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GENERAL ASSEMBLY (seventeenth session)
DISARMAMENT COMMISSION

REPORT TO THE UNITED NATIONS OF THE CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

Note by the Secretary-General

The Secretary-General has received the attached second interim progress report[1/] on the deliberations of the Conference of the Eighteen-Nation Committee on Disarmament covering the period 1 June to 8 September 1962, submitted by the Co-Chairmen on behalf of the Conference for transmission to the United Nations Disarmament Commission and to the seventeenth session of the General Assembly.

1/ The first interim progress report of the Conference covering the period 14 March to 1 June 1962 was distributed to all Members on 5 June 1962 as document DC/203.

62-20533

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

PRIVATE
ENDC/62
7 September 1962
ENGLISH
Original: ENGLISH-RUSSIAN

REPORT TO THE UNITED NATIONS

The Conference of the 18-Nation Committee on Disarmament transmits herewith to the United Nations Disarmament Commission and to the 17th Session of the General Assembly a second interim progress report on the Conference deliberations for the period 1 June 1962 to 8 September 1962.

I. Organization of Conference

A. Participants in the Conference

Representatives of the following states continued their participation in the work of the Committee:

Brazil, Bulgaria, Burma, Canada, Czechoslovakia, Ethiopia, India, Italy, Mexico, Nigeria, Poland, Romania, Sweden, Union of Soviet Socialist Republics, United Arab Republic, United Kingdom of Great Britain and Northern Ireland, and the United States of America.

B. Agreements on Procedural Arrangements

1. At its 47th meeting on 1 June 1962, the Conference decided to recess from 15 June to 16 July 1962.

2. At its 57th meeting on 16 July 1962, the Conference adopted certain additional procedural arrangements recommended by the Co-Chairmen (ENDC/1/Add.2)* concerning the number of meetings of the full Committee to be held each week and the schedule of those meetings and any subcommittee meetings.

3. At its 60th meeting on 24 July 1962, the Conference adopted further recommendations by the Co-Chairmen concerning the procedure of work of the Committee on the first stage of a treaty on general and complete disarmament (ENDC/1/Add.3)*. These recommendations were based upon the sequence of measures proposed both in Stage I of the Draft Treaty on General and Complete Disarmament Under Strict International Control, introduced on 15 March 1962 by the Delegation

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* Asterisk indicates Conference documents which are attached hereto as Annex I.

of the Soviet Union (ENDC/2), and in Stage I of the Outline of Basic Provisions of a Treaty on General and Complete Disarmament in a Peaceful World, introduced on 18 April 1962 by the Delegation of the United States (ENDC/30), and also took account of the suggestions submitted by the Delegation of the United Kingdom on 17 July 1962 (ENDC/50)*.

The recommendations provided that the overall objective of the Committee in the present phase of work should be to overcome the obstacles and disagreements between various delegations which became apparent during the discussions of the basic proposals of the Soviet Union (ENDC/2) and of the United States (ENDC/30) on general and complete disarmament in the first period of Committee activity from 14 March to 14 June 1962, and that the initial focus should be on first stage of a treaty on general and complete disarmament, with the aim of considering in detail the measures of disarmament, verification and maintenance of international peace and security of the said stage, and of agreeing on the text of appropriate articles to be incorporated into the first stage of a treaty on general and complete disarmament.

The agreed procedure set forth a list of 12 measures and topics for consecutive discussion. It also provided that discussion take place initially at plenary meetings and that during such consideration all delegations could submit relevant treaty language. Thereafter, at a suitable time, the measure or topic under discussion was to be referred to the Co-Chairmen for further detailed consideration, with the aim of bringing positions closer together and of achieving agreement on texts of appropriate articles of the first stage of a treaty on general and complete disarmament.

Nothing in the agreed procedure was intended to preclude any delegation from discussing any subject or proposal in any plenary meeting. Consideration both of the question of a treaty banning nuclear weapon tests and of questions to be discussed in the Committee of the Whole was specifically exempted from the agreed procedure of work.

C. Recess and Date of Resumption

The Conference at its 73rd meeting on 22 August 1962 agreed to a recess beginning 8 September 1962 and to a resumption of work in Geneva on 12 November 1962. The Co-Chairmen, after consultation with members of the Committee, are empowered by the Committee to set a different date for reconvening in Geneva if circumstances in their judgment so warrant, taking into account both the expected termination date of the consideration of disarmament at the 17th Session of the General Assembly and the desirability of reconvening the Committee at Geneva at as early a date as possible.

II. Plenary Deliberations

1. Ten plenary meetings took place from 1 June to 14 June 1962, prior to the recess from 15 June to 16 July 1962.

2. Twenty-six plenary meetings took place from 16 July to 8 September 1962, following the recess. The Foreign Ministers of Canada, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America, and the Defense Minister of India, took part at the 60th meeting on 24 July 1962.

3. At its plenary meetings, the Committee continued to consider, in accordance with the recommendations concerning the procedure of its work, the draft treaty on general and complete disarmament submitted by the Soviet Union on 15 March 1962 (ENDC/2), the outline of basic provisions of a treaty on general and complete disarmament in a peaceful world submitted by the United States on 18 April 1962 (ENDC/30), and other proposals submitted by members of the Committee, in the light of the Joint Statement of Agreed Principles of 20 September 1961 and of the General Assembly Resolution 1722 (XVI) of 20 December 1961.

4. The Delegation of the Union of Soviet Socialist Republics, on 16 July 1962, submitted certain additions and modifications to its draft treaty on general and complete disarmament (ENDC/2/Add.1)*. These additions and modifications concerned, inter alia (1) a 30% reduction in Stage I and a 35% reduction in Stage II of conventional armaments, and (2) measures to reduce the danger of the outbreak of war. The Delegation of the Soviet Union also made known its readiness to lengthen to 5 years the period it proposes for implementation of a treaty on general and complete disarmament, to lengthen to 24 months from the date of entry into force of a treaty the period it proposes for completion of Stage I, and to set in Stage I a level of 1.9 million men each for the reduced armed forces of the United States and the Soviet Union.

5. The Delegation of the United States of America, on 6 August 1962, submitted certain amendments to its outline of basic provisions of a treaty on general and complete disarmament in a peaceful world (ENDC/30/Add. 1)*. These amendments provided for restrictions on the production of existing armaments and

the prohibition of production of new types in Stage I. On 8 August 1962, the Delegation of the United States of America submitted certain other amendments relating to the procedure for transition from Stage I to Stage II and from Stage II to Stage III (ENDC/30/Add.2)*.

6. After discussion in plenary meetings, the following measures or topics listed in ENDC/1/Add.3 were referred to the Co-Chairmen:

Paragraph 5.a. Basic obligations concerning the measures of disarmament, verification and maintenance of international peace and security in the first stage and the time limits for their implementation.

Paragraph 5.b. Disarmament measures in regard to nuclear weapon delivery vehicles, including the problems pertaining to the production of such vehicles, together with appropriate control measures.

Paragraph 5.c. Disarmament measures in regard to conventional armaments, including the problems pertaining to the production of such armaments, together with appropriate measures of control.

7. The text of a Working Draft of Part I of a treaty, containing Articles 1, 2 and 3 (ENDC/40/Rev.1)*, which was submitted on 31 May 1962 by the Delegations of the Soviet Union and the United States but which was not included among the documents in Annex I of the first interim progress report of the Conference, is attached in Annex I of the present report.

8. Pursuant to the discussions mentioned in paragraph 6 above, the following documents were submitted:

(1) By the Co-Chairmen of the Committee at the 67th plenary meeting on 7 August 1962, a working draft of Article 4, Part II, "Basic Tasks and Obligations and Time Limit of Stage I", of a treaty (ENDC/55)*.

Prior to submission of document ENDC/55, the Co-Chairmen had given detailed consideration to earlier working drafts of Article 4, Part II, submitted by the Delegation of the People's Republic of Bulgaria on 25 July 1962 (ENDC/L.17)* and on 31 July 1962 (ENDC/L.17/Rev.1)*, and the Delegation of the United States of America on 30 July 1962 (ENDC/L.18)*.

(2) By the Delegation of the United Kingdom of Great Britain and Northern Ireland on 1 August 1962, a preliminary study of problems connected with the elimination of rockets as nuclear delivery vehicles (ENDC/53)*, a preliminary study of problems connected with the verification of the destruction of certain nuclear delivery vehicles (ENDC/54)*, and on 31 August 1962 a preliminary study of the technical possibility of international control of fissile material production (ENDC/60)*.

9. The question of a treaty banning nuclear weapon tests was discussed by the Committee during a number of plenary meetings.

Discussion was continued of the proposals of the United States and of the United Kingdom dated 18 April 1961 (ENDC/9), of the Soviet Union dated 28 November 1961 (ENDC/11), and of the Joint Memorandum of Brazil, Burma, Ethiopia, India, Mexico, Nigeria, Sweden and the United Arab Republic dated 16 April 1962 (ENDC/28).

At the 69th meeting of the Committee on 14 August 1962, the Delegation of the United States reviewed the revised United States position which it had presented at the 23rd meeting of the Sub-committee on a Treaty for the Discontinuance of Nuclear Weapon Tests on 9 August 1962.

At the meeting of the Committee on 20 August 1962, on a joint proposal by India and the United Arab Republic, the Committee requested the Co-Chairmen, who accepted, to consider practical and adequate ways for a test ban treaty.

On 27 August 1962 the Delegations of the United States and the United Kingdom introduced the texts of two proposals for a treaty. These are a draft treaty banning nuclear weapon tests in all environments (ENDC/58)* and a draft treaty banning nuclear weapon tests in the atmosphere, outer space, and underwater (ENDC/59)*.

At the 81st plenary meeting of the Committee on 5 September 1962, the Delegations of the Soviet Union, the United Kingdom and the United States agreed that the Sub-Committee on a Treaty for the Discontinuance of Nuclear Weapon Tests would continue to meet in Geneva during the recess.

III. Informal Meetings of the Committee

A short informal meeting to discuss and agree upon a recess preceded the 73rd plenary meeting.

IV. Committee of the Whole

A meeting of the Committee was held on 19 July 1962. The subjects discussed were: (a) the prevention of the further dissemination of nuclear weapons, and (b) reduction of the possibility of war by accident, miscalculation, or failure of communications.

V. Subcommittee on a Treaty for the Discontinuance of Nuclear Weapon Tests

1. The Subcommittee has held seven meetings during this phase of the negotiations.

2. At the 23rd meeting of the Subcommittee on 9 August 1962, the Delegation of the United States presented its revised position referred to in Section II, paragraph 9, above.

VI. Meetings of the Co-Chairmen

During the period covered by this report, the Representatives of the United States of America and of the Union of Soviet Socialist Republics, in their capacity as Co-Chairmen of the Eighteen Nation Committee on Disarmament, have held numerous meetings, including consultations at staff level. Schedule of and procedure for the work of the Conference, Draft Article 4 of a treaty on general and complete disarmament, and cessation of nuclear weapon tests were among the subjects discussed.

VII. Conference Documents

Transmitted herewith as Annex II to this report is a list of all documents and verbatim records of the plenary meetings of the Eighteen Nation Disarmament Committee, of the Committee of the Whole and the Subcommittee on a Treaty for the Discontinuance of Nuclear Weapon Tests. Copies of these verbatim records and documents have been or are in the course of being circulated to all Members of the United Nations.

This report is submitted by the Co-Chairmen on behalf of the Conference of the Eighteen Nation Committee on Disarmament.

Union of Soviet Socialist Republics

V.V. Kuznetsov

United States of America

Arthur H. Dean

ANNEX I

List of documents attached to the Report

Procedural suggestions of Co-Chairmen	ENDC/1/Add.2
Recommendations by the Co-Chairmen concerning the procedure of work of the Eighteen Nation Committee on the first stage of a Treaty on General and Complete Disarmament	ENDC/1/Add.3
United Kingdom: Proposals by the United Kingdom Delegation of Subjects suitable for Discussion in Depth during the Current Session	ENDC/50
Union of Soviet Socialist Republics: Additions and modifications to the draft treaty on General and Complete Disarmament under strict international control, submitted by the USSR delegation on 15 March 1962 (ENDC/2*)	ENDC/2/Add.1
United States of America: Amendments to the U.S. Outline of Basic Provisions of a Treaty on General and Complete Disarmament in a Peaceful World (ENDC/30, April 18, 1962) relating to the production of armaments in Stage I.	ENDC/30/Add.1
United States of America: Amendments to the U.S. Outline of Basic Provisions of a Treaty on General and Complete Disarmament in a Peaceful World (ENDC/30, April 18, 1962) relating to Transition	ENDC/30/Add.2
Union of Soviet Socialist Republics and United States of America: Working Draft of Part I of the Treaty on General and Complete Disarmament (in a Peaceful World) proposed by the USA and USSR	ENDC/40/Rev.1

Union of Soviet Socialist Republics and United States of America: Working Draft of Article 4 of Part II of the Treaty on General and Complete Disarmament (in a Peaceful World) proposed by the USA and USSR	ENDC/55
Peoples' Republic of Bulgaria: Working Paper: Draft article 4 of the Treaty on General and Complete Disarmament Part II: First Stage of General and Complete Disarmament Article 4 - First stage tasks	ENDC/L.17
Peoples' Republic of Bulgaria: Working Paper: Revised Draft article 4 of the Treaty on General and Complete Disarmament Part II: First Stage of General and Complete Disarmament Article 4 - First stage tasks	ENDC/L.17/Rev.1
United States of America: Working Draft of Article 4 of Treaty on General and Complete Disarmament in a Peaceful World proposed by the United States of America Part II - Stage I Article 4 - Basic Obligations and Time Limit of Stage I	ENDC/L.18
United Kingdom: Preliminary Study of Problems Connected with the Elimination of Rockets as Nuclear Delivery Vehicles	ENDC/53
United Kingdom: Preliminary Study of Problems Connected with the Verification of the Destruction of Certain Nuclear Delivery Vehicles	ENDC/54
United Kingdom: The Technical Possibility of International Control of Fissile Material Production	ENDC/60

United Kingdom and United States of America: Draft treaty banning nuclear weapon tests in all environments	ENDC/58
United Kingdom and United States of America: Draft treaty banning Nuclear Weapon Tests in the Atmosphere, Outer Space, and Underwater	ENDC/59

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

PRIVATE

ENDC/1/Add.2
16 July 1962

Original: ENGLISH

PROCEDURAL SUGGESTIONS OF CO-CHAIRMEN

Adopted at 57th Meeting of the Conference
on 16 July 1962

1. As a rule, unless determined otherwise, there should be three meetings of the full Committee per week, whether as Plenary session, Committee of the Whole, or Informal meeting.

2. The meetings of any Sub-Committee need not be fitted into the above schedule, but will occur as arranged by Sub-Committee members.

3. The Co-Chairmen will meet when necessary and desirable as arranged between them and will keep the full Committee appropriately informed.

4. For the week of July 16-20, it is suggested that further Plenary meetings be held on July 17 and 18, and that a Committee of the Whole session be fixed for July 19. For the time being, July 20 will be held open for later decision. A meeting of the Test Ban Sub-Committee has been set for the afternoon of July 18.

5. Plenary meetings would thus be held on July 23, 25 and 27, and on Mondays, Wednesdays, and Fridays thereafter, unless, by decision of the full Committee, there should be substituted meetings of the Committee of the Whole or Informal meetings, for one of the Plenary meetings.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

Private
ENDC/1/Add.3
24 July 1962
ENGLISH
Original: ENGLISH and RUSSIAN

RECOMMENDATIONS BY THE CO-CHAIRMEN CONCERNING THE PROCEDURE OF WORK OF THE 18-NATION COMMITTEE ON THE FIRST STAGE OF A TREATY ON GENERAL AND COMPLETE DISARMAMENT

Adopted at 66th meeting of the Conference on 24 July 1962

1. The over-all objective in the present phase of the work of the Committee should be to overcome the obstacles and disagreements between various delegations which became apparent during the discussions of the basic proposals of the Soviet Union (ENDC/2) and of the United States (ENDC/30) on general and complete disarmament in the first period of Committee activity from 14 March to 14 June 1962.

2. The initial focus should be on first stage of a treaty on general and complete disarmament, with the aim of considering in detail the measures of disarmament, verification and maintenance of international peace and security of the said stage, and of agreeing on the text of appropriate articles to be incorporated into the first stage of a treaty on general and complete disarmament.

3. In regard to the subject matter of each subparagraph of paragraph 5 below, it is proposed that it should be first considered at the plenary meetings of the Committee. During such consideration all delegations may submit relevant treaty language. At a suitable time during the consideration, the respective subparagraph should be referred to the two co-chairmen of the Committee for further detailed consideration with the aim of bringing positions closer together and of agreeing on the text of appropriate articles of the first stage of a treaty on general and complete disarmament, taking into account the proposals that may have been submitted by all delegations. The co-chairmen will give periodic reports to plenary sessions, as appropriate, on the progress of their work.

4. Nothing contained herein is intended to preclude any delegation from raising and discussing any subject or proposal in any plenary session of the Committee. The present arrangements are not intended to apply to the consideration during plenary sessions of the question of a treaty for banning nuclear weapon tests and of questions relating to the work of the Committee of the Whole.

5. There follows below a list of the measures and topics in the order in which they are, as a rule, to be dealt with by the Committee in accordance with the procedure outlined in paragraph 3 above:

a. Basic obligations concerning the measures of disarmament, verification and maintenance of international peace and security in the first stage and the time-limits for their implementation (Articles 4 and 19 of ENDC/2 and the introductory language of the first stage of ENDC/30).

b. Disarmament measures in regard to nuclear weapons delivery vehicles, including the problems pertaining to the production of such vehicles, together with appropriate control measures (Articles 5, 6, 7 and 8 of ENDC/2, appropriate paragraphs of Sections A and G of Stage One of ENDC/30, and taking into account items 2 and 3 of the United Kingdom proposal, ENDC/50).

c. Disarmament measures in regard to conventional armaments, including the problems pertaining to the production of such armaments, together with appropriate measures of control (Articles 11 and 12 of ENDC/2, appropriate paragraphs of Sections A and G of Stage One of ENDC/30, and taking into account items 1, 3 and 7 of ENDC/50).

d. Measures in the field of nuclear disarmament together with appropriate measures of control. (Articles 16 and 17 of ENDC/2, appropriate paragraphs of Sections C and G of Stage One of ENDC/30, and taking into account items 4 and 5 of ENDC/50).

e. Disarmament measures in regard to military bases and to armed forces at such bases or elsewhere in foreign territories, together with appropriate control measures (Articles 9 and 10 of ENDC/2, appropriate paragraphs of Sections A, B and G of Stage I of ENDC/30, and taking into account item 6 of ENDC/50).

f. Disarmament measures in regard to armed forces together with appropriate control measures (Article 11 of ENDC/2, Section B and appropriate paragraphs of Section G of Stage One of ENDC/30, and taking into account items 3 and 9 of ENDC/50).

g. Measures in regard to military expenditures together with the appropriate control measures (Article 13 of ENDC/2 and Section E of Stage One of ENDC/30).

h. Measures on the use of outer space for peaceful purposes only, together with appropriate control measures (Articles 14 and 15 of ENDC/2, Section D of Stage One of ENDC/30, and taking into account item 10 of ENDC/50).

i. Measures to ensure the security of States (Article 18 of ENDC/2, Section H of Stage One of ENDC/30, and taking into account item 8 of ENDC/50).

j. Measures to reduce the risks of war (Article 14 of ENDC/2, Article 17a of ENDC/48, and Section F of Stage One of ENDC/30).

k. Transition from the first to the second stage (Article 20 of ENDC/2 and Section I of Stage One of ENDC/30).

l. Measures related to the establishment, organization and functioning of the International Disarmament Organization (Part 5 of ENDC/2, Section G of Stage One of ENDC/30, and taking into account item 11 of ENDC/50).

6. At a suitable time, the Committee will decide whether the same procedures as agreed above should be adopted for work on later stages of a treaty on general and complete disarmament.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

Private
ENDC/50
17 July 1962
Original: English

UNITED KINGDOM

Proposals by the United Kingdom Delegation of Subjects suitable for Discussion in Depth during the Current Session

1. Reduction of conventional armaments and related measures of verification for 1st Stage and further measures for subsequent stages.
2. Reduction or elimination of nuclear delivery vehicles and related measures of verification in 1st Stage and further measures for subsequent stages.
3. Zonal verification or other measures to overcome difficulty about verification of remainders.
4. Cut-off of production, and transfer, of fissile material and related measures of verification, including that of past production.
5. Nuclear and other weapons of mass destruction, and related measures of verification.
6. Bases.
7. Verification of permitted production of weapons.
8. Peace-keeping machinery - and United Nations Peace Force.
9. Force levels and related measures of verification.
10. Outer Space and related measures of verification.
11. International Disarmament Organisation.

PRIVATE
ENDC/2/Add.1
16 July 1962
ENGLISH
Original: RUSSIAN

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

UNION OF SOVIET SOCIALIST REPUBLICS

Additions and modifications to the draft treaty on general and complete disarmament under strict international control submitted by the USSR delegation on 15 March 1962 (ENDC/2*) **

1. Replace the text of article 11, paragraph 3, by the following:

"3. Conventional armaments, military equipment, munitions, means of transportation and subsidiary equipment in units and depots shall be reduced by 30 per cent for each type of all categories of these armaments. The reduced armaments, military equipment and munitions shall be destroyed, and the means of transportation and subsidiary equipment shall be either destroyed or converted to peaceful uses.

All living quarters, depots and special premises previously occupied by units being disbanded, as well as the territories of all proving grounds, firing ranges and drill grounds, shall be transferred for peaceful uses to the civilian authorities."

2. Replace the text of article 24, paragraph 2, by the following:

"2. Conventional armaments, military equipment, munitions, means of transportation and subsidiary equipment in units and depots shall be reduced by 35 per cent from the original levels for each type of all categories of these armaments. The reduced armaments, military equipment and munitions shall be destroyed, and the means of transportation and subsidiary equipment shall be either destroyed or converted to peaceful uses.

All living quarters, depots and special premises previously occupied by units being disbanded, as well as the territories of all proving grounds, firing ranges and drill grounds, shall be transferred for peaceful uses to the civilian authorities."

3. After article 17, insert the following new article 17a:

"Article 17a

Measures to reduce the danger of outbreak of war

1. From the commencement of the first stage substantial joint military movements or manoeuvres of armed forces of two or more States shall be prohibited.

The States Parties to the Treaty agree to notify in advance substantial military movements or manoeuvres of their national armed forces within their national frontiers.

** Issued also as document ENDC/48

2. The States Parties to the Treaty shall exchange military missions between States or groups of States for the purpose of improving relations and mutual understanding between them.

3. The States Parties to the Treaty agree to establish swift and reliable communication between the heads of their governments and with the Secretary-General of the United Nations.

4. The measures set forth in this article shall remain in effect after the first stage until the completion of general and complete disarmament."

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

Private
ENDC/30/Add.1
6 August 1962
Original: ENGLISH

UNITED STATES

Amendments to the U.S. Outline of Basic Provisions of a Treaty on General and Complete Disarmament in a Peaceful World (ENDC/30, April 18, 1962) relating to the production of armaments in Stage I

Stage I, Section A, Armaments

1. In the second sentence of sub-paragraph 1a, delete the phrase "except as adjustments for production would be permitted in Stage I in accordance with paragraph 3 below".

2. Replace the present text of paragraph 3, Limitation on Production of Armaments and on Related Activities, by the following:

"a. Production of all armaments listed in sub-paragraph b of paragraph 1 above would be limited to agreed allowances during Stage I and, by the beginning of Stage II, would be halted except for production within agreed limits of parts for maintenance of the agreed retained armaments.

b. The allowances would permit limited production of each type of armament listed in sub-paragraph b of paragraph 1 above. In all instances during the process of eliminating production of armaments, any armament produced within a type would be compensated for by an additional armament destroyed within that type to the end that the ten per cent reduction in numbers in each type in each step, and the resulting thirty per cent reduction in Stage I, would be achieved.

c. The testing and production of new types of armaments would be prohibited.

d. The expansion of facilities for the production of existing types of armaments and the construction or equipping of facilities for the production of new types of armaments would be prohibited.

e. The flight testing of missiles would be limited to agreed annual quotas.

f. In accordance with arrangements which would be set forth in the annex on verification, the international disarmament organization would verify the foregoing measures at declared locations and would provide assurance that activities subject to the foregoing measures were not conducted at undeclared locations."

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

Private
ENDC/30/Add.2
8 August 1962

Original: ENGLISH

UNITED STATES

Amendments to the U.S. Outline of Basic Provisions of a Treaty on General and Complete Disarmament in a Peaceful World (ENDC/30, April 18, 1962) relating to Transition

Stage I, Section I, Transition

1. During the last three months of Stage I, the Control Council would review the situation respecting the following listed circumstances with a view to determining, in the light of specified criteria, whether these circumstances existed at the end of Stage I;

a. All undertakings to be carried out in stage I had been carried out.

b. All preparations required for Stage II had been made; and

c. All militarily significant states had become parties to the treaty.

2. Transition from Stage I to Stage II would take place at the end of Stage I or at the end of any periods of extension of Stage I, upon a determination, in the light of specified criteria, by affirmative vote of two-thirds of the members of the Control Council, including at least the United States and the Union of Soviet Socialist Republics, that the foregoing circumstances existed.

3. If, at the end of Stage I, one or more permanent members of the Control Council should declare that the foregoing circumstances did not exist, the agreed period of Stage I would, upon the request of such permanent member or members, be extended by a period or periods totalling no more than three months for the purpose of bringing about the foregoing circumstances.

4. Upon the expiration of such period or periods, the Control Council would again consider whether the foregoing circumstances did in fact exist and would vote upon transition in the manner specified in paragraph 2 above.

Stage II, Section H, Transition

1. During the last three months of Stage II, the Control Council would review the situation respecting the following listed circumstances with a view to determining, in the light of specified criteria, whether these circumstances existed at the end of Stage II:

a. All undertakings to be carried out in Stage II had been carried out.

b. All preparations required for Stage III had been made; and

c. All states possessing armed forces and armaments had become parties to the treaty.

2. Transition from Stage II to Stage III would take place at the end of Stage II or at the end of any periods of extension of Stage II, upon a determination, in the light of specified criteria, by affirmative vote of two-thirds of the members of the Control Council, including at least the United States and the Union of Soviet Socialist Republics, that the foregoing circumstances existed.

3. If, at the end of Stage II, one or more permanent members of the Control Council should declare that the foregoing circumstances did not exist, the agreed period of Stage II would, upon the request of such permanent member or members, be extended by a period or periods totalling no more than three months for the purpose of bringing about the foregoing circumstances.

4. Upon the expiration of such period or periods, the Control Council would again consider whether the foregoing circumstances did in fact exist and would vote upon transition in the manner specified in paragraph 2 above.

Stage III, Section I - Completion of Stage III

1. At the end of the time period agreed for Stage III, the Control Council would review the situation with a view to determining whether all undertakings to be carried out in Stage III had been carried out.

2. This determination would be made by affirmative vote of two-thirds of the members of the Control Council, including at least the United States and the Union of Soviet Socialist Republics. If an affirmative determination were made, Stage III would be deemed completed.

3. In the event that one or more of the permanent members of the Control Council should declare that such undertakings had not been carried out, the agreed period of Stage III would, upon the request of such permanent member or members, be extended for a period or periods totalling no more than three months for the purpose of completing any uncompleted undertakings. Upon the expiration of such period or periods, the Control Council would again consider whether such undertakings had been carried out and would vote upon the question in the manner specified in paragraph 2 above.

4. After the completion of Stage III, the obligations undertaken in Stages I, II and III would continue.

PRIVATE
ENDC/40/Rev.1
31 May 1962
ENGLISH
Original: ENGLISH and RUSSIAN

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

UNION OF SOVIET SOCIALIST REPUBLICS AND UNITED STATES OF AMERICA

Working Draft of Part I of the Treaty on General and Complete Disarmament (in a Peaceful World) proposed by the USA and USSR

NOTE: Single parentheses indicate US preference
Double parentheses indicate USSR preference

PART I - (Outline of) ((General)) Treaty obligations

The Parties to the Treaty undertake to carry out the provisions set forth in the Treaty and in its Annexes (with the following general purposes):

ARTICLE I - ELIMINATION OF ARMED FORCES AND ARMAMENTS

((The States parties to the present Treaty solemnly undertake:))

1. To ensure that (a) disarmament is general and complete and war is no longer an instrument for settling international problems, and (b) States have at their disposal upon and after completion of the general and complete disarmament programme only (those non-nuclear armaments, forces, facilities and establishments as are agreed to be necessary to maintain internal order and protect the personal security of citizens) ((strictly limited contingents of police-militia equipped with light firearms and intended for the maintenance of internal order, the protection of the personal security of citizens and for the discharge of their obligations with regard to the maintenance of international peace and security, under the United Nations Charter and under the provisions of Article ___ of the present Treaty.))

2. (Taking into account paragraph 1 above and the requirements of the United Nations Peace Force provided for below, to provide, with respect to the military establishment of every nation, for:)

((To carry out, over a period of ___ years, general and complete disarmament entailing:))

(a) Disbanding of all armed forces, dismantling of military establishments, (including bases wherever they might be located,) cessation of the production of armaments as well as their liquidation or conversion to peaceful uses ((except for the production of strictly limited amounts of agreed types of light firearms for the equipment of the police-militia contingents to be retained by States after the accomplishment of general and complete disarmament));

(b) ((Prohibition of nuclear weapons and other types of weapons of mass destruction;)) elimination of all stockpiles of nuclear, chemical, biological and other weapons of mass destruction; cessation of the production (and prohibition of the manufacture) of such weapons;

(c) Elimination of all means of delivery of weapons of mass destruction and cessation of the production of such means of delivery;

(((d) The dismantling of all kinds of foreign military bases, and the withdrawal and disbanding of all foreign troops stationed in the territory of any State;))

(e) Abolition of organizations and institutions designed to organize the military efforts of states, including war ministries, general staffs and their local agencies, and all other military and para-military organizations and institutions;

(f) Cessation of any kind of military conscription, military training and military training obligations; and the closing of all military training institutions;

(g) Discontinuance of all military expenditures ((whether from State budgets or from organizations or private individuals));

(h) Prohibition of the reconstitution of the foregoing armaments, forces, activities and facilities after their elimination, disbanding, cessation, dismantling, or conversion to peaceful use.

3. To ensure that disarmament is balanced in such a way that at no stage of the implementation of the Treaty could any State or group of States gain military advantage, and that security is provided equally for all.

4. To carry out general and complete disarmament in three consecutive stages each having a specified time limit.

5. To provide that transition from one stage of disarmament to the next takes place (upon decision) ((after adoption by the International Disarmament Organization of a decision confirming)) that all ((disarmament)) measures in the preceding stage have been implemented and verified and that any additional ((verification)) arrangements required for measures in the next stage have been prepared and can, when appropriate, be put into operation.

ARTICLE 2 - CONTROL

1. To ensure that (a) implementation of all disarmament measures is effectively verified from beginning to end; (b) each disarmament measure is accompanied by such control arrangements as are necessary for its verification during and after the implementation of general and complete disarmament; and (c) control arrangements are instituted progressively throughout the disarmament process (to provide assurance that agreed levels of armaments and armed forces are not exceeded.)

2. To these ends, to establish, within the framework of the United Nations, an International Disarmament Organization, including all States Parties to the present Treaty, with structure, functions and subsidiary bodies as set forth in Parts _____of the present Treaty; to provide for its effective operation upon the entry into force of the treaty, during the implementation of the program of general and complete disarmament, and after the completion of that program; (and to ensure that the Organization and its inspectors have unrestricted access without veto to all places as necessary for the purpose of effective verification.)

((3. In all States parties to the Treaty the International Disarmament Organization shall have its own staff, recruited internationally and in such a way as to ensure the adequate representation on it of all three existing groups of States.

This staff shall exercise control, on a temporary or permanent basis, depending on the nature of the measure being carried out, over the compliance by States with their obligations to reduce or eliminate armaments and their production and to reduce or disband their armed forces.))

4. To provide for (a) co-operation with the Organization by the Parties to the Treaty; (b) implementation within their territories of all its control measures set forth in Parts _____ of the present Treaty; and (c) submission by them to it of such information about their armed forces, armaments, military production and military expenditures as is necessary to carry out the measures (in effect at the time) ((of the corresponding stage)).

5. To provide that, upon completion of the program of general and complete disarmament, the International Disarmament Organization shall be continued in being to maintain supervision over the implementation by the Parties of the obligations they have assumed and to prevent the re-establishment of the military capability of the Parties in any form whatsoever.

ARTICLE 3 - MAINTENANCE OF INTERNATIONAL PEACE AND SECURITY

1. To ensure that general and complete disarmament is accompanied by the establishment of reliable procedures for the peaceful settlement of disputes and by effective arrangements for the maintenance of peace in accordance with the principles of the Charter of the United Nations.

2. To this end, to provide that Parties to the Treaty shall:

(a) renounce war as an instrument of national policy in their relations with other states;

(b) refrain, in their international relations, from the threat or use of force of any type, and take effective measures for the adjustment or settlement of international disputes by peaceful means ((in accordance with appropriate procedures provided for in the Charter of the United Nations)).

(c) base relations with each other on the principles of (peaceful and neighbourly relations) ((peaceful and friendly coexistence and co-operation));

(d) strengthen the United Nations as the principal institution for the maintenance of peace and for the settlement of international disputes by peaceful means.

3. To ensure that during and after implementation of general and complete disarmament, states would support and provide ((in accordance with the United Nations Charter)) agreed manpower for a United Nations Peace Force to be equipped with agreed types of ((non-nuclear)) armaments (necessary to ensure, under agreed arrangements, that the United Nations can, in accordance with the purposes and principles of the United Nations Charter, effectively deter or suppress any threat or use of arms).

4. (To provide that those non-nuclear armaments, forces, facilities and establishments remaining at the disposal of Parties upon completion of general and complete disarmament shall not be used for purposes prohibited by this Treaty.)

((The States parties to the Treaty undertake to refrain from using the contingents of police-militia, remaining at their disposal upon completion of general and complete disarmament, in any manner other than for the safeguarding of the internal security of States or for the discharge of their obligations to maintain international peace and security, under the United Nations Charter.))

Private
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7 August 1962
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CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

UNION OF SOVIET SOCIALIST REPUBLICS AND UNITED STATES OF AMERICA

Working Draft of Article 4 of Part II of the Treaty on General and Complete Disarmament (in a Peaceful World) proposed by the USA and USSR

NOTE: Single parentheses indicate US preference
Double parentheses indicate USSR preference

PART II - STAGE I

Article 4 - Basic Tasks and Obligations and Time Limit of Stage I

During Stage I the parties to the Treaty, in accordance with the provisions of Articles _____ through _____, undertake:

1. (To reduce their armaments, including nuclear weapon delivery vehicles and major conventional armaments, and to limit their production of such armaments.)

((To eliminate all delivery vehicles for nuclear weapons and to halt completely their production simultaneously with the elimination of all military foreign bases in alien territories and the withdrawal of all foreign troops from such territories.))

2. To carry out measures in the field of nuclear disarmament (, including halting the production of fissionable materials for use in nuclear weapons).

3. To reduce their armed forces ((, conventional armaments, their production of such armaments,)) and (to take agreed measures relating to) their military expenditures.

4. To establish the International Disarmament Organization upon the entry into force of the Treaty in order to ensure verification in the agreed manner of the ((disarmament)) obligations undertaken.

5. To take measures to reduce the risk of war.

6. To take steps to strengthen arrangements for the maintenance of international peace and security.

(7. To carry out all other obligations undertaken with respect to Stage I of the Treaty.)

Stage I will begin upon the entry into force of the Treaty, in accordance with Article _____, and will be completed within (three) ((two)) years from that date. Thereafter, taking account of the provisions of Article _____, the Parties to the Treaty shall proceed to the measures provided for in Stage II of the Treaty.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

PRIVATE
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25 July 1962
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PEOPLES' REPUBLIC OF BULGARIA

Working Paper

Draft article 4 of the Treaty on General and Complete Disarmament

Part II: First Stage of General and Complete Disarmament

Article 4

First stage tasks

The first stage shall begin 6 months after the entry into force of the Treaty (in accordance with article ... of the present Treaty) and shall be completed within 15 months.

The States undertake, during the first stage:

(1) to eliminate simultaneously all delivery vehicles for nuclear weapons and all military bases in foreign territory, and to withdraw all troops from such territory;

(2) to reduce their armed forces, their conventional armaments, the production of such armaments and their military expenditure as provided hereinafter;

(3) on the entry of the Treaty into force, to set up an International Disarmament Organization in order to verify in the agreed manner fulfilment of the obligations assumed;

(4) from the beginning of the first stage, to take measures to reduce the danger of war; and

(5) to take the measures set forth hereinafter for the maintenance of international peace and security.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

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PEOPLES' REPUBLIC OF BULGARIA

Working Paper

Revised draft article 4 of the Treaty on General and Complete Disarmament

Part II: First Stage of General and Complete Disarmament

Article 4

First stage tasks

The first stage shall begin 6 months after the entry into force of the Treaty (in accordance with article ... of the present Treaty) and shall be completed within 15 months.

The States undertake, during the first stage:

(1) to eliminate simultaneously all delivery vehicles for nuclear weapons and all military bases in foreign territory, and to withdraw all troops from such territory;

(2) to take measures concerning nuclear disarmament;

(3) to reduce their armed forces, their conventional armaments, the production of such armaments and their military expenditure as provided hereinafter;

(4) on the entry of the Treaty into force, to set up an International Disarmament Organization in order to verify in the agreed manner fulfilment of the obligations assumed;

(5) from the beginning of the first stage, to take measures to reduce the danger of war;

(6) to take the measures set forth hereinafter for the maintenance of international peace and security; and

(7) to proceed immediately to carry out the disarmament measures prescribed for the second stage.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

PRIVATE

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UNITED STATES OF AMERICA

Working Draft of Article 4 of Treaty on General and Complete Disarmament in a Peaceful World proposed by the United States of America

PART II - STAGE I

Article 4 - Basic Obligations and Time Limit of Stage I

During Stage I the Parties to the Treaty, in accordance with the provisions of Articles _____ through _____, undertake:

1. To reduce their armaments, including nuclear weapon delivery vehicles and major conventional armaments;

2. To limit their production of armaments;

3. To reduce their armed forces;

4. To halt the production of fissionable materials for use in nuclear weapons and to take other measures to reduce the threat of nuclear war;

5. To establish the International Disarmament Organization upon the entry into force of the Treaty in order to ensure verification of the obligations undertaken;

6. To implement the measures set forth hereafter for verifying compliance with the Obligations undertaken;

7. To strengthen arrangements for keeping the peace and ensuring international security;

8. To carry out all other obligations undertaken with respect to Stage I of the Treaty.

Stage I will begin upon the entry into force of the Treaty and will be completed within three years from that date, subject to the provisions of Article _____.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

PRIVAT
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UNITED KINGDOM

Preliminary Study of Problems Connected with the Elimination of Rockets as Nuclear Delivery Vehicles

Introduction

1. Both the Soviet Union and the United States of America envisage, in their proposals for general and complete disarmament, the elimination of rockets capable of delivering nuclear weapons, except for certain designated rockets which would be retained for the peaceful exploration of space. According to the Russian proposals military rockets wouldbe entirely eliminated in Stage I. According to the American proposals reduction would be progressive and would not be completed until Stage III.

2. Furthermore the Russian draft Treaty provides that in Stage I the manufacture of all such rockets shall be completely discontinued, workshops and special machine tools shall be destroyed, and all proving grounds shall be demolished. According to the American proposals production should be limited to an agreed allowance during the beginning of Stage I and should be halted by the beginning of Stage II. On the other hand both the Russian and the American proposals envisage the continued manufacture and testing of appropriate rockets for the peaceful exploration of space, under some form of control or supervision by the International Disarmament Organization.

3. In considering the possible implementation of these proposals, the following problems arise:-

(a) Whether in all cases it is possible to distinguish unambiguously between military rockets and rockets intended for the peaceful exploration of space.

(b) How the control or supervision of the manufacture and testing of space rockets is to be exercised.

(c) How the destruction of military rockets, their means of production and proving grounds is to be verified, and what the chances are of undetected evasion.

(d) Whether there is any means of ensuring that further developments in space technology will not be used to conceal or threaten any aggressive intentions by countries engaged in space research.

4. The purpose of this paper is to examine these problems briefly, and to suggest points for further consideration.

The Problem of Differentiation

5. One of the main difficulties with which we have to contend, in attempting to eliminate rockets as nuclear delivery vehicles, is that there is no fool-proof means of differentiating between the type of rocket used to project a weapon on to its target and the type of rocket used as a booster to launch a payload into space. This is not so much a matter of terminology, as of technical fact. The rockets used to launch every space-shot so far carried out, were originally designed as ballistic missiles. Future rockets, designed to meet the requirements of a legitimate space programme, could just as readily be used to deliver a weapon, or to threaten to do so, - provided such weapons were already available or could be produced at short notice.

6. The significance lies not in the rocket but in the use to which it is put. If intended as a nuclear delivery vehicle, the rocket has to carry a weapon in the form of a warhead. To eliminate "military rockets" capable of carrying nuclear weapons, while leaving "civil rockets" uncontrolled, would afford insufficient security unless (and this is another point requiring examination at a later stage) the elimination or control of all nuclear warheads could be guaranteed.

Control of Production

7. Although it is envisaged that the International Disarmament Organization should exercise some form of control or supervision over the manufacture of space rockets, both draft Treaties now before the Conference leave open the question of how this is to be done. As we suggest later in this paper, one way might be to internationalize the whole of space research. But if this is not done, and if the manufacturing industries are left in national hands, then for effective control resident inspectors would have to be maintained at the main assembly plants and proving grounds. Further back in the production process a sufficient measures of supervision might be exercised by checking the records of

the principal sub-contractors and by periodic visits to the component manufacturers, for which teams of travelling inspectors would be required on a geographical basis.

8. There is very little past experience on which to base even an approximate estimate of the number of inspectors that would be required. Clearly this number would be influenced by the size, complexity and distribution of the industry - which, in themselves are factors that are difficult to assess. However, bearing in mind the effort so far expended on space developments and the magnitude of the space projects that have already been announced, it seems probable that a very considerable industry will be required to support the programmes that are envisaged for the next 10 to 15 years.

9. Experience of a very limited form of factory inspection under the Factory Acts in the United Kingdom suggests that the number of inspectors required, world-wide, for the control or supervision of production by the International Disarmament Organization is likely to be large - in the region of a few thousands rather than of hundreds.

Verification of Destruction and Chances of Evasion

10. Apart from monitoring the production and testing of space rockets, the International Disarmament Organization will need to take additional measures to provide:-

(a) Verification that the rockets, production facilities and bases scheduled for destruction are in fact destroyed.

(b) A reasonable degree of assurance against the possibility of hidden stockpiles, concealed launching sites and clandestine production.

11. Verification of the destruction of rockets would be comparatively easy without resorting to inspection, as these could be fired down existing test ranges to an impact area in the Pacific where adequate instrumentation facilities could be provided to prove that rockets of the appropriate size had in fact been fired. Alternatively, rockets could be destroyed under supervision in a "destruction factory". These aspects are considered in detail in a separate paper. On the other hand illegal stockpiles, stored underground and suitably camouflaged before the disarmament process took effect, would be extremely difficult to detect - even if unrestricted facilities forinspection were permitted. There is no technical reason why certain types of rockets and their associated warheads could not be salted away for several years.

12. The destruction of production facilities and bases could be verified only by inspection. If launching sites for non-mobile rockets, such as underground silos, had been completed before disarmament and steps had been taken to render them inconspicuous, their continued concealment might be possible. But very considerable effort would have been expended in carrying out such an operation; the existence the existence of the sites would be known to many of the local population, and extreme security precautions would have to be taken to prevent compromising any such evasion plan. It might perhaps be easier to conceal mobile launching facilities such as tube launchers on merchant ships or barges, and launching ramps on railway flats or vehicle trailers; to ensure that they would not escape detection indefinitely, it would be necessary to bear these points in mind when defining the powers of inspection to be vested in the International Disarmament Organization.

13. As far as clandestine production is concerned, it might be comparatively easy to conceal, under cover ofother industrial processes, the illegal manufacture of many of the essential components comprising, for example, rocket motors and guidance systems. With regard to fuels, kerosine and the various oxydants required for liquid-propelled systems are used commercially and would be difficult to control; solid propellants can be readily produced in a variety of plants. However, the body of a rocket (whether liquid or solid-propelled), which requires high-tensile steel rolled to exacting standards, and very large heat treatment facilities, would be difficult to disguise as anything other than it was. Final assembly under clandestine conditions would also require unique facilities, which would be likely to betray themselves to the inspecting agency, always provided that appropriate powers were vested in it.

14. This analysis suggests that clandestine production subsequent to the implementation of a disarmament treaty could - given suitable inspection - be less of a danger than clandestine storage of previous production.

Safeguarding Peace in Space

15. Whatever precautions are taken against possible evasions of the disarmament agreements, one cannot at present discount the possibility that future developments in space technology may be used to conceal or threaten aggression. In this connexion some idea of the scale of the problem with which the International Disarmament Organization might be faced can be gleaned from what has already

been achieved up to mid-1962. Over 100 satellites have already been launched, of which 50 are at present in orbit. Outstanding among these, as an indication of potentiality, is the Russian Sputnik IV, weighing 10,000 lbs., with an estimated life of 2-3 years. Of the American satellites at present orbiting, ten weigh more than 2,000 lbs.; the largest, Midas II (5,000 lbs.) has an estimated life of 8-15 years. Bearing in mind the possibilities that already exist, it seems highly desirable that all space projects should be brought as soon as possible under some comprehensive organization for international collaboration.

16. The only alternative assurance against aggressive developments in space is the degree of supervision and inspection to be exercised by the International Disarmament Organization. This would require that satellites and spacecraft should be subject to inspection at all stages of design and production, and that control should be exercised at assembly points and launching sites to ensure that no illegal payloads were being launched into space. Such a commitment would involve a very large number of additional inspectors, the actual number depending on the magnitude of the space programme, the exact extent of which is virtually impossible to predict. This, obviously, is a less attractive solution than one based on international collaboration; but unless collaboration can be seen to be complete, inspection by the International Disarmament Organization will also be needed.

Points for Consideration

17. Summarizing the problems outlined above, we suggest the following questions for consideration:-

(a) Is there any means of differentiating between rockets used as boosters in a legitimate space programme and rockets intended as weapon carriers, in such a way that there is no residual risk that the resources of a space programme could be diverted into a nuclear delivery system?

(b) Since such a risk could be minimised by the control and inspection of production and proving grounds by the International Disarmament Organization, can an estimate be made of the number of inspectors required?

(c) The inspectors provided to meet the requirements at (b) above should also be capable of verifying the destruction of rockets, production facilities and bases scheduled for elimination under the disarmament agreement; but how many additional inspectors would be needed to guard

against the possibility of hidden stockpiles, concealed launching sites and clandestine production; and what powers of inspection must they be given?

(d) Is there any way of ensuring against the agressive misuse of future developments in space, apart from bringing all launchings under international control?

(e) To what extent would comprehensive international collaboration simplify the problems of verification?

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

PRIVATE
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UNITED KINGDOM

Preliminary Study of Problems Connected with the Verification of the Destruction of Certain Nuclear Delivery Vehicles

1. Any disarmament scheme pre-supposes that some weapons will be destroyed to reduce the stockpile of those held.

2. This paper examines the methods which are available for the actual destruction of certain nuclear delivery vehicles that it has been agreed shall be destroyed and the effort which would be required to verify that their destruction had taken place. Destruction might either be complete by blowing up or crushing to pieces, or partial in accordance with an agreed schedule which would specify what components were to be destroyed by burning, cutting, crushing, mutilating or melting down and what pieces could be disposed of as having civil uses.

3. It is envisaged that the process of destruction would be carried out by the country owning the weapons and that the inspectorate would merely need to satisfy itself that the weapons scheduled for destruction had in fact been destroyed. There is always the possibility that a country might try to evade the spirit of a disarmament treaty by destroying sub-standard weapons either produced specially to defeat the agreement, or constructed from the sub-standard components which arise in the normal course of production. If this possibility were rated seriously, it would be necessary for the inspectors to check that the weapons destroyed were up to operational standard. The paper considers methods of doing this.

Ballistic Missiles

4. A certain way of ensuring that operational ballistic missiles are destroyed is to fire them on a range and check that they perform as expected and fall within some prescribed area. This would ensure that accurate guidance systems were destroyed along with the carcase of the missile and its rocket motors; moreover to do this would not require the inspected power to divulge the precise details of its missiles. If thought desirable it might even be possible, at the very earliest stage of disarmament, to dispense with the presence of inspectors on the territory of the country owning the weapons, since the missile could be fired,

after prior notification of the time, from inside the owner's country; it could then be watched by the inspectorate's radar from outside the country, and it could fall into a sea area such as the Pacific, outside territorial waters, or on international ranges. The instrumentation facilities required are already available in the Pacific to both sides.

5. However, if any large number of missiles had to be destroyed in this way there is always the possibility that accidents might occur which might destroy the launching complex and so make the scheme unworkable. Moreover, if any country felt that the reliability of its missiles was low, they might resist this method of verification of destruction since they would have to fire sufficient missiles over and above those which they had agreed to destroy to ensure that the correct number was observed by the inspectorate as having been fired. This difficulty would not arise if the country destroying the missiles allowed inspectors to watch the launching of the missiles at the launching site; this kind of inspection can therefore be held to confer some advantage on the inspected country.

6. Alternatively, a "demolition factory" could be established where the missiles could be broken down or otherwise mutilated. It might be sufficient in some cases to destroy the missile carcases (e.g. fuel tanks), since these are easy to destroy and might be more readily made available to the inspectorate than the more sophisticated parts of the missile.

7. If, on the other hand, it were thought necessary to check that the missiles destroyed were up to full operational standard, it would be necessary to establish a test centre at which all the highly specialised navigation and control equipment removed from the missile scheduled for destruction could be tested for accuracy and then destroyed or salvaged for civil use. Similarly, the fuel metering equipment and rocket motors could be tested before destruction.

8. The inspectorate at this factory would require technicians who could carry out the accuracy tests mentioned above. We estimate, for instance, that in the case of inertially navigated missiles about 1½ to 2 man-weeks would be required to check the navigation equipment of each missile. Supervisors would also be needed to watch the destruction after the accuracy checks; about half a dozen should be able to supervise the destruction of any likely output of a test centre. Clerical staff to maintain the records of the destruction carried out,

together with security services to protect these records would also be needed. The combined figure is unlikely to amount to more than 100 men per factory.

Aircraft

9. Aircraft would be required to fly in to the destruction centre - this would at least check that the machine was airworthy and would make it more certain that operationally complete aeroplanes had been destroyed than if crates of components had been delivered by road to the destruction centre.

10. By analogy with the firing of a ballistic missile to check its accuracy and so ensure that it was a fully operational weapon, it might be possible to specify that each aircraft should carry out an exercise, characteristic of its role, after being flown to the destruction factory, and before destruction. If the exercise could be specified precisely it would go some way to ensuring that the aircraft destroyed had not been stripped of its main high quality components, which, if previously salvaged, would facilitate the production of other aircraft to replace those destroyed. For instance, the aircraft might make a sortie at normal operating height and speed to its full operational radius of action, drop practice bombs under specified conditions on a range and then return to the destruction airfield. The inspection effort to ensure that another aircraft was not substituted during the course of this exercise would be small, since the existing Air Traffic Control organisation could monitor the flight. The procedure would not require the owners to divulge secrets of the machine's construction provided that the actual destruction at the "factory" was carried out by the country owning the aircraft - and this might be regarded as an advantage. On the other hand, occasions would admittedly arise when it would be difficult to distinguish between unintentional human or mechanical errors and the deliberate use of inferior equipment.

11. If it was felt necessary to check that the components were up to standard, by means other than an operational test flight, a test centre, similar to that suggested for missiles, could be set up to examine the navigation and bombing systems for quality before destruction. The checks in this case would be much simpler than those for missiles, unless an inertial navigation system was fitted, in which case, tests similar to those suggested for ballistic missiles would be required. An inspection similar to the daily inspection performed on the Radar of a strategic bomber (a few man hours) should suffice provided that the aircraft

flew in to the destruction factory to give an assurance that its engines and controls worked. Such checks would, of course, inevitably reveal details of the aircraft's construction.

12. The manpower needed for the process of destruction would be supplied by the country owning the aircraft. It would not be large: it has been estimated that about 50 men - engineers and workmen who could use blow lamps, large shears, crushing machines, etc. - could destroy beyond repair about 500 operational aircraft and their vital components in about one year, provided that all these aircraft were flown to a destruction centre.

13. The international inspectorate needed to supervise the same rate of destruction would amount to perhaps 10 key engineers and some 20-30 supervisors who would watch the destruction and ensure that only authorised components left the centre in an undamaged condition. Numbers would probably increase roughly proportionally with throughput. As for ballistic missiles the international staff would need clerical support and guards to protect records.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

PRIVATE
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UNITED KINGDOM

The Technical Possibility of International Control of Fissile Material Production:

(The paper is submitted as a contribution to the Committee's discussion of Item 5(d) of ENDC/1/Add.3: "Measures in the Field of Nuclear Disarmament, together with Appropriate Measures of Control.")

The attached paper describes the technical aspects of the control of:

A. Current Production of Plutonium and U 235, (paragraphs 1 - 26);

B. Past Production of Plutonium and U 235, (paragraphs 27 - 53).

It also includes some observations on technical aspects of a Control Organization, (paragraphs 54 - 62).

The arguments in it, and the evidence presented, are related solely to United Kingdom experience, and do not seek to anticipate the results of any fuller enquiry.

The paper assumes that an international agreement would have been reached that no country should manufacture or retain nuclear weapons, and that the Control Organization's duty would be to ensure that such an agreement was demonstrably being adhered to.

The paper assumes that there would be no politically imposed restrictions on the operation of the Control Organization, or on its constitution.

THE TECHNICAL POSSIBILITY

OF

INTERNATIONAL CONTROL

OF

FISSILE MATERIAL PRODUCTION

INTRODUCTION

1. As soon as the Control Organization was installed, it would have the duty of checking in the greatest possible detail the declarations which would be made by every Signatory about the total quantity of fissile material already made both for civil and military purposes. All existing stocks of fissile material would have to be produced for inspection by the Control Organisation and compared with the declared inventories; checks would also need to be made as far as possible of the accuracy of declarations concerning the quantities of fissile material which had been used, destroyed, or lost in processing or in any other way.

2. The Control Organization would also need to institute controls on the current production of fissile materials; the continuous operation of these controls would be a major duty of the Control Organization.

3. Another duty which the Control Organization would fulfil is that of guarding against the possibility of there being clandestine plants whose purpose would be to make fissile materials intended for weapons.

4. In seeking to form our opinion about the accuracy with which a Control Organization could guarantee past production of plutonium and U235 and could detect clandestine plants in any country, we have largely restricted our considerations to technical matters. The declarations made by each country about its past production of fissile material would be supported by the production of technical records, materials accountancy statements, and many other details upon which normal operations are based.

5. If there were a false declaration some of the technical material produced would necessarily have to be forged. There might be no technical difficulty in making forgeries and any individual forged record might be indistinguishable from a genuine record. However, by using scientific analysis on a set of records, or by introducing some technical considerations pertaining to the nuclear complex as a whole, the forgery might be discovered.

6. It is therefore desirable to make an objective study of what limits of accuracy could be achieved by technical control.

7. Of course, a technical Control Organization might receive adventitious help which was not of a technical nature. For example, a person compelled by a violating country to participate in a forgery might reveal the forgery to the Control Organization. The estimation of the chance that a false declaration by a violator could be revealed by somebody who participated in the forgery is not a technical question and we would suppose that there was little possibility of international agreement based on an assessment of such chances. For this reason, we have concentrated on studying the possibilities of control using only technical methods, but in a few places we have noted the scale of effort which might be required to support false declarations by forgery.

CONTROL OF CURRENT PRODUCTION

It is appropriate to deal first with the control of current production since the knowledge which the Control Organization would obtain about plants currently producing fissile material would be essential to it in checking the past production.

2. A nuclear industry consists in the main of a complex series of operations for the production and use of fissile materials. A typical range of nuclear plants is shown diagramatically in Figure 1.

3. If merely the final output of fissile material from an overt programme were controlled, a government wishing to evade the Control could take material from a point one step further back and invest in plant to cover that step (and all subsequent steps) in secret. But for each stage of the overt plant that was successfully controlled, the violating country would need to invest in a corresponding stage of secret plant to circumvent the Control. This would apply to all stages of the overt programme, including ore procurement.

4. However, after such examination as we have been able to give to the possibility of a control on uranium ore and concentrates, we consider that this would only be feasible - if at all - with very great demands on men and money. Control at these stages would entail inspecting all possible mining areas, whether declared or not, and countering every possibility of Government-aided smuggling by land, sea and air.

5. The principle we have adopted, therefore, is to apply control to all processes in the overt programme following the ore procurement stage, but with particular attention to those stages at which material of most direct value to a weapons programme could be withdrawn. Such a control, by limiting diversion from overt plants of the feed material on which the secret programme depends and rendering it liable to detection, would compel the violator either to commit further investment in secret plant or to accept an increased risk of detection for his whole secret programme.

6. There are two basic methods of preventing diversion (a) physical security and (b) technical surveillance. In any particular operation, the Control would rely primarily on one of these two methods, using the other as a subsidiary check.

7. The special materials with which the Control would be concerned would have a continuous history from their separation from other materials, or their creation in a reactor, to the stage where they were either destroyed or rejected as waste material. During this history, their physical and chemical form would be changed from time to time. At some stages they would be in individual identifiable units such as fuel elements. At other stages their identity would necessarily be lost, e.g. when fuel elements are dissolved.

8. During the periods when the materials were in identifiable units, the main control proposed would be by physical security. The duty of the Control would then be to ensure that the count of units was correct and their identity was preserved. Sampling and measurement processes would only be involved as auxiliary checks if identity had been inadvertently lost, or illegal substitution was suspected. Thus while the material was in identifiable units no significant component of uncertainty would be introduced into the accounting process.

9. Physical control would be the principal technique applied to materials in stock during transportation and on-charge and discharge at reactors. Such control may be exercized by supervision, but in some cases it would be necessary for the personnel of the Control to undertake non-process operations themselves. For example, it would be possible to account for material in transit by a system of invoices and receipts supported by examination and analysis, but it might in general be cheaper and easier to make the Control itself responsible for all movements at the instruction of plant management.

10. When the material could not be handled in identifiable units, control could be achieved by technical surveillance. This would include normal materials accountancy and technical inspection. The basic principles of materials accountancy would apply to all the plants involved, although their application would be dependent on the technological details. Technical inspection would ensure that no material flow escaped accountancy and that the measurement processes were not deliberately falsified.

11. Technical surveillance would be the main method of control in chemical processing and reprocessing, in diffusion plants and in fuel manufacturing plants until the fuel element became an identifiable unit. The Control Authority would require

access to the design drawings for such plants and would be assisted if plants which were inaccessible during operation could be inspected during construction. It would be important for the Control to be consulted by plant management on the system of materials accountancy, including instrumentation; operators would have to declare to the Control the methods of analysis which they were using. The Control would need to ensure that samples withdrawn for their own measurements, or measurements not requiring samples, were representative and that the frequency of sampling was at least as great as that applied by plant management for process control. Analytical and measurement methods would need to be standardized within the Control and results would only be released to plant management at the discretion of the Control. In cases where finished products such as fuel elements were sampled, the Control would need to have authority to undertake destructive measurements if inferential ones were inadequate.

12. Reliance on technical surveillance, based on measurement, necessarily introduces uncertainties. These arise in part from the difficulty of measuring changes in the hold-up of material within the plant and in part from errors in measurement processes applied to material flows. The results obtained from measurement processes are subject to errors of two types:

(a) random errors, the relative importance of which can be progressively reduced by increasing the number of measurements,

and (b) errors of bias which are constant in magnitude and the effects of which cannot be reduced in this way.

13. It is thus fundamental that the operation of the Control would not be perfect in the sense that it would not be able to give a complete account of the fate of all special material, but only an account which was correct to some specified degree of precision.

14. In view of these uncertainties, it is important to attempt to forecast the precision with which the Control might be able to operate. Our general assessment of the effectiveness of a Control Organization in preventing diversion is based on its application to a nuclear industry similar in characteristics and history to that of the U.K. We conclude that:

(a) during the first few months of operation of the control system, the Control would be able to detect diversions of plutonium equivalent to 5 per cent or more of total output; the corresponding figure for a diffusion plant would also be about 5 per cent.

(b) when the control system had been running for some time and was operating satisfactorily, the Control would be able to detect diversions of plutonium and of U235 over a short period (3 - 6 months) of 3 per cent. Over long periods (1 year or more) a continuous diversion of U235 as small as 1 per cent would raise suspicions. In the case of plutonium, suspicions could probably be avoided with a clandestine diversion of 1 per cent, but a diversion of 2 per cent would almost certainly be detected.

15. The previous paragraph can be simplified to the statement that by the time that the Control Organization has been running for two or three years, it could thereafter control U235 to within 1 per cent and plutonium to an accuracy of between 1 and 2 per cent of current output.

16. The foregoing assessment of the limits of possible diversion is derived, as stated, from our study which has been based on the present U.K. nuclear organization. In other organizations, however, there are likely to be variations of practice which could alter the limits within which diversion from an overt programme could be detected.

17. For example, a greater or a lesser skill in operating a chemical plant or a more complete or a less complete historical knowledge of its performance would change the data available to the Control and hence affect the limits of detection of possible diversion. Again, newly commissioned plant could not in the initial period be subjected to a control as close as that applied to established plant.

18. The growing use of enriched uranium and plutonium for reactors in future will entail recycling operations which must increase the throughput from which diversion would be possible, thereby increasing the work of the Control Organization.

19. However, some of these features are less unfavourable than they appear because they apply to future and to new industrial systems. The techniques of the Control would be expected to improve progressively as experience was gained. Furthermore, the quantities of material produced and circulating in a newly established system or in new plants added to an existing system, would be smaller than in those industrial systems which have had time to grow. In some cases, more advanced operating techniques would be in use and these would tend to assist the Control.

Hidden Plant

20. There is no general feature that makes it easy to distinguish a nuclear installation from a similar installation associated with a non-nuclear activity. There are, however, some secondary features which would be of assistance to the Control Organization in the task of finding or identifying a clandestine plant engaged in producing fissile material.

21. Nuclear plants require special feed materials and unusual quantities of certain more ordinary materials. The special nature of the components used in the nuclear industry and the elaborate health and safety precautions needed in handling active materials would make it difficult to disguise from the workers the activities in which they were engaged.

22. The chemical processes in the nuclear industry result in comparatively small quantities of high-activity effluent and large quantities of very low activity effluent. The latter are difficult to hide because of their volume and are detectable in much lower concentrations than normal chemical effluent can be detected.

23. A country which wished to defeat the Control would need to go to considerable lengths to overcome such disadvantages, in particular those of effluent disposal. For example, effluent could be concentrated by evaporation or ion exchange and ultimately stored underground; plant could be modified in commercially uneconomic ways to make it easier to conceal; remote siting in places and situations (e.g. underground), which would normally be considered uneconomic, would make the task of detection more difficult.

24. It is possible that a violator seeking to produce clandestine fissile material would attempt to build a secret centrifuge plant for separating U235. The power consumption would be small and the generating plant could be hidden. If the

violator were prepared to go to great expense to develop and fabricate the components and then to build a small centrifuge plant, the risk of being caught could be minimized; and it might be possible secretly to produce somewhat more fissile material by this means than by diversion from overt plant. To make weapons components from this clandestine fissile material would require equipment and machine tools, but the provision of these items from normal industrial sources would not disclose the purpose for which they were required. The specialized design of a centrifuge and the necessity of having criticality controls as well as some health precautions, both in the centrifuge plant and in the metal fabrication plant, would reveal to the operators the purpose of their work. A violator might also attempt to operate a small clandestine reactor but the dispersal of the heat generated and the processing of the fuel taken from the reactor would pose major problems of concealment, certainly more difficult than those of concealing a small centrifuge plant and its ancillary facilities.

25. Disregarding the problem of controlling past production, the possibility of a violator successfully building and operating large secret plants for producing fissile material is remote; the existence of the plants would be obvious and the violator would be caught by the Control Organization. However, the possibility of a violator operating small secret plants, particularly a centrifuge plant, cannot now be excluded. The detection by technical means of small clandestine centrifuge plants by the Control Organization is a formidable problem to which there seems to be no easy solution.

26. As far as the major nuclear powers are concerned, the control problem of the secret plant would be small compared with the problem of clandestine retention of fissile material made before the Control began to operate.

CONTROL OF PAST PRODUCTION

27. The percentage reliability with which a comprehensive control system could estimate the total production of fissile material prior to the date at which the Control Organisation began to operate, would be much less than the percentage reliability of estimation of current annual production once the control system was operating. The reliability on past production could vary from country to country, and within any country, from plant to plant.

28. In regard to the accuracy of declarations made about past production of fissile material, the uncertainty would mostly relate to the comprehensiveness, the availability and the veracity of past records, and the extent to which the truth of records and accounts could be verified by a technical analysis using the established properties of the nuclear plants in the country concerned. It would be necessary to interrogate staff to explain what the records were, how they had been obtained, any special events which would need to be taken into account and other technical matters of this kind. (It is possible that only sample or master records would have been kept relating to a period several years past. If such were the case, the Control Organisation would be handicapped and some loss of accuracy of control would result.)

29. A country which intended to make a false declaration about its total past production of plutonium and enriched uranium would, of course, seek to declare production totals which were less than the real ones. The discrepancy between the actual past production of fissile material and the declared total production would not arise from one single item. The discrepancy would be built up from a large number of small items.

30. The amount of plutonium which had been made in any country could, in principle, be determined accurately from the quantities of fission productions still remaining; and the total quantity of U 235 separated could in principle be determined by measuring the depletion of U 235 below the natural content in the stockpile of depleted uranium in the country, allowing for the quantity of U 235 used. Neither method however is fully reliable, since a violator could take steps to falsify the situation.

31. The radioactivity of the fission products at any time, and the proportions of the individual fission species resulting from the operating life of a reactor can be estimated closely if the details of the reactor and the complete operating records

are available. Thus, in principle, it would be possible for the Control Organisation to measure the total radioactivity of the fission products in any one country, and the proportions of the individual radioactive species, and thus check that the quantities were closely consistent with the declarations made about the operating life of the reactors and the quantity of plutonium made. Small corrections would, of course, be made for the unavoidable small quantities of low level effluent which would have been dispersed by some suitable safe method. However, this type of check is not worth much. A violator would not have any great difficulty in extracting suitable quantities of highly concentrated waste from his highly active storage tanks in such a way that everything that the Control Organisation measured would be found to be consistent with the false declarations made.

32. Somewhat similar considerations apply to the depleted uranium waste products of diffusion plants and reactors. The violator could remove some of the depleted uranium waste products of diffusion plants and reactors and hide it in some secret place. He would also have the possibility of removing some of the depleted uranium and then mixing natural uranium with some of the remaining depleted uranium, thus slightly falsifying the stripping ratio used during a certain period of operation of the diffusion plant, or the burn-up in the reactors. The U 234 ratio could be measured but would not be significant.

33. Many of the plants which would be subject to the control system would have been operating for several years and in some cases might have been operated for as long as 15 years. The method of operation, the over-all efficiency and indeed some of the actual components might have changed substantially during the period that the plant had been operating. Certain plants might have been used for a period and then shut down.

34. In general, falsification is easier for the early periods of operation of a plant when fissile material accountancy is less precise and the method of operation of the plant is being continually adjusted, than at a period when the plant operation and procedures have been established.

35. The Control Organisation in seeking to perform its duties with regard to the total past production of fissile material in each country would work mainly by the following methods. From a technical study of the reactors, the chemical separation plants, the diffusion plants and supporting plants and laboratories and from a study of their records, an estimate would be made of what the total production had been.

The Control Organisation would prepare its inventory of all the existing fissile material in the country. This inventory would include the material resulting from the breakdown of weapons, all existing stocks of unfabricated fissile material (mostly in metal billet form), plutonium and enriched uranium in any stocks of new fuel elements, in fuel elements in reactors (including zero energy facilities) and in fissile materials in use by experimental establishments. Account would have to be taken of the declarations made about process losses and about the past consumption of enriched fuel in reactors which use such fuel, including both military and civil propulsion reactors. Separate account would have to be taken of fissile materials used in weapon trials or lost or destroyed by any other means. In verifying the declared quantities of fissile material produced as the result of breakdown of weapons, the fissile material would presumably be produced in billet form in order not to make the shapes and weights of weapon components common knowledge.

36. The Control Organisation would be faced with a particularly difficult problem in regard to declarations made about the quantities of fissile material used in weapons trials. If the Control Organisation brought in nuclear weapons experts and had access to all drawings of nuclear devices tested, all experimental records obtained in nuclear tests, and could inspect weapons establishments and interrogate staff, it might be able to guarantee that the quantities of fissile material declared as used in tests had not been over-declared by more than perhaps 50 per cent. It is unlikely that these possibilities could be realised. On the other hand if the Control Organisation were only given a list of the fissile contents of each of the nuclear devices tested, it would have no technical grounds for challenging the statements made. No doubt some countries have reached technical conclusions about the contents of nuclear devices tested by other countries based on long range records and, in some cases, on radiochemical evidence. However, the accuracy of such interpretations cannot be high. Low yield explosions, which were, or were falsely declared to be, fizzles, might have completely escaped detection. It would therefore be optimistic to expect that the Control Organisation would be able to certify the accuracy of the quantity of fissile material used in weapons trials better than within a factor of two or three.

37. The Control Organisation would thus prepare a balance sheet giving all the details of past production and showing what had happened to the fissile material.

38. It can be anticipated that the International Agreement which set up the Control Organisation would require the Organisation to make a statement about the reliability of this balance sheet. Included in this statement would be the accuracy within which the Organisation considered that the figures were reliable. From the statement, it would be easy to make a technical deduction about the possible size of clandestine stockpiles of weapons.

39. The Control Organisation could not, however, make much progress on forming its conclusions about past production until its staff had been installed and had had time to familiarise themselves with the nuclear plants in each country concerned, a process which might take a year. The verification of past production and the preparation of a reliable balance sheet would be a difficult but important task which would need to be carried out by a team of extremely experienced high grade staff of a calibre higher than that normally necessary for the routine work of the Control. Since the task of verifying past production would only have to be done once, such a specialised team could be attached to the Control Organisation in each country for this specific purpose for a period of six months and starting a year after the Control Organisation had begun to operate. It would therefore take at least eighteen months from the time when the Control started before the declarations of past production of fissile material could be verified.

40. We have attempted to assess the accuracy within which the figure in the balance sheet could be considered reliable, based on our experience with our nuclear plants in the U.K.

41. Diffusion plants for the separation of U 235 have great flexibility. Sections can be cut out at will for maintenance or other reasons. A plant could be driven over a range of power levels, depending on whether it was desired to get material at the lowest unit cost, or to get more at a higher unit cost. The total output over a given period of several months is not a uniquely defined function of the total power consumption. Percentage variations are possible, depending on how the plant has been operated during this period of several months. The efficiency of the plant, in terms of power consumption will have improved during the life of the plant as operating experience was gained and modifications introduced.

42. The maximum possible extent of falsification depends considerably on whether the records of the total electricity consumption are reliable or not. If the electricity consumption figures could for some reason be accepted as reliable, then

we believe that the total past output of U 235 from the Capenhurst plant could be falsified by more than 5 per cent but less than 10 per cent; but if the electricity consumption could be falsified by 10 per cent, the past output of Capenhurst could be falsified by 15 - 20 per cent. There would be no technical difficulty in falsifying the electricity consumption to within 10 per cent but there are certain factors in the U.K. which may not apply in other countries. Electricity is supplied to Capenhurst on commercial terms by a completely separate organisation from the one actually operating Capenhurst. The commercial accounts of this other organisation have been audited by independent auditors. The task of falsifying the records of electricity supply would therefore be much greater than if the Capenhurst plant had been driven from a power station under Capenhurst management. There would be many less records, and the records would be in one place, instead of being possibly in three or four places.

43. Thus in the U.K. we would have good hopes that the Control Organisation would be able to certify our past production of U 235 to within 5 - 10 per cent, but we can visualise that if the plants and responsibilities had been organised differently, the certification would not have been better than 15 - 20 per cent.

44. It would also be possible to make false statements slightly exaggerating the losses of U 235 in processing, and the quantities used in the civil programme, and to exaggerate substantially the quantities of U 235 used in weapon tests. Thus we conclude that in the special circumstances of the U.K., the total quantity of U 235 remaining from past production could certainly be falsified to 10 per cent. With a different organisation of the electricity supplies, the falsification might have been estimated as 15 - 20 per cent.

45. Turning now to the possibilities of falsification of the quantities of plutonium already produced in the United Kingdom, we have to take into account a similar but less stringent constraint that substantial quantities of electricity have been sent from the reactors at Calder and Chapel Cross into the South of Scotland grid. However, considerable quantities of electricity generated from the reactors are used by the reactor and associated plant, and considerable quantities of heat have been dumped from these reactors and from the earlier Windscale reactors. However, there would be considerable scope for falsifying the records of the total power levels of the reactors, without involving other organisations in the forgeries.

46. Taking account of all the possibilities of falsification, including weapons tests, it is the opinion in the U.K. that the plutonium declared could be 10 - 15 per cent less than the declared total of that still remaining from past production without detection by the Control Organisation.

47. Even on our most optimistic assumption we do not expect the Control Organisation would be able to certify that the U.K. did not have the technical possibility of secreting 10 - 15 per cent of the fissile material produced for inspection by the Control Organisation as the result of the breakdown of weapons.

Scale of effort required for a false declaration

48. A country intending to make false declarations about its past production of plutonium and enriched uranium would be compelled to falsify some of its records and documents in order to make everything consistent with the false declarations. The amount of falsification required and the number of people involved would depend considerably on whether the violator was content with a small percentage violation or whether he attempted the maximum violation which he thought would remain undetected by the Control Organisation.

49. A violator could probably secrete 3 - 5 per cent of his total past production without involving more than a relatively small number of people in the technical organisations producing and supporting the production plants. Process losses could be exaggerated, the quantities used in weapons could be exaggerated, small distortions could be made about shut down, power levels and so on. Of course, certain other people would know that some weapons had been secretly hidden.

50. A violator seeking to secrete the maximum possible amount of plutonium and U 235 which we consider could escape detection by the Control Organisation would have to undertake a large and complex series of falsification, and would have to involve several hundreds of people in technical organisations. Even though the risk of the violator being caught by technical considerations would be small, the violator must also be prepared to accept the risk that some of the staff involved in the forgeries would reveal their part in the forgeries to the Control Organisation.

51. Given the resources that the violator could deploy, the technical job of falsifying records, accounts, minutes of committee meetings, documents and letters would be well within the capability of any of the nuclear powers. The forging of data sheets in the analytical and technical records sections could present more difficulty. In the U.K. for example, many entries are in the handwriting of

individuals, and it would be necessary to make a selection of people in the sections who could be relied on not to disclose that they had made false copies of their own work.

Uncertainty about the possible size of a clandestine weapons stockpile

52. It may be assumed that the Control Organisation would prepare a balance sheet which accounted for all past production of plutonium and U 235 in every country. An important question would be the size of a possible clandestine stockpile of weapons expressed as a percentage of the declared stockpile. The situation can be illustrated numerically by some simple arithmetic applied to a hypothetical case.

53. Suppose that a hypothetical violating country which had a stockpile of weapons declared that its total past production of plutonium and enriched uranium was 100, in certain units, and suppose that the real quantity in the same units was 115. Apart from the clandestine stockpile of 15 units, there would still be some opportunity of cheating within the total number of units (100) declared. Suppose for example, the country declared that 75 units were in the existing military stockpile and that 5 units had been used in weapons trials and 20 units used for civil purposes, whereas in fact only 3 units had been used in weapons trials and 19 for civil purposes. Then the amount of fissile material produced for inspection to the Control Organisation would be 75: and the clandestine stockpile would be 18. In other words, about one fifth of the total stockpile of nuclear weapons could be secretly hidden and retained.

TECHNICAL STAFFING AND MANAGEMENT OF THE CONTROL ORGANIZATION

General

54. The staffing policy of the Control Organization would be determined largely by:-

(a) its international composition, and

(b) the requirements of exercizing physical security and technical surveillance over the production, transportation and use of fissile materials;

(c) the requirements of having a central headquarters to co-ordinate results and of having one or more central laboratories.

55. The Control Organization would need the greatest possible degree of independence in recruitment in order to ensure the quality and integrity of its staff. Terms of service would need to be the subject of independent decision by the Control Organization. Most of the staff would necessarily work in small international communities in countries of which they were not nationals, and much of their work would be routine. However, the conditions of service would be more attractive than those of a nuclear test control organization. There would be scientific work to be done at all times, and the staff would be working in a scientific or technical environment.

Duties of Senior Staff

56. Although a great deal of the work would demand adequate personal qualities rather than high scientific qualifications, there would be a need for men of high personal qualities and considerable general technical ability at the headquarters in each country and at the head of major sectors of the Control Organization's operations. The senior staff of the Control Organization, though small in number, would take the responsibility for its effective technical operation and integrity. They would plan the operation of the Control Organization and its extension to new areas at the appropriate times, and they would take personally the responsibility for enquiries that had to be made outside the Control Organization's standard activities - for example, in industries or establishments not ostensibly concerned with a nuclear programme.

Scientific Staff

57. The senior staff of the Control Organization would require supporting staff as follows:

(a) Scientists, who would direct the control teams or, in the central laboratories, develop new techniques and instruments and run training courses;

(b) Assistants, who would be adequate for most of the scientific work of the control teams.

Other Staff

58. The following types of staff would be needed in addition to the scientific staff:

(a) Technicians, who would be needed to support the scientific staff and their assistants in the ratio of about one technician to two scientists;

(b) Guards, whose duties would cover the several aspects of physical security - storekeeping, exits from and entry to controlled areas, transport of controlled materials;

(c) Administrative Officers, who would be responsible for services to the technical teams;

(d) Auxiliaries, for services such as transport, though some of these might in practice be provided by the host country.

Estimates of numbers required in the United Kingdom

59. We have made estimates of the numbers of staff who would at present be required to man such a Control Organization in the United Kingdom. As the numbers of nuclear power stations in the United Kingdom increase, the numbers of staff required would increase steadily. Over the next ten years, the numbers of scientists and technicians required would increase by about 40 per cent, and the number of guards by 100-150 per cent.

60. Our estimates are based on controlling the Capenhurst diffusion plant, controlling all of the enriched metal processing and fuel fabrication plants, controlling all of the chemical processing facilities for irradiated fuel elements, controlling the research establishments using fissile material for

experimental purposes (including zero energy reactors), and staffing a central laboratory and headquarters in the United Kingdom. We estimate that the numbers required at present would be:

Scientists	160
Technicians	80
Guards	400
Administration	250
Auxiliary	200
Total	1,090

61. We can only make very rough estimates of the total strength of the Control Organization which would be required to control nuclear work in all other countries; but we would expect the number would be approximately ten times the number required in the United Kingdom. On this assumption, a world-wide Control Organization would at the present time require about 1,500 scientists and a total strength of about 10,000.

62. The Control Organization would also require the assistance of a team of extremely experienced, high grade staff about one year after the control had begun to operate for the purpose of verification of past production of fissile material. This team would be attached to the Control Organization for a period of about six months and its numbers would be quite small.

SUMMARY OF MAIN CONCLUSIONS

63. The main conclusions emerging from our study, which has been based upon the present U.K. nuclear organisation, are summarised below.

64. The accuracy with which the Control Organisation would be able to guarantee the control of current production in each country would not vary from country to country since the same techniques would be used everywhere. It should be possible for the Control Organisation in due course to control the current production of plutonium to an accuracy within between 1 and 2 per cent, and of U235 to within 1 per cent.

65. The possibility of a violator successfully building and operating large scale clandestine plants is remote; he would be caught by the Control Organisation. If, however, the violator were prepared to go to great expense to conceal a small plant, the risk of being caught would be minimised and it might then be possible secretly to produce somewhat more fissile material by this means than by diversion from overt plant.

66. The percentage accuracy with which the Control Organisation could guarantee past production would, however, be very much less than that possible with current production when the Control Organisation is operating, and could vary considerably from country to country. Operating and accountancy procedures are likely to have been different in different countries, and until the facts are revealed and compared it is not possible to do more than indicate the order of accuracy which might be achievable by the Control Organisation with regard to past production.

67. In thosecountries which have never had a nuclear weapons programme, the work of the Control Organisation in verifying past production and use against declared stocks would be comparatively simple compared with the work in countries which have had a nuclear weapons programme.

68. Much of the fissile material so far made in the world has been intended for the manufacture of nuclear weapons; and the total quantity of fissile material made for such purposes is now enormous. The Control Organisation would be attempting in several countries to estimate the total past production from a set of plants of various ages, all of which will have been improved substantially by a sequence of

small modifications, and some of them (the diffusion plants) having great flexibility which will have been frequently exploited to meet varying needs. It is difficult to anticipate to fine limits what reliability the Control Organisation would be able to attach to its estimates of the total production.

69. Arguing from our experience with our plants in the United Kingdom, we have reached the conclusion that the Control Organisation would not be able to guarantee with better than 10 - 15 per cent accuracy a correct declaration by us about our total past production of plutonium. The maximum degree of falsification of past production of U235 would be between 5 and 10 per cent if the records of electricity supplies to the diffusion plant could be proved not to have been falsified, or 15 - 20 per cent if these could also be falsified.

70. Allowing for falsifications which slightly exaggerated the processing losses and the uses of fissile material by the civil programme and which considerably exaggerated uses in weapons trials, the maximum degree of falsification in the U.K. without the falsification of electricity supplies would enable 10 - 15 per cent of the weapons stockpile to be retained secretly.

71. Without having the necessary knowledge of the nuclear energy plants and of the detailed organisation in other countries, we cannot estimate what conclusion the Control Organisation would be able to make about past fissile material production in these other countries. However, we consider that our materials control in the U.K. has been very tight and has been extensively instrumented, recorded and documented. We therefore think it unlikely that the Control Organisation would conclude that in other countries the maximum possible violation would permit less than 10 per cent of the weapons stockpile to be hidden, and we would not be surprised if the maximum possible violation in some cases proved to be of the order of 20 per cent.

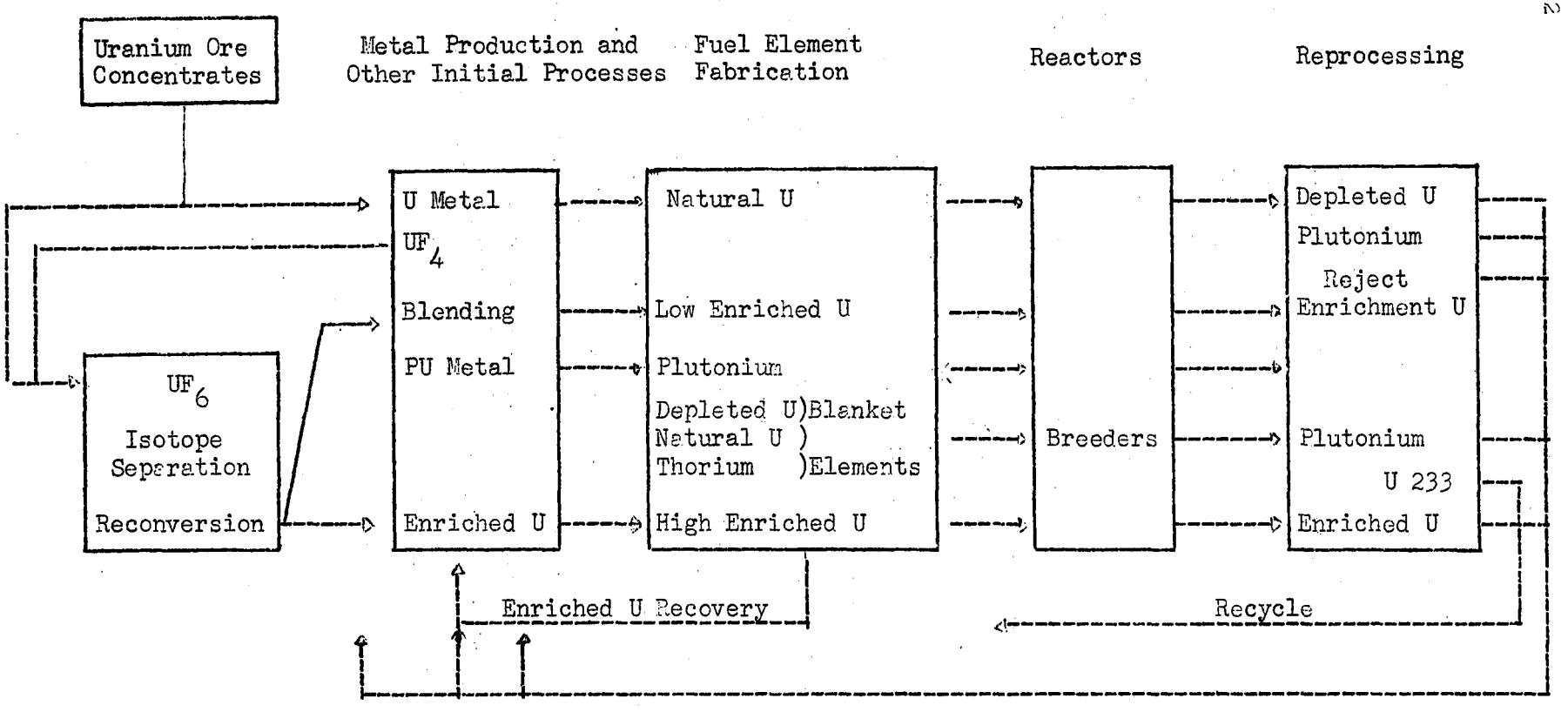
72. If the accuracy of the statements is accepted, it follows that the Control Organisation would not be able to guarantee in those countries which have had nuclear weapons programmes that some 10 - 20 per cent of the weapons had not been hidden, the percentage figure perhaps varying somewhat from country to country.

73. The falsification of past records in any country would involve the suborning of a considerable number of staff in the violating country and would, as a consequence, put that country at risk of being caught due to the possibility of one or more of the suborned staff revealing to the Control Organisation that cheating had occurred. However, the fact that nobody had revealed to the Control Organisation that forgery had occurred would not prove that there had been no forgery.

74. The Control Organisation could not make much progress on checking past production of fissile material until its staff had been installed and had had time to familiarise themselves with the nuclear plants in the country concerned, a process which would take about a year. Since the checking of past production would be a difficult task, but one which had to be done only once, we consider that the Control Organisation should be assisted in its work of checking past production in each country by the temporary attachment of a team of extremely experienced, high grade staff for a period of about six months. It would therefore be about eighteen months from the date of installation of the control system before declarations on past fissile material production could be certified.

75. We can only make a rough estimate of the total strength which we believe would be required for a world-wide Control Organisation based on the number which we consider would be required in the U.K. On this assumption a world-wide Control Organisation would, at the present time, require about 1,500 scientists and a total complement of about 10,000.

FIGURE 1



CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

Private
ENDC/58

27 August 1962
Original: ENGLISH

THE UNITED KINGDOM AND THE UNITED STATES OF AMERICA

Draft treaty banning nuclear weapon tests in all environments

PREAMBLE

The Governments of the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America,

Desirous of ending permanently all nuclear weapon test explosions,

Have agreed as follows:

ARTICLE I

OBLIGATIONS TO DISCONTINUE

Each of the Parties to this Treaty undertakes, subject to the provisions of this Treaty:

a. to prohibit and prevent the carrying out of nuclear weapon test explosions at any place under its jurisdiction or control; and

b. to refrain from causing, encouraging, or in any way participating in, the carrying out of nuclear weapon test explosions anywhere.

ARTICLE II

ESTABLISHMENT OF THE INTERNATIONAL SCIENTIFIC COMMISSION

1. The carrying out of the obligations assumed in Articles I and II of this Treaty shall be verified by an International Scientific Commission, hereinafter referred to as the "Commission." The Commission shall include an International Staff, hereinafter referred to as the "Staff", and a Verification System, hereinafter referred to as the "System".

2. Each of the Parties undertakes to co-operate promptly and fully in the establishment and effective organization of the Commission. Each of the Parties also undertakes to co-operate promptly and fully in carrying out the measures of verification set forth in this Treaty and in any agreements which the Parties may conclude with the Commission.

ARTICLE III

FUNCTIONS OF THE
INTERNATIONAL SCIENTIFIC COMMISSION

1. The Commission shall have general responsibility for the collection of data on, and the reporting of, all events which could be suspected of being nuclear weapon test explosions, and for making positive identification of the nature and origin of such events wherever possible.

2. The Commission shall maintain supervision of all elements of the System in order to ensure that such elements function in an integrated manner. For this purpose the Commission shall establish and monitor adherence to standards for the operation, calibration and co-ordination of all elements of the System.

3. The Commission may consult with the Parties concerning the nature of any unidentified event which could be suspected of being a nuclear weapon test explosion and, on the basis of available data, may issue to all Parties a report concerning the nature and origin of any event reported to it by the Staff.

4. The Commission, by majority vote including the concurring votes of the permanent members, shall approve the total amount of its annual budget.

5. The Commission shall arrange for observers to be permanently stationed at, and to make periodic visits to, elements of the System in order to ensure that established procedures for the rapid, co-ordinated and reliable collection of data are being followed.

6. The Commission may enter into an agreement with any State or authority to aid in carrying out the provisions of this Treaty.

7. The Commission shall establish such laboratories and other facilities as it deems necessary for the carrying out of the tasks assigned to it under this Treaty.

8. The Commission, by majority vote including the concurring votes of the permanent members, shall appoint an Executive Officer to assist it in carrying out its functions.

9. The Commission shall conduct, and shall facilitate the participation of members of the Staff in, programmes of basic scientific research to improve the capability of the Commission to perform its functions under the present Treaty and to ensure the use of the most efficient and up-to-date methods of verification of the obligations undertaken by the Parties to this Treaty.

10. The permanent members of the Commission shall arrange for a conference of Parties to the Treaty to be held when, in the opinion of the permanent members, a sufficient number of States have become Parties to it, in order to hold the elections referred to in paragraph 1b of Article IV. Such conference shall be held, in any event, when _____ number of States, including the permanent members, have become Parties.

11. Approximately every three years thereafter, the Commission shall invite the Parties to a conference in order to hold subsequent elections to the Commission.

12. The Commission may arrange for a conference, at any time it deems appropriate, in order to discuss matters pertaining to the Treaty.

ARTICLE IV

ORGANIZATION AND PROCEDURES OF THE INTERNATIONAL SCIENTIFIC COMMISSION

1. The Commission shall be composed of fifteen members. They shall be selected as follows:

a. The Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America, shall be permanent members.

b. Twelve other members shall be elected by majority vote of the Parties present and voting in the conference described in paragraphs 10 and 11 of Article III, of which

(i) three shall be from among Parties nominated by the Union of Soviet Socialist Republics;

(ii) two shall be from among Parties nominated jointly by the United Kingdom of Great Britain and Northern Ireland and the United States of America;

(iii) seven shall be from among Parties nominated jointly by the permanent members of the Commission on as wide a geographical basis as possible.

c. To the extent that any nominations called for in paragraph 1b of this Article are not made, the Parties to the Treaty shall elect, at the conferences described in paragraphs 10 and 11 of Article III, the remaining members of the Commission from among all of the Parties.

2. The members elected to the first Commission shall serve for three years from their election. Regular elections shall be held triennially thereafter, and those members elected to the Commission shall serve until replaced or re-elected at the next triennial election.

3. Each member of the Commission shall have one vote. All decisions, unless otherwise specified in this Treaty, shall be taken by a simple majority of the members present and voting.

4. Any Party to the Treaty which is not a member of the Commission may participate, without vote, in the discussion of any question brought before the Commission whenever the latter considers that the interests of that Party are specially affected.

5. The Commission shall meet at such times as it may determine, or within twenty-four hours at the request of any member.

6. The permanent members shall carry out the functions of the Commission until it has been established pursuant to paragraph 1 of this Article. In doing so, the permanent members shall act by unanimous agreement. They shall co-operate in encouraging other States to become Parties and they shall take prompt action to nominate Parties, as provided in paragraph 1b of this Article, for the purpose of ensuring selection of membership in the Commission at the earliest possible date.

7. The headquarters of the Commission shall be located at _____.

ARTICLE V

FUNCTIONS OF THE INTERNATIONAL STAFF

1. The Staff shall assist the Commission in carrying out its functions.

2. The Staff shall supervise the collection of data by all elements of the System and shall provide the observers who are to be stationed at and make visits to elements of the System for the purposes specified in paragraph 5 of Article III.

3. The Staff shall provide the personnel for the manning of such international elements of the System as may be established by the Commission.

4. The Staff shall analyse data collected by the System in accordance with such standards as are set forth in this Treaty and as may be set forth by the Commission, and shall forward to the Commission reports on all such data. Such data and reports shall be available for the inspection of any Party upon request.

5. The System shall, in accordance with procedures and standards prescribed by the Commission, collect and report to the Staff, within 24 hours after detection of any event which could be suspected of being a nuclear weapon test explosion, all data received relating to the detection, location and identification of the event. Thereafter, additional data, if any, relating to the event shall be reported to the Staff as it becomes available.

6. The Staff shall provide technical instruction for personnel operating elements of the System.

ARTICLE VI

ORGANIZATION OF THE INTERNATIONAL STAFF

1. The Executive Officer shall be responsible to the Commission and, under its supervision, shall carry out its policy directives. His appointment shall extend for a period of four years. The Executive Officer shall be subject to removal from office by the Commission if, as a result of failure on his part to comply with the directives of the Commission or for any other reason, the Commission decides that it no longer has confidence in him. Any such decision, and the exercise of the power of removal, shall require the concurring votes of eleven members of the Commission.

2. Subject to regulations approved by the Commission the Executive Officer shall recruit, organize and oversee the functioning of the Staff.

3. The Staff shall include such qualified scientific, technical and other personnel as may be required to fulfil its functions, and paramount consideration shall be given to obtaining officials of the highest standards, efficiency, technical competence and integrity. Subject to this principle, the Executive Officer shall also give consideration to the selection of personnel who are nationals of States which have participated in, or intend to participate in, the establishment of elements of the System.

4. The Executive Officer shall also be guided by the considerations that the permanent Staff shall be kept to the minimum necessary to perform its assigned tasks and that personnel should be obtained on as wide a geographical basis as possible.

5. In the performance of their duties, the Executive Officer and the Staff shall not seek or receive instructions from any government or from any other authority external to the Commission. Each Party undertakes to respect the exclusively international character of the responsibilities of the Executive Officer and the Staff and not to seek to influence them in the discharge of their responsibilities.

ARTICLE VII

ORGANIZATION OF THE VERIFICATION SYSTEM

1. The System shall consist of the integrated elements described in the Annex on Verification, together with such additions as the Commission deems desirable. It shall be designed to ensure the rapid and reliable collection and reporting of data. It shall include the following classes of stations:

a. Stations to be constructed at sites listed in the Verification Annex. Each such station shall be maintained and manned, in accordance with specifications established by the Commission, by nationals of the State in whose territory such station is located. The construction of and equipment for each such station shall be paid for by the Commission and the personnel for each such station shall be trained by the Commission. All Parties in whose territories such stations are located agree to accept observers at such stations for the purposes specified in paragraph 5 of Article III.

b. Existing stations to be provided, maintained and manned by individual Parties as requested by and in agreement with the Commission.

c. Stations to be constructed, maintained and manned by the Commission in agreement with individual Parties if the Commission deems such stations desirable.

d. Such detection instruments in outer space, in the atmosphere, and on and beneath the surface of the earth (including the waters thereof) as the Commission may deem desirable. These may be provided, maintained and manned by the Commission or by particular Parties, as the Commission may determine.

2. The Parties to this Treaty agree to co-operate in the establishment (including the provision of suitable sites), operation, expansion, calibration and standardization of all elements of the System and in providing the Commission with such assistance, equipment or data as may be useful to the Commission in performing its functions.

3. The Parties to this Treaty agree to ensure that within six months from the entry into force of this Treaty, all existing stations referred to in paragraph 1 b of this Article will commence operation in accordance with the

provisions of this Treaty. They also agree to ensure that within twelve months the stations referred to in paragraph 1a of this Article will be constructed and commence operation in accordance with such provisions.

4. In accordance with standards set forth by the Commission, stations referred to in paragraph 1a of this Article shall maintain continuous operation of such equipment as the Commission deems desirable for each station including the following: apparatus for the collection of radioactive debris and for the recording of fluorescence of the upper atmosphere, visible light, cosmic noise absorption, telluric currents, resonance scattering of sunlight, acoustic waves, seismic waves and electromagnetic signals. Stations on islands or near the shorelines of oceans shall, in addition, maintain continuous operation of apparatus for the recording of hydroacoustic waves as deemed desirable by the Commission. Stations aboard ships shall include and continuously operate equipment for the recording of hydroacoustic waves, fluorescence of the upper atmosphere and visible light as deemed desirable by the Commission.

ARTICLE VIII

ON-SITE INSPECTION

1. The Executive Officer shall certify immediately by public notice at the Headquarters of the Staff whenever he determines that a seismic event has been located pursuant to paragraph 2 of this Article and not eliminated from consideration pursuant to paragraph 3. The Executive Officer shall make every effort to make this certification within seventy-two hours after the location of the event.

2. A seismic event shall be considered located when seismic signals, whose frequencies, amplitudes, durations, and velocities are consistent with those of waves from earthquakes or explosions, are recorded at a sufficient number of stations to establish the approximate time and position of the event. This requires at least four clearly measurable arrival times of identifiable phases which are mutually consistent to within plus or minus three seconds. These four mutually consistent arrival times must include P-wave arrival times at three different detection stations.

3. A located seismic event shall not be suspected of being a nuclear weapon test explosion if it fulfils one or more of the following criteria:

a. Its depth of focus is established as below sixty kilometers;

b. Its epicentral location is established in the deep ocean, and the event is unaccompanied by a hydroacoustical signal consistent with the seismic epicenter and origin time;

c. It is established to be a foreshock or aftershock of a seismic event of at least magnitude six which has clearly been identified as an earthquake by the criteria in sub-paragraphs a and b of this paragraph. For this purpose a foreshock must occur as part of a sequence of earthquakes less than forty-eight hours before the main shock, and an after-shock must occur as part of a sequence of earthquakes less than a week after the main shock, and their epicenters must have been located within ten kilometers of the epicenter of the main shock.

4. Data provided by stations in territory under the jurisdiction or control of a State in which the event may be located may not be used to render it ineligible for inspection but may be used to assist in establishing its eligibility for inspection.

5. When a seismic event has been certified pursuant to paragraph 1 of this Article, the Executive Officer shall designate an area lying within the circumference of a circle, the radius of which is ____ kilometers, and the center of which is the location of the epicenter of that event.

6. On-site inspection of areas designated by the Executive Officer pursuant to paragraph 5 of this Article shall be carried out pursuant to this Article:

a. on territory under the jurisdiction or control of the United States of America or the United Kingdom of Great Britain and Northern Ireland, if requested by the Union of Soviet Socialist Republics;

b. on territory under the jurisdiction or control of the Union of Soviet Socialist Republics, if requested by the United States of America or the United Kingdom of Great Britain and Northern Ireland;

c. on territory under the jurisdiction or control of any other Party, if directed by the Commission.

7. Any Party having jurisdiction or control over territory on which an on-site inspection is requested or directed pursuant to paragraph 6 of this Article shall make the necessary arrangements to facilitate the prompt on-site inspection of the area designated pursuant to paragraph 5 of this Article.

8. The maximum number of inspections which may be requested in territory under the jurisdiction or control of a permanent member of the Commission shall be _____ in each annual period. The maximum number of inspections which may be directed in territory under the jurisdiction or control of a Party not a permanent member of the Commission shall be three in each annual period, or such higher number as the Commission, after consultation with the Party, may determine by a two-thirds majority of those present and voting.

9. For territory under the jurisdiction or control of permanent members of the Commission, not more than ____ percent of the annual number of inspections provided for in paragraph 8 of this Article shall be carried out each year in the aseismic area of that territory described in the Annex on Verification.

10. The on-site inspections, when requested or directed in accordance with paragraph 6 of this Article, shall be carried out by teams organized by the Executive Officer. In forming the teams, the Executive Officer shall ensure the adequate representation of scientific and technical skills and shall avoid composition which would result in inspection of territory under the jurisdiction or control of a State by any nationals of that State. The leader of a team shall be appointed by the Executive Officer from among its members.

11. Each of the Parties undertakes to give inspection teams, despatched pursuant to this Article, immediate and undisputed access to the area in which an on-site inspection is to be conducted, to refrain from interference with any operation of an inspection team and to give such teams the assistance they may require in the performance of their mission.

ARTICLE IX

EXPLOSIONS FOR PEACEFUL PURPOSES

The explosion of any nuclear device for peaceful purposes may be conducted only:

(1) if unanimously agreed to by the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland and the United States of America; or

(2) if carried out in accordance with an Annex hereto.

ARTICLE X

RELATIONSHIPS WITH OTHER INTERNATIONAL ORGANIZATIONS

1. The Commission is authorized to enter into agreements establishing appropriate relationships between the Commission and the United Nations or any of its specialized agencies.

2. The Commission may make appropriate arrangements for the Commission, Staff and System to become a part of, or to enter into an appropriate relationship with, an international disarmament organization, or any international organization which may in the future be established among any of the Parties to this Treaty to supervise disarmament or related measures.

ARTICLE XI

PERIODIC REVIEW

1. One year after the coming into force of this Treaty, and annually thereafter, the Commission shall review the Treaty and the operations of the Staff and System in order to:

a. Evaluate their effectiveness for verifying compliance with the obligations undertaken in Articles I and IX;

b. Recommend any improvements in the System which the Commission deems desirable, particularly with respect to the identification of nuclear explosions;

c. Recommend any changes in the quotas of on-site inspections which the Commission deems desirable.

2. The Commission shall:

a. Communicate the results of such review to all Parties to this Treaty;

b. Consider any improvements proposed by any Party to this Treaty and decide upon the adoption of those which do not require amendments to this Treaty; and

c. Vote upon any amendments to this Treaty proposed by any Party as a result of such review in accordance with the provisions of Article XVI.

ARTICLE XII

FINANCE

1. The annual budget shall be drawn up by the Executive Officer of the Staff and approved by the Commission in accordance with paragraph 4 of Article III.

2. Parties to this Treaty shall contribute to the expenses of the annual budget in accordance with the following scale:

a. _____ per cent contributed by the permanent members as follows:

(i) _____ per cent of the annual budget by the Union of Soviet Socialist Republics;

(ii) _____ per cent of the annual budget by the United Kingdom of Great Britain and Northern Ireland;

(iii) _____ per cent of the annual budget by the United States of America.

b. _____ per cent contributed by the remaining members of the Commission in equal shares.

ARTICLE XIII

WITHDRAWAL

1. If any Party to this Treaty determines:

a. that the obligations contained in Articles I or IX of this Treaty have not been fulfilled,

b. that any other obligations under the Treaty, including those relating to arrangements for on-site inspections, have not been fulfilled and that such non-fulfilment might jeopardize the determining Party's national security,

c. that nuclear explosions have been conducted by a State not a Party to this Treaty under circumstances which might jeopardize the determining Party's national security, or

d. that nuclear explosions have occurred under circumstances in which it is not possible to identify the State conducting the explosions and that such explosions, if conducted by a Party to this Treaty, would violate the Treaty or, if not conducted by a Party, might jeopardize the determining Party's national security,

it may submit to the Depositary Government a request for the convening of a conference to which all the Parties to this Treaty shall be invited, and the Depositary Government shall convene such a conference as soon after its receipt of the request as may be practicable. The request from the determining Party to the Depositary Government shall be accompanied by a statement of the evidence on which the determination was based.

2. The conference shall, taking into account the statement of evidence provided by the determining Party and any other relevant information, examine the facts and assess the significance of the situation.

3. After the conclusion of the conference or after the expiration of a period of sixty days from the date of the receipt of the request for the conference by the Depositary Government, whichever is the earlier, any Party to this Treaty, may, if it deems withdrawal from the Treaty necessary for its national security, give notice of withdrawal to the Depositary Government. Such withdrawal shall take effect on the date specified in the notice, which shall in no event be earlier than sixty days from receipt of the notice by the Depositary Government. The notice shall be accompanied by a detailed statement of the reasons for the withdrawal.

ARTICLE XIV

PRIVILEGES AND IMMUNITIES

The privileges and immunities which the Commission, the Staff, and the representatives of Parties shall be granted by the Parties, and the legal capacity which the Commission shall enjoy in the territory of each of the Parties, shall be set forth in Annex _____ of this Treaty.

ARTICLE XV

SIGNATURE, RATIFICATION, ACCESSION, ENTRY INTO FORCE AND REGISTRATION

1. This Treaty shall be open until _____ to all States for signature. Any State which does not sign this Treaty may accede to it at any time.

2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Government of _____, which is hereby designated the Depositary Government.

3. This Treaty shall enter into force on _____ for States which have deposited instruments of ratification or accession on or before that date, provided that the ratifications deposited include those of the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland and the United States of America. If ratifications by all three of the States specified in the preceding sentence are not deposited on or before _____, this Treaty shall enter into force on the date on which ratifications by all of them have been deposited.

4. Instruments of ratification or accession deposited subsequent to the entry into force of this Treaty shall become binding on the date of deposit.

5. The Depositary Government shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each ratification of and accession to this Treaty, the date of its entry into force, and the date of receipt of any requests for conferences, or any notices of withdrawal pursuant to Article XIII.

6. This Treaty shall be registered by the Depositary Government pursuant to Article 102 of the Charter of the United Nations.

ARTICLE XVI

AMENDMENTS

Any amendment to this Treaty must be approved by a vote of two-thirds of the Commission including the concurring votes of the permanent members, and shall enter into force for all Parties upon the deposit of ratifications by two-thirds of the Parties, including ratification by the permanent members of the Commission.

ARTICLE XVII

ANNEXES

The Annexes to the present Treaty constitute an integral part thereof, and any signature, ratification of, or accession to this Treaty shall apply to both the Treaty and the Annexes. The phrase "this Treaty" shall include all annexes hereto.

ARTICLE XVIII

AUTHENTIC TEXTS

This Treaty, done in the English and Russian languages, each version being equally authentic, shall be deposited in the archives of the Depositary Government, which shall transmit certified copies thereof to the Governments of the signatory and acceding States.

IN WITNESS WHEREOF the undersigned, duly authorized, have signed this Treaty,

DONE at _____, this _____ day of _____, one thousand nine hundred and sixty-two.

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

PRIVATE
ENDC/59
27 August 1962
Original: ENGLISH

UNITED KINGDOM AND UNITED STATES OF AMERICA

Draft Treaty

Banning Nuclear Weapon Tests
in the
Atmosphere, Outer Space, and Underwater

PREAMBLE

The Governments of the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America, hereinafter referred to as the "original Parties",

Desirous of bringing about the permanent discontinuance of all nuclear weapon test explosions, and determined to continue negotiations to this end,

Confident that immediate discontinuance of nuclear weapon test explosions in the atmosphere, in outer space, and in the oceans will facilitate progress toward the early agreement providing for the permanent and verified discontinuance of nuclear weapon test explosions in all environments,

Have agreed as follows:

ARTICLE I

OBLIGATIONS

1. Each of the Parties to this Treaty undertakes to prohibit and prevent the carrying out of any nuclear weapon test explosion at any place under its jurisdiction or control:

(a) in the atmosphere, above the atmosphere, or in territorial or high seas; or

(b) in any other environment if such explosion causes radioactive debris to be present outside the territorial limits of the State under whose jurisdiction or control such explosion is conducted.

2. Each of the Parties to this Treaty undertakes furthermore to refrain from causing, encouraging, or in any way participating in, the carrying out of any nuclear weapon test explosion anywhere which would take place in any of the environments described, or have the effect prescribed, in paragraph 1 of this Article.

ARTICLE II

EXPLOSIONS FOR PEACEFUL PURPOSES

The explosion of any nuclear device for peaceful purposes which would take place in any of the environments described, or would have the effect prescribed, in paragraph 1 of Article I may be conducted only:

(1) if unanimously agreed to by the original Parties; or

(2) if carried out in accordance with an Annex hereto, which Annex shall constitute an integral part of this Treaty.

ARTICLE III

WITHDRAWAL

1. If any Party to this Treaty determines

(a) that any other Party has not fulfilled its obligations under this Treaty,

(b) that nuclear explosions have been conducted by a State not a Party to this Treaty under circumstances which might jeopardize the determining Party's national security, or

(c) that nuclear explosions have occurred under circumstances in which it is not possible to identify the State conducting the explosions and that such explosions, if conducted by a Party to this Treaty, would violate the Treaty or, if not conducted by a Party, might jeopardize the determining Party's national security,

it may submit to the Depositary Government a request for the convening of a conference to which all the Parties to this Treaty shall be invited, and the Depositary Government shall convene such a conference as soon after its receipt of the request as may be practicable. The request from the determining Party to the Depositary Government shall be accompanied by a statement of the evidence on which the determination was based.

2. The conference shall, taking into account the statement of evidence provided by the determining Party, and any other relevant information, examine the facts and assess the significance of the situation.

3. After the conclusion of the conference or after the expiration of a period of sixty days from the date of the receipt of the request for the conference by the Depositary Government, whichever is the earlier, any Party to this Treaty may, if it deems withdrawal from the Treaty necessary for its national security, give notice of such withdrawal to the Depositary Government. Such withdrawal shall take effect on the date specified in the notice, which shall in no event be earlier than sixty days from receipt of the notice by the Depositary Government. The notice shall be accompanied by a detailed statement of the reasons for the withdrawal.

ARTICLE IV

AMENDMENTS

1. Any Party may propose amendments to this Treaty. The text of any proposed amendment shall be submitted to the Depositary Government which shall circulate it to all Parties. Thereafter, if requested to do so by one-third or more of the Parties, the Depositary Government shall convene a conference, to which it shall invite all the Parties, to consider such amendment.

2. Any amendment to this Treaty or its Annex must be approved by a vote of two-thirds of the Parties, including all of the original Parties to this Treaty. It shall enter into force for all Parties upon the deposit of ratifications by two-thirds of the Parties, including ratification by the original Parties.

ARTICLE V

SIGNATURE, RATIFICATION, ACCESSION,
ENTRY INTO FORCE AND REGISTRATION

1. This Treaty shall be open until _____ to all States for signature. Any State which does not sign this Treaty may accede to it at any time.

2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Government of _____, which is hereby designated the Depositary Government.

3. This Treaty shall enter into force on _____ for States which have deposited instruments of ratification or accession on or before that date, provided that the ratifications deposited include those of the original Parties. If ratifications by all three original Parties are not deposited on or before _____, this Treaty shall enter into force on the date on which ratifications by all of them have been deposited.

4. Instruments of ratification or accession deposited subsequent to the entry into force of this Treaty shall become binding on the date of deposit.

5. The Depositary Government shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each ratification of and accession to this Treaty, the date of its entry into force, and the date of receipt of any requests for conferences or notices of withdrawals.

6. This Treaty shall be registered by the Depositary Government pursuant to Article 102 of the Charter of the United Nations.

ARTICLE VI

AUTHENTIC TEXTS

This Treaty, of which the English and Russian texts are equally authentic, shall be deposited in the archives of the Depositary Government. Duly certified copies of this Treaty shall be transmitted by the Depositary Government to the Governments of the signatory and acceding States.

IN WITNESS WHEREOF the undersigned, duly authorized, have signed this Treaty.

DONE at _____, this _____ day of _____, one thousand nine hundred and sixty-two.

ANNEX II

CHECK-LIST OF DOCUMENTS
ISSUED BY THE CONFERENCE AND ITS SUBSIDIARY ORGANS

(1 June 1962 - 7 September 1962)

SECTION I - DOCUMENTS OF THE CONFERENCE

Part A Verbatim records of the Conference /ENDC/PV. Series/

	Date	Symbol
47th meeting to 82 th meeting	1 June 1962 to 7 Sept. 1962	ENDC/PV.47 to ENDC/PV.82

* * *

Part B Documents of the Conference /ENDC/- Series/

Title of document	Date	Symbol
Procedural Suggestions of Co-Chairman Adopted at 57th Meeting of the Conference on 16 July 1962	16 July 1962	ENDC/1/Add.2
Recommendations by the Co-Chairmen concerning the procedure of work of the 18-Nation Committee on the first stage of a Treaty on General and Complete Disarmament Adopted at 60th meeting of the Conference on 24 July 1962	24 July 1962	ENDC/1/Add.3
Union of Soviet Socialist Republics: Additions and modifications to the draft treaty on general and complete disarmament under strict international control submitted by the USSR delegation on 15 March 1962 (ENDC/2*)	16 July 1962	ENDC/2/Add.1
United States of America: Amendments to the U.S. Outline of Basic Provisions of a Treaty on General and Complete Disarmament in a Peaceful World (ENDC/30, April 18, 1962) relating to the production of armaments in Stage I	6 August 1962	ENDC/30/Add.1
United States of America: Amendments to the U.S. Outline of Basic Provisions of a Treaty on General and Complete Disarmament in a Peaceful World (ENDC/30, April 18, 1962) relating to Transition	8 August 1962	ENDC/30/Add.2
United States of America: Corrigendum to the Document ENDC/30/Add.2	9 August 1962	ENDC/30/Add.2/Corr.1 French only

Title of document	Date	Symbol
Union of Soviet Socialist Republics: Statement by the Soviet government on the United States high altitude nuclear explosions, dated 3 June 1962	4 June 1962	ENDC/43
United States of America: Statement by the President of the United States made on 14 July 1962 on the eve of the resumption of the Conference of the Eighteen-Nation Committee on Disarmament	16 July 1962	ENDC/44
United States of America: Report by the United States Department of Defense dated 7 July on Project Vela	16 July 1962	ENDC/45
United States of America: Statement issued by the United States Department of State on July 10, 1962, in response to certain remarks of Chairman Khrushchev on the question of nuclear tests at the World Congress for General Disarmament and Peace in Moscow on the same day	16 July 1962	ENDC/46
Union of Soviet Socialist Republics: Letter dated 16 July 1962 from the Deputy Minister for Foreign Affairs of the USSR to the Special Representative of the Acting Secretary-General of the United Nations, transmitting the speech by the Chairman of the Council of Ministers of the USSR, Mr. N.S. Khrushchev, delivered on 10 July 1962 at the World Congress for General Disarmament and Peace	16 July 1962	ENDC/47
Union of Soviet Socialist Republics: Additions and amendments to the draft treaty on general and complete disarmament under strict international control submitted by the USSR delegation on 15 March 1962 (ENDC/2*)	16 July 1962	ENDC/48
Union of Soviet Socialist Republics: Corrigendum to the Document ENDC/48	17 July 1962	ENDC/48/Corr.1 French only
Union of Soviet Socialist Republics: Tass communique of 13 July 1962	16 July 1962	ENDC/49
United Kingdom: Proposals by the United Kingdom Delegation of Subjects suitable for Discussion in Depth during the Current Session	17 July 1962	ENDC/50

Title of document	Date	Symbol
Union of Soviet Socialist Republics: Statement of the Soviet Government on 22 July 1962	23 July 1962	ENDC/51
Recommendations by the Co-Chairmen concerning the Procedure of Work of the 18-Nation Committee on the First Stage of a Treaty on General and Complete Disarmament	24 July 1962	ENDC/52
United Kingdom: Preliminary Study of Problems Connected with the Elimination of Rockets as Nuclear Delivery Vehicles	1 August 1962	ENDC/53
United Kingdom: Preliminary Study of Problems Connected with the Verification of the Destruction of Certain Nuclear Delivery Vehicles	1 August 1962	ENDC/54
Union of Soviet Socialist Republics and United States of America: Working Draft of Article 4 of Part II of the Treaty on General and Complete Disarmament (in a Peaceful World) proposed by the USA and USSR	7 August 1962	ENDC/55
Brazil: Note of the Government of Brazil on a Nuclear Test Ban	17 August 1962	ENDC/56
Union of Soviet Socialist Republics: Appeal of the Central Committee of the Communist Party of the Soviet Union, the Presidium of the Supreme Soviet of the Soviet Union and the Government of the Soviet Union to the Communist Party and Peoples of the Soviet Union! To the Peoples and Governments of all Countries! To all Progressive Humanity!	17 August 1962	ENDC/57
United Kingdom and United States of America: Draft treaty banning nuclear weapon tests in all environments	27 August 1962	ENDC/58
United Kingdom and United States of America: Draft Treaty Banning Nuclear Weapon Tests in the Atmosphere, Outer Space, and Underwater	27 August 1962	ENDC/59

Title of document	Date	Symbol
United Kingdom and United States of America: Corrigendum to the Document ENDC/59	27 August 1962	ENDC/59/Corr.1 French only
United Kingdom: The Technical Possibility of International Control of Fissile Material Production	31 August 1962	ENDC/60
Union of Soviet Socialist Republics and United States of America: Draft Report to the United Nations (Recommended by the Co-Chairmen)	5 September 1962	ENDC/61
ibid	6 September 1962	ENDC/61/Rev.1
Union of Soviet Socialist Republics and United States of America: Corrigendum to the Document ENDC/61/Rev.1	7 September 1962	ENDC/61/Rev.1/Corr.1 Spanish only

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Part C /ENDC/L- Series/

Title of document	Date	Symbol
PEOPLES' REPUBLIC OF BULGARIA		
Working Paper: Draft article 4 of the Treaty on General and Complete Disarmament Part II: First Stage of General and Complete Disarmament Article 4 - First stage tasks	25 July 1962	ENDC/L.17
PEOPLES' REPUBLIC OF BULGARIA		
Working Paper: Revised Draft article 4 of the Treaty on General and Complete Disarmament Part II: First Stage of General and Complete Disarmament Article 4 - First stage tasks	31 July 1962	ENDC/L.17/Rev.1
UNITED STATES OF AMERICA		
Working Draft of Article 4 of Treaty on General and Complete Disarmament in a Peaceful World proposed by the United States of America Part II - Stage I Article 4 - Basic Obligations and Time Limit of Stage I	30 July 1962	ENDC/L.18

* * *

Part D Documents containing information of an administrative nature /ENDC/INF.-Series/

Title of document	Date	Symbol
Basic information for delegations	16 July 1962	ENDC/INF.1/Rev.1
List of Members of Delegations to the Conference	19 July 1962	ENDC/INF.2/Rev.3
Corrigendum to the document ENDC/INF.2/Rev.3	24 July 1962	ENDC/INF.2/Rev.3 Corr.1
List of Members of Delegations to the Conference	15 August 1962	ENDC/INF.2/Rev.4
ibid	3 September 1962	ENDC/INF.2/Rev.5

Title of document	Date	Symbol
Check-list of documents issued between 16 May 1962 and 31 May 1962	1 June 1962	ENDC/INF.4/Add.4
Check-list of documents issued between 1 June 1962 and 15 June 1962	18 June 1962	ENDC/INF.4/Add.5
Check-list of documents issued between 16 June 1962 and 29 June 1962	2 July 1962	ENDC/INF.4/Add.6
Check-list of documents issued between 30 June 1962 and 13 July 1962	16 July 1962	ENDC/INF.4/Add.7
Check-list of documents issued between 14 July 1962 and 31 July 1962	1 August 1962	ENDC/INF.4/Add.8
Check-list of documents issued between 1 August 1962 and 15 August 1962	16 August 1962	ENDC/INF.4/Add.9
Check-list of documents issued between 16 August 1962 and 7 September 1962	7 September 1962	ENDC/INF.4/Add.10
Public release of final verbatim records and documents	6 June 1962	ENDC/INF.5/Add.3
Corrigendum to the document ENDC/INF.5/Add.3	7 June 1962	ENDC/INF.5/Add.3/Corr.1
Public release of final verbatim records and documents	20 June 1962	ENDC/INF.5/Add.4
ibid	4 July 1962	ENDC/INF.5/Add.5
ibid	16 July 1962	ENDC/INF.5/Add.6
ibid	31 July 1962	ENDC/INF.5/Add.7
ibid	20 August 1962	ENDC/INF.5/Add.8
ibid	31 August 1962	ENDC/INF.5/Add.9

Part E Non-Governmental Communications /ENDC/NGC/-Series/

Title of document	Date	Symbol
List of Communications received by the Secretariat of the Conference during the period 29 May to 13 July 1962	13 July 1962	ENDC/NGC/4
List of Communications received by the Secretariat of the Conference during the period 14 July to 3 September 1962	3 September 1962	ENDC/NGC/5

SECTION II - DOCUMENTS OF THE COMMITTEE OF THE WHOLE

Part A Verbatim records of the Committee /ENDC/C.1/PV.-Series/

	Date	Symbol
9th meeting	19 July 1962	ENDC/C.1/PV.9

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SECTION III - DOCUMENTS OF THE SUB-COMMITTEE ON A TREATY FOR THE DISCONTINUANCE OF NUCLEAR WEAPON TESTS

Part A Verbatim records of the Sub-Committee

	Date	Symbol
19th meeting to 25th meeting	1 June 1962 to 4 Sept.	ENDC/SC.1/PV.19 to ENDC/SC.1/PV.25

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