The United States bases its security on the Mutual Assured Destruction theory—each side holds the other's cities hostage against nuclear attack.

Strategic Arms Control

Last spring, President Carter's surprise proposals for a deep cut in both U.S. and Soviet strategic nuclear forces got a sharp rebuff from Moscow. However, the bilateral Strategic Arms Limitation Talks (SALT), begun in 1969, have continued in Geneva, and once again Americans face the complexities inherent in reaching an agreement with the Soviet Union on curbing nuclear weapons. Here, historian Samuel Wells traces U.S. policy on strategic nuclear matters back to 1945; scholar-diplomat Raymond Garthoff discusses lessons learned during his SALT experience; political scientist Jack Snyder analyzes conflicting U.S. explanations of Soviet strategic moves; and theorist Colin Gray examines the basis of the "American" approach to arms control.

AMERICA AND THE "MAD" WORLD

by Samuel F. Wells, Jr.

Technology has infatuated the American people for at least a hundred years, but only in the 1970s have significant portions of society begun to raise questions about its costs in energy, about environmental damage, and unexplored alternatives. Nuclear weapons are surely the most deadly product of that love affair. Since the late 1940s, the United States has based its security overwhelmingly on atomic and hydrogen warheads. Could we have prevented a nuclear arms race with the Soviet Union? Probably not—but American leaders could

have taken steps, despite the lack of Soviet cooperation, to reduce reliance on nuclear weapons and limit the opportunities for nuclear proliferation. Why this was never done makes a complex and tragic story.

The Era of Nuclear Monopoly, 1945–49

The United States initiated the atomic age on the premise that nuclear weapons required no special conditions or constraints in their use. Franklin D. Roosevelt ordered the development of an atomic bomb in 1941, convinced that Nazi scientists were engaged in a similar effort. He continued the crash program even after it became clear that Germany had abandoned its research. When word of the first successful atomic explosion reached President Harry Truman at the Potsdam Conference, there was little debate about whether to use the awesome weapon against Japan. President Truman did not warn the Japanese or even inform all the Allied leaders about the new weapon. Then, on August 6, 1945, "Little Boy" exploded over Hiroshima, taking 70,000 lives. "Fat Man" fell on Nagasaki three days later, killing another 40,000 people.

Neither atomic attack killed more Japanese than the 84,000 who died in the firebombing of Tokyo the previous March 9, but they led the Emperor to intervene in the government debate and tip the scales in favor of immediate surrender. The American people and their leaders rejoiced at the end of the war in the Pacific and generally approved the use of the new weapon, but, as wartime attitudes dissipated, questions about the morality and usefulness of atomic weapons began to be heard.

Some critics, like radical author Dwight Macdonald, saw the bomb as further proof of the erosion of individual responsibility, the "decline to barbarism" provoked by the en-

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croachment of science into human affairs. Many scientists, guilty about their role in unleashing this new form of destruction and concerned about its future uses, worked to educate the public about the dangers inherent in the use and testing of nuclear weapons.

Army and Navy leaders believed the A-bomb gave the United States a significant advantage, although they resisted incorporating it into their doctrine and strategic plans, in part because it accorded the primary role to the Air Force. Only a few senior officials, notably Secretary of State James F. Brynes, hoped to use the nuclear monopoly to America's diplomatic advantage. Most political leaders, including President Truman, viewed the bomb as an ace in the hole, which they hoped would never have to be used again.

Arms Control Without Risk

By the end of 1945, there was widespread agreement among American government officials and opinion leaders on the need for international control of atomic energy. Washington assumed that the Soviet Union was developing nuclear weapons, and the search for a form of control that was both enforceable and acceptable to the Soviets quickly became the major issue. President Truman met in Washington in November 1945 with Prime Ministers Clement Attlee of Great Britain and Mackenzie King of Canada and agreed to work within the United Nations to ensure the use of atomic energy solely for peaceful purposes and to outlaw nuclear weapons with appropriate safeguards.

Drawing on the work of a committee headed by Under Secretary of State Dean Acheson and David Lilienthal, Bernard Baruch presented the American program for international control to the United Nations Atomic Energy Commission in June 1946. Under the Baruch Plan, the United States proposed that all existing nuclear weapons be destroyed, that no further bombs be made, and that all information relating to the production and use of atomic energy be turned over to a proposed international agency. Steps toward nuclear disarmament would occur by stages after acceptance of a treaty that established a system of inspection and control, including sanctions that could be voted by a majority of the UN Security Council and were not subject to veto.

The Soviet Union, not surprisingly, rejected the Baruch Plan. The Russians were years away from development of their own atomic bomb and even further from a reliable

delivery system suitable for an attack against the United States. From Moscow's perspective, it was totally unacceptable to open their closed society to an inspection system and give up their veto in the Security Council before the United States had disposed of its weapons. The Soviet representatives responded with a proposal to destroy all atomic bombs first and *then* create a system of control, an arrangement that would have accorded them military predominance, especially in manpower, far superior to that of the demobilized West.

The United States refused to consider the Soviet proposal, thereby creating a deadlock in arms negotiations that would last until 1955. The sterile debate over whether disarmament or controls should come first continued; without a willingness on either side to make basic concessions, the discussions degenerated into a propaganda contest.

An Atomic Strategy

Washington moved toward greater reliance on atomic weapons for U.S. defense when confronted with both a Soviet threat of growing dimensions (Russia totally dominated its neighbors in Eastern Europe and occupied North Korea) and domestic pressures to reduce military manpower and balance the budget. During 1947, the administration advanced the Truman Doctrine and the Marshall Plan as elements of a policy of containment of Soviet expansion by political and economic means.* Recurrent crises in Berlin and a Communist coup in Czechoslovakia in the spring of 1948 persuaded many American officials that a more forceful response to the Russians would soon be necessary.

In this atmosphere, the U.S. Joint Chiefs of Staff in May 1948 approved the first emergency war plan of the postwar period. Codenamed Halfmoon, this plan postulated that the Soviet Union would initiate a war with concurrent offensives in Europe, the Middle East, and Asia and called for the United States to respond with a devastating A-bomb attack on more than 20 Russian cities within the first two months of the war.

Before the operational plans for Halfmoon could be completed, the Soviet blockade of the western zones of occupied Berlin in late June 1948 raised serious questions about Ameri-

*The Truman Doctrine, announced March 17, 1947, offered U.S. assistance in freeing "peoples who are resisting attempted subjugation by armed minorities or by outside pressures." The Marshall Plan, named for Secretary of State George C. Marshall and made public June 5, 1947, offered economic aid to all European countries willing to cooperate with others in helping themselves. The Soviet Union and Eastern Europe were included in the plan but spurned it.

can military capabilities. Several of the President's top civilian advisers wanted to adopt a tough stance, but the Joint Chiefs pointed out the inability of American conventional forces to break the blockade as well as the lack of effective atomic power. At that time, fewer than 40 B-29 bombers were able to carry the unwieldy nuclear weapons; the atomic stockpile contained only a slightly larger number of bombs, many of which were later discovered to be defective and unusable; and there were neither bombs nor delivery aircraft located outside the United States and within range of the Soviet Union.

The Berlin blockade highlighted the nation's weak and uncoordinated postwar defense posture; it convinced the President that the Pentagon would have to make better use of its resources. Even before his surprise re-election in November 1948, Truman took steps to ensure greater military preparedness and to end interservice squabbling over appropriations by proposing a tight defense budget with a $15 billion ceiling for the coming fiscal year.

The Push of Technology

The combination of budget pressures and the availability of new technology caused the United States to adopt an atomic strategy. The success of the 1948 atomic tests promised a large stockpile of new weapons, which were cheaper, smaller, had a wide range of destructive force, and used much less fissionable material than the original A-bombs. At the same time, new long-range B-36 and B-50 bombers became operational, and the Air Force perfected new techniques of inflight refueling. The military, unable to match the immense Soviet ground forces, concluded that an air-delivered atomic offensive was the only adequate means of defense within the economic limits imposed by the President. NATO also fitted into this strategic plan, with America's European allies providing the forward bases needed for strikes against the Soviet Union. By mid-1949, the United States was entrusting its basic security to nuclear weapons capable of being delivered from European bases by the bomber crews of the Strategic Air Command (SAC).

Just as this atomic strategy matured, the United States lost its nuclear monopoly. The first Soviet atomic test in August 1949 signaled a new phase of the Cold War. For the first time since becoming a great power in the 1890s, the United States was vulnerable to strategic bombardment.

In response to this new Soviet capability, the President called for a study on the advisability of building a fusion, or hydrogen, bomb. Senior officials rejected the arguments of scientists like J. Robert Oppenheimer and diplomats like George F. Kennan that a superbomb would not increase American security. Convinced by hostile Russian behavior that no reliable arms limitation agreement on nuclear weapons could be reached with the Soviets, Truman approved an accelerated research program to determine the scientific feasibility of a fusion bomb and, as a concession to critics of the H-bomb proposal, he ordered a broad review of basic U.S. national security policy in light of the new Soviet nuclear capabilities.

The review group, under Paul H. Nitze, then director of the Policy Planning Staff at the State Department, reported to the National Security Council (NSC) in April 1950. In the study known as NSC 68, Nitze and his colleagues argued that the United States should strengthen its defenses and prepare for a time of "maximum danger" from the Soviet Union in the year 1954. Truman did not endorse the study immediately. While agreeing that Soviet-American relations were headed for difficult times, he was suspicious of a large military build-up and wanted to know how much the study's recommendations would cost. Before the agencies and departments could provide an answer, the outbreak of war in Korea made the question moot.

The Era of Massive Retaliation, 1950-59

The North Korean attack of June 25, 1950, destroyed the Truman administration's resistance to increased military spending and provoked a significant escalation of the Cold War. Assuming the North Korean offensive to be directed from Moscow (the Soviet Union had equipped the North Korean forces and approved an attack but had expected it to come later in the summer), American officials viewed the invasion as concrete evidence of Soviet aggressive intent and quickly decided to resist with force this probe of Western will. Truman ordered U.S. ground troops into South Korea, and spending for defense rose from $13 billion in Fiscal Year 1950 to a peak of $50 billion in Fiscal Year 1953. Outlays would decline as the war wound down, but defense spending would never again go below $40 billion a year.

In addition to financing military operations in Korea, this

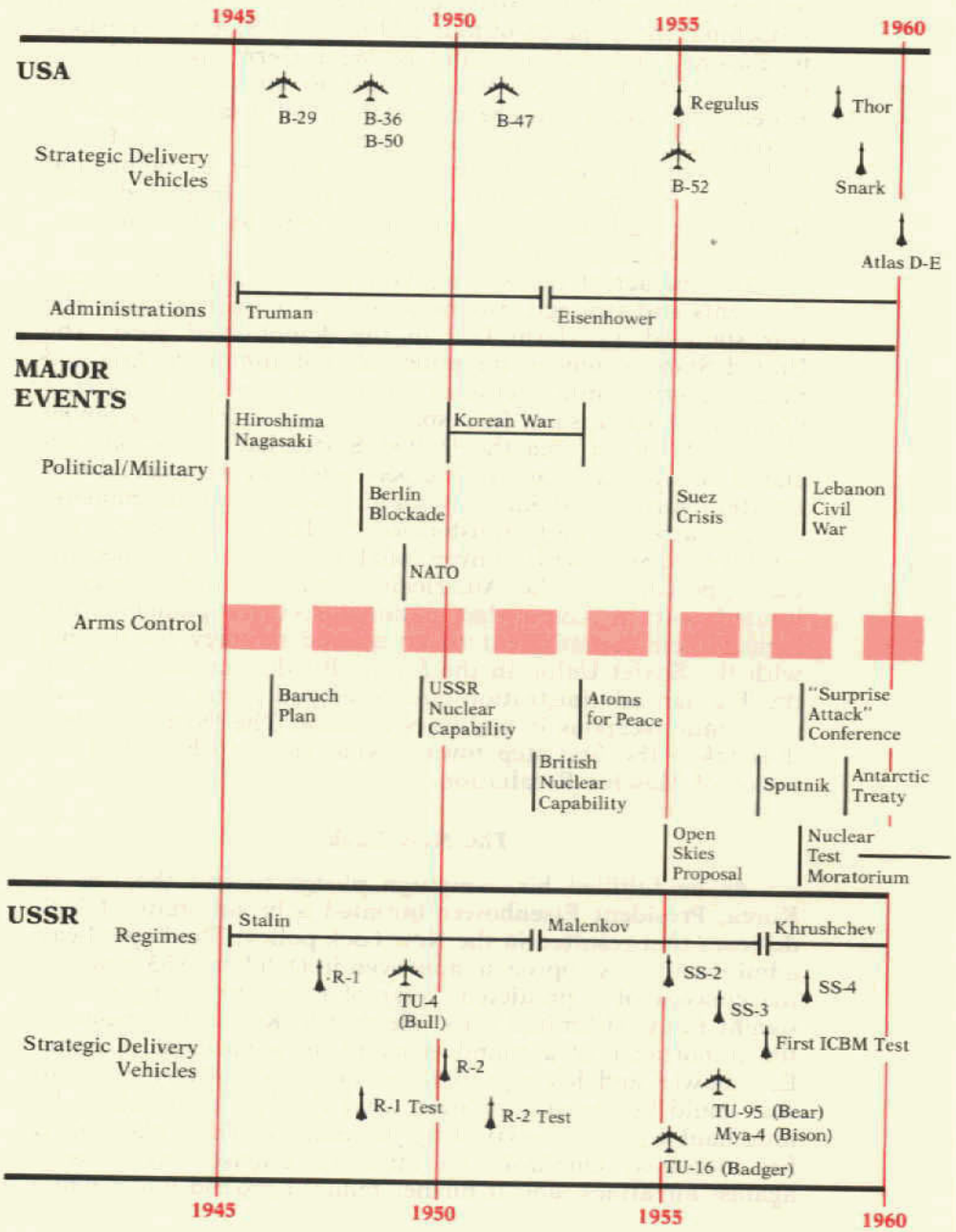
infusion of new funds supported guarantees and increased aid to the Chinese Nationalists on Taiwan and the French in Indochina, the dispatch of four additional U.S. Army divisions to Europe, and the rearming of West Germany within an integrated NATO force. With regard to strategic arms, the Korean War years saw the development of a large arsenal of tactical nuclear weapons, rapid expansion of the Air Force, and the construction of numerous air bases at home and overseas. Programs begun in this period increased SAC bomber strength from 520 aircraft in 1950 to 1,082 in 1954, and to a maximum of 1,854 in 1959.

The impact of the Korean War on U.S. diplomatic commitments and strategic programs is hard to overestimate. The war sounded an alarm bell in the demobilized West. The United States extended the policy of containment to Asia and placed overwhelming reliance on military means to restrict Communist expansion. In response to an attack by a Soviet client-state in an area the United States had previously declared outside its Asian defense perimeter, the Truman administration surrounded Russia with air bases, built an immense nuclear arsenal, and transformed NATO into a significant military alliance with conventional forces. So great became the opposition of the American public to the indecisive, limited war in Korea that national security planners confirmed their commitment to an atomic strategy for dealing with the Soviet Union in the future. By the summer of 1952, the Truman administration had developed plans to use tactical atomic weapons in any wars to come. The Democrats had thus taken the first step toward what came to be called the policy of Massive Retaliation.

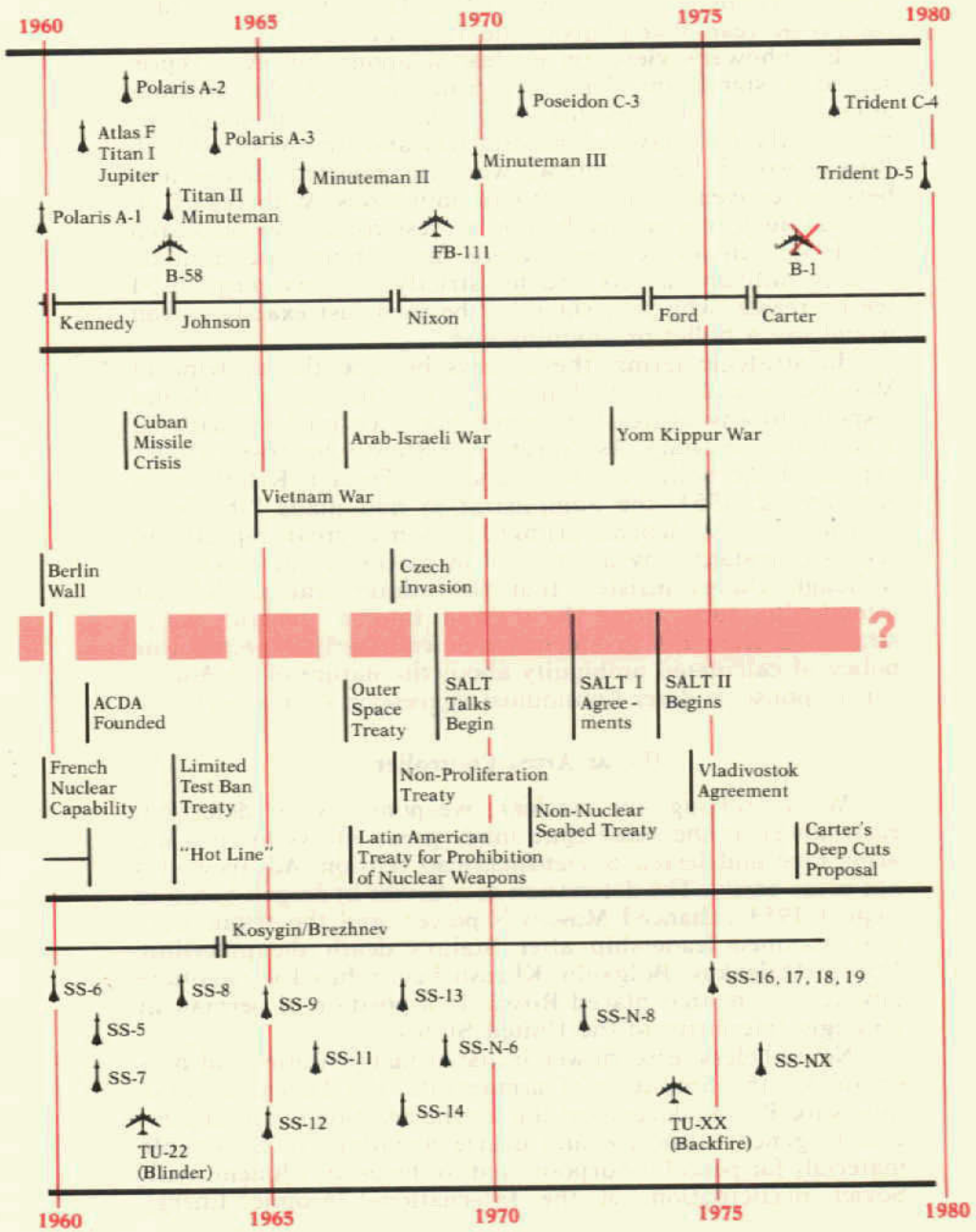
The New Look

As he fulfilled his campaign pledge to end the war in Korea, President Eisenhower initiated a broad study of U.S. defenses that resulted in the New Look policy. The Republican administration's approach, approved in October 1953, rejected the concept of a predicted "year of maximum danger" and sought to avoid limited wars like that in Korea. Emphasizing the importance of a sound economy to a national strength, Eisenhower and his top advisers sought a military program that could be maintained over what the President called the long haul without bankrupting the country. Their plan called for increased emphasis on strategic offense and defense against air attack, and it further reduced ground forces while

TIME CORRELATION OF WORLD EVENTS AND THE DEPLOYMENT



OF STRATEGIC WEAPONS SYSTEMS: USA & USSR



making them more mobile, Although Republican spokesmen stressed its novelty, Eisenhower's New Look closely resembled the pre–Korean War plans of the Truman era.

Eisenhower's views on nuclear weapons, however, represented a significant departure from those of the previous administration. He insisted that atomic weapons should be used on the first day of a general war and that any war with Russia would be a general war. He rejected distinctions between conventional and atomic munitions. With regard to tactical nuclear weapons, he told a press conference on March 16, 1955: "In any combat where these things are used on strictly military targets and for strictly military purposes, I see no reason why they shouldn't be used just exactly as you would use a bullet or anything else."

In strategic terms, these views became the doctrine of Massive Retaliation, which held that the United States should respond to any aggression, conventional or nuclear, with an all-out atomic attack. As Secretary of State John Foster Dulles explained the policy to the Council on Foreign Relations on January 12, 1954, the administration had made "the basic decision . . . to depend primarily upon a great capacity to retaliate, instantly by means and at places of our choosing." Although Dulles insisted that the administration did not intend "to turn every local war into a general war," strategists from the President on down clearly expected this policy of calculated ambiguity about the nature of an American response to deter Communist aggression of any sort.

Ike as Arms Controller

While relying on nuclear weapons as a deterrent, Eisenhower at the same time made great efforts to curb the arms race and lessen Soviet-American tension. Advances did not come easily. The detonation of a Soviet hydrogen bomb in August 1953 enhanced Moscow's power, and the triumvirate that assumed leadership after Stalin's death the preceding March (Malenkov, Bulganin, Khrushchev) refused to negotiate any agreement that placed Russia in a position of permanent strategic inferiority to the United States.

Nevertheless, Eisenhower initiated many studies and proposals for the limitation of armaments. His December 1953 Atoms for Peace address, calling for the creation of an international agency to receive and utilize donations of fissionable materials for peaceful purposes, led to the establishment, with Soviet participation, of the International Atomic Energy

Agency in Vienna in July 1957.

In order to reduce the dangers of surprise attack, the President at the Geneva Summit Conference in 1955 advanced the Open Skies proposal, which would have required the United States and Russia to exchange blueprints of their military establishments and to allow reciprocal aerial inspection of their territory. Although rejected by the Soviets at the time as a scheme for legalized espionage, the Open Skies concept, along with Ike's 1958 proposal for the peaceful exploration and development of outer space, formed the basis much later for verification of arms agreements by reconnaissance satellites, a necessary feature of the control mechanism in the SALT I Agreements.*

In the spring of 1955, American officials headed by Harold Stassen began a series of comprehensive arms control negotiations with the Soviet Union covering conventional and nuclear arms, limits on testing, nuclear free zones, and restricted aerial inspection. Prospects for agreement faded when Soviet successes in rocket development in 1957 threatened to alter dramatically the strategic balance.

The Sputnik Shock

America's sense of technological superiority was rudely jolted when the Soviet Union launched the first successful intercontinental ballistic missile (ICBM) in August 1957 and followed it in early October with the orbiting of the first earth satellite, Sputnik I. The Eisenhower administration belittled the Soviet achievement at first, but most Americans were greatly impressed. Policy studies urged the President to accelerate U.S. missile development, disperse SAC bombers, improve early warning systems, expand the civil defense effort, and increase funding for basic research and scientific education.

Responding to these recommendations and to the pressures generated by widespread discussion in Congress and the press of an impending "missile gap," Eisenhower increased the pace of missile development, won passage of the National Defense Education Act, and opened negotiations with the Russians in Geneva over ways to reduce the chances of surprise attack.

*The Soviet Union accepted the peaceful uses of space in principle in 1963, and the proposal became the basis for the Outer Space Treaty of 1967. In a less vital area, the United States, the Soviet Union, and 10 other nations signed the Antarctic Treaty in 1959, which opened Antarctica for scientific investigation but prohibited weapons testing there or the creation of military bases. This treaty, which became effective on June 23, 1961, was the first arms control agreement of the nuclear age.

The Geneva talks collapsed in December 1958 after six futile weeks because of a Soviet insistence on discussing broad issues, such as the removal of all nuclear and rocket-powered weapons from both parts of Germany, instead of the technical aspects of surprise attack (e.g. aerial reconnaissance) to which the Americans had limited the agenda. Meanwhile, the American missile build-up gained momentum; the first Atlas ICBMs became operational during 1959.

The United States overreacted to Sputnik, much as it had to the North Korean invasion of 1950. Eisenhower was correct in his basic feeling that America led in technology and was developing satellites and missiles of much greater sophistication than the Russians. We know today that the Sputnik accomplishment was largely bluff. Under immense pressure to provide propaganda victories for the Khrushchev regime, Soviet space scientists had grouped 20 inefficient rocket engines in a two-stage cluster and without adequate testing or safeguards had launched the first Sputnik into orbit. At Khrushchev's insistence, Soviet scientists continued their efforts to beat the Americans at every stage of the space race, yet Soviet technology was never superior to that of the United States.*

The Era of American Missile Superiority, 1960–70

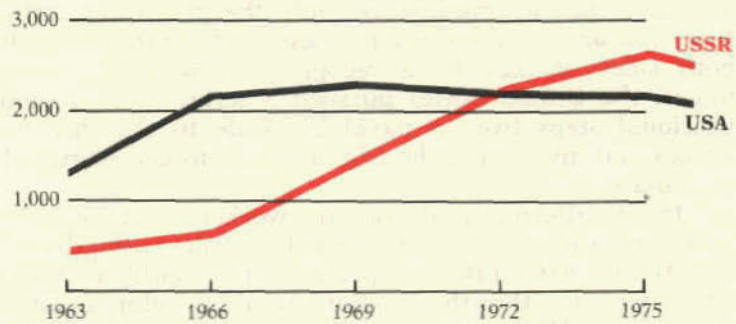
As John F. Kennedy quickly learned after entering the White House, the United States did not, in fact, lag behind the Soviet Union in strategic power. In addition to its superiority in long- and medium-range bombers, America held the lead in land- and sea-based missiles in terms of numbers deployed, reliability, accuracy, and production capacity (see chart on p. 69). Yet, for the first time, the United States was vulnerable to a devastating Soviet attack. Though lacking a long-range bomber force, the Soviets now had giant missiles that could hit cities in Western Europe and the continental United States. It no longer made sense for America to threaten nuclear war in response to localized aggression. Massive Retaliation, having become a two-way street, was no longer an adequate defense policy for the United States.

Kennedy and his Secretary of Defense Robert McNamara drew on the research of systems analysts and so-called defense intellectuals to shape a new strategy of Flexible Response. With regard to strategic weapons, their objective was to

*See *The Russian Space Bluff* (London: Stacey, 1971), by Leonid Vladimirov, a Soviet space-science journalist, who defected to Great Britain.

TOTAL "STRATEGIC DELIVERY VEHICLES" (Bombers, Missile Launchers)

After the Cuban Missile Crisis



1976 STRATEGIC FORCES

	USA	USSR
Long-range bombers	453	135
Submarine-launched ballistic missiles	656	1317
Intercontinental ballistic missiles	1054	1675

Source: *The Military Balance*, 1976–1977 (London: International Institute for Strategic Studies, 1976), pp. 73–74, 106–108.

create a secure second-strike retaliatory force that would serve as a deterrent to nuclear war. The relatively invulnerable Polaris fleet with its submarine-launched ballistic missiles (SLBMs) provided the solution to this problem.

To enhance strategic stability, the administration developed in 1963 the concept of the "triad," a balanced offensive force that included ICBMs, SLBMs, and manned bombers. For limited non-nuclear conflicts, Kennedy and his advisers expanded the country's mobile ground forces and strengthened the Green Berets for nonconventional guerrilla warfare. Reversing Eisenhower's New Look, they rejected the use of tactical nuclear weapons except in cases of extreme danger. They advanced, and subsequent administrations have maintained, the theory of the "firebreak"—that the major threshold in escalation was the move from conventional to nuclear weapons and that the costs of taking that step ought to be raised so that it would never be taken.

Nikita Khrushchev's October 1962 gamble in secretly installing Soviet intermediate-range missiles in Cuba gave Kennedy the opportunity to apply the principles of Flexible Response and resulted in a reassessment of strategic policy on both sides. Backed by a recognized superiority in nuclear forces, the United States pursued a series of graduated conventional steps from a naval blockade to the threat of air strikes and invasion of the island, which forced Khrushchev to capitulate.

In the aftermath, McNamara worked to rationalize force structure and cut back projected missile strength to 1,054 ICBMs and 656 SLBMs, a plateau that would be reached in 1967. Believing that the Russians would develop an antiballistic missile (ABM), the Army increased its effort to create a similar defensive system.

The Cuban crisis had an unexpected effect on Soviet strategic policy. Since 1945, Russian military priorities had overwhelmingly stressed conventional offense and strategic defense forces. They had not built a long-range bomber fleet and were slow to produce and deploy ICBMs despite their early successes in this field. But the Cuban episode, coming after Khrushchev's failure to bluff Kennedy out of Berlin in 1961, proved sharply humiliating to the Russians. First Deputy Foreign Minister Vasily Kuznetsov spoke for many when he declared, "You Americans will never be able to do this to us again."* Thereafter, the Russians launched a massive ICBM building program that resulted in parity with American forces within a decade. With this surge in Soviet missile strength, a debate began in the United States over what the Russians were trying to achieve—parity or superiority in strategic power.

Mutual Assured Destruction

Although unaware of the magnitude of the projected Soviet ICBM force, American defense officials concluded in 1965 that it would be impossible to maintain a degree of superiority in strategic power that would prevent serious damage to the United States in a general war. McNamara convinced President Lyndon Johnson that the best policy for America was to hold the population centers of the Soviet Union hostage. Any hope of pursuing a "Damage Limitation Strategy" (combining civil defense efforts at home with an announced policy of targeting only enemy military forces and

*Quoted in the *New York Times*, May 9, 1972.

installations rather than civilian population centers) was abandoned in favor of Mutual Assured Destruction (MAD). In February 1965, the Secretary of Defense announced to the House Armed Services Committee that, while he sought in the event of war "to limit damage to our population and industrial capacities," the primary objective of American defense policy was "to deter a deliberate nuclear attack upon the United States and its allies by maintaining a clear and convincing capability to inflict unacceptable damage on an attacker."

McNamara judged that the level of damage sufficient for deterrence was 25–30 percent of the Soviet population and about 70 percent of its industrial capacity. Subsequent strategic refinements have included the addition of "flexible options" to allow targeting of Soviet military installations in a limited war situation, but MAD has remained the basic American strategy.

Arms Limits at the Margin

While there is much disagreement among American experts over whether the Russians have accepted the underlying premise of MAD, it is clear that U.S. strategic policies and the size of both Soviet and American strategic forces as we know them today were fixed by 1965. New strategic weapons, given current technology, require 10 to 15 years for development, and the Russians, in particular, adhere to rigid five-year defense plans that restrict innovation.

The high hopes for arms control expressed by officials of the Kennedy and Johnson administrations had meager results, producing only a series of limited agreements in areas where the superpowers did not deny themselves anything of value. The U.S. Arms Control and Disarmament Agency (ACDA) was founded in September 1961 as an independent organization to develop and advocate new approaches to arms control within the Washington bureaucracy. It was unable to make progress, however, until the Cuban missile crisis and its threat of nuclear war revived interest in stabilizing the arms competition. The Cuban confrontation led directly to the signing in June 1963 of the "Hot Line" Agreement, which provided for rapid Soviet-American teletype communication "in time of emergency."

The following August, building on the experience of the 1958–61 voluntary test ban, the two superpowers and Great Britain signed in Moscow the Limited Test Ban Treaty, which

prohibited nuclear weapons tests in the atmosphere, in outer space, and under water.

Among other agreements, the most important were the 1967 Treaty for the Prohibition of Nuclear Weapons in Latin America and the 1968 Non-Proliferation Treaty. These last two accords did not affect the Soviet-American strategic balance, although the Non-Proliferation Treaty was accompanied by an announcement that the superpowers had agreed to enter discussions on strategic arms limitations.

The Era of Strategic Equivalence, 1971–

When Richard Nixon entered the White House in 1969, the Soviet Union was building giant missiles at a rate that would produce general parity in the number of strategic delivery vehicles (ICBMs, SLBMs, and long-range bombers) by 1971. In order to establish détente with Russia and stabilize the strategic arms race, President Nixon and his Assistant for National Security Affairs Henry A. Kissinger added new programs and options to the established McNamara concepts and created the Strategy of Sufficiency. Concentrating less on the effects of each new weapon system on strategic stability than on negotiating technique, Kissinger relied heavily on "bargaining-chip" tactics. Weapon systems of marginal benefit or cost-effectiveness to the United States were developed; they could then be traded off for concessions by Moscow.

The antiballistic missile highlighted the difficulty of maintaining strategic stability under the 1965 MAD doctrine. Mutual Assured Destruction rests on the assumption that enemy cities will be undefended and therefore will become hostages against a first strike. This strategy cannot survive the introduction of damage-limiting innovations such as extensive civil defense, ABM defense of cities, or high-accuracy ICBMs designed to hit the hardened silos of the other side's retaliatory missile force.

Although an extensive ABM system proved very expensive and difficult to build, the Nixon administration pursued ABM development as a bargaining-chip. The United States had also produced the Multiple Independently-targeted Re-entry Vehicle (MIRV), a missile which separates into 3–14 separately targetable nuclear warheads. American officials knew the Soviets were several years behind in MIRV technology, but to counter the Russians' ABM and improve American striking power, Nixon directed the deployment of MIRVs starting in June 1970. While giving the United States a substantial lead

in total warheads deployed, the decision now poses grave problems for stability (the Russians are MIRVing too) because it is virtually impossible to verify whether a missile is MIRVed.

The United States and Russia began a long series of strategic arms limitation talks (SALT) in November 1969. Designed to be the Nixon administration's centerpiece of détente, SALT has so far produced three agreements signed in Moscow in May 1972 and the Vladivostok Accord of November 1974. In Moscow, President Nixon and General-Secretary Leonid Brezhnev signed a statement of Basic Principles of relations between their two countries. They agreed to an ABM treaty, which restricted each side to two ABM sites, with no more than 100 missiles at each location. Most important, they signed an interim agreement that limited the number of offensive missiles each side could possess. The agreement, which expired in October 1977, restricted the Soviet Union to 1,618 ICBMs and 950 SLBMs in 62 submarines, and the United States to 1,054 ICBMs and 710 SLBMs in 44 submarines; it put constraints on the number of large ICBMs and provided for replacing old ICBMs with additional SLBMs.

The follow-up Vladivostok Accord, signed by President Ford and Brezhnev in 1974, filled some of the gaps in the interim agreement. It limited each side to a total of 2,400 strategic delivery vehicles, including bombers, and allowed each to place MIRVs on no more than 1,320 of its missiles. There was no provision in the agreement for verification of the limits on MIRVs.

The SALT Process

The SALT I agreements are milestones in the history of arms control, and they have unquestionably benefited the United States by placing the first limits on offensive nuclear weapons and effectively terminating one weapon system, the ABM, which undermined Mutual Assured Destruction and the American theory of deterrence.

But SALT was designed as a continuing process in the expectation that limited initial agreements would lead to more substantial concessions and eventually to cuts in the number of weapons. Unanticipated events have, however, interrupted the process. Domestic political attacks on the agreements, the loopholes that have been exposed in the terms, and overselling by the Nixon administration have all produced disillusionment and suspicion among the American

people. The discussion of SALT in the 1976 election campaign, together with President Ford's rejection of the term détente, demonstrates the vulnerability of arms control diplomacy to political pressures generated in an election year.

The Carter administration's "Deep Cut" proposals* presented to an astonished Soviet leadership in Moscow in March, 1977, had the effect of offering a total ban on development of the U.S. long-range cruise missile in return for a freeze on development and deployment of new ICBMs and a reduction by half in the number of large Soviet ICBMs. The Soviets rejected the proposals outright, warning that the Carter proposals threatened the Vladivostok Accord, including Brezhnev's agreement to omit from the SALT equation U.S. forward base systems (e.g., intermediate-range ballistic missiles and nuclear-armed tactical aircraft capable of attacking the Soviet Union from overseas bases).

Despite this spring's rebuff in Moscow, the SALT negotiations have resumed. New initiatives came from Washington, but as autumn approached, there was little prospect of a diplomatic breakthrough. The SALT process remains vulnerable to new weapon systems, sudden political changes in Moscow and Washington, and events in the Middle East or Africa. The current status of technology in satellite reconnaissance, mobile ICBMs, and cruise missiles threatens many changes in strategic weapons within the next few years. It is imperative that new arms control agreements be concluded before technological developments or political changes make negotiation more difficult.

Lessons of the Nuclear Age

The history of American nuclear policy over the last 30 years provides some "lessons" in the form of sensitivity training. We have much to ponder, notably our past assumptions about the motives and capabilities of the other side. We underrated Soviet fears of our nuclear supremacy after World War II. We overreacted to both the Korean War and to

*The United States proposed: a reduction in strategic delivery vehicles for each side from the Vladivostok maximum of 2,400 to 1,800–2,000; a reduction in MIRVed missiles from 1,320 to 1,110–1,200; a limit on land-based multiple warhead ICBMs of 550 each; reduction of large, modern Soviet ICBMs from 308 to 150; a freeze on development and deployment of new ICBMs; a ban on the modification of existing ICBMs; a ban on the development, testing, and deployment of mobile ICBMs; arrangements to assure the United States that the Russian Backfire bomber was not to be deployed as a strategic weapon (e.g. limiting fuel capacity or gear for inflight refueling). In exchange for these limitations, which would bear harder on the Soviets than the Americans, the United States suggested a total ban on development of strategic cruise missiles with ranges over 2,500 miles.

Sputnik. We tended to confuse Soviet rhetoric with Soviet capabilities. But to blame the United States primarily for the failure to halt the momentum of the nuclear arms race is both naive and without foundation.

Although America has led in technological innovation each step of the way (with a few exceptions like Sputnik), we have also led in efforts for arms control. But our arms limitation proposals frequently included elements such as on-site inspection that undermined aspects of the Soviet domestic security system. And our current human rights policies are reviving Kremlin fears and complicating strategic arms negotiations, despite the Carter administration's denial of any linkage between the two issues.

Moreover, we found that our early lead in atomic weaponry produced no guarantee of national security; the advent of the ICBM has made the continental United States vulnerable to surprise attack for the first time in history. Our own system of weapons procurement has given technology a momentum of its own—leading to deployment of weapons useful only as bargaining-chips. Such ventures can be costly, as President Carter discovered last spring in analyzing, then rejecting, the proposed B-1 bomber with its price tag of $102 million per airplane.

The best results in our negotiations with Moscow have come not when the United States enjoyed clear superiority, but when both sides possessed roughly equivalent power. The United States, which has traditionally approached arms control negotiations with "worst-case" assumptions, should now develop initiatives that take some risks for international control and limitation of nuclear arms. In a MAD world, the payoffs in terms of survival could be substantial.