

**PROTOCOL ON TELEMETRIC INFORMATION RELATING TO THE TREATY
BETWEEN THE UNITED STATES OF AMERICA AND THE UNION OF SOVIET
SOCIALIST REPUBLICS ON THE REDUCTION AND LIMITATION OF
STRATEGIC OFFENSIVE ARMS**

Pursuant to and in implementation of the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms, hereinafter referred to as the Treaty, the Parties hereby agree upon provisions and procedures associated with the fulfillment of obligations concerning telemetric information pursuant to Article X of the Treaty.

I. Provision of Tapes that Contain a Recording of Telemetric Information

1. Pursuant to paragraphs 4 and 6 of Article X of the Treaty, the Party conducting the flight test shall provide through diplomatic channels, no later than 65 days after the flight test of an ICBM or SLBM:¹

- (a) tapes that contain a recording of all telemetric information broadcast during the flight test;
- (b) tapes that contain a recording of all telemetric information that is encapsulated, if such tapes are recovered; and
- (c) a summary for each tape provided in accordance with subparagraphs (a) and (b) of this paragraph, including the following:
 - (i) type of ICBM or SLBM, date of flight test, tape number, recorder type, and recording speed (meters/second or inches/second);
 - (ii) *information for each track, including track number, record period, record mode, and broadcast frequency (megahertz), except for track numbers for each tape, and each portion of a tape, that contain a recording of telemetric information that has been encrypted²;*
 - (iii) *digital data encoding methods employed and digital data recording formats, except that the provisions of this subparagraph shall not apply to each tape, and each portion of a tape, that contain a recording of telemetric information that has been encrypted; and³*
 - (iv) identifications, and explanations where possible, keyed to a time standard, of the periods during the flight test for which no

¹ JCIC Agreement No. 35, Article Two, Paragraph 1.

² JCIC Agreement No. 26, Article One, Paragraph 1.

³ JCIC Agreement No. 26, Article One, Paragraph 2.

tape recordings were obtained or for which tape recordings are of inferior quality.

2. The Party conducting the flight test shall determine the method of recording the telemetric information on the tapes.

3. If the Party that receives the tapes that contain a recording of telemetric information determines that such tapes do not contain the complete set of telemetric information or that their quality is insufficient for processing such information, that Party shall provide notification thereof in accordance with paragraph 4 of Section VI of the Notification Protocol. *No later than 45 days after its receipt, the Party receiving such notification shall provide through diplomatic channels either a statement explaining the reasons for the incompleteness or insufficient quality of the recording of telemetric information or, if possible, new copies of the tapes.*¹

4. In order to make it possible for the other Party to play back tapes that contain a recording of telemetric information, each Party shall:

- (a) conduct, no later than 120 days after signature of the Treaty, an initial demonstration of the tapes being used, and of the appropriate equipment for playing back the telemetric information recorded on such tapes;
- (b) conduct a demonstration of tapes or appropriate playback equipment that are different from the tapes or equipment previously demonstrated. Such demonstration shall be conducted no less than 30 days in advance of the first flight test of an ICBM or SLBM during which such tapes or equipment that are different are to be used. Notification of the date and place of such demonstration shall be provided in accordance with paragraph 2 of Section VI of the Notification Protocol. If the recording format is the only difference in the tape that contains a recording of telemetric information, and this difference does not require different playback equipment, a Party shall provide, through diplomatic channels, only information describing the format, no less than 60 days in advance of the flight test specified in this subparagraph; and
- (c) *if requested, provide the opportunity to acquire the appropriate equipment to play back the telemetric information that is contained on the tapes no less than 30 days in advance of the receipt of such tapes, unless otherwise agreed. Notification containing such a request shall be provided in accordance with paragraph 3 of Section VI of the Notification Protocol. Equipment acquired following the initial demonstration, conducted pursuant to subparagraph 4(a) of this Section, shall be acquired in accordance with the provisions of Annex 1 to this Protocol.*² *Equipment acquired following a demonstration, conducted after entry into force*

¹ JCIC Agreement No. 41, Article One.

² JCIC Agreement No. 6, Article One.

of the Treaty pursuant to subparagraph 4(b) of this Section, shall be acquired in accordance with the provisions of Annex 5 to this Protocol.¹

- (d) *if requested, in accordance with paragraph 6 of Section VI of the Notification Protocol, ensure the timely provision of training, maintenance, spare parts, and replacement parts for equipment acquired pursuant to this paragraph or pursuant to paragraph 1 or paragraph 2 of Section I of Annex 1 to this Protocol. Provision of training, maintenance, spare parts, and replacement parts shall be in accordance with Annex 4 to this Protocol.²*

The Parties shall agree within the frame-work of the Joint Compliance and Inspection Commission on the procedures for the demonstrations provided for in subparagraphs (a) and (b) of this paragraph.

II. Provision of Data Associated with the Analysis of Telemetric Information

1. Pursuant to paragraph 5 of Article X of the Treaty, the Party conducting the flight test shall provide, through diplomatic channels, no later than 65 days after each flight test of an ICBM or SLBM, the following interpretive data:³

- (a) for all telemetric information that is broadcast, except for telemetric information that originates in and is broadcast from a reentry vehicle, a description of the format of the telemetry frame and methods of encoding, including but not limited to:
- (i) bits per standard word;
 - (ii) standard words per frame;
 - (iii) frames per second;
 - (iv) location of synchronization words or bits;
 - (v) location of information in the frame describing its formatting;
 - (vi) designation and location of each data element within the frame throughout the flight and, if a given word location is time-shared by two or more data elements, the structure for such time-sharing;
 - (vii) method of representing each data element, including the location of each bit in each data element, the order of the bits from least significant to most significant, and the method for representing negative values; and

¹ JCIC Agreement No. 48, Article One.

² JCIC Agreement No. 18, Article One.

³ JCIC Agreement No. 35, Article Two, Paragraph 2

- (viii) all information regarding encoding algorithms, including error detection and correction, data compression, and any conversion processes that are applied in the telemetry equipment to on-board measured parameter values prior to their broadcast; and
- (b) names of parameters and their locations in the telemetry frame, as well as conversion factors or analytic expressions for converting telemetric information to physical values of parameters, only for telemetric information necessary to determine:
 - (i) acceleration of the stages and the self-contained dispensing mechanism of the ICBM or SLBM;
 - (ii) separation times of the stages and the self-contained dispensing mechanism of the ICBM or SLBM; and
 - (iii) times of reentry vehicle separation commands and times of reentry vehicle releases.

2. *No later than 65 days after each flight test of an ICBM or SLBM, the Party conducting the flight test shall provide, through diplomatic channels, a missile acceleration profile, for all its stages and its self-contained dispensing mechanism, having a precision better than one-tenth of a meter per second squared, with a rate of no less than five times per second, with these data provided relative to an inertial frame of reference in a three-dimensional Cartesian coordinate system.¹ The missile acceleration profile shall be calculated on the basis of all relevant on-board and external measurements made during the flight test. In those cases when it is not possible to ensure the precision provided for in this paragraph, the Party conducting the flight test shall provide such a profile calculated to the greatest possible precision.*

3. No later than 120 days after signature of the Treaty, each Party shall provide through diplomatic channels or during demonstrations provided for in paragraph 4 of Section I of this Protocol, an example illustrative of the interpretive data and missile acceleration profile specified in paragraphs 1 and 2, respectively, of this Section for one of the following ICBMs or SLBMs:

- (a) for the United States of America: Peacekeeper, Minuteman III, Trident I, or Trident II; and
- (b) for the Union of Soviet Socialist Republics: SS-18, SS-24, SS-25, or SS-N-23.

The Parties shall agree within the framework of the Joint Compliance and Inspection Commission on the content of the interpretive data and missile acceleration profile specified in this paragraph.

¹ JCIC Agreement No. 35, Article Two, Paragraph 3.

III. Provisions Concerning Encapsulation and Encryption of Telemetric Information

1. Encapsulation provided for in paragraph 6 of Article X of the Treaty, shall be conducted subject to the following:

- (a) Encapsulation shall be applied only to reentry vehicle measurements made during the plasma phase of flight tests of ICBMs or SLBMs. Notwithstanding this provision, reentry vehicle measurements may be encapsulated throughout each flight test of the missile designated by the United States of America as Minuteman II.
- (b) When possible, the Party conducting the flight test shall broadcast, from the same reentry vehicle on which data are encapsulated, all measurements made before and after the plasma phase and, when possible, that Party shall broadcast, following the plasma phase, some measurements made and recorded during the plasma phase. The obligation to broadcast measurements made after the plasma phase shall not apply when impact of the reentry vehicle occurs during conditions of plasma formation.

2. Encryption provided for in paragraph 6 of Article X of the Treaty, shall be carried out subject to the following:

- (a) Encryption shall be used only during flight tests of ICBMs or SLBMs of former and retired types, as well as during no more than two flight tests each year of an ICBM or SLBM of only one existing type of each Party. The Party that exercises the right to use encryption during flight tests of an ICBM or SLBM of such existing type shall provide the notification in accordance with paragraph 5 of Section VI of the Notification Protocol. Subsequent notifications shall be provided only when the ICBM or SLBM, the notification of which has previously been provided, is retired.
- (b) Only telemetric information that pertains to the front section or its elements shall be encrypted, and only after that front section or its elements have separated from either:
 - (i) the self-contained dispensing mechanism, during a flight test of an ICBM or SLBM; or
 - (ii) the final stage, during a flight test of an ICBM or SLBM that is not equipped with a self-contained dispensing mechanism.
- (c) Each Party undertakes not to encrypt telemetric information that pertains to the functioning of the stages or the self-contained dispensing mechanism of an ICBM or SLBM.

IV. Provisional Application

1. Beginning from the date of signature of the Treaty, the provisions of paragraph 3 of Section VI of the Notification Protocol, subparagraph 4(a) of Section I and paragraph 3 of Section II of this Protocol shall apply provisionally.

2. The provisions specified in paragraph 1 of this Section shall apply provisionally for a 12-month period, unless, before the expiration of this period:

- (a) a Party communicates to the other Party its decision to terminate the provisional application of any such provisions; or
- (b) the Treaty enters into force.

The Parties may agree to extend the provisional application of these provisions for additional periods, subject to the same conditions specified in subparagraphs (a) and (b) of this paragraph.

3. The provisions specified in paragraph 1 of this Section shall apply provisionally in light of and in conformity with the other provisions of the Treaty.

This Protocol is an integral part of the Treaty and shall enter into force on the date of entry into force of the Treaty and shall remain in force so long as the Treaty remains in force. As provided for in subparagraph (b) of Article XV of the Treaty, the Parties may agree upon such additional measures as may be necessary to improve the viability and effectiveness of the Treaty. The Parties agree that, if it becomes necessary to make changes in this Protocol that do not affect substantive rights or obligations under the Treaty, they shall use the Joint Compliance and Inspection Commission to reach agreement on such changes, without resorting to the procedure for making amendments set forth in Article XVIII of the Treaty.

Done at Moscow on July 31, 1991, in two copies, each in the English and Russian languages, both texts being equally authentic.

FOR THE UNITED STATES OF AMERICA:

George Bush
President of the United States of America

FOR THE UNION OF SOVIET SOCIALIST REPUBLICS:

M. Gorbachev
President of the Union of Soviet Socialist Republics