at least one reliable warhead with substantial capacity to destroy the target . . ." and commends the proposed SALT II treaty for leaving open for America the possibility of doing just that. But it does not recommend speedy production of a force which could deliver such warheads, and states that it is unrealistic for any nation to expect to limit damage to itself in nuclear war. If it is impossible for any nation to escape destruction in nuclear war, regardless of circumstances, then why should one want one warhead on each Soviet silo? On one page the statement bristles with worry about the vulnerability of American ICBMs, while on another there is the expectation that, in the future, this will matter less. On one page the statement says that present programs are adequate. On another it says that present trends will lead to clearcut Soviet superiority within five years. Such a performance can come only from minds deeply divided and insufficiently in touch with reality. The statement admits as much: "We have to admit that we have not developed a plausible picture of the conflict we are trying to deter."

Secretary Brown, a former disciple of Secretary McNamara, is in a quandary. Though he recognizes concrete dangers, he is unable to recommend that they be met. Although he appears to have recognized the follies of MAD, he works for an administration which has not. The only possible compromises between dreams and reality are confusion and suspension of judgment. The FY 1980 posture statement is full of both.

6.

SALT I: Cold Dawn Revisited

As we have seen, the legacy of the McNamara era was threefold. McNamara halted acquisition of U.S. strategic missiles in the mid-1960s at a programmed level of 1054 ICMBs and 656 SLBMs and deliberately rejected or delayed serious attempts at development of strategic defensive measures, believing that a capability for assured destruction would be sufficient to deter even a considerably expanded Soviet threat. Second, because of his oft stated conviction that the Soviet Union had also accepted the MAD strategic doctrine and was interested only in achieving strategic parity with the United States, he rejected indications and down-played the significance of a massive Soviet buildup of ICBMs, although these indications were clear even to lay observers as early as 1967.[1] Third, he bequeathed the novel idea that because the "logic" of the nuclear arms race made nuclear parity the only rational national security policy for any nation, the Soviet leaders, as they drew equal to the United States, would be willing to enter into serious arms-control negotiations. In the words of one sympathetic MADman,

> it was in nuclear strategy that McNamara seems to have done best . . . He did turn the Air Force away from counterforce and toward deterrence. He

> chopped off Minuteman deployment at 1,000. He kept warheads small. He taught public opinion that security no longer lies in superior numbers of weapons. He struggled to start talks with Russians on limiting strategic arms, especially defensive arms . . . McNamara, to his credit, effectively blocked the push for a massive ABM program.[2]

In addition to the McNamara legacy, there was also by 1968 a somewhat limited and erratic history of peripheral Soviet-American arms-control agreements which had begun with the Partial Test Ban Treaty in 1963.[3]

However, SALT should not be seen simply as a logical consequence of Robert McNamara's legacy, and Mr. McNamara should not bear sole responsibility for the SALT I accords. Rather, the consummation of SALT I required the political context of "détente" as it came to be understood in the Nixon-Kissinger approach to Soviet-American relations.

The Nixon Doctrine[4] was founded on the belief that virtually all of the forces and factors that had determined the structure of world politics since World War II had changed. Richard Nixon and Henry Kissinger identified these changes: Europe and Japan had recovered economically and politically from World War II; the new nations of Africa and Asia had developed to the point where with aid they could resist external aggression; the Communist world was no longer monolithic and had its own intramural conflicts; the old, and once vibrant and attractive ideologies—the "isms"—had lost their vitality; and the more traditional national goals and concerns of security and economic progress had replaced them. Finally, and of greatest immediate importance, American foreign policy was now, according to Nixon, constrained by the exhaustion of American psychological resources and the undermining of its moral strength that followed the unpleasantness in Vietnam. Moreover, Nixon and Kissinger argued, previous administrations had neglected the American armed forces. Thus American preeminence had given way to a condition of strategic parity between the U.S. and the USSR. Not all of these changes were seen as necessarily bad for the U.S. In fact, as a result of these changes, it was now possible for the U.S. to maintain international security by lesser effort than had been required previously. Most importantly, Nixon and Kissinger hoped that

for the first time there existed an opportunity to create a "new structure of relations" with the Communist nations, which would lead to a "durable peace." The U.S. could foster a "generation of peace" by giving the Soviets a vested interest in improving political and trade relations. This would flow in part from an increased interdependence between the economies of the superpowers. Accordingly, Nixon and Kissinger believed that agreement to limit strategic arms could be an exemplary instance of cooperation that might lead to gradual changes in perception by the Soviets, and in turn lead to still wider cooperation.

However, the Nixon Administration had come to office strongly supporting the value and feasibility of "nuclear superiority" over the Soviet Union. As a candidate, Nixon had accused the Johnson Administration of having created a "security gap." He criticized nuclear parity as a "peculiar, unprecedented doctrine."[5] Once in office, however, the Nixon Administration quickly accepted the McNamara doctrine of strategic parity, merely changing its name to "sufficiency," and later replacing references to an "assured destruction capability" with the more palatable term "realistic deterrence."

Even as Nixon and Kissinger were adopting Robert McNamara's views, the Soviet strategic buildup continued. By the end of 1969, America's superiority in numbers of ICBMs had vanished, and the Soviets were making progress in closing the gap in SLBMs as well. On March 19, 1969, Secretary of Defense Melvin Laird testified to the Senate Armed Services Committee:

> As of today, the Soviets have in being and under construction more ICBM launchers than the 1,048 possessed by the United States.[6]

On April 25, 1969, Secretary Laird reported that the Soviets possessed 1,000 ICBMs in hardened silos and 140 ICBMs on soft launching pads, and estimated that they could have a total of 2,500 ICBMs by 1975.[7] Furthermore, the Russians had begun testing MRVs (Multiple warheads that cannot be independently targeted but are dispersed over a general target area) in the summer of 1968, suggesting the possibility of an eventual Soviet capability to deploy MIRV.[8] With MIRVs, a single missile could strike several targets at the same time. The relevant

questions regarding MIRV, were: how many each missile could carry, how powerful each would be, and how accurate. The U.S., which was developing MIRVs, planned to place them on Minuteman and on Poseidon, its newest SLBM. But by conscious design neither missile, especially Poseidon, possessed enough throw-weight (payload), yield or warhead accuracy to be considered a true counterforce weapon. The SS-9 which had first been introduced in 1965 was capable of carrying a 25 megaton warhead. Up to this time it had made little strategic "sense" to American MADmen. But it soon became startingly clear that, for example, 300 SS-9s, each of which could carry six huge MIRVs could effectively destroy the U.S. land-based missile force in a single strike providing they were accurate enough. By February 1970, the Soviets had deployed 275 SS-9s. Only dyed-in-the-wool believers in MAD doubted that the Soviets were striving to the utmost to improve accuracy.[9]

The growth of the Soviet threat could also be seen in estimates of Soviet military spending. The Soviets were outspending the United States by two to one for strategic forces and for military research and development.[10] In April 1969, the Institute for Strategic Studies in London concluded that: "The Soviet Union must now be treated as a full equal in terms both of strategic power and of her ability to control conflict in the developing world."[11] Although the U.S. still possessed a significant lead in overall capability, the trend was clearly with the Soviets.

The Soviet buildup, however, did not shake the Nixon Administration's determination not to redress the military balance. In Congress and elsewhere, arms control advocates and MAD supporters had mounted an intense campaign against the Johnson Administration's program to produce the Sentinel antiballistic missile system, designed to protect the general population. As has been noted, McNamara had recommended Sentinel only reluctantly. In response to this political opposition, Nixon reoriented the ABM program from city-defense to the defense of Minuteman silos. Nixon thereby subscribed to the MAD doctrine of protecting deterrent forces but leaving population centers vulnerable. Richard Nixon stated his conclusion that there could be no effective defense against the level of strategic power which the Soviets could eventually bring to bear and, in keeping with MAD dogma, sought to moderate any Soviet fears that the U.S. might actually be planning a "thick

defense." In the best tradition of Robert McNamara, Richard Nixon sought to persuade the Soviet Union to match this American restraint by refraining from making provocative improvements on weapons. He also repeatedly indicated his intention not to engage in programs that appeared to threaten the Soviet deterrent.[12] In August 1969, after a major Senate debate, Safeguard was approved in the Senate by the Vice President's single vote. Had the ABM been defeated, there would probably have been no SALT I.

On the advice of Henry Kissinger, Nixon rejected a recommendation by the Joint Chiefs of Staff that the United States increase the number of both ICBMs and of nuclear missile submarines. Dr. Kissinger argued that since the U.S. already possessed enough weapons for "assured destruction," to increase their number might unnecessarily antagonize the Soviets and "jeopardize the prospects for SALT."[13] In late 1969, the administration also declined to recommend an Air Force program to develop a larger warhead and more accurate reentry vehicle for Minuteman III.[14] Indeed for Nixon and Kissinger, SALT came to represent the answer to the Soviet buildup and the key to the broader U.S./USSR relationship. Meanwhile, a number of bureaucratic forces within the U.S. Government were battling intensely over the questions raised by the Soviet buildup, especially whether the huge Soviet SS-9 ICBM could be taken to indicate the Kremlin's intention to achieve a first-strike capability. Amid these and other bureaucratic cross currents, opponents of the U.S. MIRV warhead, who had urged a moratorium on MIRV testing and deployment, began to press their case.

In this atmosphere, in November 1969, the administration sat down to the first SALT session with the USSR. The ensuring negotiations, which were long and complex, included seven formal sessions over the next two-and-one-half years, plus the famous "back-channel" communications and the political intervention of Nixon and Kissinger at critical junctures. The detailed story of the SALT negotiations has been recounted in a number of places and has occasioned considerable analytic comment.[15] Nevertheless, it may be summarized very briefly: it is in essence a story of virtually unbroken retreat by the United States from every proposal offered and every position taken during the course of the negotiations. Shortly after SALT

went into force, Senator Henry Jackson assessed the results of the negotiations.

> Partly because of our failure to define our objectives clearly, and partly because of the unseemly haste that overcame our effort to conclude the Moscow accords in an orderly fashion, the United States failed to stand firm in support of its negotiating position on a number of key issues. For example, we dropped our insistence on the right to substitute sea-based for land-based intercontinental missiles and we failed to obtain a low ceiling on the overall number of Soviet launchers. Both objectives had been part of earlier U.S. proposals. Indeed, there is astonishingly little resemblance between our early proposals and the final agreements. What is more, there is little doubt that if the May 26 agreements had been proposed early in the preparation for the talks they would have been dismissed out of hand by American planners as conceding too much to the Soviet Union. The history of the American position is one of unimpeded deterioration.[16]

The Accords

SALT I includes three separate agreements signed by Richard Nixon and Leonid Brezhnev in Moscow in May of 1972. The major agreements consist of a Treaty on the Limitation of Anti-Ballistic Missile Systems (ABM Treaty), an Interim Agreement with a Protocol, on "Certain Measures with Respect to the Limitation of Strategic Offensive Arms" (Interim Agreement) and a statement of "Basic Principles of Mutual Relations." Both the ABM Treaty and the Interim Agreement and its Protocol have a number of far more complex Agreed Interpretations (which were initialed) appended to them, all of which are intended to be as binding on the two parties as the text of the formal signed agreements themselves. SALT I includes as well two executive agreements which had previously entered into force on September 30, 1971. In addition, each side made a number of "noteworthy unilateral statements" interpreting certain aspects of the accords on which there apparently was

not agreement. It is now clear that these unilateral interpretations were not binding, although the Nixon Administration assured the Congress during the ratification debate that they were. The meaning of SALT for the American side is also expressed in the presidential papers transmitting the SALT accords to the Congress in a detailed analysis of the agreements by the Secretary of State in the legislative record developed during the course of the Congressional hearings and debate; and in particular the so-called "Jackson Amendment" (section 3 of Public Law 92-448, the law resulting from the Joint Resolution on the SALT I accords). By such explanations and unilateral legislative actions, the U.S. Government committed itself to SALT I.

The ABM treaty, the most straightforward, detailed and constraining of the agreements placed severe numerical and qualitative limits on missiles capable of shooting down incoming ballistic missiles and on the radars which would guide them. SALT I defines an ABM system as "a system to counter strategic ballistic missiles or their elements (i.e. warheads) in flight." Each side is permitted two defensive sites, each of which may have a maximum of one hundred interceptors. One may protect the national capital; the "National Command Authority (NCA)" and one may protect a distant ICBM field. The treaty further restricts the number and size of the associated Ballistic Missile Defense (BMD) radars, the transfer of BMD technology to other nations, and the testing of mobile ABMs. The treaty is of unlimited duration, although either party may withdraw on six-months notification if it believes that "extraordinary events" have jeopardized its "supreme interests." The treaty also commits the two signatories to continue negotiation for a comprehensive agreement on offensive weapons. An additional protocol signed in July, 1974, reduced the number of ABM sites to one each. The Soviets never built a site to protect a missile field. The only one they built protects Moscow and incidentally covers some ICBMs. The United States never built a site to protect Washington and, in early 1975, deactivated its site protecting missiles at Grand Forks, North Dakota. In sum, the treaty, which limits launchers, interceptor missiles, and which cancelled out the American lead in ABM technology, has effectively prohibited conventional ABM systems.

The Interim Agreement on Offensive Weapons, which is more complex and ambiguous than the ABM treaty, is also

accompanied by a protocol as well as by the various amplifying statements. The agreement, together with its protocol, provides for a "freeze" after July 1, 1972, on new construction of fixed ICBM launchers together with numerical limits on ballistic missile submarines and their associated SLBM launchers. As of May, 1972, the Soviets had 1,618 launchers, and the U.S., 1,056.[17] The "third leg" of the so-called "strategic triad," bombers, were not addressed by SALT I, nor were IRBMs, MRBMs or other so-called forward-based systems. Qualitative improvements in missiles, such as accuracy and MIRVing (ie., numbers of warheads), were not affected by the agreement.

The most meaningful parts of the agreement are the definitions. In an agreed interpretation, an ICBM launcher was defined as a launcher for a missile with a range in excess of approximately 5,500 kilometers. All launchers so deployed, no matter what their apparent target, are to be counted as such. "Modernization" and replacement of strategic offensive missiles and launchers is explicitly permitted, but the replacement of so-called "light" ICBMs (such as the U.S. Minuteman or the Soviet SS-11 Sego and SS-13 Savage) and of "older, heavy" ICBMs (the U.S. Titan, or the Soviet SS-7 Saddler or SS-8 Sasin) deployed prior to 1964, with "modern, heavy" ICBMs (at the time this referred to the Soviet SS-9 Scarp) was prohibited. This provision acted as a "grandfather clause" to permit the USSR a total of 313 launchers for very large missiles, but to prohibit the U.S. which had no such missiles, from acquiring any. The U.S. was not successful in getting the Soviets to agree on a precise definition of "light" and "heavy" missiles. Existing launcher silos were not to be enlarged by more than 10–15 percent of the present dimensions. But the supplemental understandings do not make clear whether the 10 to 15 percent increase in launcher size refers to the silo's volume, to its depth or to its diameter (which would increase volume by approximately 50 percent) or to one dimension only (the interpretation presented by the administration during Congressional debate). Although the U.S. attempted to resolve this issue via "unilateral interpretations," no clear and enforceable limits were imposed on the volume of replacement missiles. Subsequent Soviet missile deployments have, in any case, rendered moot the question of the SS-9 threat to Minuteman. Also, the Soviets would not agree to ban land-mobile ICBM launchers, although the U.S. made a unilateral statement stating that it would view

deployment of operational land-mobile ICMBs as "inconsistent with the objectives of the agreement."

The overall result of the limits on ICBMs was to afford the Russians a substantial advantage over the U.S. in numbers of ICBMs—approximately 1,618 land-based launchers while the U.S. was permitted 1,054. Additionally, because the Soviets are permitted a 313 to zero margin over the U.S. in modern large ICBM launchers, the Soviets are granted an approximately three-to-one advantage in missile throw-weight. Although throw-weight is only one measure of strategic capability, it, along with accuracy, is important as a measure of capability to kill hard targets. But neither accuracy nor throw-weight *per se* are limited *at all* by SALT I, or for that matter, by SALT II.

The agreement itself also limits SLBM launchers and modern ballistic missile submarines on both sides to the number either deployed or alleged to have been under construction as of July 1, 1972. This limited the U.S. to 656 SLBMs and the Soviets to 740.[18] However, the attached protocol provided for a complex conversion proceedure under which each side may trade in a number of its older land- or sea-based missiles for new SLBMs (and for the submarines with which to carry them). This provision, the so-called "one-way freedom to mix" or "blue-water option" acknowledges and implements the MAD concept that SLBMs, because they are relatively inaccurate and are not "prompt," are city-busting weapons to be preferred over land-based ICBMs which, being potentially accurate, prompt hard-target killers are therefore destabilizing. There are upper limits to the blue water option. After exercising full rights of substitution, the U.S. cannot have more than 44 modern ballistic missile submarines carrying 710 modern SLBM launchers, and the Soviets cannot have more than 62 submarines carrying 950 modern SLBM launchers. The provisions are further complicated because the Soviets, who at the time had deployed some "older" nuclear power ballistic missiles submarines (Hotel class) and some diesel-powered submarines (Golf class) which have older and shorter-range ballistic missiles, have thus far chosen to retain them rather than trade them in on modern SLBM submarines (choosing instead to trade in older ICBMs). Under this option the Soviets could have deployed a maximum of 1,016 SLBMs (old and new) on 84 submarines.

In any case, once again the Soviets were permitted a decided

advantage, particularly since the U.S. had stopped its ballistic submarine construction at 41. Remarkably the USSR actually possessed only 25 operational SSBN's at the time the accords were signed, with from between 17 and 23 under construction. With remarkable understatement, one observer close to the SALT negotiations stated that there "was no agreed rationale for the higher Soviet numerical limits on SLBM launchers on ballistic missile submarines".[19] Sources in the American delegation contend that Henry Kissinger personally accepted the Soviets argument that since geographic factors and the short range of SLBMs allowed more American submarines than Soviet submarines to be on station during routine periods, the Soviet Union should be compensated with a higher number. This argument wholly neglects the obvious fact that, were these weapons ever to be used, it would not be during a routine period, and the attacker would have nearly all his submarines at sea. Ultimately, the disparity between numbers of Soviet and American launchers for both ICBM and SLBM under SALT I could be as large as 2,414 to 1,710.

Above all, it must be also noted that SALT I limited only *launchers* (silos or submarine missile tubes) but did not limit *delivery vehicles,* (missiles, and apparently under SALT II, also bombers armed with air-launched cruise missiles) and *reentry vehicles* (warheads, either single, MRV, or MIRV). There are many ways in which missiles in excess of the number of operational launchers may be used. Submarines may reload their tubes at the dock. Some Soviet ICBMs are also launched in a manner that allows easy reloading of silos. This method, similar to that used to launch SLBMs, is called "cold launch." The missile is ejected from the silo by means of compressed gas, and ignites only after it leaves the silo. Unlike conventional techniques, cold launch does only minimal damage to the silo which may be reloaded right away. As a result silos, which are relatively easy to "verify," are not synonomous with missiles which, by themselves, are exceedingly difficult to verify. It should also be noted that missiles may be launched in a number of ways that do not in the least involve silos or SLBM tubes, but rather that use simple, easily concealable equipment. Moreover, since the cold-launch technique obviates the need for bulky protective shielding normally installed in a "hot-launch" silo, the new technique effectively nullifies whatever remaining

limitations remain in effect from SALT I regarding launcher size.

It must also be noted that neither the Interim Agreement and Protocol nor the various agreed interpretations spell out the number of ICBM launchers permitted, nor the number of SLBMs either side had in being or under construction. Of course, figures for the U.S. forces were well known, but the Soviets refused to discuss the numbers of their own weapons. The United States contented itself that it could verify the provisions of the agreement through photographic satellites because these satellites could count silos and submarines. The agreement was intended, by the U.S. at least, to be an interim measure, only to last five years, from October 1972 when SALT I went into force until October 1977, during which time a permanent comprehensive treaty (to be known as SALT II) was to have been negotiated. Interestingly, the U.S. appended a unilateral statement that stresses the objective of reaching a comprehensive offensive agreement reducing threats to the survivability of the strategic retaliatory force and that notes if such an agreement is not achieved within five years, American "supreme interests" could be jeopardized, thereby constituting a basis for U.S. withdrawal. The statement did not commit the U.S. to withdrawal if no SALT II was reached by 1977, and the status of this unilateral statement, as indeed with all such statements, is unclear. The so-called Vladivostok agreement of November 1974 was said to mark 95 percent completion of SALT II. Nevertheless the Interim Agreement officially expired in October 1977 in the absence of a SALT II treaty. However, U.S. and Soviet negotiators framed a document entitled a "Parallel Unilateral Policy Declaration" by which the Carter Administration promised to continue observing the Interim Agreement limits provided the Soviets likewise observe them. A number of critics have claimed that failure to submit the continuation of the Interim Agreement to Congress is a violation of Section 33 of the Arms Control and Disarmament Act of 1961, which requires Congressional advice and consent for actions that obligate the United States "to disarm or to reduce or limit" its armed forces or armaments.[20]

Two other aspects of SALT I deserve mention. The first was a statement of "Basic Principles of of Mutual Relations Between the U.S. and the USSR," which in essence provided something of a written "charter" for détente. It commits the

U.S. and USSR to promoting "the reduction of tensions in the world, and the strengthening of universal security and international cooperation," based on the principles of "reciprocity, mutual accomodation and mutual benefit." Both sides pledge to "do their utmost to avoid military confrontations and prevent the outbreak of nuclear war." The agreement also contains a thinly veiled statement of the underlying tenet of MAD. Accordingly, each side

> will proceed from the common determination that in the nuclear age there is no alternative to conducting their mutual relations on the basis of peaceful coexistence. Difference in ideology and in the social systems of the USA and the USSR are not obstacles to the bilateral development of normal relations based on the principles of sovereignty, equality, non-interference in internal affairs and mutual advantage.[21]

Finally, there is the legislative history of the SALT I. As required by the Constitution, the ABM treaty was submitted to the Senate for its advice and consent. The administration, however, transmitted the Interim Agreement to both houses for approval by a simple majority, requesting not approval, but an "expression of support." The Senate resisted this wording, however, and Congress "approved" the whole on September 30, 1972, but only after enacting the Jackson Amendment as follows:

> . . . the Congress recognizes the principle of United States-Soviet Union equality reflected in the anti-ballistic missile treaty and urges and requests the President to seek a future treaty that, inter alia, would not limit the United States to levels of intercontinental strategic forces inferior to the limits provided for the Soviet Union; and the Congress considers that the success of these agreements and the attainment of more permanent and comprehensive agreements are dependent upon the maintenance under present world conditions of a vigorous research and development and modernization program as required by a prudent strategic posture.[22]

Nixon and Kissinger presented the SALT I agreements to the people and the Congress as a great achievement—the jewel in the crown of détente—despite the rather obvious disparity in numbers of missile launchers permitted the two sides. Today even Henry Kissinger, SALT I's foremost architect, is in the process of denying it three times.[23] What has happened? The agreements have been evaluated not for their contribution to détente, but rather have been measured against the purposes they were supposed to achieve, and they were found wanting. SALT I as an arms control agreement was supposed to help return the nuclear genie to its bottle by equalizing and reducing each sides' capacity to harm the other. But, if it was so intended, why was the USSR permitted a substantial advantage in numbers of offensive missile launchers? The answers to such questions occupy a critical place in the debate over whether America shall be defended. To repeat once again the theme of this book, neither the details of the SALT I agreements, nor even those that comprise SALT II, threaten the defense of this land so much as the philosophy and motivation of those who argue that such agreements make America more secure by making her more vulnerable.

In defending the accords during the Congressional debate in 1972, Nixon and Kissinger advanced five principal sets of arguments.

SALT I Enhances Mutual Deterrence

The first such defense of SALT I, especially the ABM treaty, is that by reducing ballistic-missile defenses to strategically insignificant levels, SALT guarantees the mutual vulnerability of both societies and thus assures mutual deterrence. As Dr. Kissinger described it, because the offensive missiles of each side are afforded a "free ride" or "unchallenged access" to the cities of the other, assured destruction is mutual. Under the MAD postulate, the risks of nuclear war should be greatly reduced thereby.[24] Kissinger stated, "Under virtually no foreseeable circumstances could the United States or the Soviet Union avoid 100 million dead in a nuclear exchange."[25] For this reason alone, true believers see the SALT I accords as a major move toward stability in the nuclear age, particularly since it is argued in this regard that the Soviets, by agreeing

to SALT I, have likewise recognized the futility and risk of an unrestrained strategic arms race. Indeed, it is argued that the Soviet Union's acceptance of a treaty aimed at "parity," "equal security" and "mutual deterrence" is an historic achievement of some magnitude.[26] Further, by the "logic" of MAD, the severe curtailment of ballistic-missile *defense* has, in effect also constrained offensive systems that would have been built by each side to overcome the threat to assured destruction posed by ABM deployments. Similarly, while most defenders of SALT I acknowledge the limits on offensive weapons to be "modest," they argue that by limiting total numbers of strategic missile launchers an important first step on the road to further reduction has been taken. They argue that the offensive agreement was an *interim* agreement intended as a short-term freeze, and point to the possibility of significant reductions in offensive weapons in SALT II. Finally there were those who, while not fully sharing the minimum deterrence position, nevertheless saw SALT I as a step toward "crisis stability," in that it appeared to indicate a Soviet desire for a more stable nuclear relationship, a mutual desire to bar the attainment by either side of a first-strike capability. The Joint Resolution stated that the success of SALT I rested on: "the preservation of longstanding United States policy that neither the Soviet Union nor the United States should seek unilateral advantage by developing a first-strike potential."[26] In short, SALT appeared to be a major step away from the type of nuclear confrontation exhibited, for example, in the Cuban Missile Crisis. Those with an almost religious belief that arms-control agreements were the only proper goal for American diplomacy judged that, whatever the risks of the agreements, (termed "joint strategic planning" by one advocate), they were less than the risks of "unrestrained competition."[27] Additionally, arms-control advocates saw SALT I as an important restraining influence *domestically.* SALT would serve to restrain "zealous military professionals from undermining the possibility of stable arms limitation by superfluous technological innovation."[28] Finally, it was argued that SALT would mean a significant cost savings to both sides since they could now forego not only the expensive systems limited by the agreement but also the inevitable counter-weapons these would have called forth.

SALT I Stymies the Soviet Buildup

Second, the administration argued that the SALT accords were necessary to halt the massive buildup of Soviet strategic weapons that had occurred since the middle '60s. In particular the administration pointed to the limit of 313 launchers placed on the SS-9, arguing that such a limit substantially delayed, if it did not render impossible, the Soviets' achievement of capability to threaten Minuteman with a first strike. Claiming that the agreements placed a freeze on Soviet offensive missile programs, the administration argued that without an agreement, Soviet forces would have increased at an even faster pace. Americans were repeatedly urged not to contemplate the Soviet numerical advantage but rather to reflect on what would have been the results of the Soviet buildup in the absence of a treaty. Spokesmen noted the effect of unilateral American restraints dating from the McNamara period and pointed to SALT as the means by which the resulting imbalance could be kept from getting worse. Henry Kissinger argued that because of the inferior U.S. posture, the only option left to the U.S. was to restrain the *degree* of Soviet numerical superiority.

> The question to ask in assessing the freeze is not what situation it perpetuates, but what situation it prevents. The question of whether the freeze perpetuates a Soviet numerical superiority is beside the point. The question is: What would the margin have been without the freeze? That is the justification for the margin.[29]

The Soviets, he said, were constructing 250 ICBMs and 128 SLBMs a year, and by 1977 would have deployed well over 2,500 and 1,350 of these missiles respectively if they had not been halted by the SALT I.[30] Henry Kissinger further lamented the U.S. strategic position in his famous aside during his Moscow press conference following the SALT signing. In defending the Soviet SSBN advantage, Kissinger explained:

> The United States was in a rather complex position to recommend a submarine deal since we were not building any and the Soviets were building eight or

> nine a year, which isn't the most brilliant bargaining position I would recommend people to find themselves in.[31]

Most recently, as he has become more critical of SALT II, Kissinger has fully developed the theme of the American strategic military need for SALT I:

> In the early 1970s, in the face of an ominous Soviet buildup, the administration in which I served sought to reverse this process. But under the impact of the Vietnam turmoil its defense programs were being cut by the Congress every year. Every new weapons program we put forward was systematically attacked or dismantled. As a result, starting in 1970, our defense department was pleading with us to negotiate a freeze on the Soviets lest the disparity in numbers would continue to grow. We needed a freeze not only for arms-control but for strategic reasons . . . We froze a disparity which we inherited in order to gain time to reverse the situation . . . If there had been no agreement, we could have been worse off because the Soviets were in a position to add numbers immediately and we were not.[32]

The argument, in brief, was that because of the momentum of the Soviet program and the quiescence of the Americans, SALT was necessary to U.S. security. Any disparities in the agreement were a result of this fact and the U.S. was lucky to get the deal it got.

SALT I Did Not Affect America's Qualitative Lead

Third, it was alleged that whatever the numerical advantages permitted the Soviets, in the final analysis, it was more than offset by the American qualitative advantage in virtually every area of strategic weaponry. Spokesmen cited the U.S. lead in MIRVs then believed to be on the order of years, the American warheads' greater accuracy, the superior technology of our SSBNs, the greater range of our SLBMs, and the sizable American B-52 bomber force with its short-range nuclear at-

tack missiles. Implicit also was a general belief in the ability of superior American technology to offset any *real* strategic disparity between the two sides should one in fact, develop. On the other hand, SALT I was also seen as having a substantial restraining effect on qualitative improvements to strategic systems on both sides. Advocates cited the specific prohibitions in the ABM treaty on a wide range of potential future BMD developments and suggested that a precedent had been established for similar limits on offensive improvements such as MIRV, rapid reload systems, and numbers and types of test launchers that could be negotiated at SALT II.

SALT is an Ongoing Process

Fourth, it was argued that the agreement, while by no means perfect, had nevertheless established a *process* for dealing with the terrible issues of nuclear war. Any deficiencies in SALT I could be rectified by future negotiations during SALT II, or even SALT III. As the Soviet buildup continued following SALT I, this theme became increasingly prominent. In the words of one participant:

> Not withstanding the slow and uneven progress of SALT I . . . the flawed and weak Interim Agreement, and the persistence of serious differences over a number of aspects of strategic arms limitation, the task was launched by SALT I and was shown not to be impossible.[33]

SALT is thus seen as a glorious culminiation of a decade of cajoling, educating and tutoring the Soviets, not only to the subtleties of MAD, but also to the intracacies of great power bargaining. It is seen, in a larger sense, as the first fruit of attempts starting with the Baruch plan to bring nuclear weapons under the rule of law. Those involved in SALT are proud of their diplomatic efforts, often commenting on the "progress" made by the Soviets in the years of SALT negotiations. The Soviets are believed to have "matured" in their views as they have achieved strategic parity with the U.S. and as they have moved through the SALT process. Also, to those who see SALT largely as a study in bureaucratic politics, the SALT I accords are praised for having caused strategic arms control itself to

come of age. Arms-control considerations now drive American military programs and plans. Arms control, claimed one defender of SALT, can no longer be pigeonholed as a matter for disarmament specialists; it is more widely recognized as a dimension of military policy—and of foreign policy.[34]

SALT I Contributes to Détente

Finally and most important of all, the Nixon Administration, particularly in the person of Henry Kissinger, defended the agreements for their contribution to reduced tension and to political détente with the Soviet Union. SALT was a means of substituting negotiations for confrontation. But SALT was also seen as something more. Its product, strategic parity, was intended to serve still broader foreign policy objectives. As the lynchpin of détente it was seen as the crucial first step in a series of improvements in relations between the two powers, and was valued for its political contribution to the "momentum of détente." In Dr. Kissinger's words:

> The agreements on the limitation of strategic arms are thus not merely a technical accomplishment, although it is that in part, but it must be seen as a political event of some magnitude. This is relevant to the question of whether the agreements will be easily breached or circumvented. Given the past, no one can answer that question with certainty, but it can be said with some assurance that any country which contemplates a rupture of the agreement or a circumvention of its letter and spirit must now face the fact that it will be placing in jeopardy not only a limited arms control agreement, but a broad political relationship.[35]

In sum, whatever the technical deficiencies and shortcomings of SALT I, it is deserving of support because of its vital contribution to détente, and it is détente that ultimately ensures and guarantees the viability of the agreements themselves.

These then are the five sets of arguments that have been offered in support of the SALT I accords. However, it is clear that its authors, Richard Nixon and Henry Kissinger, valued

SALT most for its contribution to détente. In their view, arguments regarding the real world of nuclear weapons—what they can do and cannot do—were misplaced. To ask the question of why SALT I was on its face unequal was to ask, in the opinion of Nixon, Kissinger and its defenders, the wrong question. The importance of SALT was not to be found in its details but in its broader implication for a Soviet-American co-domination of the world. Nevertheless it is necessary to carefully analyze each of the claims about SALT I on its own merits.

SALT I Enhances Mutual Deterrence

In analyzing the impact of the SALT I agreements one British author observed that "more than one Soviet strategist and military planner these days must still be rubbing his eyes in order to make sure that he is not, after all, dreaming".[36] By virtually every major criterion SALT I must be judged an unambiguous failure for the United States. SALT I neither slowed nor altered the course of Soviet strategic weapons deployments. Rather, the force levels established in SALT I codify a Soviet three-to-two superiority in numbers of ICBMs and SLBMs while calling a halt to deployment of a highly promising American ABM, the purpose of which had become the defense of U.S. ICBM silos against the emerging Soviet threat. SALT I simply froze the results of the Soviet strategic buildup of the 1960s. Further, it left the Soviet Union free to modernize its massive strategic forces, allowing it to replace the older missiles with a fourth generation of MIRVed ICBMs possessing more throw-weight, more accuracy and more reliability. The arguments on the benefits of SALT have come a cropper. One member of the U.S. SALT negotiating team described SALT I thusly:

> Throughout the SALT negotiations period, from 1969 to the present, the Soviet Union has continued the pace of both its quantitative and qualitative improvements over the full spectrum of weapons capabilities. The Soviets have carefully and deceptively negotiated provisions to accommodate the deployments originally programmed by them, and they have taken maximum advantage of every loop-

> hole and ambiguity in the agreements. Indeed, Soviet strategic advantages in many categories have widened throughout this period. At the same time, the Soviets successfully thwarted the U.S. strategic program of greatest concern to them: the more technically advanced U.S. ABM program. The Soviets have used the SALT negotiations process as a smokescreen to conceal their mounting strategic superiority from a complacent United States.[37]

All of this has occured under an agreement which was said to have guaranteed not only the condition of mutual vulnerability but a mutual acknowledgement of its *desirability.* In fact, SALT I did not lead to a condition of mutual vulnerability, to true and balanced arms control, nor to an increase in "crisis stability": in short it did not enhance the American deterrent. However true it may be that SALT fully codified MAD as the supreme *American* strategy, there is simply no evidence to support the notion that the Soviets have come to accept the validity of the American view of minimum deterrence or to adopt the postulates of MAD as a basis for *its* nuclear strategy. Nor is there evidence that the Soviets were motivated by the "logic" of MAD and the seven-year demonstration of U.S. restraint into entering the SALT negotiations in order to consolidate its acceptance of mutual deterrence. In fact, it is clear that the Soviets entered the SALT negotiations with very different goals, deliberately seeking to gain strategic advantage over the United States.

When confronted with the absence of evidence to support the thesis that the Soviets had accepted MAD, defenders of SALT I claim the Soviets *de facto* accepted the principle of mutual vulnerability when they signed the ABM treaty. But in fact, it is clear that the Soviets saw the ABM treaty very differently. The evidence suggests that the Soviets never intended to deploy more than the 64 launchers that had been operational around Moscow since 1969. Rather than indicating acceptance by the Soviets of MAD, the ABM treaty in effect constrained only the superior American ABM. Moreover Soviet intentions were by no means obscure to all observers. Senator Henry Jackson tried to discredit the administration's attempt to ascribe to the Soviets acceptance of MAD on the basis of the ABM treaty:

> According to this view both countries, in subscribing to the ABM . . . treaty, have in effect "agreed" to remain vulnerable to a retaliatory attack, thereby assuring that even quite small deterrent forces will be adequate to deter. The logic of this interpretation escapes me. First, it fails to take account of the massive Soviet air defense system. For another, it ignores the basic principle of strategic deterrence; the certain survivability of one's retaliatory force. The fact that we will not have to contend with sophisticated ABM systems is not in itself a guarantee that enough of our nuclear force could survive attack to assure retaliation. Finally, it seems to me far more plausible to explain Soviet interest in the ABM treaty as an effort to stop the United States from continuing with its much more advanced ABM deployment at a moment when comparable technology was unavailable to the Soviet Union. The last thing I would read into the ABM treaty is the otherwise unsupported notion that the Soviets have accepted the doctrine of minimum deterrence as it is understood by some of our own arms control specialists.[38]

Events were to prove Henry Jackson precisely correct. The Soviets saw the prospects for an ABM treaty as a signal to accelerate their civil-defense program. The ABM treaty would remove the chances for the U.S. to achieve superior strategic defenses via technologies in which the Soviets were noncompetitive, and throw the competition for defenses (if it should continue) into the arena of civil discipline in which the Soviet system excels.

SALT Stymied the Soviet Buildup

The mindset of the American officials who negotiated SALT I prompted two critics to remark that "the United States' immersion in its own policy of mutual assured destruction was so complete that it excluded the possibility that the USSR conceivably could be operating on different assumptions."[39] Indeed only recently have many come to understand that MAD is the essential ingredient of SALT, and that SALT is the codification of MAD. Only recently have Americans criticized SALT for

leaving the United States more vulnerable than it need be.

To answer this charge, the administration turned to a new line of reasoning. Henry Kissinger no longer evoked the vision of the Soviet Union in strategic lockstep with the United States sharing goals of arms control and nuclear stability. Instead, he now pointed to the dangers of the expanding Soviet strategic arsenal and to SALT as the only way of coping with them. Indeed administration spokesmen used the strategic numbers game in a variety of ways to defend SALT I. On the one hand, the administration argued that the Soviet numerical advantage was of no significance because under MAD, numbers of weapons above those necessary for a minimum deterrent have no strategic meaning. Hence Kissinger's outburst: "What, in God's name, do you do with strategic superiority." Any offensive "launcher gap" could therefore be ignored and, thus, SALT I was all right regardless of the imbalances it permitted. When pressed, however, the administration turned to the argument that because of the momentum of the Soviet buildup, the U.S. was forced to accept a disparity in order to prevent a still greater one from developing. According to Kissinger's later explanations (witness Kissinger's interview in the *Economist,* February 1979), SALT I was the brilliant diplomatic handiwork of a bargainer negotiating from the weaker position.

It was not always this way however. Those who believed SALT would guarantee mutual deterrence had long believed that a SALT agreement with the Soviets had become possible because the Soviets were becoming more and more like the United States every year. President Nixon, for example, had described the Soviets' drawing abreast in strategic weapons as an "opportunity."[40] Now, however, with the U.S. in the inferior position, the advocates of MAD and SALT grudgingly acknowledged the importance of numbers, but only in order to argue that a three-to-two Soviet advantage in launchers was the best option available, and that the U.S. ought to take it and be glad. The argument that "this is the best deal we could get" has become a hardy perennial of the continuing SALT debate.

However, arguments to the effect that SALT I was needed to check the Soviet buildup are essentially phony. First, they rest on the assumption that the United States was unable to match or to counter Soviet developments with weapons and doctrine of its own, and therefore had to reply on diplomacy. Henry Kissinger made this case as follows:

> By 1969, therefore, we had no active or planned programs for deploying additional ICBMs, submarine-launched ballistic missiles or bombers—in other words, as a result of decisions made in the 1960s, and not reversible within the time-frame of the projected agreement, there would be a numerical gap against us in the two categories of land and sea-based missile systems whether or not there was an agreement. Without an agreement, the gap would steadily widen.[41]

Later in his *Economist* interview, Kissinger claimed that he had seen SALT as a means by which the troubled American polity might purchase the time it needed to put its internal affairs in order, and do the groundwork necessary to overcome the effects of a half decade's neglect of American military forces. The retreat embodied in SALT I, then, was supposed to be the prelude to renewed American superiority. Thus spoke Kissinger:

> Our strategy was to agree on a five-year freeze—the interval we judged would enable us to catch up by developing cruise missiles, a new submarine [Trident], a new ICBM [MX] and the B-1 bomber. No sooner had we concluded the agreement than it was criticised for giving the Soviets a numerical advantage. That argument was absurd and showed the disintegration of seriousness in our domestic debate. What gave the Russians their numerical advantage were the American decisions of the mid-1960s not to react to the Soviet buildup coupled with the congressional decisions to cut our military budget anywhere from 5–10 percent, each year, even when we were presenting extraordinarily lean budgets.[42]

The argument that in 1972 the U.S. was helpless to respond to the Soviet buildup is patently false. *If the Nixon-Kissinger military budgets were lean, the justifications presented on their behalf were leaner still.* Henry Kissinger has been quoted as believing that "the American people have only themselves to blame" for his having negotiated SALT terms favorable to the Soviet Union.[43] But Kissinger has no right to blame American

public opinion for his policies, especially since *he never once tried to lead public opinion in any other direction.* One looks in vain for a single word of warning from the mouth of Dr. Kissinger during his headlong pursuit of SALT I. Former Arms Control and Disarmament Administration (ACDA) director Fred Ikle has eloquently put the Kissinger argument to rest.

> He who mistakes his eroding evaluations for the trend of history can be made to believe that slowing down his retreat is a gain, that preventing further enemy advances must be the limit of his ambitions, and that trying to recover what has been lost would be utter recklessness.[44]

The true reason for American failure to keep pace with the Soviet strategic buildup is to be found in the acceptance by Nixon and Kissinger of Robert McNamara's theory of MAD and in the belief that the Soviets would be content with a condition of strategic parity. Of course there was never evidence to support this view, just as there was no earthly reason why in 1969–1972 the United States could not have met and exceeded every strategic challenge posed by the Soviets. There is in fact no good reason why the U.S. could not do so today. Indeed it must ultimately be asked if *anyone* seriously doubts that if it chose, the United States could create such an arsenal as to dwarf the Soviet Union in every conceivable measure of military power. Those who today imply that the U.S. has much to fear from the arms race that they allege would result from Senate failure to ratify SALT II would do well to reflect on which side that fear should rest.

In any case, there is every reason to believe that SALT itself prevented an American response to the Soviet buildup. Surely in the absence of an agreement, the U.S. would have accelerated its new strategic weapons: B-1, Trident, and MX. At the very least, the U.S. would have constructed the Safeguard system that of course would have protected Minuteman. Second, the arguments justifying SALT I on the grounds that the accords restrained the Soviet numerical buildup are false because they postulate a Soviet strategic doctrine that does not exist, and neglect the characteristics of existing Soviet weapons. Administration leaders apparently accepted the popular "peasant-image" of Soviet strategy, according to which an un-

sophisticated, xenophobic, Soviet Union blindly acquires more and larger weapons out of an irrational affinity for things massive and ignorance of the subtleties of nuclear doctrine—witness the cavalier dismissal of Soviet nuclear warfighting doctrines as primitive and not to be taken seriously. If the Nixon Administration truly believed that the Soviets would have continued to deploy additional missiles at the 1969–71 rate (approximately 250 ICBMs and 128 SLBMs per year), it misread egregiously both the Soviets and their strategic goals. By 1971 the Soviets had enough big boosters. It appears, therefore, that Soviet planning called for exploiting their advantage in throw-weight by turning to qualitative improvement of their force. There is no military reason why they should have done otherwise, even in the absence of SALT I. From the first, Soviet intentions were dictated by their own strategic view, a view that was not at all unsophisticated. American officials, on the other hand, blinded by MAD, could not take the Soviets seriously and assumed simply that the Soviets, in their stupidity, would build more and more launchers.

Alarmingly, many advocates of SALT appeared to believe also that increased numbers of Soviet offensive weapons, which they alleged were restrained by SALT I, somehow would have presented a danger to the U.S. greater than that posed by the Soviets' qualitative improvements, which were not restrained. Several analysts have argued, however, that administration spokesmen were not sincere about the threat that increased numbers of Soviet launchers might pose, but spoke of it as an after-the-fact rationalization for having granted the advantage in offensive weapons to the Soviet Union.[45] These analysts accuse Kissinger of outright duplicity for claiming that SALT I restrained Soviet SLBM deployment. SALT I in fact limited Soviet SLBM launchers to approximately the maximum level that they could have achieved anyway.

Finally, the arguments that justify SALT I because it restrained the Soviet buildup are false on their faces: the Soviet strategic buildup, far from being stymied, expanded greatly. SALT I did not restrain Soviet progress toward superiority either quantitatively or qualitatively. Nor did informed observers even expect that it would. In fact, the Joint Chiefs of Staff (JCS) told Congress that their support of the agreements was contingent upon accelerating the development of several key American weapons systems. Admiral Thomas Moorer, Chair-

man of the JCS, declared that action "must be taken now if the U.S. is to guard against a degredation of its national security policy."[46] Secondly, some analysts have contended that in exchange for accepting the principle of ceilings, the Soviets were permitted to determine these ceilings and that the final levels agreed upon by the negotiations represented the Soviets' original proposals.[47]

Of course SALT I was not supposed to restrain the Soviets from improving the quality of their offensive systems and did not do so, despite American musings on the "spirit of SALT." Within a year following the signing of the agreements, the Soviets tested four new, more accurate ICBMs, including three with MIRVs. They also introduced a new SLBM, the SS-N-8, that was tested to a range of approximately 4,000 miles, substantially greater than the range of the U.S. Poseidon. The SS-N-8, whose range is now believed to be about 4,300 nautical miles, made nonsense of the administration's claim that the Soviets had been allowed more SLBMs in SALT I to offset the American numerical advantage alleged to result from U.S. forward submarine bases. Now, submarines carrying the SS-N-8 could strike the U.S. from their home ports—and quickly reload.

The Soviets also reaped a number of qualitative advantages through a combination of "evasion and avoidance" made possible by the loopholes in the SALT I agreement itself and by outright "violations" of the American "unilateral statements" appended to the agreement. First, by interpreting the "15 percent" increase permitted in launcher size to mean 15 percent in each dimension (giving a 52 percent increase in silo volume) and by using cold-launch techniques on the SS-17 and SS-18 the Soviets have, given their current generation of missiles, the potential for increases in throw-weight from 50 to 250 percent.[48] Secondly, the Soviet interpretation of the 15 percent restriction was used in combination with the lack of any real definition of "light" and "heavy" missiles to effectively circumvent the restrictions on missile size without technically violating the agreed terms of SALT I which stated that:

> The Parties undertake not to convert land-based launchers for light ICBMs, or for ICBMs of older types deployed prior to 1964, into land-based launch-

ers for heavy ICBMs of types deployed after that time.

The U.S. had believed that this provision, together with the unilateral interpretation, had prevented or deferred the threat to the Minuteman force posed by the large Soviet ICBMs. In fact, the Soviets have successfully thwarted this American intention. The SS-19 which replaced the SS-11 is clearly and unequivocably a "heavy" missile as understood by the United States at the time of SALT I, exceeding by approximately 30 percent the volume which the U.S. considered "heavy." Since, however, this increase in missile size did not violate the expansive Soviet definition of what was meant by a 15 percent increase, it was not technically a violation. SALT I was "sold" to the Congress by claims that it would prevent exactly what then proceeded to occur. Colin Gray has remarked that:

> The ineptitude of U.S. SALT negotiators is illustrated by reference to the testimony of Secretary of Defence Melvin Laird before the Senate Armed Services Committee on July 24, 1972. Having just stated that a ten to fifteen percent increase in more than one dimension of a silo would be considered by the United States to be "a violation of the agreement," he proceeded to claim that "in no case would it be possible for the Soviet Union to retrofit their SS-11 silos with a new significantly larger missile . . ." He was wrong, and, given the language of SALT I, no violation has occurred.[49]

In sum it seems clear that the arguments supporting the proposition that SALT prevented a worsening of the American position in the strategic balance were at best näive and ill-informed. At worst it seems that administration spokesmen simply used whatever plausible argument was at hand in order to win Congressional and public acceptance for agreements that had become important to the reelection of the sitting administration.

SALT Did Not Affect America's Qualitative Lead

Enough has already been said about Soviet deployments post-SALT I to show that Soviet capabilities were not constrained and the U.S. advantage has not thereby preserved. Moreover, Soviet technological improvements continue to multiply the effects of the numerical superiority granted by SALT I.

One of the arguments most often advanced in support of SALT I was that whatever the deficiences of the agreements themselves, they could be remedied in the SALT II agreement. It is not often admitted that subsequent agreements can also make matters worse. In fact the indications are that after SALT II (in 1985), the U.S. would be relatively worse off than when SALT I expired in 1977. The Carter Administration, following trends already visible in the Nixon and Ford Administrations, has abandoned what had earlier been America's chief practical goal in SALT: reducing the likelihood that the U.S. land-based missile force might be threatened. Certainly that force will be completely vulnerable by the early 1980s. Instead, the administration has concentrated on trying to restrict the modernization of Soviet strategic forces in some ill-defined ways. As a result, SALT has become irrelevant to the central question of nuclear strategy.

Supporters of SALT, however, argue that to reject SALT II is unthinkable if only because the negotiating process gives hope of leading to meaningful arms control—*later.* Critics disagree. William Van Cleave, a former advisor to the SALT I delegation, has argued that this American view is "politically naive."

> Our driving assumption has been that arms control negotiations are a uniquely cooperative process, wherein compromise is a mutual objective and negotiation a non-zero sum game where both sides stand to gain mutually and equally . . . The Soviet Union, however, seems clearly to have regarded SALT as another competitive endeavor, where the objective is unilateral advantage and where one can gain at the expense of the other.[50]

Indeed the "process" of SALT I itself suggest serious questions regarding American performance in future SALT negotiations. First, there is a fundamental difference in the approach taken by the two sides. The U.S. believed in a cooperative process leading to mutual advantage. The Soviets approached SALT competitively, as an integral element of broader political strategy. Paul Nitze, who served for five years as a member of the SALT negotiating team, has recounted these divergent approaches:

> At the initial sessions of SALT I at Helsinki, the U.S. delegation dwelt at length on the distinction between a zero-sum game, in which one side's gains are equal to the other side's losses, and a non-zero-sum game, in which both sides can either win or lose. It was our contention that the nuclear relationship between the United States and the Soviet Union is analogous to a non-zero-sum game, not to a zero-sum game. We argued that an agreement which provided essential equivalence, and which maintained or enhanced crisis stability, would add to the security of both sides, reduce the risk of nuclear war, do so at a reduced cost in resources, and thus be of mutual benefit. We further contended that only if both sides approached the negotiations with the objective of optimizing mutual gains could the conflicting views be resolved as to whether one side's gains would be, or appear to be, the other side's losses . . . The Soviet side did not accept this viewpoint. Soviet doctrine has always placed heavy emphasis upon what they call the "correlation of forces." In this term, they include the aggregate of all the forces bearing upon the situation—including psychological, political, and economic factors. Soviet officials took the view that the correlation of forces had been moving and would continue to move, in their favor. They deduced from this the proposition that, even though we might, at a given time, believe their proposals to be one-sided and inequitable, realism would eventually bring us to accept at least the substance of them.[51]

The history of SALT is indeed that of a shift in the "correlation of forces" and of America's acceptance of Soviet positions. Critics of SALT I catalogue a number of specific negotiating mistakes made by U.S. officials during SALT I and SALT II. These include:

- Regarding American weapons not as more or less useful in themselves, but as helpful or harmful from the standpoint of SALT.
- Assuming the role of supplicant by taking the initiative in laying specific proposals on the table, and by continually promising results to the American public.
- Tabling final positions, instead of "going-in" options. This has resulted in repeated wholesale substantive revisions in the U.S. position. The Carter Administration's initial SALT proposal of March 1977, and its subsequent retreat from it, is a classic example of this practice.
- Excessive attention to devising alternative positions by which to accommodate Soviet objections. This has led American negotiators to negotiate with themselves. In Senator Henry Jackson's words: "To discard in advance propositions that are meritorious but believed to be unacceptable to the other side is to abandon the effort to persuade the adversary of the wisdom of one's position—to say nothing of abandoning the effort to influence."[52]
- Emphasis on analyzing individual technical questions while ignoring broader strategic issues.
- Legal and technical incompetence on the part of the top-level U.S. policymakers, which resulted in a number of verbal loopholes, technical errors, and gross ambiguities in the agreements, especially during the negotiations in Moscow in May 1972, and in the later negotiations in Vladivostok in November 1974.

John Newhouse described the frantic atmosphere in which the SALT I accords were finalized as representing "a kind of vertiginous confusion reminiscent as much as anything else of the Keystone Cops."[53] In particular, the technical experts of the U.S. SALT delegation were cut off from Richard Nixon and Henry Kissinger during the final negotiations, while Leonid Brezhnev was surrounded by Soviet experts. Amazingly, the isolation of the senior U.S. delegation during the critical final

negotiations was intentional, and not uncommon American practice. According to Nitze,

> Nixon had such a passion for secrecy and such a lack of confidence in the reliability and judgment of what he considered to be the bureaucracy, that not even the head of the U.S. delegation was kept precisely informed of what was happening at the higher level. This went to such lengths that at discussions at the highest level, Nixon would rely on the Soviet interpreters rather than the more competent American interpreters whose notes might be made available to others on the U.S. side. As a result, there is no precise U.S. record of what was said . . . A further consequence of these procedures was that the President and his immediate advisers were deprived of available expertise and of the ability to fine comb the relevant detail. This resulted in unnecessary difficulties, some of significant consequence, in parrying Soviet strategy and tactics.[54]

Soviet negotiating tactics, in SALT I, however, were of a very different order. Paul Nitze has described the Soviet negotiating style in detail.

> They made an attempt to break down individual members of the U.S. team. Initially they tried to get people to drink too much . . . They tried to flatter individual members of the team, hoping to play on possible disagreements within it.
>
> In the actual substantive negotiations they employed an amazing tactical versatility. They used words in other than their normally accepted sense, or quotations out of context or subtly modified, and exploited the differences in nuance between Russian words and their English quivalents.
>
> Another technique was to attempt to get an agreement in principle, without exposing how it would be implemented. Still another was to package elements of the problem together in a manner advantageous to their side. Another was to create expectations that if we conceded a given point, then other im-

portant points would become easy to resolve.

They would use imprecise language in presenting provisions which would limit their side and precise language where the object was to limit U.S. actions . . .

They thoroughly understand the value of endless repetition, of taking the high ground to gain trading room, of making concessions grudgingly and only for equal or greater concessions, of moving to stronger positions rather than compromising, of unexpectedly shifting the subject of negotiations from one field to another.

They understand the importance of deadlines and uses of delay, the ways in which multiple levels of negotiations can be exploited, and the importance of negotiating on one's home territory.

They always negotiate ad referendum to higher authority. Even Chairman Brezhnev has withdrawn positions he had previously agreed to, on grounds that the Politburo had not concurred.[55]

Obvious as Soviet tactics might be to the average intelligent human being, they have mystified generations of American officials. These officials have performed real *tours de force* in order to put a favorable gloss on Soviet behavior. Unfortunately, having done so, they have proceeded to shape American policy as if their fancies were reality.

Leslie Gelb, currently director of the State Department's Bureau of Political and Military Affairs, thus answered the question of why "leaders in both countries build more warheads":

> The answer lies in some combination of the following: lack of trust in the other side; concern that marginal nuclear advantage can be turned into diplomatic successes; bureaucratic and technological momentum; worry about being vulnerable to *political attack from the right.*[56]

Even Secretary of Defense Brown has been quoted as subscribing to this view. In response to a question as to why he

believed that the Soviets had engaged in a fifteen-year buildup of strategic forces, Brown answered that,

> nobody really knows. It could be a mixture of causes. To some degree, it may be an expression of bureaucratic inertia . . . an expression of the strength of the Soviet military in the decision-making process of the Soviet Union.[57]

If one holds such views, SALT understandably appears as a powerful check on the forces of bureaucracy, fear and obscurantism. However, though there is simply no evidence of anything resembling a debate between hardline and softline factions within the Soviet hierarchy, there is more than ample evidence that such a debate is the essence of American policy.

In that debate, the supporters of the "softline" have weighed far more heavily than they could possibly believe their counterparts in the Soviet Union have. These are the words of Victor Utgoff, currently on the staff of President Carter's National Security Council:

> Even if the United States could attain strategic superiority it would not be desirable because I suspect we would occasionally use it as a way of throwing our weight around in some very risky ways . . . It is in the U.S. interest to allow the few remaining areas of strategic advantage to fade away.[58]

Likewise the thoughts of Walter Slocombe, in charge of SALT matters in President Carter's Pentagon:

> There are huge differences between the existing U.S. and Soviet strategic forces and in problems the two superpowers confront . . . Thus, it is inevitable that on some measures—indeed on many measures —one will enjoy a "gap" over the other. But it cannot be emphasized too often that these relatively small differences make no military or political difference. If there is to be any stability to the nuclear balance, it cannot be an objective of the United States to seek to ensure that all such gaps must run in our favor . . . More fundamentally, achieving some bilateral

> agreement on ceilings, whatever their level, by no means eliminates the need for the U.S. to practice unilateral restraint—not to be nice to the Soviets, but from an intelligent recognition of our own vital self-interest in their reactions to our programs.[59]

Supporters of such views have also made their mark on Congress and on Congressional actions. In the years following SALT I measures were introduced to eliminate various American weapons systems or to stop qualitative improvements. For example, the McIntyre-Brooke amendment (which would have eliminated all funds for research, development and testing of improved accuracy and yield capabilities for U.S. warheads) was defeated only narrowly, 49–47 and 52–42 in 1975. One amendment by Senator Hubert Humphrey to delay flight testing of the U.S. MIRV until the Soviets began such tests passed by two votes, while another by Senator George McGovern to prohibit cruise missile tests beyond 200 kilometers drew thirty-three supporters on the Senate floor.

In essence, the following is only a mild overstatement: SALT agreements are not the result of negotiations between the Soviet negotiators and their American counterparts. They result from negotiations between various groups of protagonists within the public and private sectors of the United States. The Soviets state their "bottom line" requirements for a treaty and let the U.S. sides go home and sell to the other Americans their rationales for caving in.

How the Soviets looked at SALT

In Chapter 3 we saw that, on the eve of SALT I, most Soviet forces could not do what was required of them. In some areas, such as the SRF's missiles, programs underway promised to narrow the gap between requirements and capabilities some time in the mid-1970s. But in other areas, solutions to fundamental problems were much farther off. To better appreciate how the Ministry of Defense (MOD) may have viewed the military "correlation of forces" between the two superpowers in the late 1960s, let us look at a Soviet method for measuring the military "correlation of forces" between the two superpowers and then at some statements

published in mid-1969 that appear to provide unique insight into the MOD's approach to SALT.

In 1967 Maj. Gen. III Anureyev, a senior staff member of the General Staff Academy, published a methodology for analyzing the relationship between strategic forces.[60] Anureyev's method may be summarized as follows: How much of the surviving enemy force penetrates one's own defenses and how much damage is inflicted on one's own reserve forces and industry?

The "bottom lines" for the Soviet negotiators in SALT I (and subsequent negotiations as well) were based primarily on the recommendations of the Ministry of Defense. There is ample evidence of this including the testimony of Igor Glagolev, a Soviet defector who had helped prepare Soviet SALT positions. Glagolev points out that there is no nonmilitary counterpart in the USSR to the U.S. Arms Control and Disarmament Agency and very little impact to the arms-control process from any source *but* the Ministry of Defense. Of course, Secretary (Marshal of the Soviet Union) Brezhnev and Defense Minister (also Marshal) Ustinov have final authority to approve. The MOD probably insisted upon pursuit of the following objectives in SALT I:

1. Prohibit America's projected ABM defenses, or limit them to the point that they could have but negligible effects on Soviet offensive forces, whether these were used in a preventive or in a second strike.
2. Place a limit on the number of U.S. MIRVed ICBM and SLBM launchers and on the number of SAC bombers, so that the MOD would have a stable threat against which to plan.
3. Since the USSR would have to accept the same general constraints on antiballistic missiles and on the number of strategic offensive missiles and bombers as the U.S., the USSR should negotiate the limits in such a manner that the development and deployment of the new generation of Soviet weaponry—four MIRVed ICBMs, the SS-N-8 SLBM, and the Backfire bomber—could proceed as scheduled.
4. Negotiate a large, secure, SLBM force which could be kept in reserve as a hedge against future U.S. counterforce capabilities.
5. Make sure that most of the USSR's *strategic* forces for use

on the Eurasian land mass be excluded from SALT, while trying to include U.S./NATO tactical nuclear systems in such limits.

6. Place no limits on R&D, and on funding for any Soviet strategic systems.

Some surely will argue that this list credits the Soviet Ministry of Defense with too much prescience and consensus. Perhaps so; perhaps not. No one can be sure. The Soviets probably did not have a precise set of numbers in mind as early as 1969. After all, they didn't know what the U.S. would propose, much less be willing to agree to. Nevertheless, Anureyev's methology and the *modus operandi* of Soviet institutions suggest the possibility that the Soviet MOD, however painfully, worked out the set of objectives outlined in SALT. Certainly the outcome of SALT I was consistent with these postulated objectives. This consistency could be coincidental—most of these objectives could have evolved out of the negotiating process, between and within the two delegations. On the other hand, most of these objectives appeared in Soviet proposals and positions in the initial stages of the negotiations. It is hard to believe that the Soviets improvised their initial positions on such fundamental issues after the negotiations began.

Certainly the Soviet approach to ABM defenses in SALT was completely contrary to the positions that Soviet spokesmen had articulated all over the world from 1963 to 1968, and was diametrically opposed to the standard Soviet view of defenses. Kosygin's statements after the Glassboro summit meeting (1967) were typical of the traditional Soviet view: defenses don't kill people, they save lives; defenses are not a threat to anyone and should not be limited, least of all by the Soviet Union. But in SALT the Soviets took exactly the opposite approach. Because of this, a number of American observers jumped to the conclusion that the Soviets had been converted to MAD, that years of patient "tutoring by American officials had worked." But the reason for the Soviets' change of mind had nothing to do with MAD. Given their (one sided) concept of deterrence, their fear of a U.S./NATO nuclear attack, and the net assessment of the Soviet strategic position *vis à vis* the U.S. that would have resulted from the use of Anureyev's method, it is not difficult to understand why the Soviets did not follow the logic of Kosygin's 1967 statement.

7

The Soviet and American Strategic Arsenals: 1972–1985

The American Arsenal

Whatever the outcome of the SALT II negotiations, and despite the continuing Soviet strategic buildup, the American strategic arsenal will look in 1985 (when the SALT II treaty would expire) very much as it looked in 1979, and not so different from the way it looked in 1972 at the time of the signing of SALT I. Indeed, with the exception of the cruise missile, the basic structure of the strategic "triad" of ICBMs, SLBMs and intercontinental bombers will be much as it was in 1967 when the number of U.S. ICBMs and SLBMs was frozen at 1,054 and 656 respectively—except that the number of bombers will have shrunk by half. Although strategic defensive systems are properly included in discussions of strategic weapons, the absence of American defenses against ballistic missiles, due in part to the ABM treaty, the paucity of American defense against bombers, the lack of a strategic antisubmarine warfare program, and the absence of an American civil defense, confines this review to U. S. offensive strategic forces. The U.S. strategic triad today is essentially structured as a deterrent force. Ironically, although the U.S. has tried to avoid acquiring a true counterforce capability, the current American targeting doctrine does require some weapons to be assigned to military

targets, both soft and hard, with obviously limited chances of success. Analysts have employed a variety of standards by which to judge strategic power, such as numbers of Strategic Nuclear Launch Vehicles (SNLVs), numbers of launchers, numbers of warheads, megatonnage (or equivalent megatonnage), throw-weight, warhead yield, accuracy (CEP), launcher survivability, Single-Shot Kill Probability (SSKP) and "lethality."[1] While a full technical discussion of these various measures is beyond the scope of this book, available figures for yield in megatons, accuracy (CEP) in nautical miles, and the probability that a given warhead can destroy a target hardened to withstand 1,000 PSI peak blast overpressure (SSKP) will be given. Soviet silos however, are reportedly almost three times as hard as American ones, so that any given SSKP is to be considered overly optimistic when applied to Soviet silos. Today, U.S. forces consists of the following:

1. Fifty-four Titan II liquid-fueled ICBM's in hardened silos.[2] First deployed in 1963, the Titan II has a single MK 6 warhead with a relatively large yield, reportedly on the order of 10 MT. However, it is the least accurate of American ICBMs with a CEP of .8 nautical miles and an SSKP of 25 percent. Although long considered obsolete and difficult to maintain, the size of the Titan II warhead has argued for its retention in the arsenal. There are as yet no firm public plans to retire it. The Titan II is not a counterforce weapon.
2. One thousand Minuteman II and III solid-fueled ICBMs in hardened silos. In 1972 the U.S. had deployed 500 Minuteman IIs, each with a single MK-11B or 11C warhead of 1 MT, a .3NM CEP and a 33 percent SSP K. Since 1972, fifty of these Minuteman II's have been replaced with Minuteman IIIs, as has been the entire fleet of older 400 Minuteman Is deployed at that time. The U.S. has now deployed 550 Minuteman IIIs which it first introduced in 1971. Slightly larger than the Minuteman II, Minuteman III is the only U.S. ICBM to carry a MIRV warhead. The Minuteman III carries three MIRV MK-12 warheads of .17 MT each with a CEP of .1 nautical miles and an SSKP of 24 percent. Recommendations to place a large multimegaton reentry vehicle with a high degree of accuracy on Minuteman were rejected under both McNamara and the Nixon

Administration, because such a counterforce weapon was not in keeping with the MAD doctrine. However, in 1974, Secretary of Defense Schlesinger, finding the MAD posture to be wanting, announced a new "limited strategic nuclear options" doctrine for the U.S., under which immediate massive retaliation against Soviet cities was no longer to be the President's "only option and possibly not the principal option." As a result a number of accuracy and yield improvements were planned for the Minuteman III. The substitution of the MK-12A reentry vehicle will increase the yield to .35 MT per warhead and computer software improvements to the NS-20 guidance system are expected to improve accuracy to a bit better than .1 NM, increasing SSKP to 80 percent (assuming Soviet silos are hardened to 1,000 PSI). Against targets hardened to 2,500 PSI the MK 12-As SSKP is 50 percent. These improvements will give Minuteman III a limited counterforce capability, the only credible counterforce capability in the U.S. missile arsenal. Likewise the land-based missile force is the only "prompt" force capable of attacking some Soviet missile silos before they could launch their missiles. Bombers, even those armed with cruise missiles, are far too slow. In summary, the U.S. land-based missile force consists of 1,054 strategic nuclear launch vehicles, of which 550 are MIRVed. This force has 2,154 warheads, and, with deployment of the MK-12A, will have 1,488 megatons of destructive power.

It is unlikely that the proposed MX could be deployed by 1985. So far the Carter Administration has delayed work on the MX and has been unable to decide upon a scheme for protecting the land-based missile force from the growing Soviet counterforce threat. Under consideration are several proposals including air-launching, air mobile, multiple protective structure systems, and others. Assuming that this problem can be solved, there remains a serious question as to whether the administration actually desires to build a more accurate and powerful ICBM. The Secretary of Defense's fiscal year 1980 posture statement is ambiguous, particularly as it suggests a "common" Trident/MX missile.[3] Traditionally, to require that a weapons system be redesigned to make it fit for multiple uses has been a favored way of delaying its development

until its bureaucratic enemies can kill it. "Studies" have proved to be effective weapons against weapons. The Environmental Impact Statement for the MX, for example, took years and multiple millions of dollars. A single copy stands nearly three feet high!

3. Sea-launched ballistic missile systems include:
   a. Forty-one SSBN nuclear-powered ballistic missile submarines with 656 SLBMs.
   b. The ten oldest SSBNs operate in the Pacific with 16 Polaris A-3 SLBMs each. These missiles with a range of 2,500 NM carry 3 MRV MK2. warheads of approximately .22 MT each with a CEP of .5 NM.
   c. The 31 other SSBNs carry the 2,500–3,200 NM range Poseidon C-3 SLBM which have from 10 to 14 MIRV warheads of approximately .04 MT each and a CEP of .3NM. Because of this extremely low yield, these weapons have virtually no counterforce capability whatsoever.

The improvements to the sea-borne leg of the strategic triad are the furthest along of any U.S. system with development of the follow-on Trident SSBN and the C-4 SLBM with a range of 4,000 nautical miles. The first of at least 13 Trident SSBNs each with 24 tubes has been christened although delayed. The Trident I (C-4) SLBM, also delayed, is scheduled to be retrofitted into 12 Poseidon SSBNs beginning in October 1979. The C-4 is reported to carry eight MK 4 MIRVs of .1 MT each. The U.S. has also tested the MK. 500 MARV "Evader" RV that can perform preselected maneuvers to penetrate BMD. However, the MK 500 is less accurate than a strictly ballistic RV and was not tested with terminal guidance. The Polaris/-Poseidon/Trident force has been consciously denied any counterforce capability, such as would have been provided by the MK 17 high yield, high accuracy warhead, or by a "stellar update" navigational system, or by a terminal guidance system. A follow-on missile, the Trident II (D-5) is scheduled to be developed possibly as part of a common missile program with MX. There have been reports that the D-5 would have a range of 6,800 NM and would be fitted with a larger warhead, the MK 20, which would be capable of counterforce. For that reason the Trident II is drawing strong opposition within the Carter Administra-

tion. In sum the U.S. SLBM force consists of 656 SLBM SNLVs (which could be increased to 744 under SALT II when Trident replaces older Polaris boats) with from between 3,803 and 5,552 warheads depending on configuration) and between 307 and 388 megatons.

4. The U.S. Strategic Bomber Force, the third leg of the triad, is comprised of approximately 330 B-52 bombers (D, G, and H series) of which a number are in "active storage," and are designated for training or are not equiped for strategic nuclear attack. Sixty-six FB-111 medium bomber aircraft are also assigned to the strategic air command, although they are not included in the SALT II accord. The B-52s can carry several multi-megaton nuclear bombs, as well as a number of nuclear armed Short-Range Attack Missiles (SRAMs) designed to suppress enemy air defense. The FB-111 can carry proportionally fewer bombs and SRAMs, but retains a good capability to penetrate Soviet air defenses at low altitudes. The B-52 force is quite old, the first aircraft having been introduced in 1955, and serious questions have been raised as to its continued ability to penetrate the Soviet air defenses. It was to have been replaced by the B-1.

   On June 30, 1977, President Carter canceled the B-1 supersonic bomber, negatively deciding the question of whether or not the U.S. would deploy a follow-on bomber to the B-52. The B-1, of which 244 were to be built, was designed to have an increased chance to escape a suprise attack by Soviet SLBHs because it could get off the ground faster and was hardened against nuclear effects. Moreover the B-1 was designed to penetrate the massive Soviet air defenses. It can carry twice the payload of a B-52 over the same distance as the B-52, but at a much higher speed. The Carter Administration claimed that the cruise missile could substitute for the B-1. Secretary Brown announced in the FY 1980 posture statement that research and development will continue on the B-1 "in the very unlikely event" that the U.S. would reconsider deployment. Money for research on a new manned bomber is also budgeted, as well studies for a aircraft to carry cruise missiles. But no other American airplane, existing or proposed, can penetrate the increasingly sophisticated Soviet air defenses or better the B-1 as a cruise-missile carrier.

5. The Cruise Missile, the only new category of weapons system that could enter the U.S. inventory in substantial numbers by 1985, was first flight tested in 1975. This relatively low cost, highly accurate, subsonic, airbreathing missile will be able to fly beneath conventional air defenses hugging the wrinkles in the terrain thanks to a "terrain contour mapping system" (TERCOM). Because of its extreme accuracy to hit hard targets while avoiding enemy defenses, it adds greatly to the capabilities of manned bombers. The cruise missile was derived from a combination of advances in engine and guidance systems, resulting from work on remotely piloted reconnaissance drones and armed decoys for the strategic bomber force. It was developed technologically before a strategic doctrine had been developed for its use.

   Cruise missiles can be launched from a number of platforms: air-launched (ALCM), sea, or undersea-launched (SLCM) and ground-launched (GLCM). The U.S. has several ALCMs, under development that face a "fly-off" competition in 1979, and a Sea Launched Cruise Missile, the Tomahawk. All of these systems have been delayed by the Carter Administration, and face an uncertain future due to SALT and opposition from arms-control advocates. (Interestingly, however, the administration's published assessments of American forces under SALT II always assume that the cruise missile is *already* deployed.) Nevertheless, a well-conceived strategy for their deployment would introduce a serious addition to the mix of threats that the Soviets would have to consider before attacking the U.S. Such a strategy, which took advantage of the potentially high deployment rate, low cost and the myriad possibilities for launch vehicles, could be an important "quick-fix" for the U.S. until other improvements are made to redress the strategic balance. But if the *number* of cruise missiles deployed by the U.S. is not *several times* that of the Soviet ICBM warheads they are supposed to offset, then the cruise missile will have proved to be yet another pacifier for the American public. That is because, as we have seen, any given cruise missile warhead is not nearly as useful as any given warhead on, say, a Soviet SS-18.

The Soviet Arsenal

1. Strategic Forces: Until the ABM treaty was ratified and the Interim Agreement signed, no great change occurred in the pattern of Soviet force development, or Soviet strategic concepts, or economic priorities. Whether from inertia or the desire to retain hedges and bargaining chips at the SALT I negotiations, the Soviet order of the day for the period 1969–1972 seemed to be "steady as she goes." Western observers expected that once the Soviets had accepted limits on strategic offensive forces, had made the commitment to negotiating further reductions, and had banned national ABM defenses from their plans "forever," they would begin to make some changes. Western observers expected a slackening of the pace at which Soviet weaponry was being improved. Instead, the pace quickened, and the Soviets' emphasis on counterforce weapons was reinforced.

Since 1972 the Soviets have tested all four of the new ICBMs on which development had begun in the mid-1960s and are deploying at least three of them. The SS-18 turned out to be the counterforce weapon some observers had long predicted, and the improved accuracy and large payloads of the SS-17 and SS-19—about eight thousand pounds, or more than three times that of the SS-11—could give these systems some hard-target kill capability as well. Four new ICBMs are under development. Obviously the Soviets want to be able to do much more than just retaliate against U.S. cities.

At sea, the Soviets have built to the upper limit of SALT I—62 SSBNs with 950 launchers. Development and deployment of the SS-N-8 has proceeded as scheduled and the SS-N-17 and SS-N-18 are being flight-tested. Development of the Typhoon SSBN and missile, comparable in size and range to the U.S. Trident II system, has been reported. Presumably some of the Y-class boats either will be scrapped or converted to other missions.

In the Eurasian theaters of operations the SS-20 will replace the SS-4s and SS-5s, while the Long-Range Aviation is being modernized with Backfire bombers. The improvements in accuracy, and the correspondingly lower yields, in these new MIRVed systems provide military capabilities the Soviet Union has long sought. It is not generally recognized that the

Soviets' very earliest missiles, some 750 SS-4 and SS-5 IR/MRBMs, were meant to achieve a counterforce capability against NATO and U.S. bases in the Eurasian theaters of operations. Because most of the targets were soft, even these relatively inaccurate IR/MRBMs constituted an effective force. With the SS-20, for example, the Soviets will be able to do precisely what they had aimed to do with the more powerful but less accurate SS4s and SS5: *counterforce* in the European theater of operations. But they will be able to do it more effectively and while causing less collateral damage.

Development and deployment of both the SS-9 and SS-11 as hard and soft target systems respectively were successfully predicted in the early 1960s. In the mid-1960s it was predicted, much against the conventional wisdom of the time, that the Soviets would develop new ICBMs with MIRVs for counterforce capabilities in the 1970s because it was not practical to deploy enough single warhead SS-9s to destroy all the hard targets in the U.S. Now it is generally conceded, although not universally, that Soviet ICBMs—primarily the SS-18—are acquiring a counterforce capability against U.S. land-based ICBMs. This capability will improve in the future, most specifically under the SALT agreement now being negotiated, unless the U.S. takes some expensive countermeasures such as building a large number of dummy silos.[4]

It is still overlooked in the public discourse that the new Soviet ICBMs, and to a lesser degree the new SLBMs, will extend coverage and improve effectiveness against soft targets as well, while also reducing collateral damage because given greater accuracy one can do the job with smaller yields.

Contrary to many expectations after the ABM treaty was signed, the USSR has continued to develop and to deploy advanced air defense weapons systems. For the first time since World War II the Soviets have been able to provide their national air defense forces with an interceptor (evidently the MIG 23 Floggers) that has some low altitude capabilities. Several other new air defense systems are being developed and are expected to be deployed in the early 1980s: one or more interceptors with "look-down-shoot-down" capabilities, an AWACS system to counter bombers and cruise missiles at low altitudes, the SA-10 for the same mission and possibly to engage SRAMs as well, and new ground based radars for warning and target tracking.[5] Moreover, deployment of new interceptors and

SAMs must be accompanied by advanced ground-based systems for command, control and communications even if such systems are seldom mentioned publicly.

Clearly, investment in Soviet strategic air defenses has risen in recent years and is likely to surge in the next few years. How much effectiveness has been gained, or, more appropriately, can be gained against current and programmed U.S. bombers, SRAMs and cruise missiles? That question is hard to answer quantitatively with confidence and precision in either the U.S. or the USSR. But the answer clearly is "some" no matter how much we debate the uncertainties of bomber and cruise-missile attrition rates. The important point is that the Soviets are trying harder to solve their national air defense problems despite the treaty prohibiting ABM defenses (beyond limited deployment at one site) and are going to try harder yet in the next few years.

The Soviet's renewed testing of an antisatellite system attracted public attention in the West when it became clear that they had tested it sufficiently to achieve some operational capability.

Soviet civil defense has been "rediscovered" by U.S. strategic analysts of diverse persuasions and by the U.S. intelligence community. Estimates of the (equivalent) cost of the Soviet program vary, but they range from a few to several billion dollars annually,[6] while the most the U.S. has ever spent on civil defense in any one year is on the order of 0.5 billion dollars. Currently the U.S. is spending less than 100 million.

The Red Navy continues to invest heavily in surface ships, submarines and aircraft for strategic Antisubmarine Warfare (ASW). Strategic ASW has been the primary mission of most major surface combatant converted or built for the Red Navy since the early 1960s. Production of these surface craft, a new class of nuclear-powered submarine and possibly a long-range ASW aircraft is forecast.[7] The Soviets already have built at least two units of the Alpha class SSN which probably is designed to operate at depths of 600–1,200 meters.[8] Operating at these depths would require a titanium hull. Now a nuclear carrier has been reported under construction.[9] It remains to be seen whether this is more strategic ASW or a strike carrier in the U.S. tradition, or something else. Because American missile-firing submarines are difficult to locate, however, Soviet strategic antisubmarine forces remain relatively ineffective.

Nevertheless, the amount of effort the Soviets continue to devote to this mission is impressive and probably increasing. They must think it is going to pay off some day.

When SALT talks began in 1969 the USSR was about fifteen years behind the U.S. in all basic components of ABM technology, except possibly in large phased array radars. They are still behind, but are now reaching the levels of ABM technology that the U.S. had achieved by 1969. Recent reports in the Soviet and American press indicate that the Soviets are well along in the development of several of the essential elements. According to Soviet sources, their Ryad computer, roughly the equivalent of an IBM 360, finally is in series production. According to U.S. sources, large phased array radars suitable for battle management are being installed, and a smaller ("mobile") phased array radar has been developed. Test firing has begun on a high-acceleration missile that should permit low altitude intercepts.[10]

Soviet Defense Outlays in the 1970s

SALT has had no discernible effect on Soviet defense expenditures except, perhaps, to push them upwards. True, since 1972 the growth rate in total expenditures has been less than the frantic pace of 1959–1963, or of 1966–1970. But the pace of general economic expansion has slowed much more. Consequently, the burden of defense on the economy has risen much more rapidly in the 1970s than in the 1960s, and the diversion of resources from investment to defense in the 10th fiscal year period (1966–1970) is greater than even during the Korean War.

The magnitude and growth of Soviet defense expenditures since 1970 is shown in Table I, and the trend in the share of USSR Gross National Product (GNP) in Table II. Note that the growth rate since 1970 has averaged more than 8 percent per annum; Soviet defense expenditures in 1980 constant prices will be more than double the 1970 level. Note also the rapid rise in defense outlays as a share of Soviet GNP: from about 12–13 percent in 1970 to about 18 percent in 1980. The latter trend is due in part to the declining growth rates of Soviet GNP, which in turn is due in large part to the rising burden of defense. Several other factors are at work—notably declining growth in the labor force, increasing costs of basic materials,

Table I

Soviet Defense Expenditures 1970–1980

	Defense Expenditures 1970 Prices	Billions of Rubles[11] 1976 Prices
1970	43–49	
1971	48–55	
1972	52–60	
1973	59–68	
1974	64–74	
1975	71–81	70–77
1976		73–82
1977		82–92
1978		88–102
1979		96–112
1980		108–126

Table II

Structure of Soviet GNP, 1970–1980[12]

Billions of Rubles, 1969–1970 Estimate and Current Prices

	Consumption	Investment	Defense	Civil R&D and Budget Administration	GNP
1970	215.1	116.0	49.0	7.7	387.8
1971	227.6	119.7	53.5	8.5	409.3
9172	240.6	128.8	58.5	9.3	437.2
1973	251.6	140.8	64.5	10.0	466.9
1974	265.5	149.2	69.5	10.7	494.9
1975	282.9	158.5	76.0	11.4	528.8
1980 (projection)	362–368	182–190	107–121	15–21	666–698
			Percent		
1970	55.6%	29.8%	12.6%	2.0%	100%
1971	55.6	29.2	13.1	2.1	
1972	55.0	29.5	13.4	2.1	
1973	53.9	30.1	13.8	2.1	
1974	53.6	30.1	14.0	2.2	
1975	53.5	29.8	14.4	2.2	
1980[13] (projection)	54	27	17	2	

the perennial problems of Soviet agriculture—but the growth in defense expenditures is one of the most important reasons why the rate of growth of Soviet GNP has been declining so much.

In sum, Soviet defense expenditures have increased very rapidly since the SALT process began in 1969. Indeed the case can be made that SALT has stimulated the growth of Soviet defense expenditures on the grounds that the Soviets saw SALT as the means of catching up with and surpassing the U.S. in military capabilities and have made the most of it. In order to finance the heavy burden on the Soviet economy, the Soviet leaders have had to make an unprecedented (in peacetime) diversion of resources from investment to defense.

Machinery and equipment allocated to consumption (consumer durables) are a small and fairly stable share of total domestic output and about 10 percent of the output of machinery. No precise data on total consumer durables output are available since 1975 but reported growth in the production of television sets and the like do not suggest much change, if any, in the share of total machinery and equipment allocated to consumption.

The impact of rising military spending on investment has been eased by imports of machinery and technology, much of which has been financed by loans and credits extended by Western nations, against whom most of the Soviet buildup is directed, and by the rise in price of gold and petroleum products in recent years.

It is not difficult to see where most of the money has gone. The well-publicized expansion of Soviet strategic offensive missile capabilities—primarily replacement of relatively inaccurate, single RV systems with accurate MIRVed versions and building up to the SALT I ceiling of 950 "modern" SLBMs—has been very expensive, even if the CIA cannot measure the expense accurately. Some modernization of strategic air defenses has occurred and large new programs appear to be underway. Most of the budgetary impact of modernizing Soviet Ground Force and Frontal Aviation has been felt in the 1970s though the relevant programs begun in the later 1960s. The new weapons generally are much more complex and technologically advanced than the weapons they replace. Although the number of ships in commission has declined, the Red Navy's tonnage has grown at a steady pace, and the ships are armed with more

complex, capable expensive weapons. Last but not least, research and development expenditures have increased to provide options for an even greater variety of technologically advanced weapons for the 1980s.

Today, there is little dispute about the enormity of Soviet military expenditures compared with those of the United States. President Carter, in a speech at the Naval Academy in the fall of 1978, noted that the Soviets spend 15 percent of their gross national product on military forces. This is the highest percentage of GNP devoted to military matters that has occurred in a major nation in peacetime, matched only by Nazi Germany the year before the outbreak of World War II. The U.S. on the other hand, devotes less than 5 percent of GNP to defense—the lowest figure since before the outbreak of the Korean War. The CIA reports that the USSR is outspending the U.S. on military matters by up to 45 percent (in dollar terms). The Soviets devote three times as much resources as the U.S. to strategic attack forces, over ten times the resources to active strategic defense, and at least fifty times the resources to civil defense. It is obvious that such discrepancies in effort, extending as they do over a decade or more, cannot but create huge gaps in military capability between the two countries in favor of the USSR. No presumption of Soviet inefficiency, bureaucratic inertia, or misguided military doctrine can erase this inescapable conclusion, yet the protaganists of MAD and of SALT choose to ignore intelligence information on Soviet military expenditures.

This was not always the case. There was a time when the authors and adherents of the MAD doctrines and the antidefense elements lovingly embraced every word that emanated from the CIA on the subject of Soviet military expenditures. This was so because those earlier estimates of the Soviet military budget were gross underestimates. They put Soviet expenditures at one-half to one-third of actuality.

The McNamara "whiz kids" and their allies in the executive branch and in Congress seized joyfully on these erroneous cost estimates to discredit the much harder evidence of burgeoning Soviet military programs.

In the fall of 1975, shortly before the abrupt dismissal of Dr. James Schlesinger as Secretary of Defense, this author found himself embroiled in a sharp public debate over the size of the Soviet defense budget. The row was sparked by the Secretary's

public statement that the Soviets were spending as much as 50 percent more on military forces than was the United States. Congressional budget-cutters and some elements of the press sharply criticized this estimate, accusing Dr. Schlesinger of distorting intelligence. Senator William Proxmire maintained that both William Colby, then Director of the CIA, and this author, as Director of the Defense Intelligence Agency (DIA), supported his own claim that the Secretary's figures were inflated. In fact, Secretary Schlesinger's figures came from Mr. Colby's CIA. My own view was that the Secretary, far from overstating the case, was *under*stating it. In March 1976, after Mr. Colby's forced retirement, the CIA published figures that again supported Dr. Schlesinger's warnings about the gross imbalance between Soviet and U.S. military outlays. The CIA analysis was again too conservative and understated the actual Soviet defense effort.

Estimating Soviet military costs has been one of the toughest jobs for American intelligence analysts. This is an area in which the new information gathering satellites don't help much. The military analysts in the Pentagon today can state with remarkable precision how many missile sites, aircraft, ships and divisions the Soviets have. Further, they can do a pretty good job of using such data to estimate how many Soviet soldiers and sailors it takes to man the USSR's military machine. But when it comes to estimating with reasonable confidence how much it all *costs,* analysts have been far less efficient.

The task would be a lot easier if the Soviets openly published their defense expenditure figures as the U.S. does and if there were open debates in Moscow about the costs of various defense programs. Of course, this is not the case. If there are debates about military spending, they are among very few persons in Moscow, and they are held in utmost secrecy. The Soviets do publish the total state budget, but the figures for military expenditures are patently phony. For instance, Leonid Brezhnev in 1975 announced the official military budget figures for 1976 —17.4 billion rubles. At the Soviet official rate of exchange for foreign-trade purposes of 1.35 dollars to the ruble, this amounted to about 23.5 billion dollars, a totally unbelievable figure. Ostensibly, the 17.4 billion figure was a decrease of 200 million rubles from the previous year. All this meant absolutely nothing except as an indicator of what figure best suited

the needs of Kremlin propagandists. The Soviet official budget figure must be high enough in comparison to previous figures to assure the faithful that the socialist guard will not be let down; low enough to allay any guns-versus-butter worries in the general Soviet populace. The figure must also be both low enough and tending in the right direction to back up the Soviet peace offensive in Western minds. No reputable scholar of Soviet economics should give the slightest credence to these announced Soviet military expenditures. Moscow's official figures have remained at 17-point-something billion rubles since 1970.

To make matters worse, we would still have serious intelligence problems even if the Soviets *did* release an accurate account of military expenditures. There are a number of large items which Western countries count as military expenditures that the Soviets do not. For instance, the retired pay for military men is carried in the budget of the Soviet welfare ministry. Much of the basic training of Soviet soldiers takes place in secondary and higher civilian schools. This is paid for by the Ministry of Education. Most of the costs of movement of military units and material in the USSR are carried in the budget of the Ministry of Transportation. The wages of the hundreds of thousands of reservists periodically called to active duty training are borne by the factories and farms where they work. Civil Defense costs are buried in other accounts. Thus, even if the Soviets should release a frank presentation of the budget of the Ministry of Defense, it could not be taken as a fair presentation of Soviet military costs when compared with those of the United States or any other Western power.

For many years, intelligence people, both at the CIA and in the Pentagon, simply didn't try to estimate the Soviet military budget in dollar terms. It was not until the early 60s that the CIA felt compelled to try to express the Soviet military budget in dollars. The pressure came from Mr. McNamara's "whiz kids." At that time, "systems analysis" and "cost-effectiveness studies" became the big game in Washington as far as military planning was concerned. The indispensable yardstick in such studies is the dollar. Nothing would do but to come up with dollar figures attached to Soviet military programs.

The CIA, with its usual "can-do" attitude, responded to the pressure for dollar estimates of Soviet defense expenditures and gave it a try. The CIA adapted its basic approach which was to take a Soviet weapon system, e.g., a missile, estimate what

it would cost to build it in the U.S., then estimate a "ruble-dollar" ratio, and multiply the results by an estimated number of such missiles in the Soviet inventory. Thus far, the process involves countless imponderables and is open to considerable error. But the problem only *begins* with the cost of weapons. It is also necessary to calculate the costs of the men to man the weapons, maintain the equipment, train the crews, build the launch pads and so on. One can imagine the enormous complexity of such efforts covering thousands of weapons systems from aircraft carriers to pistols. Naturally, the process was computerized to a large extent.

Some CIA analysts connected with this effort to estimate costs of Soviet military expenditures recognized some of the method's inherent drawbacks and inaccuracies. However it was not recognized that the results of the system consistently and seriously understated the total burden of military expenditures on the Soviet budget. This fact did not become apparent until several years after the method had begun to crank out estimates of the Soviet military budget in dollars and rubles. But by the time the method came under attack, many of its adherents had forgotten their initial misgivings. It became a matter of institutional and professional pride to defend the cost estimates. Figures originally suspect had become sacred cows.

The first official challenge to the costing methods came in 1970 from the Defense Intelligence Agency (DIA). That agency has the responsibility for projecting ten years into the future the number and types of Soviet weapons and units. Since such projections are bound to be imprecise, DIA always gives a range of possibilities for each weapons system. There is a low figure, a high figure and one between the two representing a "best guess." The high figure usually represents what would happen if the Soviets made very strong efforts to acquire quantity and quality in a particular type of weaponry. DIA is always worried that someone might try to add up all the high figures for the various types of weapons and units, that is, all the worst cases, and exaggerate the threat. Therefore, all such projections have for many years carried the warning to readers that the high-side figures should not be added together because it would be unlikely that the Soviet Union would maximize its effort in all areas and thus "place an intolerable strain on the Soviet economy."

In fact, Soviet efforts resulting in all high-side estimates com-

ing true *would* dislocate their economy, but not according to the CIA's method. When that method was applied to all the high figures, it produced a strange result. The method seemed to show that the Soviets could go all out on all types of military capabilities at once, and that their doing so would take up an ever-decreasing percentage of their Gross National Product! From that time forward, at least until my departure as Director, DIA never used the results of the CIA costing method in its publications.

Shortly thereafter, the validity of the costing methodology came under fire again. This time the analysis was a National Intelligence Estimate, a paper that has to be agreed to by all intelligence agencies—the CIA, DIA, State Department and others. During the process the same case was made against the method, but from an historical point of view. The CIA provided estimates of the Soviet military budgets for the period 1960–1971. These figures indicated a very modest 2 or 3 percent per annum increase in the Soviet budget, which to DIA estimators was incredibly low, because, during those eleven years the Soviets had deployed 1,500 or more ICBM launchers, had built over 50 missile-launching nuclear submarines, had deployed most of 700 medium- and intermediate-range missile launchers, had deployed over 7,000 surface-to-air missile launchers, had deployed a large theater force opposite China, had created 20 new Army divisions, and had introduced five or six new fighter aircraft. And this is only a partial list. This simply could not have been done at the low costs indicated by the CIA's method. The most dubious figures were those ascribed to Soviet strategic attack forces. In 1960, the Soviet strategic offensive force consisted of four intercontinental ballistic missile launchers, no missile subs, 200 heavy bombers and 200 or so medium-range ballistic missiles. By 1971, the Soviets had overmatched the U.S. in ICBMs, had nearly matched the U.S. in missile subs, deployed over 700 medium- and intermediate-range missiles and still had the 200 heavy bombers. Further, they were undertaking a massive construction program to accommodate the four new ICBM systems then being tested. We were to believe that costs for strategic forces in 1971 were only 0.33 per cent higher than in 1960! From that point on, the DIA would never agree to the inclusion of such cost figures in national estimates, even though the CIA continued to produce them on a regular basis.

I was the Deputy Director for Estimates at the DIA during this period and became the chief antagonist of the low-cost estimates. I became even more determined to correct this anomaly in intelligence when I found that these underestimates were being used by the whole world. I discovered that the U.S. was publishing an annual unclassified report on worldwide arms spending as a service to the UN. The Soviet and Warsaw Pact figures in that document were simply the totals derived from the CIA direct-costing method, cleaned up a bit to protect intelligence sources and methods. Excluding research and development costs, these CIA estimates had the Soviets spending less than their announced budget. As a result, the report, which found its way into the reference files of most universities and research institutes around the globe, stated that NATO outspent the Warsaw Pact on arms by about 30 billion dollars a year! The Soviets must have been enormously pleased to see the U.S. making Moscow's case for them.

Although I and my estimators at the DIA were the first to balk at the Soviet budget figures, I would not like to leave the impression that the controversy was a purely Pentagon versus CIA issue. There were analysts in the DIA who supported the figures, and analysts at the CIA who shared my doubts. A doubter from the outside was Joseph Alsop, the well-known columnist, whose pungent criticisms of low intelligence estimates of the Soviet military budget sparked half-joking barbs directed at me by my CIA colleagues. Alsop seemed to use a number of my arguments in his columns, and there was a strong suspicion that I was leaking them to him. I wasn't, but I must confess to enjoying his efforts.

This controversy boiled and bubbled along for about three years. The CIA continued to publish the results of their suspect method; indeed they had no other choice because there was a constant demand for such figures. There was no other official source for them. And we continued to get into controversies over dollar costs of Soviet and even Chinese efforts. During the debate over continuing aid to South Vietnam, we were asked by Congress to estimate the dollar cost of Communist aid to North Vietnam. The minute we were asked, I knew we were in for another round of expressions of outrage from some Congressmen, based on the proposition that the U.S. had put more dollars into South Vietnam than the Soviets and Chinese had put into North Vietnam. Later we had the same problem with

regard to North and South Korea. It seemed impossible to avoid providing these rather useless dollar figures, and all the warnings of intelligence people about our lack of respect for the figures could not prevent them from becoming the centerpiece of arguments over policy.

Both the DIA and CIA, meanwhile, were trying to find alternate ways of assessing the defense expenditures of the USSR. Experts on Soviet economics from academia and the "think-tank" world were assembled on the subject. Only one of them, however, had a strikingly different approach. That was William T. Lee, a young analyst who had been previously employed at the CIA.

Lee's approach was essentially this: In order for the Soviets to manage their economy, they must publish real budget figures; otherwise, they would confuse their own bureaucrats and managers. Therefore, the *real* defense expenditures are somewhere in Soviet published economic data. Lee analyzed this data and arrived at estimates of the Soviet military budget essentially available but disguised in that data. This all made some sense, but unfortunately for Bill Lee, his method indicated that the results from the old direct-costing method were not just a *little* too low, they were *100 percent too low.* His results at that time showed an expenditure of 40 billion rubles in 1970 versus about 24 estimated by CIA. Neither the CIA nor DIA analysts could swallow that big an admission of error. Thus Lee's results were rejected with much criticism of his analytical approach. But Lee was eventually to have the last laugh; his method yielded results far closer to the truth than those of his critics.

The whole matter of Soviet defense spending came to a head again in the spring of 1975. The intelligence controversy over costing was settled for a while by the acquisition of good evidence. By April 1975, evidence from a variety of sources combined to provide solid proof that we had indeed been underestimating the Soviet budget by *at least* 100 percent. In terms of percentage of GNP devoted to the military, the new evidence showed that our old estimates of 6 to 8 percent were wrong. In my view, the Soviets are spending 15 percent of their GNP on the military. The actual figure is probably closer to 20 percent because the 15 percent figure still excludes hidden costs such as pensions, much training, and transportation costs that remain hidden in the budgets of various nonmilitary ministries

of the USSR. Regrettably, while the CIA changed its estimates sharply upward at the time, they continue today to cling to the discredited method that produced the low estimate.

This new information came to light right in the middle of the first big U.S. defense budget fight with the new post-Watergate Congress, one that promised to be most hostile to the military establishment in many years. Evidence of the substantially larger Soviet defense expenditures, particularly compared to those of the U.S., could conceivably be used to persuade the Congress to increase or at least maintain the existing level of defense spending. If one chooses to believe the conventional wisdom around Washington, one would expect military intelligence to have immediately used this bombshell to help fend off broadaxe cuts in the defense budget. This was not the case. With the agreement of Dr. Schlesinger, Mr. Colby and I, now Director of DIA, elected not to release the new evidence pending a thorough reestimate of costs. We judged that its use at this time in the Congressional arena would evoke a furious attack on the validity of the evidence and endanger the sources of the information.

We were able to continue this policy until July, when Senator William Proxmire requested Mr. Colby and me to testify on the Soviet budget. We did so. We both mentioned the new evidence and informed the Senator that our estimates of the Soviet budget were going to rise sharply. Senator Proxmire asked that we be as liberal as possible in declassification of the testimony for publication. We were, and the declassified testimony was ready for publication within a few days. It seemed strange to me that the testimony remained unpublished and unreleased for three months. I cannot escape the suspicion that had Mr. Colby and I testified that the Soviet military budget was *lower* than we had previously held, that testimony would have been released with alacrity.

Senator Proxmire finally released the testimony in October 1975, in a press conference following Secretary of Defense Schlesinger's public statement that the Soviets were outspending us on military matters. To my astonishment—and, I am sure, to Mr. Colby's—Proxmire's press conference managed to convey the impression to newsmen that both of us would quarrel with Dr. Schlesinger on the grounds that he was overstating the case. The facts were that Dr. Schlesinger was using Mr. Colby's estimates of dollar costs of Soviet military expenditure,

and my only quarrel would have been that, the revisions notwithstanding, the dollar estimates still tended to *understate* Soviet expenditures.

The uproar over the size of the Soviet military budget will wax and wane, but is sure to crop up frequently during the SALT debate. Lee estimates Soviet defense expenditures at 110 to 130 billion rubles in 1980; the CIA estimate almost certainly will not exceed 65 billion rubles, because they cling to their old methodology.

In December 1975, the Soviet government announced that the civilian economic output for the year had been drastically short of expectations, particularly in agriculture. Further, Moscow announced that 1976 was going to be another bad year. Of course, part of the reason for this remarkably bad performance was bad weather that reduced harvests, as well as the chronic bungling of an overcentralized economic system. But to these factors must be added the impact of enormous military outlays over the previous several years. Not just weather caused a 10 percent drop in agricultural output! It was also a lack of good farm machinery. Soviet military hardware is produced in the same factories that produce farm machinery. In a Soviet plant that turns out both tractors for farms and tanks for the military, high tank production lowers tractor production. In a plant producing both war gases and insecticides, the more gas manufactured, the less insecticide. And so it goes. Heavy military expenditures are putting a severe strain on other sectors of the Soviet economy, and the Soviet leaders seem determined to endure that strain rather than check the growth of military power. They would rather expend their limited hard currency to buy grain from America than alter military priorities.

The huge Soviet military expenditures alone do not lead to the conclusion that the U.S. is today in a militarily inferior position. They do, however, demonstrate Moscow's resolve to extend Soviet military advantages where they exist, cancel out the few remaining U.S. advantages where they exist and achieve recognition as the prime military power in the world. If this happens, U.S. intelligence officers can throw away that comforting lexicon of words used in past intelligence appraisals to describe Soviet behavior.

Among the arguments put forward by the SALT protagonists is one that postulates a massive Soviet speedup in strategic

armament should the new treaty not be ratified. This is an old gambit in the SALT-selling bag of tricks, with which I have had some further personal experience.

As noted earlier, one argument for the acceptance by Congress of SALT I was that the Soviets would build up much faster in the absence of the agreement. A request was made for an estimate of future Soviet strategic forces in the case of nonratification of SALT I. Since the Defense Department's intelligence analysts had already made such projections of Soviet programs using a SALT case and a no-SALT case, we recommended that our highest level projection—the no-SALT case—be used. But this wouldn't do. CIA analysts dutifully prepared a frightening projection of Soviet buildup should SALT I be rejected. Even the State Department balked at the unrealistic figures. But this estimate, nonetheless, went forward to support the administration's contention that SALT I would result in a Soviet military posture less threatening to the US.

It was especially galling to Defense intelligence analysts to have their highest "worst case" estimates rejected as being too rosy, because for years those very same estimates had been denied by arms-control enthusiasts as "bloated, unrealistic scare stories." It is especially ironic that those "worst case, no-SALT" estimates became reality *after* SALT I was notified.

Today one cannot maintain unequivocally that if SALT II is defeated the Soviets will not try to build up strategic forces faster than they have been. However, one can be certain that there will be no sudden burst of new urgency in Soviet military programs. The Soviet economy is under enormous strain to maintain a 15 percent (or more) allocation of resources to the military. It cannot stand much more.

8.

The Real Possibilities of the Soviet and American Arsenals in the 1980s

With more conventional weapons than the United States, more nuclear weapons capable of counterforce, more long-range land-based naval aircraft, more naval combatants, more active defense, more passive defense, more agents capable of turning foreign crises in directions desired by its own leaders, and possessed of a strategy that aims at victory, the Soviet Union will have the luxury of choosing among a number of attractive ways of winning what it sees as its epochal struggle against the United States.

Because the Soviets expected that these conditions would come to pass and they believed that the "correlation of forces" in the world was shifting their way, the twenty-first Party Congress (1959) adopted the dogma that a final catastrophic climax in the competition between "imperialism" and communism—read a massive nuclear exchange—is not "fatalistically" inevitable. The imperialists, said Khrushchev, have become weaker. As they weaken further, their options will be even narrower and less attractive. The stronger the socialist camp —the camp of peace—grows, the lower the degree of force it is likely to have to employ to push the imperialists over the brink, to their destruction. However, as we have seen, the Soviets believe that changes in the correlation of forces do not repeal the laws of war. This means that, in their views, the decisive

weapons of this age, nuclear weapons, will probably have to be used in any major confrontation. That is to say, they appear to believe that the correlation of forces must be forcefully demonstrated in order to have its full political effect. Beginning in the early 1980s, the Soviet arsenal will lend itself to rational use in pursuit of this ideological formulation—a limited but decisive war employing the full range of superior forces.

The American arsenal was built not to fight but to deter. But while its makers often asked "What will deter the Soviets," they seldom asked "What would deter the United States from using any part of its arsenal?" Americans coined the term "Extended Deterrence" to signify the ability of either the U.S. or the Soviet Union so to project the threat of its nuclear arsenal as to protect its allies, or its own operations in faraway lands. The most outstanding formulation of that concept occurred in President Kennedy's speech to the people of Berlin: "We will defend your cities with our cities." But American policymakers never explained to themselves, never mind to their allies, just how the vulnerability of New York would render Frankfurt less vulnerable, much less how, say, the Saudi royal family should feel about the vulnerability of American cities or (and) of American ICBMs. The fundamental reason for this lies in the belief, widespread among American policymakers, that deterrence is an undefinable phenomenon, based ultimately on an absurd willingness to commit suicide, and that deterrence is diminshed by excessive attention to the real capabilities of forces which may never be used. Thus, in the 1980s, despite its relative disadvantages, the American arsenal may be engaged in precisely the kind of war envisaged by the Soviet Union for two principal reasons: first, the Soviets have seized the political and military initiative around the world. Second, the United States may well engage inferior forces against superior ones in the belief (or hope) that the very uncertainty of deterrence will suffice to cover them.

We can imagine few ways in which the U.S. could fight the Soviet arsenal in the early to mid-1980s and escape without complete defeat. The United States' major assets are a blue-water Navy much superior in carrier-based airpower, and a superior number of small submarine-launched nuclear warheads. If, for some inconceivable reason, the Soviet Navy could be drawn into a set-piece battle in the South Atlantic or the mid-Pacific, the United States Navy would stand a good chance.

The Soviet Kynda and Kresta I cruisers could not get close enough to our ships to use the 380 mile range of their SS-N-3 antiship cruise missiles, nor the Kresta IIs, Karas and Krivaks within the thirty mile range of their SS-N-10s. American carrier aircraft would intercept them far out. The V/STOL aircraft from the Soviet carriers Minsk and Kiev would be no match for American F-14s. Nor could the Soviets protect the two antisubmarine carriers, Moskva and Leningrad, from American air attack. The Soviet surface fleet would be routed. The Soviet submarines would pose a greater danger. The 15 "C" class nuclear boats would launch thirty-mile missiles against both surface and subsurface targets while submerged. The 29 "E II" class boats would launch 250 mile cruise missiles against surface targets. These missiles have nuclear warheads. It is unlikely that the American surface fleet would escape without losses. The 40 nuclear and 60 "F" class attack submarines would add to the troubles. But the U.S. Navy's 70 nuclear attack submarines are quieter, and would enjoy an unequal battle against Soviet subs, should these come anywhere close to massing for a set-piece battle. Such massing would also expose them to the antisubmarine helicopters carried by an American surface fleet that would now have but one immediate task: antisubmarine warfare. Hence, in set-piece battles in mid-ocean, where landbased aircraft could not come into play, the Soviet Navy would stand a good chance of being mauled and losing nearly all surface vessels and attack submarines. Without the Navy's cover, Soviet ballistic missile submarines would be vulnerable, and Soviet shipping around the world highly vulnerable. This might well cause the Soviet Union to keep its "Y" class submarines in the White Sea, out of firing position, and not to try to move forces anywhere in the world where they would have to be supplied by sea.

Above all, though the Soviet Union could still destroy most American missiles and might still be able to conquer Europe, the drastic reduction of the Navy would make it more difficult for the Soviet Union to follow up its successes and might make it impossible to consummate overall victory. Certainly, with the U.S. Navy in control of the seas, a battle in Europe would be much more difficult for the USSR. Not only could allied forces be resupplied at will, but the full force of some ten carrier air wings could go some way toward equalizing the balance of air forces in Europe. Certainly also, given the reduced threat

from Soviet SLBMs, the U.S. could afford to dedicate a thousand or so more Poseidon warheads to the battle in Europe. Under these conditions the Soviets might well decide that the destruction of American ICBMs would not be worthwhile—the war would have started badly, and the ratio between possible futher gains and losses might not appear attractive.

In contrast with the single unlikely scenario for an American victory in the early 1980s, it is all too easy to imagine a great number of scenarios that would lead to American defeats. Let us limit ourselves to one.

The chain of events could well begin in Saudi Arabia, where a pro-Western royal family of about one-thousand individuals rules a native population of less than 8 million desert-dwellers, where much of the organized work is done by more than 1.5 million immigrant workers, mostly Palestinians and Yemenis, and where about 10 million barrels of oil are produced every day. The connections between the Palestine Liberation Organization (PLO) and the Soviet Union are well known. The role played by the PLO in the events leading to the Shah of Iran's downfall in January 1979 is also clear: the PLO acted as conduit for Soviet arms and money to the Shah's opponents. In Saudi Arabia, the PLO would probably take a more direct hand, eschewing the organization of large-scale riots and mindful of how the founder of the Saudi dynasty took power little more than a half-century ago—by climbing over the Palace wall, knife in hand, one moonless night. The PLO could count on mobilizing the immigrants who crowd the cities in support of a coup d'état.

Let us suppose, then, that in June 1982 the PLO struck the Saudi royal family, but with only partial success. While King Khalid died and the cities of Riyadh and Mecca were in turmoil, Crown Prince Fahd survived. Saudi elements in league with the PLO formed a "constitutional, social, Islamic monarchy" which immediately received the Soviet Union's recognition. Prince Fahd, from Jìdda, called for American help. The United States, judging that the Arabian Peninsula's entry into the Soviet sphere of influence would seal Soviet control of Europe, decided to send one brigade of the 82nd Airborne Division. In addition, the President dispatched two aircraft carriers to the Persian Gulf. They arrived a week later. Every European country but Germany refused landing rights to the twenty-five giant C-5 cargo airplanes in which the lightly-armed brigade trav-

eled. The brigade flew directly from Rhein-Main Air Force Base Germany, to Riyadh, with one midair refueling to avoid stopping in Israel, so as not to stir up additional Arab animosity for the expedition. For the same reason, the U.S. refused Israel's offer to provide fighter cover over Riyadh. The Americans sent one C-5 one hour ahead of the others. It was supposed to drop 200 paratroopers who, with light equipment, would secure the airport. However, as that aircraft approached Riyadh, three of its engines were hit by Soviet-made SA-7 heat-seeking missiles. The resulting crash-landing left 150 Americans dead and 100 prisoners of the provisional Arabian government. The latter asked for Soviet assistance to repel "American aggression." Thus, by the time the American brigade was forced to land in Israel's Negev desert for lack of fuel, the first Soviet forces were on their way to Arabia.

The Soviets airlifted a Cuban division from Ethiopia and a Soviet air defense regiment from Moscow. Fifty Backfires flew directly to Riyadh, and 50 MIG 23s and 25s flew by way of Iran. The Soviet Union then warned the United States that if the American carriers came within fifteen-hundred miles of the Arabian coast, they would be met by a swarm of 100 new cruise missiles released by the Backfires as much as 800 miles away from the carriers. Eight-hundred miles is beyond the carrier aircraft's normal combat radius. But in order to even consider sending its aircraft out so far, the carriers would have to detect the attackers some fifteen-hundred miles away—which they could hardly be expected to do. The U.S. therefore held its carriers in the mid-Indian Ocean.

Now determined more than ever not to lose Saudi Arabia, the U.S. decided to overwhelm the Soviet-Cuban force in Riyadh. It discounted Arab reactions and secured both bases and active assistance from Israel. In the Negev desert the U.S. prepared a force of 100 F-14s and F-15s from Germany, backed up by the Israeli Air Force, by an Israeli airborne brigade and by the entire 82nd Airborne Division, the rest of which was brought to Israel directly from Fort Bragg, North Carolina. That force, American analysts agreed, could take Saudi Arabia easily. The day before the attack was to take place, however, the Soviet Union accomplished the following:

a. Following hasty claims of border provocations, an East German armored division moved north from the town of Salzwedel (Brandenburg) along the east bank of the river

Jeetze, then stopped just west of Dömitz on the Elbe. The occupied territory, some seventy square miles, is little populated and had formed an indefensible western salient into East German territory. The only casualties in the operation were a platoon of British soldiers on a training exercise who were captured, along with a five-man American detachment which was manning an electronic listening post. Thirty West-German border policemen were killed, however.

b. The entire Warsaw Pact's troops were mobilized and drawn up in marching order in the rear and in battle formation along the border between East and West Germany. Along that front the forces of the Warsaw Pact and of NATO were roughly equal, except that in three sectors the Warsaw Pact's superiority was four to one. These sectors were: the Jeetze River front, and the fronts facing the West German cities of Fulda and Lübeck.

At the same time, however, the Soviet Union declared that it did not intend to attack any part of Europe or the United States, and would not do so unless its troops or those of its allies were attacked.

In response, the United States placed its entire armed forces on alert, deferred plans for acting in Arabia until the situation in Europe could be rectified, and ordered its two carriers in the Indian Ocean to transit around Africa to Northern European waters.

While American and NATO military officials wrestled with the problem of how one might concentrate a Western force superior to the ten Eastern divisions around the captured Jeetze River salient without exposing other NATO sectors to even more dangerous imbalances, the Soviet Union moved diplomatically to destroy NATO. In meetings with German, British and French officials, the Soviets disclaimed any desire for war, and agreed to negotiate the future of the captured area without preconditions and in the context of Mutual Balanced Force Reductions. Nevertheless, they pointed out, should Europe wish to sacrifice itself for the United States' sake, Soviet forces would be more than equal to their task. They pointed out that, before the armies would even clash at the front, the East's long-range weapons would damage if not destroy all military installations in Western Europe, while Europe's long-range weapons could do but little damage to the Soviet Union. The Soviets pointed out that, in this exchange, the Soviet

Union would stand to lose relatively little and Western Europe much.

First the Soviets listed the aircraft available in Western Europe capable of reaching even the Western Soviet Union:

30 old British V-bombers
40 old French Mirage IVs
140 American F-111 Gs and F-4s
70 American carrier planes—a total of 280 western aircraft.

The Soviet Union, in the meanwhile, could send 500 Badger and 200 Backfire bombers, and at least 400 S-U 19s and Mig 23 attack aircraft—a total of 1100.

The balance in medium-range missiles, the Soviets pointed out, favored them even more: Britain could fire 80 Polaris missiles, while France could fire 80 Polaris-type missiles plus 18 land-based MRBMs—a total of 178. The Soviet Union, on the other hand, could fire 500 SS-5s, 200 SS-20s, plus some 70 older SS-N5s from 70 Golf II submarines cruising the North Sea—a total of 770. Thus, the Soviets promised that they would not use these weapons as long as the Europeans ceased to act provocatively, but that they would use them if the Europeans attacked now, or attempted to build or buy more "irrational weapons of mass destruction" in the future. The Europeans agreed to do nothing for the moment, but to consult the United States.

The Soviets then added that Europe's troubles, including the interruption of oil supplies from Soviet allies like Lybia, Algeria, Iran, and the new Arabian Government, were due to the United States. Given European policies of peace, the Soviet Union could assure Europe long-term contracts for oil at prices somewhat below those of 1974 if Europe were to commit itself to "a policy of peace." A policy of peace, according to the Soviet Union, would require the removal of American nuclear weapons from Europe. European leaders, while agreeing to work for a political situation in which American nuclear weapons would not be needed in Europe, recognized that the current crisis had been caused by American ambition and promised that they would not allow the U.S. to use Europe to escalate the crisis further. They also underlined their eagerness to contract for their oil supplies through the Soviet Union which, they recognized, was now the only power capable of guaranteeing them.

The Europeans opened the subsequent negotiating session

with their American allies by asking what America could propose. The President of the United States flew to Europe and personally argued that accession to the current state of affairs, much less accession to Soviet demands, would be the beginning of world domination by the Soviets. He urged the Europeans to mobilize fully and then to carry out a conventional assault on the East German salient by the Thuringian town of Heiligenstadt, guarded by a single East German division, to take at least something which could then be traded for a return to the *status quo ante.* The President assured Europe that the Soviets would not dare use nuclear weapons as long as it was clear NATO's action had such a limited scope. The Europeans asked what the U.S. would do if the Soviets replied by blasting Europe's troops and airfields with nuclear weapons. Clearly Europe could not reply in kind. Would American Poseidon submarines strike similar "soft" military *targets in the USSR*? Under European pressure the President agreed to commit Poseidon to Soviet targets in case the Soviets "went nuclear" in Europe. He also agreed that the attack on Heiligenstadt would be carried out by two U.S. divisions, ostensibly on their way from Bavaria to relieve the Dutch corps on duty by the Jeetze River, and that no European forces need be involved.

The first part of the American plan worked well. The two American divisions on their northward march wheeled east just south of Götingen, then south through Heiligenstadt and the East German division, and were at the Werra River within four hours of their first offensive act, having taken about forty square miles of East German territory. But a Soviet counterattack by sixteen SCUD-B nuclear-tipped tactical missiles destroyed about a hundred tanks and killed 4,000 of the 30,000 American soldiers involved in the operation. The President decided to withdraw the two divisions, and that, since the Soviet Union had not struck the US—indeed had not killed any American civilians at all—a retaliatory strike against targets in the Soviet Union would bring on a strike against the United States. Upon learning of this, the European leaders decided to end the crisis on Soviet terms, while the number of victims was still below the number of traffic deaths throughout Europe in a typical summer. They bitterly decided to ask the United States to withdraw all its troops from Europe and wished that they had abided by the first Soviet suggestion, which had dealt only with American nuclear weapons. On balance, however,

they did not regret the Americans' departure—who knows how much disaster their unrealistic expectations regarding deterrence might bring?

In the United States, the crisis had driven home the lesson that military superiority in general and nuclear superiority in particular is indeed useful, especially to a nation capable of making quick political conquests and willing to defend them. The crisis had pointed out several American shortcomings:

- lack of a competent apparatus for covert action which could have prevented the PLO's coup against the Saudi royal family
- lack of a competent covert paramilitary organization which could have fought the PLO's provisional Arabian government
- lack of long-range strike aircraft
- inferiority by the NATO alliance of 4 to 1 in tanks, 2 to 1 in fighter-type aircraft, 4 to 1 in artillery, 1.8 to 1 in personnel, and 3 to 1 in nuclear delivery vehicles in Europe capable of reaching the respective combatants' homelands.

Moreover, American planners had learned that they could not use American strategic weapons to deter anything at all which happened anywhere else in the world, because they had been forced to acknowledge that, in a nuclear exchange with the Soviet Union, the United States would be hurt far worse. America had not been able to protect its own troops in Europe, nor European territory, nor the King of Arabia, nor the Shah of Iran, for the good and sufficient reason that it was unable to protect itself against a superior power.

Some Americans pointed out that these shortcomings had been known years before the crisis, and that it might now be too late to remedy them. But Americans generally avoided recrimination and concentrated on the task before them. American policymakers agreed that they had just suffered a defeat of much greater magnitude than the one which the Soviets had suffered in the Cuban Missile Crisis twenty years before. They realized that henceforth the U.S. would be utterly alone in the world, and that it could not even count on sympathy from its former European allies, much less on the oil of the Persian Gulf or on the minerals of Africa. They resolved there-

fore to build up American armed forces, just as the Soviets had done, following their defeat.

The President of the United States therefore presented to the Congress an emergency request for weaponry, to the end that, in a few years, the United States might have a force capable of withstanding a Soviet first strike against its weapons and of retaliating by destroying a high proportion of Soviet weapons. Thus, the President asked for a crash program to build 820 MX missiles to be deployed on mobile—and therefore invulnerable—transporters. He also asked for money to retro-fit all missiles on the 31 Poseidon submarines with two MK 12-A warheads, each capable of prompt-hard-target-kills. He asked for the immediate production of the B-1. In addition, the President asked for the production of 10,000 Patriot surface-to-air missiles and associated radars for purposes of terminal air defense, as well as for 2,000 F-15 interceptors. A portion of the President's message proposed that all the monies, personnel, equipment and contractors associated with the Federal Highway Program be henceforth employed to build shelters and emergency stores for the American people. Finally, the President advised the country to invest in defenses against ballistic missiles. Old Spartan and Sprint antimissile missiles would be emplaced in the Minuteman missile fields, and the nation's best engineers would be asked to build a space-based laser antiballistic missile system which would make the U.S. well-nigh invulnerable to ballistic missiles. These programs, he said, would cost about 100 billion dollars per year for the next five years, after which the United States would go on to build other facets of its military power. Excepting a few "Better-Red-than-Dead" diehards, the Congress accepted the President's message with enthusiasm.

The Soviet Union, however, denounced the President's message as a danger to peace and said that it would regard the actual building of the proposed weapons as an act of war. The Soviets asked for an end to the dangerous state of alert on both sides, for resumption of the negotiations for a SALT III treaty, and for suspension of America's decisions regarding arms until a treaty could be concluded. The United States replied that it would be happy to negotiate and to end the state of alert—indeed American strategic forces needed some time for crew rest and for maintenance. But the U.S. told the Soviet Union that, just as the Soviet Union had pursued its expansion of

forces in the 1960s and 1970s while negotiations were going on, so now would the United States do likewise. The alert would end, but American rearmament would begin. American negotiators thought this a balanced proposal, and were happy when the Kremlin reacted favorably. The new defense programs were voted by Congress on July 15. The negotiations began on August 1, and the alert ended the next day.

However, the Politburo had decided that it could not allow the United States to work its way out of strategic inferiority. The Politburo reasoned that the correlation of forces had shifted so dramatically in favor of the socialist camp, that the concrete situation demanded resolute Soviet action. An aroused America, now vulnerable, would certainly not remain so for long and would build up forces to threaten the new predominance of Soviet power. On August 2 the Politburo therefore ordered the Soviet SRF to prepare to destroy the Americans' land-based missiles and bombers and cripple the U.S. submarine force, while killing as few civilians as possible. The Politburo reasoned that, with most of their forces gone, and their country just about intact, the Americans would stand to gain little and lose much if they chose to retaliate against a Soviet Union which retained most of its armament.

On September 2, 1982, over the Labor Day weekend, the Soviets struck with a part of their strategic nuclear attack forces.

The attack hit only U.S. military targets. The U.S. Minutemen and Titan force was reduced by 95 percent by 2,500 MIRVs delivered by the SS-18; U.S. bomber bases were hit by depressed-trajectory SLBMs; reconnaissance, navigation, and communications satellites were struck by Soviet antisatellite weapons. U.S. aircraft carriers were attacked by bomber and submarine-launched cruise missiles. No U.S. city was attacked.

After the attack, the United States had lost less than a quarter-million people—six years' traffic fatalities. But it was left with some 50 active bombers, 50 ICBMs, and 20 missile-firing submarines, and a sharply reduced electronic network for warning. With these assets it faced the strategic rocket forces of the Soviet Union and the Soviet Navy, which had expended less than a fourth of their warheads.

Even as the attack was occurring, the leader of the Communist Party of the Soviet Union was teletyping its results to the President of the United States, asking if the President had

learned from recent events that an inferior power cannot provoke a superior one ever-more seriously without suffering evermore disastrous consequences. The Soviet leader then begged the American President to realize that the Soviet Union had rolled out several hundred mobile ABMs that morning and had begun sandbagging industrial machinery a few days before. He asked the American President to think of how little the United States could do to protect itself and to act rationally. He asked that American submarines be called to the surface and that they proceed to certain American ports without delay. Finally, he urged in the strongest terms that the United States not delay in sending sensible instructions to its negotiators at SALT III in Geneva. The Soviets promised that their negotiators in Geneva would have a list of proposals for on-site inspection and control of weapons and for prosecution of war criminals that would guarantee absolutely that war between the United States and the Soviet Union could never happen again.

The President's orders to the surviving American forces to take no action against the Soviet Union were generally deemed wise by the commanders who received them, though many cursed the strategy which had brought them to defeat without firing a shot. A few wished they were irrational enough to destroy a Soviet city or two and perish in some kind of glory. Only one commander of a ballistic missile submarine in the Norwegian Sea disobeyed the President's orders. He ordered his sixteen Poseidon submarines to be salvoed. Soon, 160 40-KT warheads were on their way to the northern Soviet Union. Seventy warheads were directed at radar sites in the arc from Tallin to Arkhangelsk. Twenty of these were intercepted by the Soviets new mobile ABM—which much resembled the old American Sprint missile, and the remaining 50 destroyed thirty radar sites. Forty were directed at four airbases south of the Finnish border. They did heavy damage to the buildings, heavy to moderate damage to the airplanes, and little damage to the runways. The remaining 50 warheads were directed at industrial targets on the outskirts of Leningrad. Some were intercepted by SA-5s. The remaining weapons killed a quarter of a million people and did enough industrial damage to forty factories to require at least a year's refurbishing of those factories. The Soviet Union's response was restrained. Over the hot line, the President of the United States prayed the Soviet lead-

ership to be allowed to more than make up the damage, and the Soviet leadership agreed.

Is the foregoing scenario probable? No. As a matter of fact, this particular scenario has a very low probability of occurring. This is but one of hundreds of scenarios for a U.S.-Soviet military confrontation, each with a low order of probability. Other plausible scenarios begin with the death of Tito and an irresistable temptation for the Soviets to intervene or, with a new effort to dislodge Khrushchev's "bone-in-the-throat," West Berlin, or with a new adventure by Cuban proxies in Latin America. These hundreds of possible scenarios with individually low likelihoods add up to a serious possibility if not a probability of confrontation with the USSR wherein the strategic nuclear capabilities of both sides come to bear critically. If measured against the current Soviet trend toward overt aggressiveness, the likelihood of confrontation is steadily increasing. If measured against the risks to the United States involved, the challenge posed by Soviet military capabilities to the survival of the entire Western value system is unmistakably clear.

9

The Acme of MADness: SALT II

As noted earlier, SALT I and détente were launched in an era of general confidence that Mutual Assured Destruction was a viable concept. U.S.-Soviet-watchers, including the bulk of those within the intelligence community, had become so attached to the concept that they could not or would not recognize the clear signals in Soviet behavior that MAD was bankrupt.

Détente and disarmament were based on a number of optimistic assumptions about the state of U.S.-Soviet relations. Among these were:

- The Soviets lost the Cold War when they retreated from Cuba in 1962.
- The USSR had become a *status quo* nation, no longer bent on expansion, especially by force of arms.
- Soviets efforts in strategic arms were designed only to "catch up" with the United States—to ensure a credible deterrent against American nuclear aggression or blackmail.
- The Soviets, despite their adamant statements to the contrary, actually accepted the "reality" of Mutual Assured Destruction.

From the very beginning of the détente-SALT era, many knowledgeable people could and did argue that these assumptions were unrealistic. They pointed to the undiminished Soviet hostility toward all noncommunist polities, to persistent political and economic warfare against the Free World's interests, and to the Soviets' costly struggle to gain the military upper hand over the United States. However, such warnings fell on deaf ears.

SALT's Two Foundations

Two general attitudes bolstered the United States' determination to accept the above mentioned shaky assumptions and to make détente and disarmament the keystones of foreign policy. First was the confidence born of nearly thirty years of U.S. military supremacy and of Soviet failures to compete effectively with the West. The argument from this quarter was that the blundering, stumbling Soviets could never really threaten the West. The USSR—with its economy stagnating, with its satellites in Eastern Europe straining to emulate the West rather than Russia—was suffering from a widening gap in technology, was on the verge of military conflict with Red China, and therefore was to be more scorned than feared. To this school of thought the Soviets' rout in the Cuban Missile Crisis was proof-positive that the Soviets had lost the Cold War and had no alternative but to cooperate with the United States. To Americans of this general opinion, détente and arms-control were not policies of retreat and appeasement, but more of a capstone to the obvious triumph of the West. MAD, to them, was a logical, immutable American concept that the Soviets were obliged by circumstances to accept *regardless* of their own Leninist military doctrines.

Second, détente, disarmament and SALT I received enthusiastic support from the antimilitary, pacifist spectrum of American politics, bolstered and fanaticized by the Anti-Vietnam War "Peace Movement." The everpresent pacifist current in the American body politic had been greatly energized in the immediate post-World War II period by the existence of nuclear weapons. The Ban-the-Bomb, Peace-at-Any-Price, Better-Red-than-Dead school of thought had been highly active, but not very effective in the '50s and early '60s. But their ranks expanded and their influence in American politics grew enor-

mously in the late '60s and early 1970s. By 1972 they were able to run one of their number, George McGovern, for President. They accepted the assumptions undergirding détente and America's disarmament for their own peculiar reason. In their view, the Cold War could be terminated easily by the United States since America had started it in the first place. In their view the Cold War and all other evils afflicting the international scene were the result of the machinatious of the U.S. "military-industrial complex" and of simple-minded American anticommunists. Their view of nuclear weapons was one of open-mouthed, unreasoned terror. They accepted science-fiction accounts of the results of nuclear warfare uncritically, treating them as facts. They so terrified themselves of nuclear weapons that they found *any* U.S. effort to defend the nation militarily an outrageous affront to peace. And they found any Soviet military program perfectly excusable as mere defensive reaction to the inherent wickedness of the Pentagon. For this school of thought, SALT I was not the final answer, but it was a step in the direction of bridling the United States and thus to be wholeheartedly supported.

The complementary effects of these two schools of thought—one based on overconfidence, the other on pacifism and terror—simply overwhelmed the cautioning voices about arms-control and détente. Thus SALT I sailed through the US political machinery with little opposition. Nearly a decade later, while arguments based on American self-assurance are indeed made on behalf of SALT II, they are laced with uncertainty. However, the voice of the pacifists and terror-mongers is even more strident. For, after 1972, events and trends have wrought havoc with the confident assumptions that underpinned the non-pacifist support of SALT, while they have strengthened the apocalyptic visions of the pacifists. Where they once could plead that the United States *should* have no defense against nuclear attack, they can now state that the United States *has* no defense except agreement with the Soviet Union. But these voices should not concern us excessively here. The more honest and pragmatic arguments based on self-confidence were always the most influential.

Interestingly the more pragmatic school of thought that earlier supported détente and SALT is in the greatest intellectual difficulty. The assumption that the Cold War was over and that détente signaled its demise, has been shattered by ever increas-

ing Soviet aggressiveness and by the United States' ever decreasing ability to cope with the crises precipitated by that aggressiveness. The assumption that the Soviets merely wished to "catch up" with the United States and escape inferiority was shattered by Moscow's unprecedented post-SALT I efforts to achieve across-the-board military superiority. The assumption that the Soviets deep in their hearts accepted the MAD theory was shattered by the belated revelation that they had poured enormous resources into civil defense thereby creating a situation in which the destructive effects of nuclear war would be by no means mutual. When the Carter Administration revealed—albeit in somewhat disguised language—that American fatalities from a nuclear exchange would be as high as 160 million, while Soviet fatalities would be as low as 10 million,[1] the MAD theory should have collapsed. The Soviets were making a reality of their long-held contention that they would create capabilities to fight and win a nuclear war by creating forces capable of destroying and defending against the U.S. deterrent.

As these trends became more evident, more and more previous supporters of SALT (of the pragmatic stripe) switched to the opposition. Some were previously engaged diligently in the SALT process itself such as Paul Nitze, Fred Ikle, and Dr. William Van Cleave. Even Henry Kissinger, architect of SALT I, has recanted somewhat his previous support. The refusal of these previous SALT supporters to ignore the realities of Soviet actions was not reflected among members of the pacifist-unilateral disarmament school of thought—Paul Warnke. SALT II is worrisome to the diminishing ranks of the old "confident" school because of the Warnke-esque parts of the treaty, and worrisome to the pacifist school because of the parts negotiated prior to the Carter Administration that do not force greater disarmament on the U.S. and do not in fact limit nuclear weapons.

The administration tries to hold the two groups of supporters in line by making gestures in both directions. To calm the worried pragmatist, the administration rid itself of Warnke and replaced him with a retired general, George Seignious. (Actually, he was only *half*-replaced by Seignious, who took only one of Warnke's jobs, Director of ACDA; the chief negotiating job remained with Ambassador Earle, a Warnke hand-

picked man.) Further, the administration—after two years of cutting, delaying and cancelling U.S. defense programs—tried to assume the image of defense-mindedness and proferred a 3 percent increase in the defense budget. The polemics of administration SALT-selling efforts became laced with assurances that U.S. forces remained and would remain superior to those of the USSR.

At the same time, the administration courted the most steadfast supporters of SALT, the pacifist school, with assurances that the President really wished to rid the world of *all* nuclear weapons. The President attested to their belief in the benign nature of the Soviets by declaring Leonid Brezhnev's goals in SALT and his own to be identical. The administration's SALT-sellers hammered home the theme that SALT II, despite its flaws, was essential to arriving at SALT III, IV and V treaties, which would bring on the millenium of disarmament.

Thus, SALT II looms as the ultimate obeisance to the discredited concept of MAD. But SALT II lacks the support of many who have seen the intellectual underpinnings of MAD evaporate. If SALT II is ratified by the Senate, it will be due largely to the less cerebral but more passionate support of the unilateral disarmers. At the time of this writing a SALT II agreement had not been signed. Therefore no text had been made public. Nevertheless, the basic provisions of the SALT II agreement have been public knowledge for some time.[2] The SALT II accords as now envisioned will consist of:

- A treaty limiting offensive strategic arms that is to remain in force through December 31, 1985, unless replaced earlier by an agreement to limit offensive forces even further.
- A protocol integral to the treaty that is to cover the period through December 31, 1981, and that will expire on that date unless renegotiated earlier.
- A joint statement of principles which would provide the basis for future negotiations, i.e., SALT III.
- An exchange of statements on the Soviet Backfire bomber.

The basic provisions of the agreements are as follows:

The SALT II Treaty

1. The treaty will set equal numerical limits on the total aggregate number of launchers for Strategic Nuclear Launch Vehicles (SNLVs)—sometimes termed Strategic Nuclear Delivery Vehicles (SNDVs)—allowed for each side. As we will see below, because there is no precise, inclusive definition of a launcher, it is not altogether clear what this provision limits. This limit, which includes launchers for ICBMs, SLBMs, and Air-to-Surface Ballistic Missiles (ASBMs) with ranges in excess of 600 kilometers, as well as "heavy bombers," is to be initially set at 2,400 each. By December 31, 1981, the total SNLVs on both sides are to be reduced to 2,250.

   This provision will require the Soviets, who have currently deployed close to 2,500 SNLVs to reduce their total of deployed SNLVs by approximately 100 initially and by up to 250 by the end of 1981. However, the Soviets could comply with this provision without any adverse impact upon their military capabilities. Indeed, by carefully deploying systems not covered by the treaty as replacements for older systems, the Soviets could easily gain in capability. For example, in order to reach the 2,250 limit, the Soviets could scrap their approximately 140 older Bear and Bison bombers, or could convert them to tankers to be used in support of the Backfire bomber, which is not covered by the treaty. Additionally, the Soviets could remove from their silos 100 of the SS-11 ICBMs deployed in the Western Soviet military districts and targeted against Western Europe. The Soviets could then replace these missiles, which are due for modernization in any case, with the much more capable and MIRVed SS-20, a weapon which is not covered by the treaty. But nothing in the treaty would require the Soviets to scrap any missiles removed from an operational silo. Such missiles could be stored and used in other ways.

   For the U.S., of course, the 2,400 and 2,250 figures will require no reduction in forces. The U.S. does not have more than 2,000 SNLVs deployed. But the U.S. may wish to count its mothballed B-52s in order to arrive at the

conclusion that SALT II codifies equality between the U.S. and USSR in the number of SNLVs.

2. Although each nation is free to determine the composition of its forces within the total aggregate, there are three sublimits on MIRVed SNLVs.[3] Note that these sublimits apply to *launchers* fit for firing SNLVs and to heavy bombers, *but not to the actual missiles themselves.*

   a) Neither side may have more than 1,320 MIRVed ICBMs, SLBMs and aircraft equipped to carry armed Air-Launched Cruise Missiles (ALCMs) with a range greater than 600 kilometers.[4]

   In the case of the U.S., the sublimit of 1,320 means that, at present, a maximum of 274 aircraft which carry ALCMs can be deployed without scrapping any Minuteman III or Poseidon missiles. However, as the U.S. Trident I is deployed, the total number of U.S. MIRVed ICBMs and SLBMs will rise to 1,200. This will mean that the number of ALCM carriers allowed to the U.S. will drop to 120. It should also be noted that the American force contains a high proportion of bombers and the Soviet force a high proportion of ICBMs, and that it is far from obvious that bombers should be considered as the equivalent of MIRVed land-based missiles.

   b) A sublimit of 1,200 is to be placed on the number of MIRVed ICBM and SLBM launchers. Note once more that the number of these kinds of missiles is not limited at all, only the number of missiles deployed in known launchers is counted. But again, it is clear that missiles can be launched by means other than known launchers. Each side is free to "mix" between these sea and land-based missile launchers subject to one additional sublimit:

   c) A sublimit of 820 is to be placed on the number of MIRVed ICBM launchers. Also, within this limit, the Soviets will be permitted to have 308 (or 326, if operational launchers at test sites are counted) Modern Heavy Ballistic Missile (MHBM) *launchers* (Launchers for the Soviet SS-18). The U.S. which has no MHBMs will not be permitted any. Neither side may develop, test, or deploy ICBMs which have a throw-weight ex-

ceeding that of the heaviest deployed ICBM of either side at the time of signing, i.e. the Soviet SS-18. ICBMs are defined in the treaty as missiles which have been tested at ranges of 5,500 kilometers are more. But some experts claim that lesser range missiles such as the SS-20 can be fired confidently to the range of ICBMs merely by lightening their payload.

This agreement in no way limits the threat to the U.S. Minuteman posed by the Soviet SS-18 and, in fact, permits the Soviets to add an additional 500 MIRVed SS-17 and SS-19 ICBMs if they choose, which they probably will. The Soviet counterforce threat that was foreshadowed in SALT I thus becomes reality in SALT II.

3. There are a number of other limits on ICBMs and SLBMs:
   a) For purposes of the treaty, any missile of a type that has been tested with a MIRV warhead is to be considered a MIRV missile, whether or not it is deployed with such a warhead. Likewise, any launcher of a type from which a MIRVed missile has been launched is to be considered a MIRV launcher.
   b) The start of additional, and the relocation of existing, *fixed* ICBM launchers is banned. This provision would seem to preclude the multiple-aim-point or multiple-protective-shelter systems for the U.S. MX missile if it is to be considered as *fixed.* However, if MX is considered mobile, then it is not restricted under the treaty. Mobile missiles are addressed in the protocol.
   c) Each side is permitted to test and deploy only one "new type" "light" ICBM (either MIRVed or unMIRVed) during the period of the treaty, subject to the other limits of the treaty. This provision would permit the U.S. to deploy the MX, although development of the missile has been pursued at such a leisurely pace that deployment may not be feasible prior to 1985. The Soviets, who insisted on this provision, are believed to be readying a new ICBM for test and deployment.
   d) The exact definition of "type" has not been reached.
   e) There are no limits on improvements in accuracy and no limits on modifications of existing types of ICBMs. However, any test of an ICBM with more reentry vehicles than have previously been tested on that type of

ICBM will cause it to be classified as a "new type." U.S. and Soviet ICBMs have been tested with the following number of RVs and these will be the limits for each missile:

MINUTEMAN III	3*
SS-17	4
SS-18	10
SS-19	6

f) The testing and deployment of a larger number of RVs on any "new type" ICBM than the largest number already flight-tested by either side on any ICBM is banned. The limit therefore is 10. There is a similar limit on SLBMs (14).

There has been public speculation that it is possible to test a MIRV system without releasing all the warheads, and it has been suggested that the Soviets may have a capability to deploy more MIRV warheads than the limit. Press reports indicate that there is evidence that the Soviets have tested a SS-18 with up to 14 RVs.

g) There are no limits on the number of missiles or warheads that may be produced and stored. The storage of ICBMs in excess of those needed for associated launchers near known operational launching sites is banned. The development, testing and deployment of rapid reload systems for ICBM launchers is also prohibited. In this regard, however, with the deployment of the cold-launched SS-17 and SS-18 ICBMs, the Soviets have seemingly already acquired such a capability for rapid reload and refire of these missiles.

h) Both parties agree not to increase "significantly" the number of ICBM and SLBM launchers for purpose of tests and training. A significant increase is defined to be in excess of 15 percent.

i) There is no limit on the number of "new type" SLBMs which each side may test and deploy during the treaty. This provision allows the planned modernization of each side's SLBM forces, e.g., the U.S. Trident and the

*Although Minuteman was tested with 7 RVs under the Pave Pepper program, only 3 RVs are deployed. The U.S. has accepted 3 as the limit on its ICBM warheads.

Soviet Typhoon. No agreement has been reached as to the range which will be used to distinguish between SLBMs and other submarine-launched missiles that are judged nonstrategic and therefore are not limited.

4. There are also provisions in the treaty regarding "heavy bombers" and ALCMs:

   a) Although it is extremely difficult to craft a definition for a "heavy bomber," heavy bombers are to include the U.S. B-52s and B-1s and the Soviet Bears and Bisons. Additionally, all other aircraft, such as transport aircraft, equipped to carry ALCMs with ranges greater than 600 kilometers, are to be counted as "heavy bombers" under both the aggregate and the sublimits. All U.S. heavy bombers, including B-52 in "active storage," training aircraft, and even the four B-1 test aircraft, are covered under this provision. Soviet heavy bomber variants, such as Bears and Bisons reconfigured to tanker, antisubmarine or reconnaissance roles but which still retain their bomb bays, are not however counted as heavy bombers. Presumably these aircraft will be differentiated by either externally observable differences (EODs) or functionally related observable differences (FRODs) for purposes of verification by National Technical Means (NTM).[5]

   The treaty does not address the vast disparity between the elaborate Soviet air defense system, which includes over 10,000 SAMs and intercept of aircraft, and the U.S. system which has virtually been dismantled. These U.S. defensive forces which remain are to "ensure the sovereignty of U.S. airspace in peacetime." The treaty provides no compensation to the U.S. in numbers of bombers for this disparity in bomber defense.

   b) If new bombers, such as the two new bombers reportedly under development in the USSR are deployed, agreement *by both sides* will be required for them to be classified as "heavy bombers." This provision would appear to portend precisely the same problems over definition of a strategic or "heavy" bomber that have surrounded the development of the Soviet's SS-17s and SS-19s, which were much heavier than America's light

missiles, but which the Soviets nevertheless refused to consider heavy missiles.

c) For purposes of the Treaty, the Soviet Backfire bomber is not to be counted as a "heavy bomber" unless it is equipped to carry ALCMs of greater than 600 kilometer range. The arrangement regarding the Backfire are discussed later.

d) In addition to heavy bombers, only aircraft newly constructed for the specific purpose of carrying ALCMs may be equipped to carry ALCMs. However, it appears that FRODs will be used to differentiate, for example, a commercial 747 from one configured to carry ALCMs. Heavy bombers carrying ALCMs will have EODs to distinguish them from those bombers that do not carry ALCMs. This provision would seem to be extremely difficult to verify. For example, the U.S. B-52 can carry ALCMs internally in its bomb bay as well as on the racks designed to carry the SRAM. Soviet civilian airliners may be modified to carry ALCMs without any Westerner knowing of it. B-52, B-1s, Bears and Bisons will be limited to 20 ALCMs per bomber. The average number of missiles carried on all ALCM carrying aircraft is to be limited to a number less than 30. The range of ALCMs is to be defined as the distance that the missile can travel, measured by projecting its flight path onto the earth. Deviations from this straight line, e.g., for "jinking" to avoid defenses, will mean that operating range could be considerably less than maximum range.

5. There are a number of additional provisions to the treaty; most significant are:

a) A noncircumvention agreement. Both sides agree not to undertake initiatives, either directly or through third countries that would circumvent or undermine the viability of the treaty.

b) Both parties agree not to interfere with the national technical means of verification of the other, and not to take deliberate concealment measures that would impede the monitoring and verification of compliance with the terms of the agreement. Each side has agreed not to encrypt information that *it* judges necessary to the other for adequate verification of matters limited

by the agreement. Any disagreements are to be referred to the Standing Consultative Commission whose decisions require agreement by both sides. There is, of course, the problem of how one side is to know if data that is encrypted by the other is or is not required for verification if that side has no access to the information in the first place. Press reports indicate that the question of encryption is one of the key remaining issues of the SALT II negotiations.

The Protocol

The Protocol that is to cover the period to December 31, 1981, is concerned with limiting mobile ICBMs, ASBMs and launchers for armed, ground and sea-launched cruise missiles. The treaty permits deployment of the systems affected after the protocol expires. The protocol has the following provisions:

1. The deployment of mobile ICBM launchers as well as ASBMs is banned for the duration of the protocol.
2. Flight testing of ICBMs from mobile launchers is also banned, although testing of the launchers themselves is not prohibited provided that no missile is fired from such launchers.

   Again, the absence of precise definitions of launchers leaves open a wide range of possibilities for associating equipment necessary for launching missiles and the missiles themselves. The advantage here goes to the power that is least afraid of being charged with violating the spirit of the treaty.
3. Agreement to ban the deployment of GLCM and SLCM launchers with a range in excess of 600 kilometers. Testing and development of such vehicles of any range is not restricted by the protocol. The U.S. is at least five years ahead of the Soviet Union in technology for such cruise missiles, particularly in guidance systems. However, the United States has no such cruise missile of any type deployed at this time, and, because of delays induced by the Carter Administration, there is doubt that any will be deployed during the protocol. The Soviets, on the other hand, have deployed at least 5,000 cruise missiles of all types in the past twenty-five years, some of considerable

range, fully capable of inflicting heavy damage on American population centers and industrial targets.[6] Because it is almost impossible to know the range of a cruise missile without extremely intrusive verification techniques, it will be almost impossible for the U.S. to verify the Soviets' compliance with any restrictions upon it.

Additionally, according to Paul Nitze, the Soviets are reportedly demanding that the protocol ban cruise missiles with multiple warheads, and that the limits on armed cruise missiles be extended also to cover remotely controlled unmanned vehicles (RPVs) even if not armed.[7]

Joint Statement of Principles

A Joint Statement of Principles is to accompany the treaty and to become the "guide" for SALT III, much as the SALT I agreement was to provide the framework for SALT II. The objective of SALT III will be to:

1. Further reduce the number of offensive strategic weapons and to qualitatively restrict these forces.
2. Bring the so-called Soviet "gray area" and U.S. "forward-based" systems into a comprehensive system of arms-control.

There appears to be certain fundamental disagreements as to the purpose of SALT III. Paul Nitze has reported that the U.S. has proposed the following principles:[8]

- A reduction in the aggregate number of SNLVs.
- A lowering of the limit on MIRVed missile launchers.
- Provisions further restricting the development, testing, and deployment of new ICBMs and SLBMs.
- Provisions restricting the flight testing of ICBMs and SLBMs.
- Further restrictions on strategic defenses, including air and civil defense.
- Steps to strengthen verification through "cooperative measures," in addition to "national technical means."

According to Nitze, the Soviet Union's position is that such a statement of principles should make clear that the theater

nuclear weapons possessed by the United States and its European allies capable of reaching the Soviet Union must be taken into account in arriving at new ceilings, that the subject of restrictions on strategic defenses beyond those contained in the ABM treaty is not appropriate for SALT, and that no "cooperative measures" other than in support of "national technical means" should be considered.

An Exchange of Statements on the Soviet Backfire Bomber

1. The Soviet Backfire bomber is not to be counted as a "heavy bomber" (unless it is equipped to carry ALCMs of range greater than 600 kilometers).
2. According to Nitze, the Soviet Union is reported to have agreed to make an informal declaration—outside the contractual forms of the treaty—of its intention not to raise the production rate of the Backfire above the current rate of about 30 per year. The United States, on its part, will declare its intent to retain the option of producing and deploying a new penetrating bomber of a type similar to Backfire that also would not be counted against the SNLV limit. There is no possibility, of course, that the U.S., given its current practices for approving new weapons, could deploy such a new bomber during the duration of the treaty.

The Backfire issue is extremely troubling for several reasons. First, it perpetuates in SALT II the unfortunate SALT I expedient of placing contentious but critical issues outside the treaty for the purpose of conferring quasi-legality on two different interpretations. The American unilateral statements in SALT I, although presented to the Congress as a binding part of the agreement, were totally rejected by the Soviets. Likewise, the "agreed interpretations" and "common understandings" have not been well honored by the Soviets. An exchange of letters is only worse.

Secondly, quite apart from the negotiating methodology involved, the restrictions that the exchange of letters would place on the Backfire are militarily worthless. The Soviets could build hundreds of these bombers by 1985 under the proposed restrictions. Within the U.S. intelligence establishment there

is some disagreement as to the Backfire's range. Nevertheless, arguments that it is not "strategic" because it must be refueled in the air in order to carry-out an attack on the U.S. evaporate when one realizes that all strategic bombers, including the B-52, require midair refueling to perform intercontinental missions.

Thirdly, the Backfire issue raises a fundamental question with regard to the American approach to verification. It demonstrates the unlikelihood that a serious Soviet violation of the agreement would be challenged, given the inability of the U.S. intelligence community to agree on so basic an issue (in the case of Backfire) as range. How much more difficult would it be to achieve enough consensus on a more ambiguous issue in order to challenge the Soviets on a violation of something as undefined as the building of a "new type" of missile! The Backfire issue, in short, is symptomatic of the broad, unresolved problems of SALT.

10

The Salt II Debate

It should be clear at this point that the precise terms of the SALT II treaty are of only limited relevance to the strategic situation in which the United States finds itself at the threshold of the 1980s. Ratification or nonratification of SALT II by the U.S. Senate cannot change a balance of forces that has resulted from a long-term neglect of U.S. capabilities and an unprecedented buildup on the part of the Soviets. As we have seen, SALT and the hopes for SALT have seriously affected what the U.S. has and has not done in the field of offensive and defensive strategic weaponry. In a quite different way SALT has played a role in encouraging the Soviet buildup.

The specific provisions of SALT II are consistent with the strategy and the military building programs that have brought the Soviets to the brink of a decisive nuclear superiority and with the *non*strategy of Mutual Assured Destruction that has driven the U.S. in the opposite direction, from preeminence toward impotence. But the specific terms of SALT II do not *disallow* a change in either U.S. or Soviet behavior in the field of strategic competition.

Thus the arguments pro and con in the SALT II issue in the United States fall generally into three categories. The first regards the wisdom and fairness of the specific provisions of SALT II. The second regards the sort of international behavior

that the very fact of a SALT II Treaty may be expected to foster in both nations, *irrespective* of the treaty's terms. The third category of argument regards the question of whether the restrictions imposed by SALT II on both sides will in any way check the vigorous Soviet strategic nuclear programs or change the lassitude of U.S. strategic efforts.

These three kinds of considerations are reflected in countless specific arguments for and against SALT II. Over and above all other arguments are two fundamental questions—verification, i.e., whether each of the parties to SALT II can be sure that the other lives up to the bargain, and the question of how well SALT II has fulfilled the objectives that its proponents set out for it in the first place.

The Artificial World of Verification

The beginning of wisdom concerning the question of how compliance with the terms of SALT treaties may be verified may be reduced to three propositions: First, there is a world of difference between what the Soviet Union has to do to find out whether the U.S. is complying, and what the U.S. has to do to try to find out whether the Soviet Union is complying. The Soviets need do next to nothing. Subscriptions to America's major newspapers, a few trade journals, and Congressional publications, will tell the Soviets the numbers and specifications of American weapons years before they are deployed—without fail. Only the United States has to spend labor and scratch with elaborate National Technical means to gain a few insights into the other side's weapons. Above all the Soviet Union can count on the existence of people within the American executive and legislative branches who would oppose any attempt by the United States to cheat and would expose any plans to cheat. They would be heavily reinforced in the private sector by the Arms Control Lobby. It is certain, but often forgotten, that the United States could count on the absolute solidarity of the Soviet Establishment in any plan to cheat. Second, the SALT agreements have been written in such a way that the Soviet Union does not have to cheat in order to gain massive superiority. It just has to do what it has been doing: exploit loopholes in the drafted language and count on the "Spirit of SALT" continuing to do to the United States what it has done for a decade. Third, the entire intellectual and political struc-

ture of verification consists of a set of assumptions and practices that make it well-nigh impossible for the Soviets to be declared in violation of the agreements.

The first two propositions are self-evident. The third requires explanation. The complex of electronic and other methods upon which the U.S. relies for data on Soviet armaments need not be discussed here. Too much harm has already been done to them by excessive discussion of what they can do, in the press and especially by the American negotiators in Geneva. But the prime reason they should not be discussed is that they are of secondary importance. The tools for answering questions regarding verification are pretty fair. But the questions themselves are far less clever. The mindset of those who ask them inspires even less confidence. The Executive branch divides verification into two stages: *Monitoring,* the technical surveillance of Soviet activities in order to detect possible violations, and *verification,* the political process by which American leaders decide whether the data collected justifies calling something a violation. Now, it is important to note that the kind of technical monitoring that the intelligence agencies do is determined by the kinds of political considerations by which the results of the monitoring are ultimately evaluated.

The foremost example is the very first decision ever taken regarding verification. Contemporary historians agree that during the early stages of SALT I, the United States and the Soviet Union were discussing limitations on the production of ICBMs, but that the Soviet Union would not agree—and still does not agree—to allowing the United States to inspect the factories where Soviet missiles are built. The United States was then faced with the choice of declaring that SALT I could not be verified or *adjusting its definition of verification* so that the information the U.S. *could* gather without inspection would appear adequate. The U.S. chose to do the latter for the sake of "the SALT process." The adjustment was a simple one. Acknowledging tacitly that it had no idea how many missiles the Soviets were building, the U.S. decided, by *fiat,* that it would regard as significant only the launchers from which missiles could be fired. In practice, the U.S. would consider one silo as the equivalent of one missile, assume that there existed but one missile per silo, and assert that however many missiles the Soviets had over and above the number of silos, these missiles would not count because they could not be used in a first strike.

The U.S. chose to regard as not pertinent to SALT limits the fact that the Soviets could reload their silos and fire again. SALT I established the absolute equation—one silo, one missile and vice versa. As Paul Nitze pointed out, pressures to declare that SALT I is verifiable have resulted in the United States' acceptance of *launchers* as the currency of SALT. This has proved to be the wrong currency. On the other hand, all of this makes sense if one believes that once "both sides have the ability to annihilate each other" a few hundred or thousand missiles more don't make any difference.

SALT II, like SALT I, limits the number of *launchers* that each nation may deploy—not the number of missiles it can produce nor the number of missiles it can deploy. But of course a missile can be launched only with the aid of some equipment. The natural question would appear to be just what minimum of equipment *is* required to launch a missile? It would appear doubly reasonable to make the answer to that question a part of any treaty limiting strategic arms. But SALT does not restrain the production of missiles, nor does it contain a comprehensive definition of what it takes to launch a missile. It does not for the single simple reason that not much is needed to launch a missile except fuel tanks, a means of erecting it on a surveyed site and some electric power. All of this can be provided in any big building without much chance of detection by sophisticated "National Technical Means." For practical American purposes, then, a launcher means a tube on a submarine or something similar laid out in the open for a satellite to see, but does not mean anything that a satellite can't see. Once again, the United States has shaped the SALT agreements so that they are "verifiable," and reality be damned.

Within the intelligence community, success in monitoring is measured by how well a system or a combination of systems fulfills certain requirements. Elaborate and costly studies examine just how the requirements are being met. But the entire process is no more meaningful than the requirements themselves. And it appears that these have been tailored to be met. One example will suffice. How does the U.S. know whether the USSR is developing new missiles? The treaty defines new missiles as those whose dimensions differ from new ones by plus or minus 5 percent; thus U.S. intelligence agencies will try to determine if the new missiles differ from the old by any greater amount. Whatever may be their determination, it will be quite

useless. The external characteristics of a missile say very little about its performance. With missiles as with ability: "It's not the size of the dog in the fight, it's the size of the fight in the dog." Throw-weight, reliability, and accuracy are not necessarily related to size. Traditionally, the United States has obtained its information about the throw-weight, reliability and accuracy of missiles from the telemetry of Soviet tests. Traditionally, both U.S. and USSR placed radio transmitters aboard missiles being tested, which broadcast data on how the missile was performing. By intercepting that date from Soviet tests, the U.S. felt confident it knew a great deal about Soviet missilry. The two American listening posts in northern Iran, closed down by Iran's new leftist revolutionary government in 1979, have provided an important part of interception of such telemetry. Of course the Soviets knew the telemetry was being intercepted, and took some known measures to diminish its usefulness. One of these was to put the telemetry in unbreakable electronic codes. Some of the development of the SS-18 was conducted with coded telemetry. In December 1978, the Soviet Union agreed no longer to encode telemetry on tests important to any part of SALT, but reserved the right to determine unilaterally which tests are important. America's agreement to this —fantastic as it is—is very much in line with previous practice: verification by definition.

Actually the controversy over encryption of telemetry is a tempest in a teapot. No law of God or man stipulates that missiles shall emit telemetry when tested. It is quite feasible to record a missile's flight data in a capsule that may be recovered later. SALT does not prohibit this. Also, nothing says that the telemetry that a missile emits has to be correct. It can be wholly false—the real data being picked up in a capsule later —or partially false to give the wrong impression. There are no technical barriers to the Soviets doing either of these interesting and profitable things.

The upshot of all this is that it is entirely possible for the American verification system to work perfectly as advertised, *and* for the Soviets to produce as many missiles of whatever kind they like without being detected.

The philosophical separation of "verification" from "intelligence monitoring," making the former a political function and the latter a technical function, is very important to understand. The distinction is honest enough in an intellectual sense.

After all, to accuse the USSR of cheating on a treaty is an act of great political import, not an automatic response to the findings of U.S. intelligence. But the SALT protagonists who bandy the words "verification" and "adequately verifiable" about in the debate know perfectly well that Senators, Congressman and the public at large read those terms as measures of the U.S. Intelligence Community's capabilities to detect Soviet attempts to circumvent provisions of the treaty. And they know perfectly well that pressure on intelligence chiefs to declare SALT II "adequately verifiable" in the in-house political sense of the phrase is an attempt to obscure actual limitations on intelligence.

Intended or not, the Carter Administration's new concept of verification is misleading. The signs of a new approach were evident in the early decisions of the new Director of the Arms Control and Disarmament Agency (*and* Chief Negotiator with the Soviets), Paul Warnke. He disbanded that element of ACDA that dealt with verification, thereby downgrading the entire function. A new outlook on verification became vogue in administration statements on the subject. Verification was described as adequate if "cheating on a scale large enough to alter the strategic balance would be discovered in time to make an appropriate response."[1] This is a fundamental change from the definition of verification generally understood by those of us involved in the process in previous administrations. Verification used to be "adequate" if U.S. intelligence had high confidence (never *total* confidence) that Soviet attempts to circumvent the treaty provisions would be detected—*period.* The old question to intelligence chiefs was a legitimate one that could be answered by a careful review of intelligence assets available to monitor Soviet activity pertinent to the treaty provision in question. For instance, I could (and did) affirm to my policy-making masters that those provisions of SALT I dealing with numbers of launchers could be verified with high confidence. With regard to other arms-control proposals, I have answered frankly that there was little or no assurance that intelligence assets could detect Soviet attempts to circumvent them.

The *new* concept of verification, however, includes two very subjective aspects: the scale of cheating that would upset the "strategic balance" and the time required for the United States to make an "appropriate response." The first of these depends entirely on one's view of what constitutes "strategic balance";

the second depends upon one's view of what kind of a U.S. response would be "appropriate" and how long it would take to effect that response.

If one accepts the view of Mr. Tom Holstead, an important official of ACDA, who stated on April 13, 1979 at Colorado University that "even Soviet secret acquisition of 1,000 nuclear weapons over and above the SALT II limitations" would not endanger strategic balance, it follows that Soviet compliance or noncompliance with the treaty has very little to do with balance. Therefore "adequate" verification by the new definition can be accomplished with little or no monitoring of Soviet military programs. Thus does the manipulation of the term "verification" resemble the Newspeak of George Orwell's *1984.*

It is only by applying this contorted definition of verification that the SALT-sellers can insist that the enormous damage done to U.S. intelligence capability by the compromise of the KH-11 satellite and the loss of key collection facilities in Iran do not alter their confidence that SALT II will be "fully verifiable from the day it is signed." Only a conviction that the Soviets are to be trusted in arms-control matters plus a belief that it doesn't really matter if they *should* cheat can explain the sanguine views of the administration on the verification issue. Such faith and nonchalance toward keeping the Soviets honest is not shared widely in the U.S. Senate nor in the American body politic as a whole.

Objectives and Results of SALT II

Negotiations for SALT II were supposed to enhance the security of the United States by producing a treaty that would accomplish three objectives. The first was to lower the total amount of destructive power in the hands of both sides so that in case of war, the catastrophe would not be so large, and above all, so that both nations would demonstrate to each other and to themselves that nuclear arsenals could be placed on the road to ultimate extinction. The SALT II agreements did not achieve this because the Soviet Union did not want to constrain its program for building strategic weapons. The agreement allows the Soviet Union and the United States to do almost anything they might *wish* to do to improve the quantity and quality of their strategic forces except build "new" silos or increase the overall number of "strategic" launchers. The number of war-

heads that the Soviet Union and the United States could have by the end of the SALT II Treaty will be considerably higher than when the treaty was negotiated—20 percent higher for the United States and 300 percent higher for the Soviet Union. The striking power of both sides—but especially of the Soviet Union's—will increase.

The second American objective of SALT II, mandated by the Jackson Amendment of 1972, was to achieve equal limits on strategic weapons. Perhaps no one could expect a mere treaty to produce equal arsenals given that the building programs and the strategies of the two nations are so different. (We have seen that in order to reach its allowed equal aggregate, the U.S. must count mothballed B-52s as if they were brand new SS-18s.) The U.S. has fewer ICBMs, but more SLBM warheads than the Soviets. Therefore, every American demand that the Soviets reduce the number of their ICBMs to American levels was met by the demand that the U.S. reduce the number of its SLBM warheads to the Soviet level. If American planners were working according to Soviet strategic precepts, they might well have found such offers appealing. But American "strategy"—Mutual Assured Destruction—prefers small, inaccurate SLBM warheads to large accurate ones on ICBMs. In fact, the Soviet Union's preference for ICBM warheads fit for war-fighting is such that Soviet negotiators insisted on high limits for MIRVed ICBMs. This is the reason they rejected high handedly the American proposals of March 1977. They did this even though, as of 1979, the Soviet Union had not yet deployed as many MIRVed missiles as the United States. The obvious explanation is that the Soviet building program is certain to provide the Soviet Union with at least 800 MIRVed ICBMs by 1982, with a total of at least 5,500 warheads fit for hard targets. The Soviet SS-18 has become symbolic of this inequality between American and Soviet forces, because it carries 10 warheads of 1.5 megatons each (as compared with the Minutemen IIIs 3 warheads of 170 kiloton each) and because SALT II does not allow the U.S. to build any launchers for missiles as large as the SS-18. Critics of SALT have focused on this provision as the central inequality in the treaty. That is warranted, but only in a sense. Supporters of SALT rightly point out that American strategy (which they have long controlled) does not require weapons such as the SS-18 and heretofore has rejected weapons with a capability for assured, prompt, hard-target kills. There-

fore, it is fair to say that although SALT II ratifies American inferiority with respect to MIRVed ICBM warheads capable of hard-target kill, the treaty is not the cause of that imbalance.

Proponents of SALT claim that the treaty does provide equality, and point to the equal limits on the aggregate number of launchers, to the equal sublimits on MIRVed ICBMs, on combined MIRVed ICBMs and SLBMs, and on combined MIRVed ICBMs, SLBMs and aircraft fitted with ALCMs. They concede that these equal figures hide deeper inequalities. They admit that each of the Soviet Union's ICBMs would be allowed more MIRVs than Minutemen, that the U.S. would not be allowed any "heavy" missiles, and that, given present American policies, it is impossible for the U.S. to even have as many ICBMs as the treaty would allow. Finally, proponents of SALT sometimes even agree that one can no more compare Soviet warheads to American ones than one can equate Cadillacs and Volkswagens because both are cars. True, they concede, Soviet warheads do what the Soviets want, but they insist that American warheads allowed by SALT II are sufficient to do what American planners want to do. Thus, they conclude, though American warheads may be as Volkswagens they are equal to Soviet Cadillacs because they take the U.S. where its leaders want it to go. By the same token they dismiss the inequality resulting from the Soviets being allowed the Backfire bomber while the U.S. has no comparable aircraft.

The third American objective in SALT II was something called "crisis stability," or a situation in which neither side could hope to gain a military advantage by striking first at the other side's weapons. We have seen that this situation did not exist in the early '60s when the U.S. had a massive advantage, that some American planners rejoiced when it came to exist in the late 1960s as the Soviets began to deploy their third generation of missiles, and that most American planners worried that "crisis stability" would vanish as the Soviet Union deployed their fourth generation. But no one claims that SALT II has in any way impeded the Soviet Union from achieving the ability to gain an overwhelming military advantage by striking first. No one disputes that this situation gives the Soviet Union a rational military incentive to strike the United States. Whether or not this is a *sufficient* incentive is another matter entirely. However, the American proponents of SALT have unanimously and without exception taken the position that

"crisis stability" no longer matters, because calculations of military advantage in nuclear war are mere "parlor war-gaming,"[2] and because anyone who can believe that the Soviets would exploit such a military advantage "can believe anything."[3] Rational military incentives are not supposed to matter in nuclear war or threats of nuclear war. Yet, curiously, the very same people who dismiss the importance of "crisis stability" when arguing for SALT II insist that it is absolutely essential when they argue against America's deployment of the MX missile. America's possession of the MX would endanger peace, they say, because for the first time since the mid 1960s, the U.S. would have the ability to destroy Soviet missiles. This would give the U.S. an incentive to strike first, and would make the Soviets dangerously uncomfortable. One is tempted to question the honesty of people who claim that a treaty that gives the Soviet such an incentive enhances America's security, but who support the treaty's provisions that make it difficult for the U.S. to acquire a countervailing capability, and who even work against such U.S. efforts to gain that capability permitted the U.S. by the treaty. But the temptation should be resisted. One can do all of this honestly if only one believes that military advantage is so useless that America should not aggravate the Soviet Union's supposedly ignorant paranoia by trying to "ape" its ways.

Once again, then, arguments concerning what America negotiators achieved in SALT II reduce themselves to arguments concerning the fundamental American posture of Mutual Assured Destruction. If that posture is correct, then SALT II could be said to have achieved its three chief objectives well enough. If MAD is wrong, then SALT II did not achieve those objectives at all.

Wisdom and Fairness of Some Specific Provisions

It is healthy that discussions of SALT have gone beyond individual provisions and have focused on the effects of those provisions on certain parts of the military balance. Nevertheless, such discussion cannot help but refer back to the provisions of the treaty, to what they limit and what they do not limit.

It is a standard claim of the SALT-sellers that "SALT II puts

a cap on strategic nuclear weapons." To support this contention, the figures on total delivery vehicles—2,250 for each side—and the subtotals for vehicles carrying more than one weapon are cited. This claim is further adorned with the declaration that the Soviets, who today have 2,500 missile launchers and strategic bombers, will have to actually get rid of 250 systems.

This is a false claim. SALT II *appears* to reduce the total number of delivery systems allowed each side only by the device of not counting certain Soviets bombers and missile launchers as having intercontinental capabilities. The most celebrated of these noncounted systems is the new Soviet strategic bomber nicknamed Backfire. This bomber is the best that the Soviets have ever produced for intercontinental nuclear attack against the United States. For instance, this supersonic jet bomber has far better capabilities for such attacks than the propeller-driven Soviet Bear bomber that is counted in the SALT II totals.

Backfire is the Soviet equivalent of the U.S. B-1 bomber that the present administration elected to cancel. There is absolutely no doubt of its capabilities to reach the United States and to drop nuclear bombs on our weapons or cities. Backfire will have a far easier task in penetrating the nearly nonexistent U.S. air defenses than the U.S. B-52 will have penetrating the dense array of surface-to-air missile defenses and interceptor defenses of the USSR. But the B-52s count in the 2,250 limit; the Backfire does not.

This Soviet bomber is not even addressed directly in SALT II. However, there is an accompanying note from the Soviet leadership (without the force of the treaty) that is designed to allay U.S. concern about its exclusion. This note will affirm Soviet intent *not* to threaten the United States with Backfire *in time of peace*, and not to build it any faster than current rates. At current rates, the Soviets—according to administration estimates—can have up to 400 Backfires operational by the end of the treaty period. This is a reduction of previous estimates, which indicated that Backfires would number up to 700. Since that estimate was made a second factory was erected by the Soviets, apparently to double the output of Backfires. It is something of a mystery why and how the more optimistic figure of 400 has been calculated.

Comrade Brezhnev's nontreaty statements about Backfire

are scarcely comforting. First of all, one would not expect to be threatened by Backfire in *peace*time. Secondly, his implied promise not to build over 400 Backfires during the period of the treaty is merely a unilateral statement of present intent and not actually binding. And finally, the Soviets can produce another 400 modified Backfires and insist that they are a "different" aircraft not covered by the treaty and not even covered in the unilateral statement.

Thus the much-touted 2,250 "cap" on Soviet nuclear delivery systems is in fact 2,250 *plus* the Soviet equivalent of the U.S. SAC bomber force—400 or more strategic bombers. While it is true that about 150 old Soviet strategic bombers (Bison jets and Bear propeller-driven) *are* counted in the 2,250 total, they will soon be replaced by Backfire, probably being converted into tankers to refuel Backfire. The Soviets would be foolish indeed to keep in active service these obsolescent bombers that *count* when they can replace them with modern bombers that do *not* count.

Ironically, the new Soviet bomber does not count while the four prototype U.S. B-1s *do* count. Even U.S. B-52s no longer in active service count against U.S. totals until they are literally cut in two.

Also excluded from the Soviet total of delivery systems are the mobile ICBM launchers now being displayed in the USSR. This is the launcher developed for the new solid-propellant Soviet intercontinental missile SS-16. The rationale for not counting these launchers is that they are being deployed with lesser-range SS-20 missiles—shorter-range "ammunition," that is to say that while the launcher is equally capable of firing *either* the intermediate-range ballistic missile SS-20 *or* the intercontinental version SS-16, we have elected to count it in the category of *non*intercontinental launchers. While it is known that the ICBM SS-16 has been fired many times from this launcher in tests, this intercontinental "ammunition" is not in evidence around the launchers deployed to operational areas. Since the shorter-range ammunition *is* in evidence, we do not count the launchers in SALT. The danger in all this is that we don't know how many of the longer-range missiles have been produced by the Soviets. (More than can be accounted for, to be sure.) And we don't know whether or not the longer-range "ammunition" is stored near these launchers out of sight of satellite cameras. We *do* know that it would take only a few

hours to change "ammunition" from the SS-20 to the SS-16.

It has been estimated in intelligence that the Soviets will deploy about 750 of these launchers. This estimate is based on the fact that the Soviets have maintained a force of less-than intercontinental-range missiles, directed primarily against Western Europe, of about that magnitude. If these uncounted ICBM launchers and the uncounted Backfires were *not* excluded from SALT II totals, the number of strategic delivery vehicles allowed the Soviets would exceed the 2,250 touted in the treaty by as much as 1450!

And the picture is still incomplete.

Curiously, the noncounting of the mobile launchers just discussed is the *only* one that was resolved in SALT on the basis of the weapon rather than the launch vehicle. In the SS-20 case, the actual *missile* was the determining factor, not the launcher. The obvious capability of the launcher to accommodate ICBMs became subordinate to the perception of less worrisome "ammunition," i.e., the SS-20 shorter-range missile was the *real* threat, but not to the U.S.

This stress on the weapon rather than the *launcher* is a unique phenomenon in SALT II. For the other ICBM systems, all silo-launched, there seems to be an assumption that the United States is threatened by the holes in the ground *rather* than the nuclear-tipped "ammunition," the missiles.

This approach opens up another broad avenue for the Soviets to pile up nuclear weapons without constraint. By counting the *launcher* as the threatening element, US. negotiators in SALT II and the SALT-sellers tend to ignore the fact that about half of the Soviet silos can be fairly quickly fitted with a second ICBM and fired again.

Since the signing of SALT I, the Soviets have employed a "pop up" or "cold launch" technique on their new SS-17 and SS-18 launchers. It is similar to the technique used for submarine launched missiles where compressed gas launches the missile and its rocket engines do not fire until the missile has cleared the launching tube and popped out of the water. With this technique, the launcher can be readied for refire in a matter of a few hours. By contrast U.S. ICBMs fire *inside* their silos, burning out wiring and other fixtures so that a major overhaul is required before another missile can be fired. Thus the Soviet nuclear threat from ICBMs cannot be measured in terms of *launchers* alone.

Can we assume that the Soviets have the spare missiles available for refire? This is of course a critical question. We certainly *cannot* assume that spare ICBMs are *un*available. The Soviets have already replaced some 1,500 ICBMs with new models and by the end of the SALT II treaty period will have replaced over 2,200. We cannot say with any confidence what happens to replaced ICBMs. Some few can be accounted for in practice firings by Soviet missile crews and a few more may be assumed to have been used for other purposes. But the bulk of them remain unaccounted for. What we *do* know is that the Soviets rarely dispose of military equipment that can conceivably be useful to them. We *should* assume refire missiles for every "cold launch" Soviet ICBM silo and even extras that could be launched from presurveyed hard surfaces such as highways. In addition to probable refire missiles for Soviet ICBM silos, it is important to note that the mobile SS-20/SS-16 launchers are also refireable and the fact that some of the Soviet submarines have missiles with enough range to reach the U.S. from homeports makes them essentially refirable silos as well.

When one takes into account the Soviet strategic systems deliberately left out of SALT II and the numbers of weapons that can be amassed by the Soviets for refire, the notion that a "cap has been placed on nuclear weapons" appears preposterous. For those more interested in putting a cap on *U.S.* nuclear weapons it is apparent that while we will be far more constrained than the Soviets, we can add more weapons as well. Indeed we would be foolish not to do so.

A critical problem intrinsic to SALT II as a treaty is that it aids and abets the Soviet drive for global military superiority. The lopsidedness aspects of the agreement discussed above would be encouraging enough to the Soviet General Staff. But of more precise import is the granting to the Soviets of a monopoly in "super heavy" highly accurate ICBMs. We are agreeing to permit the Soviets to acquire a capability using less than one-fifth of their ICBM force to eliminate almost our entire ICBM force. We are agreeing to deny ourselves a comparable capability.

The weapon system involved is the Soviet SS-18 ICBM. It has very high accuracy and carries 10 to 14 individually targetable warheads (MIRVs). Each of these warheads has a yield in the 1.0 to 1.7 megaton range. SALT II permits the Soviets 326 launchers for these missiles or a minimum of 3,260 extremely

effective deliverable warheads—it would take 2,000 of them to destroy over 90 percent of our U.S. Minuteman missiles. Others could be used to hit U.S. submarines in port and to attack the command and control systems for U.S. retaliatory forces. After such an attack, the Soviets would still retain more ICBMs than the U.S. started with. Such a "balance" of forces is simply intolerable. It is in fact a war-winning capability.

Much of the treaty's meaning depends on prohibition of all but one "new type" of missile. One might well think that as long as the treaty lasts, the U.S. will face Soviet missiles no more capable than the ones we have already discussed. But that would be wrong. As we have seen, since the only operative definition of "type" is gross external size and number of warheads, and since we have seen that it could well prove impossible for the United States to verify the number of warheads the Soviets placed in new missiles, it is not only possible but virtually certain that the Soviets will be able to deploy a wholly new generation of missiles that will deliver counterforce blows more accurately and more reliably. The argument is often made that the very same provision would allow the U.S. to build not only the MX but a radically "improved" Minuteman except that the U.S. could not cheat by deploying more warheads than allowed by the treaty (remember that the treaty allows the Soviets a maximum of 10 warheads per ICBM and allows only 3 for the U.S.). That is true. But even if the U.S. built its planned 200 MXs and could overcome internal objections to building an "improved" Minuteman, it could never catch up to Soviet capabilities because the Soviets have come close to matching the U.S. in the technology of guidance and miniaturization. They could always deploy more warheads of the same quality as the U.S. There is ultimately no way for the U.S. to redress the balance in ICBMs except by acquiring as much throw-weight as the Soviet Union—*and that is precisely forbidden by SALT II.*

Of course no provision of the treaty would prevent the U.S. from undertaking a crash program to build 820 MXs by, say 1982. That would certainly redress the balance for at least a decade. But such a move would be anathema to the American spirit of SALT, and it could be undertaken politically only by a Congress that had already rejected that spirit.

Opponents of SALT have generally remarked upon the exclusion of the Backfire bomber and the SS-20 missile generally

for reasons which, though good and sufficient, hide even weightier ones. True, these systems can strike the United States. But the argument of the administration—and of the Soviet Union—that these systems are intended primarily for Europe deserves greater attention. We have seen that in the Soviets' own view, Europe is quite as strategic a theater of operations as is the United States. Of course Europe is of even greater significance to America's European allies. Beneath the embarrassed endorsements of the "purposes of Arms Control and SALT," thoughtful Europeans resent the fact that the United States so airily dismisses nuclear delivery systems aimed at them. This bolsters the Soviets' argument to the Europeans that the U.S. considers them simple pawns. The American definition of what is strategic neglects 4,000 warheads that the Soviets consider strategic. These are over and above the thousands of tactical nuclear warheads arrayed against America's tactical nuclear warheads in Europe. These 4,000 are testimony more eloquent than words of the Soviet Union's interest in Europe. In this regard, the United States may give such verbal reassurances as it wishes to Europe regarding the meaning of the clause that prohibits the U.S. from giving technical information to its allies on the grounds that it would constitute a "circumvention" of the treaty. Regardless of any assurances or any number of consultations, Europeans would look at the reality of American inaction with regard to developing weapons to counter the Backfire and the SS-20, and at SALT as the vehicle by which America's abandonment of Europe was being consummated. The Soviet concept of what is and is not strategic would simply prove more relevant to Europe than the United States' concept.

The provisions limiting the testing of long-range Ground Launched (GLCMs) and Sea-Launched Cruise Missiles (SLCMs) practically reduce the cruise missile to being launched from aircraft, while the number of such aircraft is kept low by including it within the total of MIRVed strategic launchers. The U.S. can choose an ICBM that can be launched on a moment's notice and be almost sure of destroying its hard target, or an ALCM-carrying B-52 that may not get off the ground, and that, if it even reaches its target, will do so only after a delay of eight or more hours. In this comparison, considerations of the ALCM's range are insignificant. The U.S. apparently has chosen to have at least 120 of these ALCM-carrying B-52s instead of 120 MIRVed ICBMs. The treaty's negotiators can hardly be

blamed for agreeing in effect to eliminate GLCMs and SLCMs, since their strategic vision prefers B-52s loaded with ALCMs to MXs. Rather, that strategic vision is responsible for the treaty.

Political Considerations in SALT

As this book was being completed, it appeared that some proponents of the treaty were willing to concede all the arguments on numbers, throw-weight, accuracy, effectiveness against various types of targets, survivability of forces on both sides, as too arcane and inconclusive even for the "experts." Joseph Kraft and Meg Greenfield bid us not worry about these technicalities, but rather to concentrate on the political relationships symbolized by SALT as an exercise in political "process." "Treaties aren't meant to last forever," said Ms. Greenfield, so it really is unfortunate and pointless that "We will beat each other's brains out over SALT because the treaty to some extent rearranges the vital U.S.-Soviet strategic nuclear relationship." Comparing the SALT II Treaty to the Israeli-Egyptian Peace Treaty, Greenfield wrote: "Finally, then, these documents symbolize progress and motion. They aren't meant to last forever. You could even say they are rather like weapons these days. Their power to influence events has been diminished—but they can buy everyone a little time and security to push ahead." So never mind the realities of what the strategic forces of each side can and cannot do to the other, never mind the immediate political consequences of "some" rearrangement in the "vital" strategic force balance between the U.S. and the USSR. Concentrate instead on the political symbolism of "progress," "process," and "motion" to be found in the treaty.

Mr. Kraft also bases his support for the treaty on political symbolism and the delicate state of Mr. Brezhnev's health. The critics may well be right on the technical issues, concedes Mr. Kraft, but these conditions are as nothing against the transcendent power of the treaty as the political symbol and essence of the "only major bilateral business being conducted by the United States and the USSR. If there is no arms treaty, the web of contacts known as détente will dwindle to almost nothing. Mr. Kraft sees Mr. Brezhnev as the paladin of SALT and "détente": Brezhnev has made SALT his special affair, resisting clear challenges from the military and other political leaders."

If Mr. Brezhnev dies before the U.S. ratifies the treaty, so Mr. Kraft argues, the Soviets may back out. Zbigniew Brzezinski presents a similar argument: The U.S. should approve the treaty in order to provide a politico-strategic framework that Mr. Brezhnev's successors will be hard put to discard.

These arguments boil down to three essentials. First, the political process of the negotiations is more important than the substance of the resulting agreements. The fact that the U.S. and the Soviets have spent some seven years negotiating a treaty to replace the 1972 Interim Agreement, the prospect that Mr. Carter and Mr. Brezhnev will sign the same piece of paper—with the same pen?—at a summit meeting is more important than what the piece of paper says. Second, the Soviet military, and perhaps some of the top political leaders too, are very dissatisfied with the treaty. Only Mr. Brezhnev's personal power and prestige has forced and cajoled the recalcitrants to go along. So we must sign before nature has its way with Mr. Brezhnev's increasingly frail body. Third, Mr. Brezhnev's successors are likely to represent those bureaucrats who don't like the treaty now. But once the treaty comes into force, the future leaders of the Soviet Union are not likely to abrogate it even if it does not provide them the kind of military security they want.

However, a treaty limiting the nuclear arms of the two superpowers deserves better political justifications than these. Any nation is well advised to beware of the real price it is paying when it agrees with another nation, on any issue, on the grounds that the negotiating process itself is more important than the substance of the agreement—just as any citizen would be ill-advised to enter into a contract for a house, a car, a loan or what have you just to gain good will. Common sense warns that one gains not good will but contempt for being stupid. Moreover, the argument that the process is more important than the substance is contradicted by what has happened in the decade since the process began. In prior chapters we have discussed the buildup in Soviet forces since SALT began. Let us review a few of these.

First, when SALT began in 1969 the U.S. had many more ICBMs and SLBMs than the Soviets. The U.S. was about to quadruple its advantage in deployed warheads. Now the Soviets have more launchers, about 60 percent as many warheads

on ICBM and SLBM launchers, and soon will close that gap whether the treaty is ratified or not.

Second, in 1969 the Soviets had no counterforce capability against U.S. ICBMs despite all the SS-9s they were building. On the other hand, in a counterforce response in 1969 the U.S. could have destroyed over 40 percent of Soviet ICBM launchers and, equally important, virtually all of the 750 IR/MRBMs the Soviets had targeted on our overseas bases and our Allies. Now the Soviets are near the point where they can destroy virtually all U.S. ICBMs while the U.S. would be hard put to destroy 10 percent of the Soviet launchers. Once SS-20 deployment is complete (probably in 1982–83), the U.S. will have little counterforce capability against Soviet IRBMs. But with the SS-20s the Soviets can virtually disarm our allies, destroy all our bases in Eurasia, and ensure that Soviet armies will occupy Europe relatively intact so that European economic assets would be available to assist Soviet recovery.

Third, in 1969 the Soviets were fifteen years away from the technology required for any degree of effective low-altitude air and ABM defenses. Now they are just a few years away from weapons effective enough to justify employment of such defenses with good prospects for advanced optical and other technologies needed to improve the effectiveness of air and missile defenses in the next two decades.

Fourth, in 1969 the U.S. margin of nuclear superiority was the basis for corresponding political perceptions of U.S. strength and purpose by Allies, neutrals and foes. The USSR was strong enough to interfere in some areas but still had to be relatively circumspect. Now the political perception abroad has changed dramatically as the nuclear balance has changed in the USSR's favor as a result of the SALT process. Quite true, other factors have contributed to changing foreign political perceptions of the U.S., but the erosion of our nuclear superiority probably is the most important factor. The Soviets have not been rash in projecting their power abroad as they redressed the nuclear balance in the SALT process, but one has only to compare the Soviets' recent conduct—in the 1973 Mideast War, in Angola, Somaliland, Ethiopia and Afghanistan—with their probes of the previous decade to see how much bolder the Soviets have become. They make no bones about it: the continuing shift of the "correlation of forces" in their favor provides ever increasing latitude to aid and abet anti-U.S. and anti-Western

revolutionary movements and client states. Even friendly enemies such as the mainland Chinese, who also have been known to aid revolutionary movements, tell us we have gone much too far.

So much for the argument that the SALT process is more important than the terms of the treaty.

That the Soviet military, and some top political leades, have been opposed to SALT from the beginning has been an argument in search of some shred of evidence. No doubt Soviet military and political leaders have not reached an instant consensus on every SALT issue and objective. Perhaps some disputes are still smoldering, but it is difficult to find any evidence for this proposition, much less convincing evidence. Almost certainly, the parties to any serious disputes have not split neatly along formal bureaucratic lines. Most importantly, the evidence indicates that rather than opposing SALT, the Soviet military establishment has been one of its strongest supporters. Not only has SALT saved them from the very adverse shift in the military balance they faced in 1968–69, SALT also has given them a bit of strategic superiority and promises much more.

SALT proponents are hard pressed to answer the question: "What aspect of SALT II do you believe engenders any opposition from the Soviet General Staff or any other quarter of important opinion in the Soviet hierarchy?" The usual answer is a list of items—such as U.S. forward-based-systems—*not* included in the treaty that the Soviets would have preferred to restrict. The fact is that there is no provision in SALT II that in any way evokes the kinds of serious concerns to the Soviets that most of the provisions evoke among serious-minded Americans.

Zbigniew Brzezinski's argument that we need to constrain future, less amiable Soviet leaders by the treaty is equally unconvincing. Mr. Brezhnev's successors are unlikely to want more strategic offensive forces than the treaty provides them. The treaty allows the Soviets about as much offensive advantage against U.S. strategic weapons and all other U.S. military forces as any military man could rationally want. What more can strategic offensive forces do for future Soviet military and political leaders than to destroy virtually all U.S. ICBM silos, the President and most of the top echelons of the Federal Government (if they are where they are expected to be), all com-

mand and control facilities serving U.S. strategic forces and national intelligence, all SLBMs in port, as many bombers as can be caught on the ground, all nuclear weapons in U.S. (fixed) storage sites, all U.S. nuclear weapon production facilities, and most or all other major U.S. military installations?

As has been noted, unless frustrated by multiple basing of U.S. ICBMs (to which the Soviets have not agreed), the treaty permits the Soviets all the strategic offensive systems they can use effectively against the United States. The strategic forces they need to defeat, disarm and occupy Europe with its economic assets intact to aid Soviet recovery—from whatever damage the U.S. would inflict on the USSR in such circumstances—are outside the treaty. Moreover, these forces are rapidly being modernized so that they no longer will be vulnerable to U.S. attacks.

Since SALT began, the Soviets have improved strategic ASW forces and made much progress in catching up in ABM technology. They are reported to be installing large radars required for national ABM deployments. They are developing and are expected to deploy an advanced air-defense interceptor, an Airborne Warning and Command System (AWACS) and the SA-10 system, all to acquire defenses (for the first time) against bombers and cruise missiles at low altitudes. Construction of a nuclear-powered aircraft carrier has been reported and construction of submarines for the ASW mission—probably models with titanium hulls for operations at depths of 600 to 1,200 meters, which the Soviets consider the "deep sound channel of the ocean"—can be expected to increase as nuclear propulsion units are freed from the SSBN program.

From Mr. Brezhnev's point of view, this is a worthy legacy to his successors, who will probably appreciate it, and the reason why Mr. Brezhnev may well be the first Soviet leader to be honored by his successors since Lenin. But it is hardly a reason why Mr. Brzezinski should urge the U.S. Senate to ratify the treaty.

On Balance: to Ratify or Not to Ratify

In the definitive book on SALT I, John Newhouse described the reaction of American officials to the Soviet SS-9 with words such as "technologically regressive," "out of all proportion to any national strategic mission" and "aesthetically contempti-

ble."[4] We have seen that in Soviet eyes the SS-9 is quite rational (and possibly even pretty) and that the negotiations for SALT II have changed neither the Soviets' priorities nor their aesthetics. During these negotiations the Soviets sought to trade minimal concessions in their strategic program against maximal concession by the United States! They succeeded. In a sense the treaty reflects what both sides have thought their strategic posture should be. The process of ratification is designed to force the Senate to express its consent or its disagreement with the views of the administration on what may be required to defend the nation.

Selling SALT II

As of this writing the SALT II debate has already been in full swing for at least six months. Under prodding from Senator Barry Goldwater, the administration admitted to spending in excess of six-hundred-thousand taxpayer dollars by April 1, 1979, on the direct costs of the SALT-selling effort. (This is essentially the wages and travel costs of government spokesmen on the road; support costs of the effort would swell this figure considerably.) This intense effort has been mounted even before the negotiations on SALT II have been completed. That fact is quite significant.

Administration spokesmen have launched an extraordinary propaganda attempt for a SALT II, which in their own words is 95 percent complete. The remaining 5 percent can scarcely be perceived as addressing only "minor" points since they have been the subject of intense negotiation for a year and a half. How then could the administration ask public support for an incomplete treaty? They could not, of course, unless they were determined to get a SALT treaty passed *regardless of its actual content!* Only thus can such selling of a pig-in-a-poke be logically explained.

The opposition (using private funds) has tried to offset this governmental campaign and can be asked the same questions: How can you *oppose* an incomplete treaty? But the opposition can reply with intellectual honesty. Enough is publicly known about SALT II that will not be changed by the remaining 5 percent under negotiation to make the case for rejection. Even in the unlikely event that the Soviets concede all remaining points to the U.S., the treaty would remain unacceptable.

It must be presumed that those who have insisted on Senate ratification of an incomplete SALT II would *not* retract their sales pitch even though all remaining points in the unresolved "5 percent" were settled by capitulation to Soviet positions!

What could bring an administration to risk a substantial charge of intellectual dishonesty in order to peddle SALT? One imperative is the quadrennial conviction of the sitting President that "progress" in SALT is essential to reelection. This was true of Nixon in '71, Ford in '75 and now Carter in '79. The other imperative springs from a more basic conviction that any SALT treaty is better than none. While the pure political imperative is strong and galling to all concerned with the actual substance of SALT, the latter imperative—dedication to SALT as a process—is the most dangerous. It represents commitment to SALT for its own sake, putting the United States in the role of supplicant at the bargaining table dealing with Soviets who can count on U.S. concessions to their demands for the sake of preserving the "process."

Driven by these imperatives, the administration's SALT-sellers have sallied forth to convince a skeptical U.S. public and lobby the states where senatorial votes for SALT II might be secured. A smooth sales-pitch was developed and administration flaks were trained in its delivery, and by the spring of 1979 the State Department Arms Control and Disarmament Agency pitch had settled into a routine.

Chambers of Commerce and universities in the cities of key states were approached to "sponsor" the SALT-selling effort. Audiences were then carefully selected from the membership of organizations that could be expected to be supportive of SALT—e.g., League of Women Voters, Urban League, Conference of Christians and Jews, and the United Nations Association. Carefully *excluded* were those organizations apt to be skeptical, e.g., veterans' groups, service clubs and patriotic societies. Vigorous efforts were made to avoid the appearance of any spokesmen for the opposition point of view. This carefully staged effort was to produce an impression, to be amplified by the local press, that civil leadership supported SALT II.

The administration learned early that these well-orchestrated efforts and the best of the SALT-sellers could be brought to naught by knowledgeable opposition. Paul Warnke was badly mauled in debate with Eugene Rostow early on in the selling effort. From that point forward, the "big names" in the

SALT-selling circuit declined to show up if the sponsors allowed the opposition to speak. And the schedule of SALT-selling events around the country became one of the few secrets that could be kept by the administration. The Coalition for Peace Through Strength and the Committee on the Present Danger could only determine where to send opposition speakers by tip-off from local citizens. When they were able to do so, the SALT-sellers tended to come off second best. The mere presence of knowledgeable opponents dampened the SALT-sellers penchant for the unsupportable hyperbole that they used freely in the absence of anyone to dispute it. But the main problem lay in the basic weaknesses of the pro-SALT II arguments. They tend to collapse under careful scrutiny.

Of course, the pro-SALT arguments of the government spokesmen are couched in much more reserved language than those of the dedicated nongovernment disarmament lobby. Further, the pro-SALT rhetoric has become progressively more restrained as effective counterarguments have been put forward effectively. In fact, by the spring of 1979, government spokesmen for SALT II were pleading that the treaty should be ratified because it does *not* really limit arms much.

11.

SALT, Defense and Assured Destruction

Treaties regarding strategic arms, whether accepted or rejected by the U.S. Senate, have come to be the only instances in which the American political system considers the Republic's common defense. When military planning was taken over by civilians in the early 1960s, it did not become more rational and more democratically accountable than it had been, but rather less so. As a consequence, although over nearly two decades the United States has bought billions of dollars' worth of weapons, adopted libraries of plans, and conducted itself according to a certain set of views, it has never adopted any strategic outlook on an open, official, responsible basis. In 1980, as in 1959 when Herman Kahn wrote *On Thermonuclear War,* minor officials in the executive and legislative branches must thrash out for themselves what America's strategic outlook is every time they are called upon to make decisions that would make sense according to one and not another outlook. MAD became all the rage among American officials in the 1960s and began to lose adherents in the late 1970s. But neither the rise nor the decline of MAD has followed conscious decisions by the American people. Nowhere in the American administrative and political system, except in the U.S. Senate during a debate on an arms-control treaty, are responsible officials apt to look up from thick budget books listing program after disjointed

program and ask themselves "what could this country's enemies do to defeat the United States, and what could the U.S. do to stop them?"

As American Senators ask this question in conjunction with SALT at the threshhold of the 1980s, they get discouraging answers. Only those ill-informed or ideologically bound can seriously abide descriptions of America's strategic predicament such as given by Senator Edward Kennedy to the Arms Control Association on February 20, 1979. Such descriptions typically credit the United States with weapons it does not have (usually swarms of cruise missiles), assume that America's warheads are as useful as Soviet warheads and further assume that Soviet purposes are indistinguishable from America's. Finally, those who deny that America is in danger never fail to mention that the American economy is capable of winning any sort of race with the Soviet Union—even an arms race. But this begs the question of whether America could or should *want* to defend itself. For the most part, however, Americans approach debates over SALT with the growing realization that the United States is in trouble. Everyone knows the U.S. will not strike first, and that given the kinds of weapons it has, the U.S. would derive little benefit from doing so. On the contrary, the more one looks at the Soviet force, the more one realizes that the Soviets would stand to gain much by striking against American weapons and that no moral scruples would prevent them from doing so.

But if these facts are clear, their meaning is controversial. Some, led by the President of the U.S., deny outright that these facts are significant and point instead to the absolute deterrent power of a single ballistic-missile submarine. At other times, those who follow the President argue that indeed Soviet forces have grown ominously, but that only SALT II and SALT III can keep them from getting even worse. At the same time, they argue that SALT will not constrain them from doing anything that they themselves believe to be required for the nation's security. The President's opponents hear such reassurances with disbelief, and argue that anyone who trusts in the magical powers of a single submarine cannot be counted on to understand what may actually be needed to prevail in war. The President's critics look askance at SALT because it allows the Soviet Union to have more powerful forces, because it allows the threat to the United States to increase, and because it is

impossible for outsiders to tell whether the Soviet Union is complying with its terms. Nevertheless, the President's critics are often hard-put themselves to say why the forces that SALT *would* allow to the United States would be inadequate for the nation's security and what forces would be adequate.

Given the Soviet Union's superior forces in the early 1980s, American planners face no pleasant alternatives. If one wished to build forces to substitute for the ICBMs and bombers that the Soviets will be able to destroy in a first strike, and to overcome Soviet civil and industrial defense, one would have to invest in 15 or 20 Trident I submarines at a billion dollars per copy. But since Trident I is not a counterforce weapon, the U.S. would not be increasing its ability to protect itself by building it. If the U.S. decided to build forces capable of counterforce, it would have to quadruple its planned investment in the MX missile, retrofit its submarines with powerful, accurate warheads, and modify the Trident to be a counterforce weapon. But if the U.S. were to do these highly expensive and "provocative" things during the mid-1980s, the Soviets could apply considerable pressure to stop them.

In order to acquire true counterforce weapons as well as active and passive defenses without excessive risks, the United States would have to decide by 1980 that war is possible and that preparations for the possibility of fighting one should begin. This would be a painful awakening. On the other hand, most Americans have come to realize that failure to improve radically American defenses will mean some kind of Soviet hegemony in the world. The debate over SALT is significant because it is widely seen as the first part of any decision about the shape of America's defenses in the 1980s and beyond. This perception is entirely correct because, although the precise terms of SALT do not prohibit the United States from making any of the above mentioned improvements—meaning it would not be legally inconsistent for the Senate to approve SALT and the building of a war-fighting capability by the same vote—a decade's experience has shown that the spirit of SALT stifles American defenses very effectively indeed.

The Soviet Union and the Carter Administration—though of course for different reasons—present SALT to the Western public in identical terms: Both ask the public not to consider what each side's forces are and are not capable of doing. Both

ask the public to overlook the fact that, under SALT, Western forces will become increasingly inferior. Rather, they ask the public to consider whether, regardless of the above, it wishes to take a step in the direction of peace by approving SALT, or in the direction of the end of mankind by rejecting it.

In order to accept the above formulation of the choice before them, the Western public would have to accept the two false assumptions which underlie it. The first of these assumptions is that modern war can have no winners, that defense is impossible, and therefore that military superiority is meaningless and may be safely disregarded. Yet we have seen that this assumption is wrong—that the Soviet Union exports it but does not accept it. We have seen that Soviet forces have been built on precisely the opposite assumption, that nuclear war can be deterred only by superior forces capable of limiting damage to one's own side and of destroying the enemy's armed forces. The technology that makes nuclear weapons all too rational exists. At the threshold of the 1980s there is no technological or military reason why any missile need be aimed at any but military targets and no reason why collateral damage to civil society resulting from the destruction of such targets should exceed the tragic devastation of previous wars. In the same period, only ideology and the tendency to wish horror away stand in the way of providing civilian populations with a defense against nuclear weapons. The Soviet Union, renowned more for its realism than for any tender feeling toward human life, is providing its people (*key* people first, of course) with civil defense. Finally, the technology of the 1980s promises effective active defenses against both bombers and ballistic missiles—*for those who want them.* These defenses would not eliminate the possibility of nuclear war, but they would radically diminish the effectiveness of all known nuclear delivery systems. Once these defenses were deployed, nations would probably turn to other offensive weapons and in turn to other defenses. It must be realized that not only is war, however terrible, a rational enterprise, but also that, given human nature, changes in weapons and tactics follow one another endlessly. Each change presents nations with new difficulties and new opportunities. But even as war is not caused by weapons in general or by any weapon in particular, no change in weapons' technology per se can either raise or eliminate the chances of major war. The

chances of war increase when aggressive powers like the Soviet Union build more and better weapons than peaceful countries such as the U.S.

The second major assumption that underlies the joint arguments of the Soviet rulers and of the Carter Administration is that the distinction between peace and modern war is paramount in human affairs and renders all other distinctions insignificant. If nuclear war is the end of mankind, so goes the argument, the reasons that might lead nations to fight lose all importance. Therefore, it does not matter if one side is fighting to enslave the other, and the other is fighting for its freedom. Distinctions between free men and totalitarians, between aggressors and victims, between benign and malignant ends, cannot be allowed to becloud the central question: How may war between the U.S. and the Soviet Union be made less likely? In U.S. practice of the past decade that question reduces itself to how may the Soviet Union's displeasure be avoided. The only meaningful consideration now is whether any act of any individual or nation makes war between the U.S. and the Soviet Union less likely or more likely. By this standard, any act by the United States—be it building a new weapon, ABM defenses or the MX missile, or sending troops to any country threatened by the Soviet Union, or failing to ratify SALT—may be judged counterproductive to American security. That is because the security of the United States is supposed to be already assured by the capacity of even a single submarine to do "unacceptable damage" to the Soviet Union, and because any attempt to achieve more than this is supposed to fuel tensions between the two superpowers and to provide points of friction that may ignite an unintentional conflagration. However, the second assumption, like the first, is the product of American intellectuals alone and is propounded by the Soviet Union exclusively for foreign consumption. As we have seen, the Soviets believe that nuclear weapons have not altered the fundamental enmity between the "working class" and its "exploiters" around the world, but rather that these weapons have increased the former's arsenal of means by which to do in the latter. They have decided that nuclear superiority can be a decisive sword in war and, in peace, a shield stout enough to cover the "working class' " ability to win revolutions and wars of liberation around the globe. The Soviets know perfectly well that unless one is willing and able to go "all the way" militarily, one will be hard

put to find the political wherewithal to conduct even diplomacy with any degree of success.

Significant numbers of American intellectuals, led by Henry Kissinger, failed to understand that they could not tell the American people that military superiority is meaningless, that safety lies in a series of thinly camouflaged retreats, and yet expect the people to support any measure meant to keep any sort of military balance. The logic of the "so what?" school of geopolitics, once accepted, is relentless. Why not abandon Israel, or Germany, as thousands of individuals who had cast their lot with the U.S. in Vietnam and in Iran were abandoned to their fates? Would it be worth the effort to protect them knowing that the Soviet Union could pour vast resources into the struggle against them, that the effort would raise the possibility of nuclear confrontation, and that all of this would surely raise political opposition at home? By the same token, why not abandon, no, first *defer* and then quietly abandon MX and space-based laser defensive systems just as the Nike X, the B-1 and the neutron bomb were abandoned? Would the increase in capability provided by these weapons really balance out the increased tensions with the USSR and the attendant rise of political opposition at home? Given these premises, this question can have but one answer regardless of the circumstances. Significant numbers of American intellectuals, who long ago lost touch with reality, failed to understand that once a democracy grants legitimacy to the proposition that safety can be had with little sacrifice, it grants an advantage in internal politics to whomever will declare that his opponents have overstated the price of safety. In defense policy, too many American intellectuals have tended to try to purchase the image of peacemakers in the present at the price of the nation's physical and moral ability to defend itself in the future.

American officials, and large numbers of "opinion-makers," again led by Henry Kissinger, regarded SALT as the centerpiece of détente. The Soviet Union agreed, but for entirely different reasons. These Americans believed that the various SALT agreements, as well as the series of commercial deals between the U.S. and the Soviet Union, would create new interests within the Soviet Establishment that would make that Establishment less capable of aggressive behavior in the world. The Soviets' view of détente varies only slightly. They believed that SALT and trade would vest a number of American officials

and businessmen with personal interests in good relations with the Soviet Union, and that this web of interests would make it more difficult for the United States to resist Soviet advances in armaments and in world politics. It appears that the Soviets took the better measure of their adversaries than did Henry Kissinger, and that they understood the dynamics of popular government better than did American officials. Because of the SALT process, and during the decade since it began, countless American politicians have built their images before the public by predicting a safer world if only the American people would not build certain weapons, withdraw from Vietnam, not plunge into Angola, not get excited about the Arabs' embargo of oil, etc. The American people listened to their leaders. At the threshold of the 1980s, however, many of those leaders recognize that the world has become less friendly to the United States and that the Soviet Union has become much, much more dangerous. The nation's interests would require that they reverse their field. But they recognize that to do so they would have to argue against themselves. Moreover, they have reason to doubt that the American people, habituated as they have become to being told that they could be safest by worrying about defense least, would listen to the exact opposite, especially from *them.* Thus, objectively, the personal interests of many politicians now runs against that of the people they are supposed to serve. A decade of SALT has created a de facto community of interest between the Soviets and whomever in the United States might wish to promise peace on the cheap.

This growing community of interest makes a mockery of promises that the United States can use every opportunity afforded by the SALT agreements to build up its forces, and makes nonsense of assurances that the U.S. will be able to force the Soviet Union to comply with the terms of the treaty. The U.S. could not exploit the meager possibilities offered by SALT II or SALT III for the same internal reasons it did not exploit the ones offered in SALT I. The U.S. could not declare outright that the Soviet Union had violated any terms of the SALT II or SALT III treaties for the same reason it never declared the Soviets had violated SALT I. The data to indicate such violations was not lacking. But to have used that data to impeach the Soviets would have impeached the sitting administration for having allowed itself to be fooled for so long, and would have forced the administration to ask for some expensive, dangerous

weapons—something which is always politically risky. On the other hand, as we have seen, the SALT process has not hindered the Soviet Union from acquiring the ability to protect itself through counterforce strikes and civil defense and will not hinder it from improving its active defenses. Indeed, SALT insured them against the risk of the American people's reaction to what they were doing. As SALT bears its fruits—a more intimidating Soviet arsenal and evermore compromised American officials—the personal incentives operating on those officials not to deny their own handiwork can only grow.

This is not to say that one cannot conceive of agreements to limit strategic arms that would benefit both the Russian and the American people. Quite the contrary is true. Both peoples would benefit were the two governments to agree to build great numbers of systems to *defend* against nuclear attack and to limit the means by which such attacks could be delivered. Such an agreement would have to allow both sides to inspect the other's facilities for the testing and production of weapons. If both sides built up formidable defenses and relatively puny offensive forces, neither would have the slightest incentive to attack. Even more significantly, if both sides contracted to structure their forces this way—and if they agreed on measures to enforce such a contract—they would thereby be giving proof of their intention not to use nuclear weapons to any advantage. There is reason to believe that Soviet leaders would never agree to such an arrangement. The reason is precisely that everything we know about them indicates unequivocally that they see the great political and military usefulness of nuclear weapons to hasten the end of the West's way of life. In addition, the Soviets would have no reason to abandon the SALT process, which has yielded them such advantage in the past decade. But, sadly, no one can be certain that the Soviets would reject such a plan, because American negotiators have never proposed any scheme of arms-control except ones based on mutual vulnerability. So, whereas the Soviets would presumably reject an argument of the conventional type because it would restrain their plans for conquest, American officials have not even suggested one because it would run afoul of their foolish private ideology.

Thus, when the American people consider a SALT treaty, they have every reason to regard it as the American negotiators' attempt to turn into reality their private dream-world of

Mutual Assured Destruction. The American people, whose will to live is unencumbered by ideology, have no reason not to react to the American negotiators' requests as the Soviets have reacted for so many years. There is no reason to believe that the "SALT-sellers," having failed to "teach" the Soviet Union the virtues of Mutual Assured Destruction, will succeed in teaching those virtues to the American people. When the amendments to the Constitution became the law of the land only if supported by two-thirds of the Senate, the Founding Fathers knew that, in most cases a two-thirds majority could be achieved only by widespread public debate. They knew that public debate is the means by which the popular view is "refined and enlarged" and the means by which the public can force its representatives to abandon what fancies they may have adopted and to reflect the popular view.

Given all this, there is no reason why the American people should not demand of their government that negotiations with the Soviet Union over strategic arms be either redirected toward lowering the United States' vulnerability to nuclear attack, or be broken off so that the United States might achieve lower vulnerability through unilateral effort.

Yet the American people cannot dismiss the ideology of MAD and the fruits of SALT quite so easily. There *is* danger, real danger, in showing a Soviet Union that has become very powerful and quite used to success that in the future its relative power will decrease and its successes will likely stop. But above all, to reject the several variations on the theme of MAD is to accept the fact, to be willing to live with the fact, that the modern world is a highly dangerous and thoroughly nasty place partly because of nuclear weapons, yes, but *chiefly* because modern totalitarian systems are more ruthless than Genghis Kahn could have been. To reject MAD is to accept the fact that living in the modern world will surely require sacrifice, and could involve tragedy.

Some of the things that America needs are clearly within America's grasp. The United States needs an honest-to-goodness military strategy to protect itself in case of war and to replace the body-count mentality that has affected the Pentagon for so long. The United States needs to decide just how it will restore the "nuclear umbrella" that once covered its allies in Europe and Asia, but which vanished when it became clear the U.S. could not even protect itself in case of war, much less

its allies. The U.S. needs to decide what kind of military forces and policy are necessary to keep the Soviet Union from winning victory after victory in the Third World. Then the United States must build the proper mixture of forces to make these decisions work. But in order to do these things, the American nation must overcome a fearsome obstacle: It has not only to discard much of the intellectual baggage accumulated since World War II—and that should not be impossible—it has also to discard the last vestiges of an innocent view of life that did not admit the constant threat of finite tragedy. In short, in order to avoid war with the Soviet Union and to survive such a war if it comes, the American nation will have to become willing to look the present danger in the eye and not flinch.

There will be no final holocaust of fire and radiation. That is physically impossible. But what is *possible* is sufficiently frightening. The ordeals of slavery and slow death that have been visited upon Russia, China, Vietnam, Cambodia, Angola, Tibet, Hungary, Cuba, by conquering communists are not figments of anyone's imagination. They happened, and they are happening, wherever communists have come to power, without even a single exception. Ragged, hungry survivors have walked, crawled and swum to tell the tale. How, ultimately, can Westerners spare themselves from such ordeals except by being able to fight, survive and win wars against the leading communist power? They cannot. To prepare for such a war lessens the chance that one will be forced to fight it. Moreover, to fight is not necessarily to die. Better defensive weapons could make war less likely and less destructive for the West. Nevertheless, there is no denying that even if the West increases its readiness, sometime in the future it may well have to fight, and to take grievous losses.

Proponents of MAD rightly accuse their opponents of saying that nuclear war may be acceptable under some circumstances. But the converse is also true, and even less appealing—that the proponents of MAD might prefer the Gulag Archipelago even to a victorious nuclear war because the latter would involve greater casualities. Unless one is willing to accept that under some circumstances he will fight in a rational manner to maximize his own chances of survival in freedom, he will avoid neither war nor slavery, and he will only deter himself from rational planning while his enemies gather the forces to defeat him.

Footnotes

Chapter 1.

1. The best of these are Daniel J. Boorstin's *The Americans* and, by way of comparison, Edward C. Banfield's *The Moral Basis of a Backward Society* (New York: 1958).
2. Positivism is an intellectual doctrine first taught in the nineteenth century by August Comte in *Cours de Philosophie Positive* (Paris: 1942). It has been interpreted and propagated in countless ways, e.g. by Max Weber and John Dewey, and has become perhaps the dominant component of modern intellectual habits. Its most recent exposition is Thomas Kuhn, *The Structure of Scientific Revolutions* (Chicago: 1974). The principal tenet of positivism is the distinction between "facts" and "values," and the contention that it is impossible to decide whether any value is preferable to any other. Therefore, positivism teaches that, in order to decide any question, one must resolve it into one or more questions of "fact."
3. Benjamin Franklin to Samuel Cooper, May 1, 1777, in Francis P. Wharton, *The Revolutionary Diplomatic Correspondence of the United States,* six volumes (Govt. Print. Office: 1889), Vol. 2, p. 313.
4. Thomas Jefferson to Thomas Leiper, June 12, 1815, in Paul L. Ford, ed., *The Works of Thomas Jefferson*, 12 vols. (New York: G. P. Putnam's Sons, 1904–05), Vol. 11, pp. 477–78.
5. For a full discussion of this question, see Paul Eidelberg, *Beyond Détente* (Chicago: Sugden, 1977). For a somewhat different inter-

pretation see James E. Dornan, Jr., "The Search for Purpose in American Foreign Policy," *The Intercollegiate Review,* Vol. 7, No. 3, Winter 1970–71, pp. 92–110; and "United States National Security Policy, Retrospect and Prospect," in James E. Dornan, Jr., ed., *United States National Security Policy in the Decade Ahead* (New York: Crane Russak and Co., Inc., 1978), pp. 267–90.

6. John Spanier, *American Foreign Policy Since World War II,* rev. ed. (New York: Fredrick A. Praeger, 1964), p. 5. Over one hundred years before Spanier, de Tocqueville, of course, had observed the fact that "democratic nations are naturally desirous of peace, and democratic armies of war."
7. *Ibid.,* p. 12.
8. James E. Dornan, Jr., untitled contributing article in "A Strategic Symposium: SALT and U.S. Defense Policy," *The Washington Quarterly,* Vol. 2, No. 1, Winter 1979, p. 71.
9. See Stanley Hoffman's perceptive *Gulliver's Troubles, Or the Setting of American Foreign Policy* (New York: McGraw-Hill Book Co., 1968), p. 180.
10. Richard Pipes, "Why the Soviet Union Thinks it Could Fight and Win a Nuclear War," *Commentary,* Vol. 64., No. 1, July 1977, p. 22.
11. Hoffman, *Gulliver's Troubles,* pp. 181–83.
12. Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations* (New York: Random House, 1957), p. 327.
13. See George H. Quester, *Deterrence Before Hiroshima: The Airpower Background of Modern Strategy* (New York: John Wiley and Sons, Inc., 1966).
14. *Ibid.,* p. 1.
15. Alexander P. de Seversky, *Victory Through Air Power* (New York: Simon and Schuster, 1942).
16. Bernard Brodie, *Strategy in the Missile Age* (Princeton, N.J.: The Princeton University Press, 1971), pp. 152–53.
17. Marquis de Custine, *Journey for Our Time* (1839) (Chicago: Gateway, 1951).
18. Karl Marx, *The German Ideology* (New York: International Publishers, 1970), p. 44.
19. New York International Publishers, 1971.
20. Bernard Brodie, ed., *The Absolute Weapon* (New York: Harcourt, Brace and Co., 1946).
21. See Richard Pipes, "Why the Soviet Union Thinks it Could Fight and Win Nuclear War," *Commentary,* Vol. 64, No. 1, July 1977, p. 24. Brodie's reply and Pipes' answer to him are in "Letters from Readers," *Commentary,* Vol. 64, No. 3, September 1977, p. 455.

22. Bernard Brodie, "The Development of a Nuclear Strategy," *International Politics,* Vol. 2, No. 4, Spring 1978, pp. 71–73.
23. Brodie, *The Absolute Weapon,* p. 30.
24. *Ibid.,* p. 40.
25. *Ibid.,* pp. 46–47.
26. *Ibid.*
27. *Ibid.,* p. 80
28. Maxwell Taylor, *The Uncertain Trumpet* (New York: Harper & Row, 1959), p. 184.
29. Dwight D. Eisenhower, "Annual Budget Message to the Congress: Fiscal Year 1955, January 21, 1954," *Public Papers of the Presidents of the United States: Dwight D. Eisenhower, 1954,* p. 117.
30. James E. King, Jr., "NATO: Genesis, Progress, Problems," in Gordon B. Turner and Richard D. Challener, eds., *National Security in the Nuclear Age* (New York: Frederick A. Praeger, 1960), p. 158.
31. Samuel P. Huntington, *The Common Defense: Strategic Programs in National Politics* (New York: Columbia University Press, 1961), p. 298.
32. John Foster Dulles, "The Evolution of Foreign Policy," address before the Council on Foreign Relations, New York, N.Y., January 12, 1954, *The Department of State Bulletin,* Vol. XXX, No. 761, January 25, 1954, pp. 107–8.
33. *Ibid.*
34. Herman S. Wolk, "The New Look in Retrospect," *Air Force Magazine,* March 1974, p. 51.
35. Huntington, *The Common Defense,* p. 65.
36. Winston Churchill, "United We Stand Secure," *15 Vital Speeches* (April 1, 1949), p. 384, quoted in *Ibid.,* p. 298.
37. Harry S. Truman "Annual Message to the Congress on the State of the Union, January 7, 1953," *Public Papers of the Presidents of the United States: Harry S. Truman, 1952–53* (1966), p. 1125.
38. Quoted in Samuel P. Huntington, *The Common Defense* (New York: Columbia University Press, 1961), p. 89.
39. Dean Acheson, "Assignment of Ground Forces of the United States to Duty in the European Area," U.S. Senate, Hearings, Committee on Foreign Relations and Committee on the Armed Services, 82nd Congress, 1st session (Washington, D.C.: Govt. Print. Office, 1951), p. 79.
40. Dwight D. Eisenhower, "Address Before the General Assembly of the United Nations on Peaceful Uses of Atomic Energy," New York City, December 8, 1953, *Public Papers of the Presidents of the United States, Dwight D. Eisenhower, 1953,* pp. 816–17, 820.
41. Winston Churchill, speech to the House of Commons, March 1, 1955. Quoted in the *New York Times,* March 2, 1955.

42. Memoirs of Harry S. Truman, *Year of Decisions,* Vol. 1 (Garden City, N.Y.: Doubleday & Co. Inc., 1955), p. 416.
43. Maj. Gen. Nikitin and Col. S. Baranov, "The Revolution in Military Affairs and Measures of the CPSU for Raising the Combat Might of the Armed Forces," *Military Thought,* No. 6, 1968, pp. 3–4.
44. Maj. Gen. Nikitin and Col. S. Baranov, *Military Thought,* No. 6, 1968, p. 5.
45. *Ibid.*
46. *Ibid.*
47. Gen. Army V. Tolubko, "Roketrye Voiska Strategicheskogo Naznachenua," *Voenno-Istorcheski Zhurnal,* No. 4, 1975, and No. 10, 1976, pp. 20–21, 54.
48. *Ibid.*
49. Khrushchev interview with Arthur Sulzberger, *New York Times,* Sept. 8, 1961, cited in Thomas W. Wolfe, *Soviet Power and Europe 1945–1970* (Baltimore: Johns Hopkins Press, 1970), p. 186.
50. Gen. Army P. Batitskiy, "Development of the Tactics and Operational Art of the Country's Air Defense (PVO) Troops," *Military Thought,* No. 10, 1967, p. 36.
51. Marshal (Aviation) S. A. Krasovskiy, ed., *Aviatsiia i Kosmonavtika SSSR* (Moscow, 1968), p. 347.
52. George F. Kennan, "The United States and the Soviet Union, 1917–1976," *Foreign Affairs,* Vol. 54, No. 4, July 1976.
53. Harriet Fast Scott, Editor's Comments on Chapter III, *Soviet Military Strategy* (translation of the Third Edition) ed. by Marshal Sokovskiy (Crane, Russak & Company, Inc., 1975), p. 118. The article quoted appeared in No. 6, 1967.
54. The speed with which numerous articles on the problem of formulating a new military doctrine and strategy for the nuclear age after Stalin's death suggests that much discussion occurred, and probably a few drafts were written, by military officers while Stalin was still alive.
55. "Diskussii o Khareketere Zakonov Voennoy Nauki," *Military Thought,* No. 4, 1955, p. 21.
56. For a typical statement on the decisiveness of such a war to terminate the war see Gen. Col. M. Lomov, *Military Thought,* No. 1, 1966.
57. Gen. Maj. K. Stepanov and Lt. Col. Ye. Rybkin, "The Nature and Types of Wars of the Modern Era," *Military Thought,* No. 2, 1968, pp. 74–75, Marshal (SU) A. A. Grechko, *Na Strazke Mira,* p. 53.
58. Contrary to the conventional wisdom, "victory" as the Soviet objective should deterrence fail has a long lineage. Several times in the period 1957–1960, Khrushchev stated that "socialism" would survive a nuclear war, but that capitalism would not. His

1960 speech to the Supreme Soviet, subsequently translated and published as a pamphlet under the title *Disarmament, the Road to Strengthening the Peace and Ensuring Friendship between Peoples,* was the one subsequently cited by the military as the political authority for "victory" and complete "defeat of the enemy" in a nuclear war. The journal of the General Staff, *Military Thought,* was making similar statements in the late 1950s. Such statements have long since become common fare throughout Soviet military literature. Three of the most authoritative monograph sources are Gen. Col. A. S. Zheltor, Lt. Col. T. R. Kondratkov, Col. E. A. Khormenko, eds., *Metodologicheskie Problemy Voennoy Teoru i Praktiki* (Moscow, 1969), pp. 143, 277, 287, 289; Gen. Col. N. A. Lomov, Gen. Maj. I. I. Anureev, Col. M. I. Galkin, *Nauchovo-Tekhnieheskiy Progress i Revoluitsiia v Volnnom Dele* (Moscow, 1973), pp. 165, 224, 273, 276; Marshal (SU) A. A. Grechko, *Boopezhennye Sily Sovetskogo Gosudarstva* (Moscow, 2nd ed., 1975), pp. 208–9. Zheltov was the Commandant of the Sevin Political-Military Academy and the book was written by political officers. Lomov and Anureev were on the faculty of the General Staff Academy and their book was written by political and line officers.

59. Gen. Maj. I. Zav'yalov, "An Answer to Opponents," *Military Thought,* No. 10, 1965, pp. 51–53. The argument with opponents did not involve these issues but a rather esoteric question of the distinction between a defensive strategy, which all rejected, and defensive operations to limit damage, which all agreed to; for a position strongly supportive to Zav'yalov see Col. Gen. Tsyganov, "Types and Forms of Combat Operations," *Military Thought,* No. 8, 1965, pp. 27–28, 32–34; Gen Maj. Kruchinin, "Contemporary Strategic Theory on the Goals and Missions of Armed Conflict," *Military Thought,* No. 10, 1963, pp. 14, 17, 18–20; Gen. Maj. N. Vasendin & Col. N. Kuznetsov, "Modern Warfare and Surprise Attack," *Military Thought,* No. 6, 1968, pp. 47–48.
60. For a sampling of line and political officers on the objective of superiority, see Col. A. Gurov, "Economics of War," *Military Thought,* No. 7, p. 7, 1965; Gen. Maj. A. Korniyenko and Capt. V. Korolev, "Economic Aspects of Soviet Military Doctrine," *Military Thought,* No. 7, 1967, p. 33: Col. S. Tyushkevich, "The Methodology for the Correlation of Forces in War," *Military Thought,* No. 6, 1969, pp. 31–32 discusses the advantages of superiority; Gen. Maj. Ye. Nikitin, "The Revolution in Military Affairs and Measures of the CPSU for Raising the Combat Might of the Armed Forces," *Military Thought,* No. 6, 1967, p. 7 stated: "No lags will be allowed in the military field, maintaining reliable military-technical superiority is a task conditioned by the inter-

national duties of the Soviet Union"; Maj. Gen. Engr. Tech. Services A. Parkhomenko, "Problems of Management in the Area of the Development of Military Material," *Military Thought,* No. 7, 1963, p. 3 says the USSR "is confidently building up a military advantage over its probable foe."

61. For discussion of the Party's military-technical policy, the following sources—mostly political officers—are representative: Cols. B. Trushin and M. Gladkov, "The Economic Foundation of the Military-Technical Policy of a Country," *Military Thought,* No. 12, 1968, pp. 23–30; Col. A. Aleksandrov, "The Bases and Principles of Soviet Military Organization," *Military Thought,* No. 12, 1967, pp. 25, 27, 29; Gen. Maj. Ye. Nikitin and Col. S. Baranov, "The Revolution in Military Affairs and Measures of the CPSU for Raising the Combat Might of the Armed Forces," *Military Thought,* No. 6, 1968, pp. 1, 2–5; Marshal (SU) A. A. Grechko, *Na Strazhe Mire i Stroitel'stva Komymunizma* (Moscow, 1971), pp. 52, 53, 56; "The 51st Anniversary of the Soviet Armed Forces," *Military Thought,* No. 2, 1969, p. 7; Gen. Army A. Yepishev, "The CPSU and the Soviet Armed Forces," *Military Thought,* No. 1, 1968, p. 9; Col. Ya Zimin, "V. I. Lenin and the Development of the Organs of the Soviet High Command," *Military Thought,* No. 10, 1967. For Party Control of the military purse see Marshal (SU) V. Sokolovskiy and Gen. Maj. Cherednichenko, "Military Strategy and its Problems," *Military Thought,* No. 10, 1968, p. 39 and footnote 5.
62. Col. M. Skovorodkin, "Some Questions on Coordination of Branches of Armed Forces in Major Operations," *Military Thought,* No. 2, 1967, pp. 36, 39; Gen. Maj. Kh Dzhelankov, "The Infliction of Deep Strikes," *Military Thought,* No. 2, 1967, pp. 42–47; Gen. Maj. N. Komkov and Col. P. Shemansky, "Certain Historic Trends in Development and Troop Control," *Military Thought,* No. 10, 1964, p. 31; Gen. Lt. G. G. Semenov, "The Content of the Concept of an Operation," *Military Thought,* No. L, 1968, pp. 92–93; Gen. Maj. S. Begunov, "The Maneuver of Forces and Material in an Offensive," *Military Thought,* No. 5, 1968; Capt. 1st Rank V'yunenko, "Naval Support of Ground Forces," *Military Thought,* No. 7, 1963, pp. 64–66, 74.
63. Like "victory" and war fighting, preemption was one of the earliest tenets of Soviet military strategy formulated in the first state of the post-Stalin debate (1953–1955) on Soviet military doctrine and strategy in the nuclear age. In Soviet strategy, preemption is not to be confused with preventive war and unprovoked surprise attack "out of the blue." Because the literal term for preemption is subject to such misinterpretation, however, the Soviets seldom have used it since the late 1950s. Instead they use the terms

"frustrate," disrupt," and "repel" a surprise attack by the West and stress the importance of surprise and seizing the initiative. The excellent treatment of this issue by Herbert S. Dinerstein in *War and the Soviet Union* (New York: Frederick A. Praeger, 1958), Chap. 6, based on *Military Thought* and open sources, is commended to any interested reader. During the 1960s several Soviet writers spelled out the meaning of "frustrating" and "repelling" an attack on the USSR as combined (offensive) counterforce and defensive (air, missile, space and civil defense) operations—Gen. Maj. Zaviyelov, *Military Thought,* No. 10, 1965, pp. 51, 53; Gen. Maj. N. Vasendir and Col. N. Kuznetsov, *Military Thought,* No. 6, 1968, p. 47; Gen. Col. M. Povaliy, "Development of Soviet Military Strategy," *Military Thought,* No. 7, 1963, p. 83; Gen. Maj. Kruchinin, *Military Thought,* No. 10, 1963, p. 14.

64. Perhaps the most politically authoritative source for selective targeting of industry is Gen. Col. Zleltov, ed., *Metodologicheskie Problemy* (previously cited), pp. 120–21. The earliest available Soviet statement on using minimum-yield weapons ("minimum expenditure of explosive power") is from Gen. Maj. V. Kruchenin, "Contemporary Strategic Theory on the Goals and Missions of Armed Conflict," *Military Thought,* No. 10, 1963, p. 17. Kruchenin was on the faculty of strategy at the General Staff Academy in the 1960s, probably as early as 1963—Gen. Army V. G. Kulikov, ed., *Akademiia General' nogo Staba* (Moscow, 1976), p. 185 and following p. 192. Most of the passages about the use of large weapons with no concern for collateral damage were removed from Marshal Sokolovskiy's (ed.) *Military Strategy* when the corrected second edition was issued in 1962—see the translation of the edition edited by Harriet Fast Scott (New York: Crane, Russak, & Company, Inc., 1975), pp. 168, 451, 460.
65. No single Soviet source has explicitly defined "victory" in this manner, but since all three of these points have been reiterated so often, the association appears justified.
66. "The 51st Anniversary of the Soviet Armed Forces," *Military Thought,* No. 2, 1969, p. 3.

Chapter 2

1. Robert S. McNamara, "U.S. Defense Policy: A Balanced Military Force," speech delivered before the Democratic Platform Committee, Washington, D. C., August 17, 1964, *Vital Speeches of the Day,* p. 710.
2. John F. Kennedy, *The Strategy of Peace* (New York: 1961), pp. 61, 66–68.
3. John F. Kennedy, "State of the Union Message to Congress,"

Documents on Disarmament (Washington,: Govt. Print. Office, 1962).

4. The statement, by Richard Rovere, is quoted in Albert Wohlstetter, "The Delicate Balance of Terror," *Foreign Affairs,* XXXVII, January 1959, p. 213.
5. Robert S. McNamara, "U. S. Defense Policy: A Balanced Military Force," speech delivered before the Democratic Platform Committee, Washington, D. C., August 17, 1964, p. 1.
6. Indeed only ten months after the Kennedy Administration had taken office, Deputy Secretary of Defense Roswell Gilpatric warned the Soviets: "Our confidence in our ability to deter Communist action or resist Communist blackmail is based upon a sober appreciation of the relative military power of the two sides . . . In short, we have a second-strike capability which is at least as extensive as what the Soviets can deliver by striking first." Roswell L. Gilpatric, speech before the Business Council, Hot Springs, Virginia, October 21, 1961 (Department of Defense, Office of Public Affairs, Release No. 1173–61), pp. 1–2. In February McNamara had admitted there was no gap "and there never had been one," but he was publicly corrected by the White House.
7. Robert S. McNamara, "Defense Arrangements of the North Atlantic Community," address at the University of Michigan, Ann Arbor, Michigan, June 16, 1962. (Department of Defense News Release No. 980–62), pp. 4–5.
8. *Ibid.*
9. Morton Halperin, "The 'No Cities' Doctrine," *The New Republic,* October 8, 1962, pp. 17–18.
10. McNamara, Democratic Platform Speech, p. 1.
11. Robert S. McNamara, "Organizing for National Security," Subcommittee on National Policy Machinery, Committee on Government Operations, U.S. Senate, Washington, D.C., 1961, I, p. 1197, quoted in William W. Kaufman, *The McNamara Strategy* (New York: Harper and Row, 1964), p. 169.
12. Richard Pipes, "Why the Soviet Union Thinks It Could Fight and Win a Nuclear War," *Commentary,* Vol. 64, No. 1., July 1977, pp. 24–25.
13. Colin Gray, "What RAND Hath Wrought," *Foreign Policy,* No. 4, Fall 1971, pp. 111–29.
14. McNamara, *Democratic Platform Speech,* p. 1.
15. U.S. Congress. Senate. Committee on Armed Services. "Statement of Secretary of Defense Robert S. McNamara Before the Senate Armed Services Committee on the Fiscal Year 1969–73 Defense Program and 1969 Defense Budget." (Washington, D.C.: U. S. Govt. Print. Off., 1968) [FY 1969 Posture Statement], p. 47.
16. *Ibid.,* pp. 49–50.

17. *Ibid.,* pp. 45–46.
18. Bernard Brodie, "Implications For Military Policy," *The Absolute Weapon: Atomic Power and World Order,* Bernard Brodie, ed. (New York: Harcourt, Brace, and Co., 1946), p. 76.
19. McNamara [FY 1969 Posture Statement], p. 46.
20. Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961–1969* (New York: Harper & Row, 1971), pp. 183–84.
21. Arnold Wolfers, "The Atomic Bomb in Soviet American Relations," *The Absolute Weapon: Atomic Power and World Order,* p. 135.
22. John Newhouse, *Cold Dawn: The Story of SALT* (New York: Holt, Rinehart and Winston, 1973), p. 176.
23. Harold Brown, "Annual Report of the Secretary of Defense to the Congress on the FY 1980 Budget, FY 1981 Authorization Request and FY 1980–1984 Defense Programs," January 25, 1979 [FY 1980 Posture Statement], p. 75.
24. *Ibid.,* p. 15.
25. Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough?* pp. 176–77.
26. *Ibid.,* p. 175.
27. McNamara [FY 1969 Posture Statement], p. 43.
28. Brown [FY 1980 Posture Statement], p. 15.
29. James E. Dornan, Jr., *Détente and the Pending Strategic Crisis* (Washington: ACU Education and Research Foundation, 1974), p. 13.
30. Glenn H. Snyder, *Deterrence and Defense: Toward A Theory of National Security* (Princeton: Princeton University Press, 1961), reprinted in Mark E. Smith III and Claude J. Johns, Jr., eds., *American Defense Policy,* 2nd ed. (Baltimore: The Johns Hopkins Press, 1968), p. 34.
31. R. J. Rummel, quoted in Ron Rosenbaum, "The Subterranean World of the Bomb," *Harper's,* March 1978, p. 101.
32. Herman Kahn, *On Thermonuclear War,* 2nd ed. (New York: The Free Press, 1969), pp. 587–88.
33. Benjamin S. Lambreth, *Selective Nuclear Options in American and Soviet Strategic Policy* (RAND Corporation, R-2034-DDRE, December 1976), p. 14., cited in Richard Pipes, "Why the Soviet Union Thinks It Could Fight and Win a Nuclear War," *Commentary,* Vol. 64, No. 1. July 1977, p. 25.
34. Enthoven and Smith, *How Much is Enough?* pp. 207–8.
35. *Ibid.,* p. 210.
36. Felix Fabian, "What's All This Fuss About PPBS," in John E. Endicott and Roy W. Stafford, Jr., eds., *American Defense Policy,*

fourth ed. (Baltimore: The Johns Hopkins University Press, 1977), p. 271.

37. Fritz E. Ermarth, "Contrasts in American and Soviet Strategic Thought," *International Security,* Fall 1978.
38. Harold Brown, "Planning Our Military Forces," *Foreign Affairs,* January 1967, pp. 281, 290.
39. James E. Dornan, Jr., untitled contributing article in "A Strategic Symposium: SALT and U. S. Defense Policy," *The Washington Quarterly,* Vol. 2, No. 1., Winter 1979, p. 69.
40. Stewart Alsop, "McNamara Thinks About the Unthinkable," *Saturday Evening Post,* December 1, 1962, p. 18.
41. Robert S. McNamara, address to editors and publisher of United Press International, San Francisco, Calif., September 18, 1967, reprinted in Mark E. Smith III and Claude J. Johns, Jr., eds., *American Defense Policy,* 2nd ed. (Baltimore: Johns Hopkins Press, 1968), p. 131.
42. *Ibid.,* pp. 131–32.
43. *Ibid.,* p. 136.
44. See Albert Wohlstetter, "Is There A Strategic Arms Race?" *Foreign Policy,* No. 15, Summer 1974, and "Is There A Strategic Arms Race? (II) Rivals But No 'Race,' " *Foreign Policy,* No. 16, Fall 1974.
45. Interview with Robert S. McNamara, "Is Russia Slowing Down in Arms Race," *U.S. News and World Report,* April 12, 1965, p. 52.
46. Robert S. McNamara, San Francisco speech, p. 130.
47. *Ibid.,* p. 133.

Chapter 3

1. Marshall N. Krylov, "The Nuclear Missile Shield of the Soviet State," *Military Thought,* No. 11, 1967. Krylov's statement evidently reflected the operational availability of the early-warning radars. The decision to incorporate launch-on-warning when the radars became available probably was made several years earlier —see the comments by Col. Gen. Tsyganov in "Types and Forms of Combat Operations," *Military Thought,* No. 8, 1965, p. 28.
2. W. T. Lee, "The Politico-Military-Industrial Complex of the USSR," *Journal of International Affairs,* Vol. 26, No. 1, 1972, pp. 76–77.
3. John M. Collins, "American and Soviet Armed Services, Strengths Compared, 1970–76," *Congressional Record,* Vol. 123, No. 135-Part III, August 5, 1977, p. S14072; idem, *American and Soviet Military Trends Since the Cuban Missile Crisis* (Washington, D.C.: The Center for Strategic and International Studies, Georgetown University, 1978), p. 93.

4. *Ibid.*
5. Lee, *Journal of International Affairs,* Vol. 26, No. 1, 1972, pp. 81–82.
6. The Soviets apparently tested the MIRV concept with two space shots, using the SS-6 as the booster, in 1964. Each space launch placed two spacecraft in different orbits—Charles S. Sheldon, et al, *Soviet Space Programs, 1966–1970,* Staff Report for the Committee on Aeronautical and Space Sciences of the United States Senate (Washington, D.C.: Govt. Print. Office, Dec. 9, 1971), p. 168. The SS-9 mod 4 was an unsuccessful attempt to adapt the MRV concept to the counterforce mission. Michael Getler, "Russian Missile Faulted," *Washington Post,* June 17, 1971. Since the SS-9 mod 4 was first flight tested in August 1968—Secretary of Defense Melvin Laird's FY 1973 Posture Statement, p. 56—fabrication of mod 4 flight test hardware must have begun no later than about mid-1966 with mockups, models and design work extending back to 1963–64. Flight testing of the current family of Soviet MIRVed missiles began in March 1972—Secretary of Defense James R. Schlesinger, United States Congress, Hearing before the Subcommittee on Arms Control, International Law and Organization of the Committee on Foreign Relations, Ninety-third Congress, Second Session, "U.S. and Soviet Strategic Doctrine and Military Policies," March 4, 1974 (Washington, D.C.: Govt. Print. Office, 1974) p. 4—hence fabrication of flight test hardware must have begun no later than early 1969. This pushes design and component development back to the mid-1960s at least. Minuteman III R&D was approved and funded in 1966 and production was funded in FY 1969.
7. Collins, *American & Soviet Military Trends,* p. 144–47.
8. The SA-10 probably is much more effective against bombers at low altitude than any previous (PVO Strany) SAM but its effectiveness against SRAM probably will be a matter of uncertainty and debate for some time, as will its effectiveness against the new U.S. strategic cruise missiles. However it is difficult to believe that a system so long in development would not have been designed to counter SRAM, in which case it should be equally or more effective against cruise missiles. And any SAM that is effective against SRAM should have some capability—self-defense at least—against strategic ballistic missile RVs. According to the CIA, the SA-10 will be deployed in the early 1980s—CIA, SR 78-10121, "Estimated Soviet Defense Spending, Trends and Prospects," June 1978, p. 12
9. Cited by Thomas W. Wolfe, *Soviet Power and Europe, 1945–1970* (Baltimore and London: The Johns Hopkins University Press, 1970), p. 186, footnote 113.

10. Gen. Army P. Batitskiy, "Development of the Tactics and Operational Art of the Country's Air Defense (PVO) Troops," *Military Thought,* No. 10, 1967, p. 36.
11. Wolfe, *Soviet Power & Europe,* pp. 187–88.
12. Wolfe, *Soviet Power and Europe,* p. 187 and footnote 117.
13. Wolfe, *Soviet Power and Europe,* p. 438 reports the first public U.S. "cognizance" of the Soviet deployment by Secretary of Defense McNamara in November 1966.
14. *Ibid.,* p. 187. On the other hand, Khrushchev was much given to rattling his missiles in public.
15. Cols. I. Zheltikov and V. Igolkin, "Certain Tendencies in the Development of Anti-Aircraft and Anti-Rocket Defense," *Military Thought,* No. 8, 1964, p. 64.
16. Engr. Col. V. Bezzabotnov, "The U.S. Limited ABM System 'Sentinel'," *Military Thought,* No. 5, 1968, pp. 72–74; Col. Y. Kalyugin, "The Nature of Combat Operations of Air Defense Troops," *Military Thought,* No. 1, 1968, pp. 47–48.
17. Bezzabotnov, *Military Thought,* No. 5, 1968, p. 72 appears to have the erroneous notion that NIKE-X was not designed to handle MIRVs. Perhaps this was understandable confusion between NIKE-X design and the light area defense concept underlying the "Sentinel" deployment.
18. Bholtikov and Igolkin, *Military Thought,* No. 8, 1964, pp. 64–65, Defense Secretary McNamara announced the deployment of a "light" version of the Nike-X system designed to cope with the prospective threat from the Chinese People's Republic, any accidental or unauthorized attacks from the USSR, or any future "n^{th} country" threat in Sept. 1964.
19. "The 1970 Defense Budget and Defense Program for Fiscal Years 1970–74," statement by Secretary of Defense Clifford, p. 43 gives the Soviet nuclear-powered SLBM force as 45 launchers as of Sept. 1968. This total included the early H-class launchers. According to Secretary Clifford's statement (p. 43), the first Y-class SSBN became operational in 1968.
20. The SS-N-X-18 with three RVs may be deployed soon but the "Typhoon" SLBM has not yet been tested.
21. Developments noted in this and preceding two paragraphs have been reported in a variety of sources, principally, Collins, *American and Soviet Armed Services, Jane's Fighting Ships,* and *Jane's All the World's Aircraft.*
22. Admiral N. Klarlamov, "Some Trends in the Development of Navies," *Military Thought,* No. 10, 1967, p. 66; Admiral A. Chabanenko, "Combat Rocket Carrying Atomic Submarines," *Military Thought,* No. 12, 1967, p. 47.
23. *Jane's Fighting Ships,* indicates that the Alpha class represents

some type of experimental boat that failed. This judgment may be premature.

24. Kharlamov (*Military Thought,* No. 10, 1967, pp. 68–69) and Chabaneko (*Military Thought,* No. 12, 1967, pp. 45–46) saw a great future in ASW for surface ships carrying not only helicopters but also VTOL aircraft—thus anticipating the Kiev class ASW carrier. They also foresaw much promise in various kinds of surface-affects vehicles including large ships of the type represented by the "Caspian Sea Monster."
25. N. I. Akimov, ed., *Civil Defense* (Moscow, 1969, Oak Ridge Laboratory translation), p. 68.
26. For informative articles that have a realistic tone, see Maj. V. Olshevskiy, "Some Economic Aspects of Civil Defense," *Military Thought,* No. 12, 1967; and W. Col. Ye. Galitskiy, "The Coordination of Civil Defense with Units of the Armed Forces," *Military Thought,* No. 4, 1968.
27. Balitskiy, *Military Thought,* No. 4, 1968, pp. 50–51.
28. Gen. Maj. A. Korniyenko, "The Economic Bases of the State's Military Power," *Military Thought,* No. 8, 1968, pp. 2, 3. Korniyenko was in the Department of Military Economics (probably its head) of the Lenin Political Military academy at the time.

Chapter 4

1. James R. Schlesinger, "U.S.–USSR Strategic Policies," statement by Secretary of Defense Schlesinger at the United States Congress, Hearing before the Subcommittee on Arms Control, International Law and Organization of the Committee on Foreign Relations, United States Senate, March 4, 1974 (Washington, D.C.: Govt. Print. Office, 1974), p. 8.
2. Richard J. Whalen, "The Shifting Equation of Nuclear Defense," *Fortune,* June 1, 1967, pp. 85–183.

Chapter 5

1. "The quantity of gamma radiation (or X rays) which will give rise to the formation of 2.08×10^9 ion pairs per cubic centimeter of dry air." The effects of one roentgen on animal organisms are called rads.
2. Herman Kahn, *On Thermonuclear War* (New York: Free Press, 1969), pp. 40–95.
3. Figures on effects of nuclear weapons are from *The Effects of Nuclear Weapons* (U.S. Atomic Energy Commission, 1962), esp. pp. 627–623, and from P. J. Begorov, *Civil Defense (A Soviet View)* trans. and ed. by Leon Gouré (Washington, D.C.: Govt. Print. Office, 1976).

4. Donald H. Rumsfeld, *Annual Defense Department Report* FY 1978, p. 68.
5. Footnote 3, *Supra.*
6. T. K. Jones and Scott Thompson, "Central War and Civil Defense," *Orbis,* Fall 1978, pp. 681–712.
7. *Ibid.,* p. 11.
8. *Ibid.*
9. Congressional Budget Office, "U.S. Strategic Forces, Deterrence Policy and Procurement Issues," Washington, D.C.: April 1977.
10. See Leon Gouré, *Shelters in Soviet War Survival Strategy* (Coral Gables, Florida: Advanced International Studies Institute, University of Miami, 1978).
11. See Kosta Tsipis, *Nuclear Explosions' Effects on Missile Silos* (Cambridge, Mass: MIT Center for International Relations, Feb. 1978), for difficulties attendant to the destruction of superhardened silos.
12. Clarence Robinson, Jr., "Soviets Boost ICBM Accuracy," *Aviation Week and Space Technology,* April 3, 1978, pp. 14–16.
13. "U.S. and Soviet Strategic Capabilities Through the mid-1980s," paper by the U.S. Arms Control and Disarmament Agency (ACDA) published in September, 1978, is unclassified. It parallels closely a similar classified study done by the CIA. In testimony before Congress a spokesman from the Department of Defense noted the ACDA study's bias, and declared that the DOD. does not share it. U.S. House of Representatives, 95th Congress, Second Session, Committee on Armed Services, Hearing Transcript of Oct. 3, 1978, p. 195. Nevertheless, the DOD. Annual Report for Fiscal year 1980, p. 115, contains a comparison of Soviet and American strategic forces which makes no distinction between those which are capable of prompt, hard-target kill and those which are not.
14. William J. Perry, "U.S. Cruise Missile Briefing," *Defense and Foreign Affairs Daily,* Nov. 20, 1978, p. 1.

Chapter 6

1. See, for example, American Security Council, "The Changing Strategic Military Balance U.S.A. vs U.S.S.R." Washington, D. C.: June 1967.
2. John Newhouse, *Cold Dawn: The Story of SALT* (New York: Holt, Rinehart and Winston, 1973), p. 47.
3. See U. S. Arms Control and Disarmament Agency "Arms Control and Disarmament Agreements, 1959–1972," Washington, D.C., June 1, 1972, for the text of these agreements, including the SALT I accords.
4. See Richard Nixon, "U. S. Foreign Policy for the 1970's: A New

Strategy for Peace," a report to the Congress by Richard Nixon, (Washington, D.C.: U. S. Govt. Print. Office, February 18, 1970), especially pp. 1–3 and succeeding "State of the World" message. For an early formulation of the Nixon Doctrine, which was given official articulation on Guam on July 25, 1969, see Richard M. Nixon, "Asia after Viet Nam," *Foreign Affairs,* XLVI (October 1967), pp. 111–125.

5. Quoted in Chalmers Roberts, "The Road to Moscow," in Mason Willrich and John B. Rhinelander, eds., *SALT: The Moscow Agreements and Beyond* (New York: The Free Press, 1974), p. 23.
6. National Strategy Committee of the American Security Council, "The ABM and the Changed Strategic Military Balance: U.S.A. vs. USSR," (Washington, D. C.: May 1969., p. 33.
7. *New York Times,* April 26, 1969, p. 1. cited in *Ibid.*
8. Newhouse, *Cold Dawn,* p. 21.
9. James E. Dornan, Jr., "Strategic Rocket Forces," in *The Soviet War Machine* (New York: Chartwell Books, Inc., 1976), pp. 208, 210. In analyzing charts of Soviet missile strength before the Senate Armed Services Committee on March 20, 1965, Deputy Defense Secretary David Packard stated:

> As you can see, parity has been reached. The smaller Soviet missiles represented in this area of the chart make up the larger part of the totals. Those large missiles [SS-9] that have the accuracy and yield to be a threat to our Minuteman forces are projected on the larger part of the figure. They became operational in 1966 and their inventory has grown . . . These are the large missiles on which the Soviets have flown multiple warheads. Thus, this force potentially represents a severe threat to our Minuteman. Quoted in "The ABM and the Changed Strategic Military Balance, USA vs. USSR," p. 34.

10. "American Security Council, The ABM and the Changed Strategic Military Balance, USA vs. USSR," p. 51.
11. Article by Alfred Friendly, *Washington Post,* April 11, 1969.
12. Alton Frye, "U.S. Decision making for SALT," in Willrich and Rhinelander, *SALT,* p. 80.
13. See Marvin and Bernard Kalb, *Kissinger* (New York: Dell Publishing Company, 1974), pp. 129–130.
14. Frye, p. 97.
15. See Newhouse, *Cold Dawn;* Willrich and Rhinelander, *SALT;* and John H. Barton and Lawrence D. Weiler, eds., *International*

Arms Control, Issues and Agreements (Stanford: Stanford University Press, 1976).

16. Henry M. Jackson, speech before the Military Committee of the North Atlantic Assembly, Bonn, West Germany, in "Senator Jackson Reviews Terms of SALT I," *Aviation Week and Space Technology,* December 11, 1972, p. 54.
17. SALT I provided for a "standstill agreement" which applied the freeze beginning at the time of signing. The number of U. S. ICBMs had, of course, been frozen since 1967. An agreed interpretation emphasized that Soviet ICBM launchers under "active" construction could continue.
18. Cruise missile submarines are not covered by the agreement.
19. John B. Rhinelander, "The Salt I Agreements," in Willrich and Rhinelander, *SALT,* p. 149. Rhinelander was legal counsel to the U. S. SALT I delegation.
20. See, for example, "Where Have You Been, Senators," *Wall Street Journal,* February 2, 1979.
21. In addition to "Arms Control and Disarmament Agreements, 1959–1972," cited above, the texts of the SALT I accords can be found in Willrich and Rhinelander, *SALT.* See appendix 3, pp. 309–12, for text of the Basic Principles of Relations.
22. Public Law 92–448, 92nd Congress, House Joint Resolution 1227, September 30, 1972. See Willrich and Rhinelander, *SALT,* appendix 4, pp. 313–15.
23. See especially the recent *Economist* interview of Dr. Kissinger. "Kissinger's Critique," *The Economist* (London), February 3, 1979.
24. See James E. Dornan, Jr., *Détente and the Pending Strategic Crisis* (Washington, D.C.: ACU Education and Research Foundation, 1974), especially pp. 10–15.
25. Quoted in S. T. Cohen and E. F. Black, "SALT and the Public Law," *National Review,* January 20, 1978, p. 83.
26. These and several following quotes are from arguments made by Raymond L. Garthoff, "SALT I: An Evaluation," *World Politics,* Vol. 31, October 1978, pp. 1–25. Garthoff was an influential senior adviser to the SALT I negotiations. There is widespread speculation that he was the source of the "closely held" information that appeared in John Newhouse's warmly pro-SALT account, *Cold Dawn.*
27. *Ibid.* Garthoff also cites the contribution made by the mutual acceptance of NTM to the emergence of "incipient collaborative strategic planning" between the two great powers. See Garthoff, *World Politics,* October 1978, p. 19.
28. Frye in Willrich and Rhinelander, *SALT,* p. 99.

29. Dr. Henry A. Kissinger, press conference, May 26–27, 1972; *Washington Post,* August 16, 1972.
30. Dornan, *Dètente and the Pending Strategic Crisis,* p. 11.
31. Kissinger, press conference, May 26–27, 1972.
32. Kissinger, *The Economist,* February 3, 1979, pp. 17–18.
33. Garthoff, *World Politics,* October 1978, p. 18.
34. *Ibid.*
35. Quoted in Dornan, *Détente and the Pending Strategic Crisis,* p. 11.
36. John Erickson, "Soviet Military Power," *Strategic Review,* I, Spring 1973, Special Supplement, p. ix.
37. See David S. Sullivan, "The Legacy of SALT I: Soviet Deception and U.S. Retreat," *Strategic Review,* Winter 1979, p. 27.
38. Jackson, *Aviation Week and Space Technology,* December 11, 1972, p. 53.
39. Cohen and Black, *National Review,* January 20, 1978, p. 83.
40. Cited in Amoretta Hoeber, Patrick Packer, and William Van Cleave, "Reality and SALT," *The Journal of International Relations,* Summer 1977, p. 5.
41. Henry A. Kissinger, White House Congressional briefing, June 15, 1972, cited in Sullivan, *Strategic Review,* Winter 1979, p. 39.
42. Kissinger, *The Economist,* February 3, 1979, pp. 17–18.
43. Admiral Elmo R. Zumwalt, Jr., USN (Ret.), *On Watch* (New York: New York Times Book Co., 1976), pp. 319, 390–91.
44. The quote is from Fred Charles Ikle, *How Nations Negotiate* quoted in Colin S. Gray, "SALT: Time to Quit," *Strategic Review,* Vol. 4, No. 4, Fall 1976, p. 15.
45. See, for example, Dornan, *Détente and the Pending Strategic Crisis,* pp. 18–19.
46. Testimony of Admiral Thomas H. Moorer before the Senate Armed Services Committee quoted in Arnold C. Weinstein, "Joint Chiefs Warn of Strategic Decline," *Aviation Week and Space Technology,* June 26, 1972, p. 188.
47. Sullivan, *Strategic Review,* Winter 1979, p. 38.
48. Francis P. Hoeber, David B. Kassing, and William Schneider, Jr., *Arms, Men and Military Budgets, Issues for Fiscal Year 1979* (New York: Crane Russak and Co., Inc., 1978).
49. Colin S. Gray, "SALT I Aftermath: Have the Soviets Been Cheating?" *Air Force Magazine,* November 1975.
50. U.S. Congress, Senate, Testimony of William R. Van Cleave, "International Negotiations," Hearings before the Subcommittee on National Security and International Operation (Jackson Subcommittee), Part 7, 92nd Congress, 2nd Session, July 25, 1972, p. 200.
51. Paul H. Nitze, Speech Before the Staff of the Los Alamos, N.M. Scientific Laboratory in *Aviation Week & Space Technology,* February 17, 1975, p. 43.

52. Jackson, *Aviation Week & Space Technology,* December 11, 1972, p. 54.
53. Newhouse, *Cold Dawn,* p. 249.
54. Nitze, *Aviation Week and Space Technology,* February 17, 1975, p. 43.
55. *Ibid.,* p. 42.
56. Leslie H. Gelb, "Questions and Answers on the Vladivostok Strategic Arms Deal," *New York Times,* December 6, 1974.
57. Interview with Harold Brown, "Behind the Soviet Buildup Lurks the Question of Why," *San Diego Union,* January 14, 1979, p. C5.
58. Quoted in George F. Will, "The Administration's Unpredictable Voice," *Washington Post,* February 22, 1979, p. A17.
59. Walter Slocombe, " 'Promising Reasonable Arms Accord,' " *Washington Post,* December 16, 1974.
60. Gen. Maj. of Engr-Tech Services I. Anureyev, "Determining the Correlation of Forces in Terms of Nuclear Weapons," *Military Thought,* No. 6, 1967. Gen. Anureyev has been one of the senior research analysts and instructors in the General Staff Academy for many years—*Akademiia General'nogo Shtaba* (M. 1976), p. 145—and is the author of several books and the article on operations research in Vol. 3 of the *Sovestskaia Voennais Entsiklopediia,* pp. 619–21.

Chapter 7

1. The technical questions that attend the debate over the comparison of U.S. and Soviet forces are complex, arcane and occasionally beyond the level of the lay reader. MAD supporters have usually argued that it is the number of warheads that matter while accusing those opposed to SALT of an overconcern with numbers of launchers and the megatonnage of weapons. In fact, the effectiveness of the American strategic force must be seen both in terms of what the Soviets could do to the U.S. and what the U.S., in turn, could do to the Soviets to prevent or limit the damage that they could do the U. S. Such a comparison would involve a number of these parameters. With regard to mathematical formula, in general it will suffice to note that the "lethality" (K, the probability that a warhead will destroy a given target) is directly proportional to the two-thirds power of the yield (the nuclear blast expressed in thousands or millions of tons of TNT) and inversely proportional to the square of the accuracy (expressed in nautical miles and based on CEP, an old artillery concept which measures the radius of a circle drawn around the 50 percent of the weapons which land closest to a given target). The formula is $K = \frac{Y^{\frac{2}{3}}}{(CEP)^2}$. For a complete discussion of the technical calculations see Lynn E. Davis and Warner R. Schilling, "All You Ever Wanted to Know

About MIRV and ICBM Calculations But Were Not Cleared to Ask," *Journal of Conflict Resolution,* Vol. 17. No. 2., June 1973, pp. 207–43, and Thomas A. Brown, "Missile Accuracy and Strategic Lethality," *Survival,* Vol. XVIII, No. 2., March/April 1976.

2. The figures listed were developed from a number of sources, including *The Military Balance,* years 1972–1978; The International Institute for Strategic Studies, London; *Janes Weapons Systems;* and James E. Dornan, Jr., Consultant, *The U.S. War-Machine* (New York: Crown Publishers, Inc., 1978).
3. Secretary of Defense Harold Brown, "Department of Defense Annual Report, Fiscal Year 1980," report to the Congress on the FY 1980 Budget, FY 1981 Authorization Request and FY 1980–1984 Defense Programs. Washington, D.C.: January 25, 1979, especially pp. 116–22.
4. Secretary of Defense Harold Brown, "Annual Report, FY 1980," p. 117, presents trends in vulnerability of Minuteman very similar to those forecast in the mid-1960s. However it now seems that even these "pessimistic" forecasts of the late 1960s underestimated soviet performance by 3 to 5 percent. The forecasts, which in their time were ridiculed, nevertheless did identify the thrust of Soviet efforts quite accurately.
5. Charles W. Corddry in the *Baltimore Sun,* February 9, 1979.
6. CIA: "Estimated Soviet Defense Spending: Trends and Prospects," SR78–10121, June 1978, p. 12.
7. General George S. Brown, FY 1978 Posture Statement, p. 27.
8. For the advantages of such an SSN see Adm. A. Chabenenks, "Combat Rocket Carrying Atomic Submarines," *Military Thought,* No. 12, 1967, and Adm. N. Kharlamor, "Some Trends in the Development of Navies," *Military Thought,* No. 10, 1967, pp. 66–67.
9. John J. Fialka, "Soviets Apparently Building a Nuclear Carrier," *Washington Star,* March 1979.
10. Henry S. Bradsher, "Soviet ABM Defense Step-up Has Pentegon Concerned," *Washington Star,* February 2, 1978.
11. William T. Lee, "Soviet Defense Expenditures," *Osteuropa Wirtschaft,* December 1977, p. 288.
12. Lee, *USSR Gross National Product.*
13. In the 1980 projection of the GNP accounts, defense is the difference between the projection of total GNP and the sum of the other components. Performance thus far indicates that GNP and components, except defense, will fall on the low side of the range.

Chapter 9

1. "Soviet Civil Defense," CIA Report N1 78–10003, July 1978.
2. For an enlightening account of how such secret information

becomes public, see Robert G. Kaiser, "SALT Talks: Leaking Toward Armageddon?" *MORE,* February 1978.

3. Multiple Reentry Vehicles (MRVs) that are not independently targetable are not limited. These include 160 U.S. Polaris A-3 SLBMs and certain versions of the Soviet SS-9 and SS-11.
4. See U.S. Congress, House Committee on Armed Services, "Report on the Panel on the Strategic Arms Limitation Talks and the Comprehensive Test Ban Treaty of the Intelligence and Military Application of the Nuclear Energy Subcommittee," Ninety-fifth Congress, 2nd Session, December 23, 1978, p. 9.
5. It is more than a little suggestive that the technique of distinguishing the mission and capability of a bomber by means of small external differences that in no way impede its ability to deliver bombs in wartime has FROD as its acronym.
6. See James E. Dornan, Jr., "SALT and SLCMs: The Asymmetrical Equation," *Sea Power,* Vol. 20, No. 8, August 1977.
7. Paul H. Nitze, "Current SALT II Negotiating Posture" (mimeographed), March 6, 1979, p. 5.
8. *Ibid.*

Chapter 10

1. Department of State Special Report, "The Strategic Arms Limitation Talks," July 1978.
2. David Linebaugh, *Christian Science Monitor,* April 18, 1979.
3. Stephen Rosenfeld, *Washington Post,* November 3, 1978.
4. John Newhouse, *Cold Dawn* (New York: Holt, Rinehart and Winston, 1973), p. 21.