

# **TREATY BETWEEN THE UNITED STATES OF AMERICA AND THE UNION OF SOVIET SOCIALIST REPUBLICS ON THE LIMITATION OF UNDERGROUND NUCLEAR WEAPON TESTS (AND PROTOCOL THERETO)**

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The Treaty on the Limitation of Underground Nuclear Weapon Tests, also known as the Threshold Test Ban Treaty (TTBT), was signed in July 1974. It establishes a nuclear "threshold," by prohibiting tests having a yield exceeding 150 kilotons (equivalent to 150,000 tons of TNT).

The threshold is militarily important since it removes the possibility of testing new or existing nuclear weapons going beyond the fractional-megaton range. In the 1960s, many tests above 150 kilotons were conducted by both countries. The mutual restraint imposed by the Treaty reduced the explosive force of new nuclear warheads and bombs which could otherwise be tested for weapons systems. Of particular significance was the relationship between explosive power of reliable, tested warheads and first-strike capability.

The task of negotiating a comprehensive test ban remained on the agenda of the U.S. Government, and, in Article I, the parties to the Threshold Test Ban Treaty undertook an obligation to continue negotiations toward that goal.

The first proposal for stopping nuclear weapon tests was made in 1955, and the first major negotiations with the Soviet Union for an effectively controlled test ban began in Geneva in 1958, with the United Kingdom also participating. The Conference on the Discontinuance of Nuclear Weapon Tests produced no agreement. The problem of working out verification procedures to ensure compliance with a complete ban on nuclear weapon tests in all environments proved to be intractable at that time. The procedures deemed necessary by the United States and the United Kingdom were not acceptable to the Soviet Union.

In 1963 the Limited Test Ban Treaty (LTBT) was signed by the Soviet Union, the United States, and the United Kingdom. This Treaty prohibits nuclear weapon testing in the atmosphere, in outer space and under water. The parties also agreed not to carry out any nuclear weapon test, or any other nuclear explosion, in any other environment -- i.e., underground -- that would cause radioactive debris to be present beyond the borders of the country in which the explosion took place.

Underground nuclear explosions were not prohibited by the 1963 Treaty, although both in the Treaty preamble and Article I, the LTBT parties pledged to seek "the discontinuance of all test explosions of nuclear weapons for all time . . ."

The United States and Soviet Union agreed in the spring of 1974 to pursue the possibilities of further restrictions on nuclear testing. Accordingly, a team of U.S. experts was sent to Moscow for technical talks.

Agreement on the Threshold Test Ban Treaty was reached during the summit meeting in Moscow in July 1974. The Treaty included a protocol which detailed technical data to be exchanged and which limited weapon testing to specific designated test sites to assist verification. The data to be exchanged included information on the geographical boundaries and geology of the testing areas. Geological data -- including such factors as density of rock formation, water saturation, and depth of the water table -- are useful in verifying test yields because the seismic signal produced by a given underground nuclear explosion varies with these factors at the test location. After an actual test has taken place, the geographic coordinates of the test location are to be furnished to the other party, to help in placing the test in the proper geological setting and thus in assessing the yield.

The Treaty also stipulates that data will be exchanged on a certain number of tests for calibration purposes. By establishing the correlation between stated yields of explosions at the specified sites and the seismic signals produced, this exchange improved assessments by both parties of the yields of explosions based primarily on the measurements derived from their seismic instruments. The tests used

for calibration purposes may be tests conducted in the past or new tests

Agreement to exchange the detailed data described above represented a significant degree of direct cooperation by the two major nuclear powers in the effort to control nuclear weapons. For the first time, each party agreed to make available to the other data relating to its nuclear weapons test program.

The technical problems associated with a yield threshold were recognized by the sides in the spring of 1974. In this context the Soviet Union mentioned the idea of some kind of a "mistakes" understanding concerning occasional, minor, unintended breaches. Discussions on the subject of such an understanding took place in the autumn of 1974 and in the spring of 1976. The Soviet Union was informed by the United States that the understanding reached would be included as part of the public record associated with submitting the Treaty to the Senate for advice and consent to ratification. The entire understanding is as follows:

Both Parties will make every effort to comply fully with all the provisions of the TTBT Treaty. However, there are technical uncertainties associated with predicting the precise yields of nuclear weapons tests. These uncertainties may result in slight, unintended breaches of the 150 kiloton threshold. Therefore, the two sides have discussed this problem and agreed that: (1) one or two slight, unintended breaches per year would not be considered a violation of the Treaty; (2) such breaches would be a cause for concern, however, and, at the request of either Party, would be the subject for consultations

The Soviet Union was also informed that while the United States would not consider such a slight, unintentional breach a violation, the United States would carefully review each such breach to ensure that it is not part of a general attempt to exceed the confines of the Treaty.

The understanding in its entirety was included in the transmittal documents which accompanied the TTBT Treaty and the PNE Treaty when they were submitted to the Senate for advice and consent to ratification on July 29, 1976

Although the TTBT was signed in 1974, it was not sent to the U.S. Senate for advice and consent to ratification until July 1976. Submission was held in abeyance until the companion Treaty on underground nuclear explosions for peaceful purposes (PNET) had been successfully negotiated in accordance with Article III of the TTBT.

For many years, neither the United States nor the Soviet Union ratified the TTBT or the PNE Treaty. However, in 1976 each party separately announced its intention to observe the Treaty limit of 150 kilotons, pending ratification.

The United States and the Soviet Union began negotiations in November 1987 to reach agreement on additional verification provisions that would make it possible for the United States to ratify the treaties. Agreement on additional verification provisions, contained in new protocols, substituting for the original protocols, was reached in June 1990. The TTBT and PNET entered into force on December 11, 1990.\* The TTBT verification protocol provides for the use of the hydrodynamic yield measurement method with respect to all tests having a planned yield exceeding 50 kilotons, as well as seismic monitoring and, with respect to all tests having a planned yield exceeding 35 kilotons, on-site inspection.

\* The full text of the 1990 Protocols will appear in the next edition of this series.

**TREATY BETWEEN THE UNITED STATES OF AMERICA AND THE UNION OF SOVIET SOCIALIST REPUBLICS ON THE LIMITATION OF UNDERGROUND NUCLEAR WEAPON TESTS**

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*Signed at Moscow July 3, 1974*

*Ratified December 8, 1990*

*Entered into force December 11, 1990*

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to take effective measures toward reductions in strategic arms, nuclear disarmament, and general and complete disarmament under strict and effective international control,

Recalling the determination expressed by the Parties to the 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water in its Preamble to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time, and to continue negotiations to this end,

Noting that the adoption of measures for the further limitation of underground nuclear weapon tests would contribute to the achievement of these objectives and would meet the interests of strengthening peace and the further relaxation of international tension,

Reaffirming their adherence to the objectives and principles of the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water and of the Treaty on the Non-Proliferation of Nuclear Weapons,

Have agreed as follows.

**Article I**

1. Each Party undertakes to prohibit, to prevent, and not to carry out any underground nuclear weapon test having a yield exceeding 150 kilotons at any place under its jurisdiction or control, beginning March 31, 1976.
2. Each Party shall limit the number of its underground nuclear weapon tests to a minimum.
3. The Parties shall continue their negotiations with a view toward achieving a solution to the problem of the cessation of all underground nuclear weapon tests.

**Article II**

1. For the purpose of providing assurance of compliance with the provisions of this Treaty, each Party shall use national technical means of verification at its disposal in a manner consistent with the generally recognized principles of international law.
2. Each Party undertakes not to interfere with the national technical means of verification of the other Party operating in accordance with paragraph 1 of this Article
3. To promote the objectives and implementation of the provisions of this Treaty the Parties shall, as necessary, consult with each other, make inquiries and furnish information in response to such inquiries.

**Article III**

The provisions of this Treaty do not extend to underground nuclear explosions carried out by the Parties for peaceful purposes. Underground nuclear explosions for peaceful purposes shall be governed by an agreement which is to be negotiated and concluded by the Parties at the earliest possible time.

#### Article IV

This Treaty shall be subject to ratification in accordance with the constitutional procedures of each Party. This Treaty shall enter into force on the day of the exchange of instruments of ratification.

#### Article V

1. This Treaty shall remain in force for a period of five years. Unless replaced earlier by an agreement in implementation of the objectives specified in paragraph 3 of Article I of this Treaty, it shall be extended for successive five-year periods unless either Party notifies the other of its termination no later than six months prior to the expiration of the Treaty. Before the expiration of this period the Parties may, as necessary, hold consultations to consider the situation relevant to the substance of this Treaty and to introduce possible amendments to the text of the Treaty.
2. Each Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests. It shall give notice of its decision to the other Party six months prior to withdrawal from this Treaty. Such notice shall include a statement of the extraordinary events the notifying Party regards as having jeopardized its supreme interests.
3. This Treaty shall be registered pursuant to Article 102 of the Charter of the United Nations.

**DONE** at Moscow on July 3, 1974, in duplicate, in the English and Russian languages, both texts being equally authentic.

**FOR THE UNITED STATES OF AMERICA:**

**RICHARD NIXON**

*The President of the United States of America*

**FOR THE UNION OF SOVIET SOCIALIST REPUBLICS:**

**L. BREZHNEV**

*General Secretary of the Central Committee of the CPSU*

# PROTOCOL TO THE TREATY BETWEEN THE UNITED STATES OF AMERICA AND THE UNION OF SOVIET SOCIALIST REPUBLICS ON THE LIMITATION OF UNDERGROUND NUCLEAR WEAPON TESTS

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The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties.

Having agreed to limit underground nuclear weapon tests,

Have agreed as follows:

1. For the Purpose of ensuring verification of compliance with the obligations of the Parties under the Treaty by national technical means, the Parties shall, on the basis of reciprocity, exchange the following data:

a. The geographic coordinates of the boundaries of each test site and of the boundaries of the geophysically distinct testing areas therein.

b. Information on the geology of the testing areas of the sites (the rock characteristics of geological formations and the basic physical properties of the rock, i.e., density, seismic velocity, water saturation, porosity and the depth of water table).

c. The geographic coordinates of underground nuclear weapon tests, after they have been conducted.

d. Yield, date, time, depth and coordinates for two nuclear weapon tests for calibration purposes from each geophysically distinct testing area where underground nuclear weapon tests have been and are to be conducted. In this connection the yield of such explosions for calibration purposes should be as near as possible to the limit defined in Article I of the Treaty and not less than one-tenth of that limit. In the case of testing areas where data are not available on two tests for calibration purposes, the data pertaining to one such test shall be exchanged, if available, and the data pertaining to the second test shall be exchanged as soon as possible after the second test having a yield in the above-mentioned range. The provisions of this Protocol shall not require the Parties to conduct tests solely for calibration purposes

2. The Parties agree that the exchange of data pursuant to subparagraphs a, b, and d of paragraph 1 shall be carried out simultaneously with the exchange of instruments of ratification of the Treaty, as provided in Article IV of the Treaty, having in mind that the Parties shall, on the basis of reciprocity, afford each other the opportunity to familiarize themselves with these data before the exchange of instruments of ratification

3. Should a Party specify a new test site or testing area after the entry into force of the Treaty, the data called for by subparagraphs a and b of paragraph 1 shall be transmitted to the other Party in advance of use of that site or area. The data called for by subparagraph d of paragraph 1 shall also be transmitted in advance of use of that site or area if they are available; if they are not available, they shall be transmitted as soon as possible after they have been obtained by the transmitting Party.

4. The Parties agree that the test sites of each Party shall be located at places under its jurisdiction or control and that all nuclear weapon tests shall be conducted solely within the testing areas specified in accordance with paragraph 1.

5. For the purposes of the Treaty, all underground nuclear explosions at the specified test sites shall be considered nuclear weapon tests and shall be subject to all the provisions of the Treaty relating to nuclear weapon tests. The provisions of Article III of the Treaty apply to all underground nuclear explosions conducted outside of the specified test sites, and only to such explosions.

This Protocol shall be considered an integral part of the Treaty

**DONE** at Moscow on July 3, 1974.

**FOR THE UNITED STATES OF AMERICA:**

**RICHARD M. NIXON**

*The President of the United States of America*

**FOR THE UNION OF SOVIET SOCIALIST REPUBLICS:**

**L. BREZHNEV**

*General Secretary of the Central Committee of the CPSU*