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THE CRISIS IN ARMS CONTROL†

*Harold K. Jacobson**

There is general agreement among observers of contemporary international affairs, and national and international officials from all sides, that there is a serious crisis in arms control. As of January 1984, the Soviet Union had broken off two major arms control negotiations: the Intermediate-Range Nuclear Force Talks (INF) and the Strategic Arms Reduction Talks (START). Negotiations in the United Nations Conference on Disarmament (CD) on a variety of arms control issues were stalemated. The United States was engaged in a large-scale military build up, and there was no sign that the Soviet Union would abate the extensive military programs that it had started in the 1960's; indeed, its leadership had declared that the USSR would match U.S. efforts. Rhetorical exchanges between the United States and the USSR were harsh. Each side had publicly accused the other of violating existing arms control agreements. Since the signing of the limited nuclear weapon test ban treaty the prospects for arms control had never appeared bleaker.

Analyses of the causes of the crisis abound. Few of these, however, penetrate the crisis' full potential depth. If the conceptual and political consensus which underlay the progress achieved in arms control starting in 1963 has evaporated, regaining the momentum in arms control will be more difficult than most observers have predicted.

How serious and long-lasting the crisis really is will be known only in the future, but exploring its potential depth now may serve to foreclose the worst possibilities. Portraying the possible destruction of the consensus, and the cost of this, could serve to prevent it from occurring. This assumes that the progress that has been achieved in the period since the conclusion of World War II, and especially since 1963, should be valued, nurtured and extended. Supporting this assumption, therefore, is a necessary preliminary step to analyzing the crisis. Then it will be possible to explore why progress has been possible and how the foundation of this progress may now be in jeopardy.

I. EFFORTS TO ACHIEVE DISARMAMENT AND THE REGULATION OF ARMAMENTS BEFORE 1945

A major reason that the post-World War II arms control accomplish-

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ments are so impressive is that so little had been accomplished previously, despite the often widespread, deeply-felt desire to achieve disarmament, or at least to regulate armaments. Of course, throughout history states that were victorious in wars had imposed disarmament on their vanquished enemies. Efforts to achieve disarmament or the regulation of armaments through negotiated agreements, however, had yielded few results.

The Rush-Bagot agreement of 1817 between the United States and Britain limiting naval forces on the Great Lakes¹ was an exceptional achievement, all the more impressive because of its durability. During the period between the two World Wars three treaties came into effect after being signed and ratified — the Washington (1922) and London (1930) agreements limiting naval forces² and the Geneva Protocol (1925) prohibiting the use of asphyxiating gases.³ Of these, only the last has endured. The first two were of limited duration, and they have been sharply criticized for endangering rather than contributing to international security. The League of Nations' efforts to achieve disarmament, which were mandated by the covenant and which culminated in the 1932 disarmament conference, failed dismally.

At the end of the interwar period, there was broad agreement that the regulation of armaments and *a fortiori* disarmament would be extremely difficult to achieve through voluntary agreements.⁴ The negotiations conducted during the period had revealed seemingly insurmountable technical and political obstacles.

The technical obstacle was the problem of comparability. It is most unlikely that states would voluntarily accept an agreement that significantly altered the existing distribution among them of military power; they might, however, accept an agreement that lowered the level of forces without altering the distribution of power. Even if this were not the case, states engaged in a negotiation to regulate armaments would still be interested in assessing the effects of potential agreements on the distribution of military power. Under either assumption, different types of military forces would have to be compared, because the structure of states' military forces differ substantially.

With extensive and exposed land frontiers, the Soviet Union, following traditional Russian patterns, has placed particular emphasis on land forces. In the current era this has included heavy reliance on land-based, nuclear-tipped missiles. The United States, like Britain, has given greater emphasis

1. Rush-Bagot Agreement: Naval Forces on the American Lakes, Apr. 28, 1817, United States-Great Britain, 8 Stat. 231, 18 Stat. 296, T.S. No. 110 ½.

2. International Treaty for the Limitation and Reduction of Naval Armament, Apr. 22, 1930, 46 Stat. 2858, T.S. No. 830, 112 L.N.T.S. 65 [hereinafter cited as London Treaty]; Limitation of Naval Armament, Feb. 6, 1922, 43 Stat. 1655, T.S. No. 671, 25 L.N.T.S. 202 [hereinafter cited as Washington Treaty].

3. Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, June 17, 1925, 21 U.S.T. 571, T.I.A.S. No. 8061, 94 L.N.T.S. 65 [hereinafter cited as Geneva Protocol], reprinted in UNITED STATES ARMS CONTROL AND DISARMAMENT AGENCY, ARMS CONTROL AND DISARMAMENT AGREEMENTS, 14 (5th ed. 1982) [hereinafter cited as DISARMAMENT AGREEMENTS].

4. For analyses of these difficulties, see generally S. DE MADARIAGA, DISARMAMENT (2d printing 1967); H. MORGENTHAU, POLITICS AMONG NATIONS 391-416 (5th ed. 1973).

to naval and air forces. Sea-launched ballistic missiles comprise a much larger portion of U.S. strategic forces than they do of the USSR's strategic forces. For the United States and the Soviet Union each to reduce their forces by eliminating one Army or Marine division would lower the United States' total of nineteen divisions by more than five percent while it would lower the Soviet Union's total of 191 by less than one percent. Because of the disproportionate effects of identical reductions, efforts have been made to equate different elements of states' military forces, but this is an exceedingly difficult task. How many divisions should the Soviet Union drop to counterbalance the United States giving up one aircraft carrier, an element of military force in which the United States has numerical superiority? Even if the League of Nations disarmament conference in 1932 had been able to surmount the political obstacles on which it foundered, the preparatory work provided little ground for optimism that it would have been able to devise cuts in military forces that states generally would have regarded as comparable.

The political obstacles, however, proved insurmountable. First, there was and is the issue of how states define the military requirements for their security. Simply put, states have military forces to provide for their security; they are unlikely to restrict or reduce their forces in ways that their governments and public feel could jeopardize their security. In the early 1930's, France and Germany defined the basic requirements for their own security in essentially incompatible terms. France insisted on having superiority in mobilized military forces, Germany sought military forces at least approaching equality. This basic disagreement blocked any progress, and as Germany cast off the limitations imposed on it by the Versailles settlement, no state forcefully objected.

Another political obstacle concerns the task of creating an international organization which all parties could trust to monitor the agreement. It is almost a condition of sovereignty that states will seek to create one type of device or another to ensure that they can block an international organization from taking action against their interests; yet granting this protection destroys the confidence that other states might have in the organization. Complicated forms of majority voting have been considered, but none have overcome this obstacle.

By World War II, disarmament and the regulation of armaments had come to be seen from a considerably different perspective than that which had led to the great emphasis on these objectives in the Covenant of the League of Nations. The general belief that the failure of France and the United Kingdom to have sufficient military forces to deter Germany contributed to the outbreak of World War II combined with an understanding of the difficulties facing negotiated reductions, with the result that having adequate military force available to defend the existing world order came to be seen as a strategy for achieving peace at least equally as important as the regulation of armaments and disarmaments. In 1945, governments and informed observers in the West were perhaps even more interested in the availability of adequate military forces than they were in reducing them.

II. ARMS CONTROL ACCOMPLISHMENTS SINCE WORLD WAR II

The devastating effect of nuclear weapons, demonstrated through their use against Japan, forced reconsideration of these priorities; at a minimum, it was thought, nuclear weapons should be controlled and preferably banned and eliminated. Negotiations to control and eliminate nuclear weapons were launched immediately, and after a time talks were also begun to limit conventional armaments. Even the horror of nuclear war, though, was not a sufficient force to overcome the technical and political obstacles that had blocked progress in the regulation of armaments during the 1930's.⁵ As of the mid-1950's, both the Soviet Union and the United States had substantial military establishments that included nuclear weapons as integrated components, the two Germanys had begun to rearm and most of Europe was divided into opposing military alliances through the North Atlantic and Warsaw treaties. This situation persisted through the 1960's and 1970's and continues into the 1980's. All of the major states except Japan maintain military establishments that are large by peacetime standards, and the United Kingdom, France and the People's Republic of China have joined the United States and the USSR in developing nuclear arsenals. India has detonated a nuclear device. How then is it possible to argue that there have been important accomplishments in arms control in the period since World War II?

One justification has already been given — compared to the interwar or any period of comparable length many more arms control agreements have been signed and ratified and have entered into force. Starting with the Antarctica treaty in 1959, the United States has signed twenty new bilateral and multilateral treaties and agreements, fully accepting the five agreements, ratifying twelve of the treaties and stating its intention to abide by the terms of the three that it has not ratified.⁶ In 1975, the United States finally ratified the 1925 Geneva Protocol. In addition, the rearmament of the Federal Republic of Germany has been controlled through the 1954 treaty that established the Western European Union (WEU).⁷ That so many agreements have been voluntarily negotiated and put into effect is notable.

A more important justification to support the argument that there have been important accomplishments in arms control in the period since World War II, is that these negotiated agreements have had significant beneficial consequences in controlling armaments. The proliferation of nuclear weapons, even if Israel and South Africa are added to the six states listed above, is much less extensive than anyone as recently as two decades ago predicted it would be. Surely the several treaties that constitute the nonproliferation regime have contributed to this outcome. The Federal Republic of Germany renounced the right to produce or possess nuclear weapons in the WEU treaty; more than ninety states have acceded to this restriction by accepting the 1968 treaty on the nonproliferation of nuclear weapons.⁸ The

5. An excellent account of the arms control negotiations is provided in B. BECHHOEFFER, *POSTWAR NEGOTIATIONS FOR ARMS CONTROL* (1961).

6. The texts of these treaties and a statement of their status can be found in *DISARMAMENT AGREEMENTS*, *supra* note 3.

7. WEU Treaty, Oct. 23, 1954, 211 U.N.T.S. 342.

8. Treaty on the Non-Proliferation of Nuclear Weapons, *opened for signature* July 1, 1968,

limited test ban treaty, which only permits the testing of nuclear weapons underground, precludes all signatories from testing such weapons except the small number that have large territories which include sparsely inhabited areas.⁹ The 1967 Treaty of Tlaltelolco declared Latin America a nuclear-free zone.¹⁰ The WEU treaty, the Treaty of Tlaltelolco and the International Atomic Energy Agency all established inspection mechanisms to provide reassurance that nuclear materials dedicated to peaceful purposes are not diverted to use in the fabrication of weapons. To be sure, the nonproliferation regime did not stop India from detonating a nuclear device in 1974, and it will not necessarily prevent additional states from gaining a nuclear weapons capability. It has, however, sharply limited the proliferation of nuclear weapons. It could continue to do this.

The arms competition between the United States and the Soviet Union has been subjected to restraints. Because of the limited test ban treaty, neither country has tested nuclear weapons in the atmosphere, in outer space or under water since 1963. This has eliminated a major environmental hazard. It has also meant that neither side can have complete confidence in an anti-ballistic missile system that uses nuclear warheads because such systems have never been tested in flight and cannot be by states adhering to the treaty. Because of the treaties, the United States and the Soviet Union have been precluded from deploying nuclear weapons in Antarctica, in outer space and on the deep seabed. They have agreed to respect the nuclear-free character of Latin America. Under the nonproliferation treaty they may not transfer nuclear weapons or nuclear weapons technology to non-nuclear-weapon states. Under the anti-ballistic missile (ABM) treaty and protocol, the Soviet Union and the United States have agreed not to deploy more than one ABM system.¹¹ Numerical limits have been set on the strategic arsenals of the two sides as a consequence of the interim agreement and the treaty negotiated during the Strategic Arms Limitations Talks (SALT).¹² Although these agreements, with the exception of the ABM protocol, did not lead to a reduction in United States and Soviet armaments, they have prevented the two countries from adopting policies involving the

21 U.S.T. 483, T.I.A.S. No. 6839, 729 U.N.T.S. 161, *reprinted in* DISARMAMENT AGREEMENTS, *supra* note 3, at 91.

9. Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water, *opened for signature* Aug. 5, 1963, 14 U.N.T.S. 334 [hereinafter cited as Limited Test Ban Treaty], *reprinted in* DISARMAMENT AGREEMENTS, *supra* note 3, at 41.

10. Treaty for the Prohibition of Nuclear Weapons in Latin America, Feb. 14, 1967, 634 U.N.T.S. 281, *reprinted in* DISARMAMENT AGREEMENTS, *supra* note 3, at 64.

11. Protocol to the Treaty on the Limitation of Anti-Ballistic Missile Systems, July 3, 1974, United States-Soviet Union, art. I, 27 U.S.T. 1645, 1648, T.I.A.S. No. 8276, *reprinted in* DISARMAMENT AGREEMENTS, *supra* note 3, at 162; Treaty on the Limitation of Anti-Ballistic Missile Systems, May 26, 1972, United States-Soviet Union, art. III, 23 U.S.T. 3435, 3440, T.I.A.S. No. 7503 [hereinafter cited as the ABM Treaty], *reprinted in* DISARMAMENT AGREEMENTS, *supra* note 3, at 139.

12. Treaty on the Limitation of Strategic Offensive Arms, June 18, 1979, United States-Soviet Union, S. Exec. Rep. No. 14, 96th Cong., 1st Sess. 319 [hereinafter cited as SALT II Treaty], *reprinted in* DISARMAMENT AGREEMENTS, *supra* note 3, at 246; Interim Agreement on Certain Measures with Respect to the Limitation of Strategic Offensive Arms, May 26, 1972, United States-Soviet Union, 23 U.S.T. 3462, T.I.A.S. No. 7504 [hereinafter cited as SALT I Interim Agreement], *reprinted in* DISARMAMENT AGREEMENTS, *supra* note 3, at 150.

further development and deployment of nuclear weapons. The nuclear arsenals of the two countries could have become even more formidable.

Other agreements have involved measures designed to lessen the risk that the United States and the Soviet Union will unintentionally become involved in a nuclear exchange, and more broadly to stabilize the military relationship between the two countries. Means to insure rapid and accurate communication between the heads of government of the two countries have been put in place.¹³ The two countries have agreed to take measures to prevent accidents with nuclear weapons and to insure against their unauthorized use.¹⁴ They have pledged to consult each other in the event of third-party conflicts that might escalate and involve them.¹⁵

More importantly, as a consequence of the ABM treaty and protocol and the limited nuclear test ban treaty, the two countries have left themselves vulnerable to a retaliatory nuclear strike. This vulnerability is a powerful deterrent against either side launching a nuclear attack against the other: neither the government of the United States nor that of the Soviet Union seems likely to initiate an action that would surely subject its own society to unprecedented devastation.

In sum, the arms control agreements have limited the proliferation of nuclear weapons, put restraints on the development of nuclear weapons, limited the places where nuclear weapons can be deployed, created safeguards against the unintentional use of nuclear weapons and, by leaving the Soviet Union and the United States vulnerable to each other, created a strong deterrent against either country using nuclear weapons. Nuclear arsenals have been controlled; the term "arms control" accurately describes the process and its goals, more so than traditional terms such as "disarmament" and the "regulation" of armaments. The agreements do not make the world safe, but they make it safer than it would be without them. Further agreements could be negotiated that would make it even safer. These agreements will not be achieved, however, unless the current crisis in arms control is overcome, and failure to make further progress could place at risk what has already been accomplished.

III. THE LIMITED NUCLEAR TEST BAN TREATY AS A PROTOTYPE FOR PROGRESS IN ARMS CONTROL

The forbidding aspect of the current crisis is that the conceptual and political consensus that was thought to underlie the progress in arms control may have evaporated. This apparent consensus was forged in the negotia-

13. See Agreement on Measures to Improve the USA-USSR Direct Communications Link, Sept. 30, 1971, United States-Soviet Union, 22 U.S.T. 1598, T.I.A.S. No. 7187, reprinted in DISARMAMENT AGREEMENTS, *supra* note 3, at 115; Memorandum of Understanding Regarding the Establishment of a Direct Communications Link, July 20, 1963, United States-Soviet Union, 14 U.S.T. 825, T.I.A.S. No. 5362, reprinted in DISARMAMENT AGREEMENTS, *supra* note 3, at 31.

14. See Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War, Sept. 30, 1971, United States-Soviet Union, 22 U.S.T. 1590, T.I.A.S. 7186, reprinted in DISARMAMENT AGREEMENTS, *supra* note 3, at 111.

15. See Agreement on the Prevention of Nuclear War, June 22, 1973, United States-Soviet Union, art. IV, 24 U.N.T.S. 1478, T.I.A.S. No. 7654, reprinted in DISARMAMENT AGREEMENTS, *supra* note 3, at 159.

tions that led to the limited nuclear test ban treaty. The limited test ban treaty became a prototype for other treaties limiting nuclear weapons. Understanding it, and the full context of its negotiation and acceptance, is crucial to understanding the progress that has been achieved and also the current crisis.¹⁶

The treaty is very simple. It consists of a preamble and five articles. The first article states the basic obligation not to test nuclear weapons in the atmosphere, in outer space or under water. The second article provides a mechanism for amending the treaty. The third article states the conditions for the treaty to enter into effect and for states other than the three original parties, the Union of Soviet Socialist Republics, the United Kingdom and the United States, to accede to the treaty. According to the fourth article, the treaty is of unlimited duration, except that a party may withdraw by giving three months notice "if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country."¹⁷ The final article makes the English and Russian texts "equally authentic."

Several observations are in order. First, the treaty avoided the technical problem of comparability by not requiring states to reduce their military forces, but simply requiring them to desist from further testing of nuclear weapons. Of course, the ban on testing would affect the Soviet Union and the United States in different ways since the two countries had pursued testing programs that emphasized different types of weapons: the Soviet Union had done more testing of weapons with large yields — the type of testing that could not be conducted underground — than the United States. There was no effort, however, to include in the treaty a provision that would equate the technical progress of the two sides. Instead, by simply precluding all but underground testing, governments were left to determine whether it would be in their interests to adhere to the limited ban, and to take whatever compensatory measures they might feel would be appropriate through underground testing or some other means.

Second, the treaty avoided the political problem of diminishing the felt security of any of the original parties because it did not require them to reduce their military forces, but merely to desist from further development, a course that could have made one or all of the original parties feel even more insecure.

The treaty avoided the political problem of attempting to create an international institution that all parties could trust to serve as a control mechanism for the agreement, by relying instead on national technical means (NTMs) for monitoring compliance. Until the signing of the limited test ban treaty, from as far back as the end of World War I, it had generally been assumed that agreements for the regulation of armaments would necessarily involve the creation of international institutions that would be responsible for monitoring compliance with the agreements and for imposing

16. This analysis draws heavily on the work that Eric Stein and I did for our book *DIPLOMATS, SCIENTISTS, AND POLITICIANS: THE UNITED STATES AND THE NUCLEAR TEST BAN NEGOTIATIONS* (1966).

17. Limited Test Ban Treaty, *supra* note 9, art. IV.

sanctions if there were infractions.¹⁸ Failure to agree on the decision-making procedures of such an institution had been one of the major reasons the early negotiations to control nuclear weapons had foundered. In 1963, although the negotiations to ban nuclear weapons tests had been in progress for five years, major issues concerning the international organization that would police the agreement remained unresolved, and it was not at all certain that agreement would be possible. The conclusion that all but underground tests could be adequately monitored by NTMs meant that these controversies could be sidestepped.

The issue of imposing sanctions if a party to the agreement were to break it was also avoided. The only provision in the treaty relating to the issue of sanctions is article 4, which allows parties to withdraw by giving three months' notice. This provision recognized that the only real sanction if one party were to break the agreement would be for the other side to resume testing. The article recognized that at least three months would be required to mount a retaliatory test series; thus, giving three months' notice to withdraw would not impose a liability or inhibition on a wronged party.

The control mechanism for the limited test ban treaty thus consists of national technical means as the method of surveillance and adversary retaliatory testing as the sanction for a breach of the agreement. Allowing continued testing of nuclear weapons underground was related to both aspects. Rightly or wrongly, U.S. officials concluded that national technical means would not provide adequate surveillance of underground testing. U.S. officials also concluded that for the threat of retaliatory testing to be credible, U.S. weapons laboratories would have to maintain active programs. They felt that this would be difficult unless some weapons could be tested; good scientists would be unwilling to work on projects that could never be brought to the stage of actual testing.

Maintaining a credible deterrent was an important issue because on September 1, 1961, the Soviet Union broke the moratorium on testing nuclear weapons that had been in effect since the negotiations began in 1958 by launching the most extensive series of tests ever conducted, a series that would involve the most destructive weapons ever tested. In December, 1959, President Eisenhower had stated that because of lack of progress in the negotiations, the United States would consider itself free to resume testing, although it would not do so without announcing its intention in advance of any resumption. The United States did not prepare for a new series of tests in the atmosphere, however, so that it was April 1962 before it began a retaliatory test series. Many U.S. government officials felt that unless the United States maintained a capacity to test, the USSR might again unexpectedly test nuclear weapons in the atmosphere. As it was, the Soviet Union conducted another series of tests in December 1962, and thus was the last of the original parties to the limited ban treaty to test nuclear weapons in the atmosphere. The Soviet Union's test series in 1961 and 1962

18. It should be noted, however, that neither the Washington Treaty, *supra* note 3, nor the London Treaty, *supra* note 2, regulating naval armaments provided for inspection or enforcement mechanisms. The types of naval vessels that were regulated probably could not have been constructed in secret. In this sense, the Washington and London Treaties are forerunners of the post-World War II treaties that rely on national technical means for verification.

were conducted despite the decree that the Supreme Soviet adopted on March 31, 1958, resolving to discontinue all types of nuclear weapons tests. On several occasions during the debate in the United States on the ratification of the limited test ban treaty, the Kennedy administration gave assurances that as a deterrent against the USSR's breaking the treaty, the United States would maintain a readiness to resume testing of nuclear weapons in the atmosphere.

Although various individuals and groups in the United States found the limited test ban treaty less than completely satisfactory from their point of view, it nevertheless commanded widespread support. Those who were primarily interested in achieving the regulation of armaments, and ultimately disarmament, would have preferred a comprehensive test ban. Some military officials and scientists, particularly those associated with the Lawrence laboratory at Livermore, California, worried that the treaty would place the United States at a military disadvantage. The Soviet Union was using high-yield warheads to compensate for the fact that the guidance systems for its missiles were not as accurate as the U.S. systems. It was foreseeable that when the USSR caught up with the United States in this respect (and it has) its advantage in high-yield weapons would continue to exist and the United States' compensating advantage would have disappeared. The Joint Chiefs of Staff, nevertheless, collectively and individually supported the ratification of the treaty. It should be noted, though, that the limited nuclear test ban treaty was negotiated at a time when the United States was engaged in extensive build up of its military forces; the Joint Chiefs had ample reason to believe that whatever military disadvantages the treaty might involve, compensating actions would be taken. An overwhelming majority of other U.S. officials also supported ratification of the treaty. Whatever reservations individuals and groups may have had about the treaty there was broad consensus that the United States and the world were better off with the treaty than they would be without it.

On September 24, 1963, the U.S. Senate voted eighty to nineteen to give its advice and consent to the ratification of the limited test ban treaty, and the following day the Presidium of the Supreme Soviet of the USSR unanimously voted to ratify it. The international consensus appeared to be sealed.

The nuclear test ban treaty is an important measure of arms control. To reiterate its benefits, it protects the atmosphere against environmental degradation, it is an important instrument against the proliferation of nuclear weapons, and it is an inhibition against the development of some types of ABM systems.

Subsequent arms control agreements have been modeled on the limited nuclear test ban treaty. They have usually not involved reducing military forces in being, but rather renouncing possible actions that have not yet been taken. Progress has been limited and incremental. When the treaties have involved the military establishments of the United States and the Soviet Union, the agreements have relied on NTMs for surveillance of compliance with the terms of the agreements and on the possibility of adversary retaliation as a potential sanction against failure to comply. Only the treaties that comprise the nonproliferation regime provide for control mecha-

nisms operated by international institutions, and these have only limited and voluntary application to the nuclear-weapon states.

IV. THE EMERGENCE OF THE CRISIS

Until the mid-1970's, it seemed that the apparent consensus forged within the United States and between the United States and the Soviet Union in the negotiations that led to the limited nuclear test ban treaty, and the model of the treaty, could provide the impulse for continued progress in arms control for many years to come. How has this prospect been called into question?

In the United States, arms control has become a political issue. Both Jimmy Carter in 1976 and Ronald Reagan in 1980 attacked the arms control record of the incumbent president as important parts of their presidential campaigns. Carter and Reagan each, rather than promising to build on the achievements of his predecessor, pledged to demonstrate a new approach. Carter initiated the process of making arms control a political issue by arguing that President Ford had not done enough to reduce armaments, especially nuclear weapons.

The administrations of Richard Nixon and Gerald Ford had taken steps to extend the limited ban on nuclear testing to include some underground testing and to place a quantitative limit on U.S. and Soviet strategic nuclear forces. In 1974, the United States and the Soviet Union signed a treaty that prohibited conducting underground nuclear explosions with a yield of more than 150 kilotons; all nuclear explosions in any other environment were already prohibited by the limited test ban treaty.¹⁹ Under the protocol to the treaty the two sides agreed to exchange information on the yields of weapons tested at their underground sites, as well as geophysical data concerning these sites to facilitate the calibration of the other parties' seismic instruments — in other words, to facilitate detection by NTMs. Two years later, in 1976, the two countries signed a treaty that would allow the conducting of underground peaceful nuclear explosions (PNEs) at sites other than those on which information had been exchanged under the terms of the threshold test ban treaty; explosions could be conducted at such sites, however, only under conditions that provided for on-site inspections.²⁰ Control of PNEs is essential because there is no basic difference between the technology of a PNE and of a nuclear weapon.

The U.S. government had never been wholly confident, especially with respect to explosions having lower yields, that, relying solely on national technical means, it could distinguish underground nuclear explosions from earthquakes. For this reason, from the outset of the negotiations to ban nuclear testing, the United States had insisted that if underground testing were to be prohibited, the agreement would have to provide for on-site inspections so that suspicious seismic events could be investigated. The So-

19. Treaty on the Limitation of Underground Nuclear Weapons Tests, July 3, 1974, art. I, United States-Soviet Union, S. Exec. Doc. No. N, 94th Cong., 2d Sess. 5-6, *reprinted in* DISARMAMENT AGREEMENTS, *supra* note 3, at 167.

20. Treaty on Underground Nuclear Explosions for Peaceful Purposes, May 28, 1976, arts. 3, 4, United States-Soviet Union, S. Exec. Doc. No. N, 94th Cong., 2d Sess. 10-12, *reprinted in* DISARMAMENT AGREEMENTS, *supra* note 3, at 173.

viet Union, on the other hand, was very reluctant to allow on-site inspections. The two treaties were steps toward breaking this impasse. In the 1974 agreement the United States acknowledged that it could have reasonable confidence in its ability to detect underground tests of nuclear weapons that had a yield of more than 150 kilotons. By allowing on-site inspections in the 1976 treaty, the Soviet Union acknowledged that they might be necessary. Experience with on-site inspections could show how essential they really were, or might make them less essential by allowing the confirmation and calibration of national technical means of detection. Experience could also provide a test for the USSR of how intrusive they might be.

The two treaties could be seen as forerunners of a comprehensive ban on testing nuclear weapons. There has always been opposition in the U.S. government, however, to a comprehensive test ban (CTB), irrespective of the U.S.'s ability to monitor compliance with such an agreement. This opposition is based on a desire to improve the efficiency and safety of weapons, to maintain a testing capability as a deterrent against the limited test ban being broken and to proof-test weapons to insure that they continue to function properly after many years of storage. This opposition would have to be overcome for the United States to agree to a comprehensive test ban.

In 1972, as part of the SALT negotiations, the United States and the Soviet Union signed the Interim Agreement on the Limitation of Offensive Weapons.²¹ This agreement committed the two sides for a period of five years not to deploy strategic ballistic missile launchers beyond those that were already deployed or under construction. This interim agreement was to be the first step toward a more permanent and far-reaching limitation of the two sides' strategic nuclear arms. Negotiations proceeded toward this objective, and in 1974 at Vladivostok President Gerald Ford and Chairman Leonid Brezhnev agreed that the prospective treaty should limit each of the two sides to 2,400 launchers of strategic nuclear delivery vehicles, no more than 1,320 of which should be launchers for missiles with multiple independently-targeted reentry vehicles (MIRVs). The United States had sought but failed to win Soviet agreement for a lower number that could have required the USSR to reduce its modern heavy intercontinental ballistic missile (ICBM) force. The Soviet Union would have had to reduce the number of its launchers only slightly to comply with the 2,400 ceiling while the United States could have increased the number of its launchers. The Ford administration saw the Vladivostok agreement as an important step toward achieving a strategic arms limitation treaty. It also regarded the equal ceilings as an improvement over the U.S. inferiority imposed by the Interim Agreement. Although the goal of achieving a strategic arms limitation treaty was of some urgency because the Interim Agreement would expire in 1977, it had not been gained by the time of the 1976 presidential campaign.

During the campaign, Jimmy Carter attacked the underground threshold test ban treaty and the entire concept of peaceful nuclear explosions, and argued that what was needed was a comprehensive test ban. He also attacked the Vladivostok numerical ceilings, arguing that they were too

21. SALT I Interim Agreement, *supra* note 12.

high and would allow an arms build up rather than providing arms control. He pledged to reduce the defense budget \$5 to \$7 billion below the planned figure.

After his election, President Carter did not press the Senate to give its advice and consent to the two treaties dealing with underground nuclear explosions, but instead sought to achieve a comprehensive test ban. By the end of his administration, agreement had not been reached on a CTB, and the two treaties remained unratified.

With respect to the limitation of strategic nuclear arms, in the early days of his administration, Carter decided to try to press for ceilings that were lower than those agreed to at Vladivostok: he proposed a total number of launchers between 1,800 and 2,000 of which only 1,100 or 1,200 could have MIRVs. These ceilings would have required the USSR to reduce the number of strategic nuclear launchers that it had by almost twenty-five percent; the U.S. reduction would have been less than five percent. The USSR rejected Carter's proposal. When the SALT treaty was finally signed in June 1979 the initial ceilings set for strategic nuclear weapon launchers were 2,400, of which only 1,320 could be missiles with MIRVs, exactly the ceilings that had been argued on at Vladivostok.²² The treaty did provide, however, that as of January 1, 1982, the overall ceiling would be lowered to 2,250. Carter submitted the treaty to the Senate to gain its advice and consent to ratification, but on January 3, 1980, after the Soviet invasion of Afghanistan, he asked the Senate to defer consideration of the treaty.

Whether or not the Senate would have given its consent to ratification of the SALT treaty had the Soviet Union not invaded Afghanistan is moot. Both liberals and conservatives in the Senate attacked the treaty because the ceilings that it set were too high; they did not do enough to reduce the number of nuclear weapons. The liberals simply wanted the total reduced; the conservatives particularly wanted the USSR to reduce the number of heavy missiles that it had deployed, missiles which the conservatives believed threatened the U.S. ICBM force. The conservatives also questioned whether the treaty could be verified adequately. Furthermore, they were skeptical of the wisdom of entering into an arms control agreement with the Soviet Union when it was engaged — in their eyes — in conduct that threatened U.S. interests in the Third World, and when the United States was not doing enough to ensure the adequacy of its own military forces. In constant dollars the military budgets for fiscal year 1978, which began October 1, 1977 and which was the first full year of the Carter Presidency, and for fiscal year 1979 were less than the budget for fiscal year 1977, even though in current dollars they were larger. Inflation more than absorbed the increase. The military budget for fiscal year 1980 — again in constant dollars — was less than one percent higher than that for fiscal year 1977. As president, Carter thus essentially fulfilled his campaign pledge to cut the military budget.

During the 1980 presidential campaign Ronald Reagan asserted that the SALT treaty was "fatally flawed," because, among other reasons, it did not provide for significant reductions. He pledged to build up U.S. military

22. SALT II Treaty, *supra* note 12, arts. III, IV.

forces, arguing that this would induce the Soviet Union to accept sharp reductions in nuclear forces. When he became president, Reagan began an extensive military build up: The military budgets for fiscal years 1981 and 1982 were each more than eleven percent larger in constant dollars than that of the preceding year, and that for fiscal year 1983 was almost nine percent larger. Although President Reagan announced that the United States would abide by the terms of the SALT treaty as long as the Soviet Union did too, he refused to press for ratification of the treaty. He renamed the SALT negotiations the Strategic Arms Reduction Talks (START) and sought deep reductions in Soviet and American strategic nuclear arsenals. In 1982 he broke off the talks concerning a comprehensive test ban and announced that he would not press for ratification of the threshold test ban and PNE treaties unless they were improved, specifically by greater provision for on-site inspections, but the Soviet Union refused to reopen the negotiations.

Carter's and Reagan's actions symbolize a broad politicization within the United States of arms control issues; these issues have become a matter of partisan controversy. Moreover, the course that was pursued from the signing of the limited test ban treaty through the PNE agreement has come under attack from both ends of the political spectrum. With respect to strategic weapons, both left and right argue that much lower ceilings than those provided for in the SALT treaty are necessary. With respect to underground testing and PNE, in contrast, the two sides differ sharply: the left is determined to achieve a comprehensive test ban, while the right would abandon efforts to control underground explosions. The sharpness of the debate about arms control and the failure of the Senate to give its advice and consent to the ratification of the three treaties puts in question the ability of the United States to ratify any treaty.

Of course, a treaty involving deep cuts in the strategic nuclear arsenals of the United States and the Soviet Union which did not weaken the U.S. sense of security would be very welcome to Americans of virtually all political persuasions. The problem is that to negotiate such a treaty the two sides would have to address and surmount the technical problem of comparability, the problem that plagued negotiations prior to 1963. The strategic nuclear forces of the Soviet Union and the United States have quite different structures; to reduce them sharply without seriously disadvantaging one side or the other would be extremely difficult.

Further dimming the prospects for arms control, it is not clear now that the United States and the Soviet Union hold the same concept of the goals of the process that began in 1963 with the limited nuclear test ban treaty. The apparent consensus between the two states may have been short-lived or even illusory. To be sure, the United States and the Soviet Union continue to agree on the modalities embodied in the limited nuclear test ban treaty; reliance on NTMs for surveillance and the possibility of adversary retaliation as the potential sanction against infractions. The two countries seem, however, to have had different expectations about the broader consequences of a series of agreements based on these modalities.

There has been a widespread expectation in the United States that as more and more arms control agreements came into effect, the arms race between the Soviet Union and the United States would be slowed and ultimately reversed. Furthermore, there was also a general expectation that as

the military relationship between the two countries was stabilized and made less tense, their propensity to clash throughout the world would be moderated.

Starting with the seven-year plan that began in 1959, the USSR's military expenditures have risen steadily, resulting in a continual and substantial military build up.²³ Rather than stopping the deployment of strategic nuclear delivery vehicles when it achieved numerical parity with the United States, as many Americans expected would happen, the Soviet Union continued to deploy more and more weapons until ceilings were set by the Interim Agreement and the SALT treaty. Modernization of weapons continued within the framework of these ceilings, and there has been increased deployment of weapons not covered by them. Serious allegations have been raised that the Soviet Union has violated other arms control agreements, the first two of which it has ratified: the 1925 Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare;²⁴ the 1972 Treaty on the Limitation of Anti-Ballistic Missile systems;²⁵ and the 1979 Treaty on the Limitation of Strategic Offensive Arms.²⁶ Since the mid-1970's, the Soviet Union has abetted and given substantial material assistance to forces that threatened Western interests in Africa, the Middle East, the Caribbean and Central America.

It seems clear from the pronouncements of Soviet leaders that the USSR never intended by engaging in the arms control process to limit its freedom to support what it viewed as revolutionary forces in the Third World. To accept such a limitation would involve the USSR's renouncing its commitment to support what it views as the progressive movement of history. This poses in acute terms the issue of linkage — to what extent should the United States make its agreement to arms control measures conditional on Soviet restraint in the Third World. This issue did not arise at the time of the signing of the limited nuclear test ban treaty, nor for about a decade thereafter, but it cannot be avoided in the 1980's. In many ways the issue is similar to one faced in the interwar period and specifically at the League of Nations disarmament conference — can arms control be achieved in the absence of a political agreement or must a political agreement precede the acceptance of arms control?

It also seems clear that the Soviet Union will not willingly accept a military position that it perceives as being inferior to the United States. The purpose of the Soviet military build up is difficult to fathom, at least partly because of the degree of secrecy in which the USSR enshrouds its military affairs. Given this basic uncertainty, it is hard to understand fully how the Soviet Union conceived that arms control would serve its interests. Did it see arms control as a way of freezing situations where it had a military advantage, or as blocking United States weapons developments so that it could catch up, as some Americans have alleged, or did it see it as a more neutral device for stabilizing dangerous relationships? Does the USSR re-

23. This arms build up is described and analyzed in D. HOLLOWAY, *THE SOVIET UNION AND THE ARMS RACE* (1983).

24. Geneva Protocol, *supra* note 3.

25. ABM Treaty, *supra* note 11.

26. SALT II Treaty, *supra* note 12.

gard its having anything less than military superiority as putting it in a position of inferiority?

The inability to answer these questions with certainty contributes to the tendency in the United States to seek deep cuts in the strategic nuclear arsenals of the two countries. Given the Soviet insistence on not being placed in a position that it would regard as involving military inferiority and U.S. suspicion about Soviet intentions, the technical problem of comparability will inescapably be a central issue in any negotiation aimed at achieving substantial reductions.

If an agreement provided for substantial reductions, infractions would have more serious military consequences than if the parties' arsenals were larger. Thus, verification is a more serious issue in negotiations aimed at deep cuts. Suspicion that the Soviet Union has violated existing arms control agreements has already raised the demands for certainty that the United States places on verification systems. Moreover, the evolving weapons technology has substantially increased the difficulty of verifying arms control agreements. Cruise missiles, which the United States has started to deploy and which the Soviet Union is developing, can carry either nuclear or conventional warheads. They are small and mobile and easy to conceal. All of these factors throw into question the adequacy of nonintrusive national technical means — essentially observation satellites — to monitor future arms control agreements. If NTMs are not adequate, then more elaborate verification systems, perhaps under international control, will be required. Unfortunately, devising such systems has generally eluded negotiators aiming toward the regulation of armaments or disarmament.

V. PROSPECTS FOR ARMS CONTROL

What then are the prospects for arms control? If the apparent consensus that made possible the limited nuclear test ban treaty and the several treaties and agreements that followed it has evaporated, they are indeed bleak, because progress in arms control would require overcoming obstacles that before 1963 consistently blocked the achievement of agreements.

Perhaps these obstacles can be overcome. Public revulsion against nuclear weapons seems greater than it ever has been. President Reagan and the U.S. Catholic bishops agree that the current situation — in which the ultimate guarantee against either side launching a first strike is the fact that neither the United States nor the Soviet Union could escape a massive retaliatory nuclear strike — is not in the long run an acceptable way of dealing with nuclear weapons. The nuclear freeze movement has gathered unprecedented popular support in the United States and the West. There are indications of stirrings of opposition to nuclear weapons in communist countries as well. Since the advent of nuclear weapons, however, public opposition to them has risen, crested and dropped back. Whether or not the current tide of opposition will provide sufficient pressure to force governments to overcome the traditional obstacles to the regulation of armaments and disarmaments is impossible to predict.

Failing this, another possible course would be to attempt to return to the concepts that made possible the limited nuclear test ban treaty and the subsequent agreements and treaties. It is a much less satisfying path, for it

involves incremental, rather than dramatic, progress and living with, rather than eliminating, nuclear weapons. The United States would have to accept arms control as primarily a device for reducing the risk of nuclear and possibly conventional conflict, not as a brake on Soviet expenditures. The United States may no longer find this an attractive prospect; yet if the traditional obstacles cannot be overcome, the only other course could be an expensive and dangerous arms race.