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QUESTION OF GENERAL AND COMPLETE DISARMAMENT

QUESTION OF CHEMICAL AND BACTERIOLOGICAL (BIOLOGICAL) WEAPONS

URGENT NEED FOR SUSPENSION OF NUCLEAR AND THERMONUCLEAR TESTS

Report of the Conference of the Committee on Disarmament

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INTRODUCTION

1. The Conference of the Committee on Disarmament submits to the United Nations General Assembly and to the United Nations Disarmament Commission a progress report on the Committee's deliberations on all questions before it for the period 17 February to 3 September 1970, together with the pertinent documents and records.

2. Included in this report is a detailed account of the negotiations, to which the Committee devoted an important part of its work during 1970, regarding a draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof. The text of the final draft of the Treaty is contained in annex A.

3. This report also includes accounts of the Committee's work during 1970 on the question of a treaty banning underground nuclear weapon tests, the question of chemical and bacteriological (biological) weapons, the question of general and complete disarmament, and other questions.

I. ORGANIZATION OF THE CONFERENCE

A. Procedural arrangements

4. The Conference reconvened on 17 February 1970.

5. Two sessions were held, the first from 17 February to 30 April 1970 and the second from 16 June to 3 September 1970. During this period the Committee held forty-six formal plenary meetings during which members set forth their Governments' views and recommendations for progress on the questions before the Committee. The Committee also held five informal plenary meetings without records.

6. In addition to the plenary meetings described above, members of the Committee met frequently for informal multilateral consultations on disarmament questions of common interest.

7. The representatives of the Union of Soviet Socialist Republics and the United States of America, in their capacity as Co-Chairmen of the Committee, also held meetings to discuss procedural and substantive questions before the Committee.

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B. Participants in the Conference

8. Representatives of the following States continued their participation in the work of the Committee: Argentina, Brazil, Bulgaria, Burma, Canada, Czechoslovakia, Ethiopia, Hungary, India, Italy, Japan, Mexico, Mongolia, Morocco, Netherlands, Nigeria, Pakistan, Poland, Romania, Sweden, Union of Soviet Socialist Republics, United Arab Republic, United Kingdom of Great Britain and Northern Ireland, United States of America and Yugoslavia.

II. WORK OF THE COMMITTEE DURING 1970

9. In a letter dated 30 January 1970, the Secretary-General of the United Nations transmitted to the Conference of the Committee on Disarmament the following resolutions adopted at the twenty-fourth session of the General Assembly:

Resolution 2602 (XXIV) - Question of general and complete disarmament;

Resolution 2603 (XXIV) - Question of chemical and bacteriological (biological) weapons;

Resolution 2604 (XXIV) - Urgent need for suspension of nuclear and thermonuclear tests;

and also the following resolutions which dealt with disarmament matters:

Resolution 2499 (XXIV) - Celebration of the twenty-fifth anniversary of the United Nations;

Resolution 2605 (XXIV) - Conference of Non-Nuclear-Weapon States.

Members of the Committee were assisted in their examination and analysis of possible disarmament measures by numerous messages, working papers, and other documents that were submitted to the Conference (annexes B and C), and by the plenary statements of Committee members (annex D).

10. The Secretary-General of the United Nations addressed the Conference on 18 February 1970 and called attention to the resolutions adopted by the General Assembly at its twenty-fourth session, the urgent tasks it had entrusted to the Conference and the important role of the Conference in achieving agreement on disarmament measures.

11. In accordance with its provisional agenda, the Committee continued work on the following measures in the field of disarmament:

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- (a) Further effective measures relating to the cessation of the nuclear arms race at an early date and to nuclear disarmament;
- (b) Non-nuclear measures;
- (c) Other collateral measures;
- (d) General and complete disarmament under strict and effective international control.

A. Further effective measures relating to the cessation of the nuclear arms race at an early date and to nuclear disarmament

Special report on the question of a treaty banning underground nuclear weapon tests

12. Having in mind the recommendations of General Assembly resolution 2604 B, members of the Committee continued to work on the question of a treaty banning underground nuclear weapon tests.
13. The great importance of this measure was recognized by members of the Committee in their opening plenary statements.
14. The delegation of the United Kingdom submitted a working paper (CCD/296) on verification of a comprehensive test ban treaty aimed at determining what detection and identification capability could be achieved in support of a comprehensive test ban treaty given the present state of the art in seismology.
15. The United States delegation submitted a working paper (CCD/298) on data from the underground nuclear explosion for peaceful purposes (Project RULISON) which was utilized collaterally for seismic investigation purposes.
16. The Secretary-General circulated to members of the Committee responses to his request, pursuant to General Assembly resolution 2604 A, concerning the provision of certain information in the context of a proposal for the creation of a world-wide exchange of seismological data which would facilitate the achievement of a comprehensive test ban.
17. On 12 August 1970, at the request of the Canadian delegation, the Committee held an informal meeting on the cessation of testing.
18. The delegation of Canada submitted a working paper (CCD/305) on 10 August 1970 which assessed the responses circulated to Committee members by

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the Secretary-General and analysed seismological capabilities for detecting and identifying underground nuclear explosions.

19. On 12 August 1970 the delegation of Sweden presented a working paper (CCD/306) on a comparison of two systems for verification of a comprehensive test ban.

20. The delegation of Sweden expressed the belief that while Strategic Arms Limitation Talks (SALT) negotiations continue, the Conference of the Committee on Disarmament should proceed with preparatory work towards a ban on underground testing of nuclear weapons, noting the advisability of underpinning, through such a ban, arms limitation measures that might be achieved through SALT (CCD/PV.487).

21. The United States delegation made clear (CCD/PV.449) its continued support for a comprehensive ban on the testing of nuclear weapons, adequately verified, including provisions for on-site inspection, and reaffirmed its desire to contribute to international co-operation in the improvement of seismic detection and identification capabilities.

22. The Soviet delegation emphasized (CCD/PV.494) the importance of a political decision regarding this measure and pointed out that the Soviet position is based on the belief that the use of national means of detection for the purpose of control over the prohibition of underground nuclear testing is adequate.

Other measures

23. Many members of the Committee welcomed the entry into force of the Treaty on the Non-Proliferation of Nuclear Weapons on 5 March 1970, and expressed the hope that additional countries would adhere to this Treaty. The representatives of the Union of Soviet Socialist Republics, the United Kingdom and the United States of America submitted as Committee working papers the statements made by the heads of their respective Governments at the ceremonies marking the entry into force of this Treaty (CCD/279/Rev.1, CCD/280 and CCD/281). A statement by the Secretary-General of the United Nations was also submitted (CCD/282).

24. On 10 March 1970 the delegation of Yugoslavia submitted as a working paper (CCD/278) the declaration made by its Government in connexion with the ratification of the Treaty on the Non-Proliferation of Nuclear Weapons.

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25. A number of delegations stressed the importance of full implementation of the provisions of the Treaty on the Non-Proliferation of Nuclear Weapons, in particular article VI concerning further negotiations on effective measures relating to cessation of the nuclear arms race and to nuclear disarmament. Delegations noted the importance of the bilateral discussions between the Governments of the Union of Soviet Socialist Republics and the United States of America on the limitation of offensive strategic nuclear weapons delivery systems and systems of defence against ballistic missiles. The delegations of Sweden and Mexico suggested that the Conference of the Committee on Disarmament should consider the nature and contents of a special international agreement or agreements to be concluded pursuant to the provisions of article V of the Treaty (CCD/PV.450 and 487).

26. Having in mind General Assembly resolution 2602 C, which invited the Conference of the Committee on Disarmament to consider effective methods of control against the use of radiological methods of warfare conducted independently of nuclear explosions and the need for effective methods of control of nuclear weapons that maximize radio-active effects, the Netherlands delegation submitted a working paper (CCD/291) on this subject on 14 July 1970. This paper concluded on the basis of available information that possibilities of radiological warfare do exist theoretically, but do not seem to be of much or even of any practical significance; therefore, it is difficult to see the practical usefulness of discussing measures related to radiological warfare.

B. Non-nuclear measures

Question of chemical and bacteriological (biological) weapons

27. Members of the Committee continued their work with a view to achieving progress on all aspects of the problem of the elimination of chemical and bacteriological (biological) weapons. They took into consideration General Assembly resolution 2603 B, which requested the Conference of the Committee on Disarmament to give urgent consideration to reaching agreement on the prohibitions and other measures referred to in the draft Convention on the Prohibition of the Development, Production and Stockpiling of Chemical and Bacteriological (Biological) Weapons and on the Destruction of Such Weapons submitted to the General Assembly

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by the delegations of Bulgaria, the Byelorussian Soviet Socialist Republic, Czechoslovakia, Hungary, Mongolia, Poland, Romania, the Ukrainian Soviet Socialist Republic and the Union of Soviet Socialist Republics, the draft Convention for the Prohibition of Biological Methods of Warfare submitted to the Conference by the United Kingdom of Great Britain and Northern Ireland, as well as other proposals.

28. In addition to plenary meetings, informal meetings on this question were held on 22 April, at the request of the delegation of Sweden, and on 5 August 1970, at the request of the delegations of Argentina, Canada, Italy, Japan, the Netherlands, Pakistan and Sweden.

29. The following amendments to the two conventions mentioned above were proposed to the Conference of the Committee on Disarmament:

The delegations of Hungary, Mongolia and Poland suggested amendments (CCD/285) to the socialist delegations' draft Convention providing for complaints of possible violations of its prohibitions to be reported to the United Nations Security Council which would undertake necessary measures to investigate complaints, and submitted a draft Security Council resolution.

The United States delegation proposed (CCD/290) that toxins be added to the agents covered by the prohibitions of the United Kingdom draft Convention.

The delegation of the United Kingdom subsequently introduced a revised text of its draft Convention and accompanying draft Security Council resolution (CCD/255/Rev.2), which took into account the proposal of the United States and a suggestion (CCD/PV.458) made by the Netherlands delegation together with minor drafting amendments.

30. The following proposals were also presented to the Committee:

The delegation of Yugoslavia proposed that all countries consider the possibility of placing, by law, all institutions engaged in chemical and biological weapons research, development and production under civilian administration (CCD/PV.456).

The delegation of Japan suggested (CCD/PV.456) a complaints procedure and an arrangement for investigation by the Secretary-General of the United Nations with the co-operation of international experts. For chemical weapons

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verification, it proposed procedures based on possible check points in the production cycle (CCD/288) and on statistical reporting and a possible technical method of on-site inspection (CCD/301).

The Swedish delegation suggested (CCD/PV.463) an international verification system for the prohibition of C and B weapon production based on open information with obligatory reporting regarding C and B agents to international agencies and verification by challenge.

The delegation of Mongolia proposed that special government agencies might be established to enforce compliance with prohibitions on C and B weapons in a manner similar to that in the 1961 Single Convention on Narcotic Drugs, and suggested adding to the socialist draft Convention a provision regarding a review conference (CCD/PV.464).

The delegation of Morocco suggested in a working paper (CCD/295) that C and B weapons should be jointly prohibited and their destruction provided for by one instrument; verification procedures for B weapons would be defined in this instrument and B weapons would be totally eliminated on its entry into force; this instrument would define the manner and time-limit for negotiation of a supplementary document on verification procedures for C weapons which would put into effect the prohibition on these weapons.

The Yugoslav delegation presented a working paper (CCD/302) elaborating a control system combining national legislative measures of renunciation and self-control, and measures of international control supplemented by a procedure in case of suspicion of violation.

31. In addition, the following steps were recommended:

The Japanese delegation proposed (CCD/PV.456) that a group of experts study technical aspects of verification for the prohibition of C and B weapons.

The Italian delegation presented a working paper (CCD/289) containing suggestions on the possible convening of a group of experts to study the problems of controls over chemical weapons and the way in which such a group would function. It also introduced an additional working paper (CCD/304) raising a certain number of technical questions.

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The United States delegation presented working papers on the relationship between the production of chemical agents for war and the production of chemicals for peaceful purposes by the commercial chemical industry (CCD/283); on toxins (CCD/286); on the problem of differentiating through off-site observation nerve agent production facilities from civilian chemical production facilities (CCD/293); and on economic data monitoring as a means of verifying compliance with a ban on chemical weapons (CCD/311).

The delegation of Canada submitted an analysis (CCD/300) of various proposals regarding verification of prohibitions on the development, production, stockpiling and the use of C and B weapons and a number of questions concerning additional information on national policy and controls, the production and stockpiling of chemicals, and research and development.

The delegation of Czechoslovakia presented a working paper on the prohibition of the development, production and stockpiling of C and B weapons and on their destruction (CCD/299), which concluded that national self-inspection and supervision seem to be the most suitable fundamental method of verification.

The delegation of the Soviet Union submitted a working paper on the complete prohibition of C and B weapons (CCD/303) which emphasized the necessity of a full prohibition of C and B weapons, the danger of approaching separately the prohibition of C and B means of warfare, and the practical advisability of the use of national means of control over the prohibition of these weapons with appropriate procedures for submitting complaints to the Security Council in cases of violation of the agreement.

A working paper examining certain of the problems involved in meeting the verification requirements for an acceptable CW agreement was submitted by the United Kingdom delegation (CCD/308).

At the conclusion of the 1970 session the delegations of Argentina, Brazil, Burma, Ethiopia, India, Mexico, Morocco, Nigeria, Pakistan, Sweden, the United Arab Republic and Yugoslavia presented a joint memorandum (CCD/310) on the question of C and B methods of warfare. This memorandum expressed the consensus of these delegations that it is essential that both chemical and

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bacteriological (biological) weapons should continue to be dealt with together in taking steps towards the prohibition of their development, production and stockpiling and their effective elimination from the arsenals of all States, and that the issue of verification is important in this field, as indeed adequate verification is also essential in regard to the success of any measure in the field of disarmament. It also expressed the hope that the basic approach outlined in this paper would receive general acceptance so that an early solution could be found in regard to the prohibition of the production, development and stockpiling of such weapons and their effective elimination from the arsenals of all States.

The delegation of the United States emphasized the inherent differences between chemical and biological weapons from the standpoint of arms limitations, underlined advantages of reaching early agreement to the greatest extent possible, and urged that there should be immediate negotiation of a convention along the lines of that proposed by the United Kingdom prohibiting production and stockpiling of all biological weapons and toxins, while study proceeds on the problems which must be resolved in order to make progress towards further prohibitions regarding chemical weapons (CCD/PV.491).

The delegation of the United Arab Republic submitted a working paper concerning suggestions on measures of verification of a ban on chemical and biological weapons (CCD/314).

The delegations of Hungary, Mongolia and Poland submitted a working document concerning the introduction of a safeguard clause - CCD/285 - to the draft Convention on the Prohibition of the Development, Production and Stockpiling of Chemical and Bacteriological (Biological) Weapons and on the Destruction of Such Weapons^{1/} made by Mr. J. Winiewicz, Deputy Minister for Foreign Affairs of the Polish People's Republic, at the 464th plenary meeting of the Conference of the Committee on Disarmament (CCD/315).

32. The USSR delegation emphasized the necessity of an urgent prohibition both of bacteriological (biological) and chemical weapons. The Soviet delegation pointed

^{1/} See Official Records of the General Assembly, Twenty-fourth Session, Annexes, agenda items 29, 30, 31 and 104, document A/7655.

out the strict logic and soundness of the approach to this problem of those delegations which urge that these types of weapons be prohibited together (CCD/PV.493).

33. A number of delegations made statements regarding their Governments' unilateral renunciations of one or both of these weapons and comments were made by Committee members with regard to these statements. Several delegations emphasized that unilateral renunciations should not be regarded as a solution of the problem of prohibiting chemical and bacteriological (biological) weapons.

34. Members of the Committee believe that the time and effort they devoted to this question contributed to a better understanding of the views and concerns of all participants, and to a deeper knowledge of the problems involved.

35. The Conference of the Committee on Disarmament, convinced of the need to give urgent consideration to the question of chemical and bacteriological (biological) weapons, intends to continue intensive work in this field with the aim of reaching agreement on the prohibitions and other measures referred to in General Assembly resolution 2603 B and other relevant proposals.

36. Many members of the Committee welcomed the statements by the delegations of Brazil, Japan and Morocco concerning ratification of the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925, and expressed the hope that additional countries would adhere to this instrument in the near future. The delegations of Mexico, Sweden, Mongolia, India, the United Arab Republic and Yugoslavia (CCD/PV.449, 480, 489, 490) emphasized the importance of General Assembly resolution 2603 A (XXIV) regarding the Geneva Protocol of 1925.

37. The delegations of Mongolia and Hungary emphasized (CCD/PV.455, 456) the importance of implementing General Assembly resolution 2603 B (XXIV), inviting all States which have not yet done so to accede to or ratify the Geneva Protocol in the course of 1970 in commemoration of the forty-fifth anniversary of its signing and the twenty-fifth anniversary of the United Nations.

38. The Italian delegation reaffirmed (CCD/PV.453, 474) its view that parties to the Geneva Protocol of 1925 should withdraw the reservation that the Protocol is only binding as regards States which have signed and ratified the Protocol.

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The delegation of Japan expressed the hope that those States which have attached reservations to the 1925 Geneva Protocol would withdraw their reservations as early as possible (CCD/PV.471). Several delegations emphasized that reservations to the 1925 Geneva Protocol have played an important positive role in gaining wide adherence to the Protocol and in preventing the use of chemical and biological weapons in the Second World War.

Other measures

39. Certain delegations expressed in plenary statements different views regarding the question of conventional armaments. A working paper (CCD/307) on possible principles that might assist in the development of approaches to this subject was submitted by the United States delegation.

C. Other collateral measures

Draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof

40. Having in mind the recommendations of General Assembly resolution 2602 F (XXIV), the Conference of the Committee on Disarmament continued its work on the draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof.

41. When addressing the Conference of the Committee on Disarmament at the beginning of its 1970 session, the Secretary-General of the United Nations expressed the view that the elaboration and submission to the General Assembly of an agreed draft treaty on this subject would constitute an important step in preventing the danger of the spread of the nuclear arms race to a vast area of our planet (CCD/PV.450).

42. In commenting on this question in their opening statements, many members of the Committee expressed the view that certain amendments and more precise language should be incorporated in the draft Treaty which was reported to the twenty-fourth session of the General Assembly. After careful consideration of the views of Committee members and all the proposals and suggestions made at the General Assembly, the representatives of the Soviet Union and the United States tabled a second revised joint draft Treaty on 23 April 1970 (CCD/269/Rev.2).

43. Articles I and II of this draft contained new language designed to reconcile a number of suggestions about how the area covered by the Treaty should be defined. The new draft of these articles took into account points raised at various times by the delegations of Argentina, Ethiopia, India, Morocco, Nigeria, Pakistan and the United Arab Republic; the text was essentially that proposed by the delegation of Argentina in working paper A/C.1/997.

44. The amended text of article III represented a synthesis of the views and positions of many countries regarding the verification provisions of the Treaty, largely as these were reflected in working paper A/C.1/992 submitted by the delegation of Canada. With respect to article III, statements were made by the delegations of the Soviet Union and the United States regarding the right of States Parties to apply directly to the Security Council in accordance with the Charter of the United Nations (CCD/PV.467 and 492).

45. In response to proposals of Argentina, India, Morocco, Pakistan and the United Arab Republic, the disclaimer provision was broadened and was given the status of a separate article IV as it appeared in the working paper of Argentina (A/C.1/997).

46. In response to a proposal by the delegation of Mexico in a working paper (A/C.1/995), an amendment making clear that the Treaty would in no way affect the obligations of parties under international instruments establishing zones free from nuclear weapons was incorporated in the new draft as article VIII.

47. A number of minor editorial changes suggested by various delegations in the General Assembly and at the Conference of the Committee on Disarmament were also included.

48. During subsequent discussions, a number of delegations expressed their complete satisfaction with the second revised draft of the Treaty. A number of other delegations suggested that the Treaty might still be improved and its provisions further clarified through certain additional amendments.

49. On 18 June 1970 the Polish delegation proposed that the question of the prevention of an arms race on the sea-bed remain on the agenda of the Committee (CCD/PV.471). General support was expressed for this proposal.

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50. On 25 June 1970 the delegation of Brazil suggested a number of amendments regarding the verification provisions of article III (CCD/PV.473). On 3 July 1970 the delegation of Argentina proposed changes in paragraphs 1, 2, 3 and 6 of article III regarding verification activities (CCD/PV.475/Add.1).

51. On 7 July 1970 the delegation of the United Arab Republic suggested that article VIII should be expanded to include other agreements on disarmament and in particular the Treaty on the Non-Proliferation of Nuclear Weapons (CCD/PV.476). Statements by the delegations of the Soviet Union and the United States made clear that the Treaty does not affect obligations assumed under other arms control treaties, including the non-proliferation treaty and the partial test ban treaty (CCD/PV.492). On 21 July 1970 the delegation of Mexico proposed that a second paragraph be added to article VIII of the draft Treaty (CCD/294). On 30 July 1970 two further amendments to article III and a new article V were recommended in a working paper (CCD/297) submitted by the delegations of Burma, Ethiopia, Mexico, Morocco, Nigeria, Pakistan, Sweden, the United Arab Republic and Yugoslavia.

52. The substance of the amendments contained in the latter paper and suggestions put forward in plenary statements and in consultations with many delegations were incorporated in a third revised draft of the treaty. The representatives of the Soviet Union and the United States consulted extensively with all members of the Committee concerning the precise formulation of the text of this draft, which was tabled on 1 September 1970. On this occasion the delegations of the Soviet Union and the United States made statements with explanations of the provisions of the revised draft Treaty. A number of delegations took note of these statements. The Argentine and Brazilian delegations made interpretative declarations in this respect (CCD/PV.492, 494).

53. Delegations expressed satisfaction with the general consensus achieved and the spirit of compromise which resulted in the inclusion in this draft of amendments responsive to their suggestions. Hope was widely expressed that the draft Treaty would be commended by the General Assembly and opened for signature at an early date.

54. The text of the final draft of the treaty discussed above is contained in annex A.

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Other measures

55. The representatives of Bulgaria, Czechoslovakia, Hungary, Poland, Romania and the Union of Soviet Socialist Republics made statements concerning the problem of European security.

56. General Assembly resolution 2602 D recommended that the Conference of the Committee on Disarmament give consideration to the military implications of laser technology. An examination of this question, contained in a working paper (CCD/292) submitted by the Netherlands delegation, concluded that the highly speculative character of the conceivable military applications of laser technology for weapons purposes did not seem to substantiate the need for arms control consideration at this time, although further developments in this field should be followed attentively.

D. General and complete disarmament

57. During its 1970 sessions the Conference of the Committee on Disarmament gave detailed attention to the recommendation of General Assembly resolution 2602 E. The possibilities of preparing a generally acceptable programme dealing with all aspects of the problem of the cessation of the arms race and general and complete disarmament under effective international control were carefully studied in considering this question. Members of the Committee were particularly aware of the need to encourage activities directed toward systematic progress in solving the complex problems of disarmament.

58. During the discussions of this question, all members of the Committee stated their positions on the issues involved. The discussion took into account General Assembly resolutions 1378 (XIV), 1722 (XVI) and 2602 (XXIV), the agreed principles for disarmament negotiations contained in the 1961 Joint Statement of the Soviet Union and the United States^{2/} which was approved by the United Nations General Assembly at its sixteenth session, the Committee agenda adopted in 1968, and treaties and agreements on disarmament questions already in force, which in the

^{2/} Ibid., Sixteenth Session, Annexes, agenda item 19, document A/4879.

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opinion of Committee members should serve as a point of departure for continued negotiations on the question of general and complete disarmament.

59. In the course of considering this matter, members of the Committee stated their positions on:

The interdependence of disarmament problems and questions of international peace and security;

The relationship of partial disarmament measures to general and complete disarmament;

The priority of nuclear disarmament, and disarmament regarding other weapons of mass destruction;

The need to give due consideration to maintaining a balance among various measures to prevent armament, to limit armament, and of disarmament;

The need to assure that no State or group of States gains military advantages at any stage of disarmament measures;

The need to associate all militarily important States, in particular all nuclear weapon Powers, with the process of disarmament in order to achieve a full measure of success in the efforts to contain the nuclear arms race and to reduce and eliminate all armaments;

The importance of full implementation of and wide adherence to treaties and agreements already in force in the field of disarmament;

The role of political and technical factors in determining appropriate methods for effectively verifying disarmament measures;

The need for flexibility;

The importance of converting resources released by disarmament to peaceful uses;

The role of regional disarmament measures;

The need to intensify efforts in the field of disarmament in general.

60. Many delegations stressed the urgent necessity of resuming work on general and complete disarmament. A number of plenary statements were devoted exclusively to a review of the way in which the question of general and complete disarmament has been approached in the past and to proposals for further progress in this field. Many delegations devoted their statements to the elaboration of a

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comprehensive programme of disarmament referred to in General Assembly resolution 2602 E. These included statements by the delegations of Canada (CCD/PV.481), Czechoslovakia (CCD/PV.469 and 490), Hungary (CCD/PV.489), India (CCD/PV.488), Italy (CCD/PV.453 and 475), Japan (CCD/PV.489), Mexico (CCD/PV.499), Morocco (CCD/PV.491), the Netherlands (CCD/PV.478), Pakistan (CCD/PV.490), Poland (CCD/PV.483), Romania (CCD/PV.455 and 485), Sweden (CCD/PV.478), the Union of Soviet Socialist Republics (CCD/PV.466, 486), the United States of America (CCD/PV.472) and Yugoslavia (CCD/PV.478).

61. On 9 July 1970 the Foreign Minister of Brazil, in addressing the Conference of the Committee on Disarmament on this subject, suggested certain principles for disarmament negotiations, including the need to ensure that disarmament measures do not affect adversely economic, scientific and technological development, or prejudice or prejudice unresolved juridical and other questions in any outside field (CCD/PV.477).

62. The following working papers and proposals were submitted on this subject:

The Netherlands delegation submitted an analysis (CCD/276) of steps toward a comprehensive disarmament programme.

The Mexican delegation stated its position in a working paper submitted on 5 March 1970 (CCD/277).

The Romanian delegation presented to the Committee proposals for further specific steps leading to disarmament (CCD/PV.455) including a proposal aiming at the establishment of a nuclear free zone in the Balkans. In a subsequent statement (CCD/PV.485) the Romanian delegation elaborated its ideas on the contents of a programme for the Disarmament Decade.

The delegation of Sweden presented a working paper (CCD/287) on ways in which verification has been dealt with in various arms control and disarmament treaties and proposals.

The delegation of India suggested that the Joint Statement of Agreed Principles for Disarmament Negotiations (ENDC/5) could be elaborated into a comprehensive programme of disarmament, taking into account the various comments and suggestions which had been put forward in the Committee (CCD/PV.488).

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The delegation of Italy submitted a working paper (CCD/309) which recalled the report it had made following an exchange of views with a number of delegations regarding a possible approach to a comprehensive programme of disarmament, its goal, principles and mandates, main elements and related general considerations (CCD/PV.475). In the same working paper the delegation of Italy submitted proposals on initiating programmes of studies relating to the question of the reduction of armed forces and conventional disarmament, in the framework of a comprehensive programme of disarmament, and on an undertaking to begin negotiations of these reductions.

On 2/ August 1970 the delegations of Mexico, Sweden and Yugoslavia submitted a draft comprehensive programme of disarmament (CCD/313), which contains principles and proposals as to elements and phases of the programme and procedures for its implementation, and states that the aim of this comprehensive programme is to achieve tangible progress in order that the goal of general and complete disarmament under effective international control may become a reality in a world in which international peace and security prevail, and economic and social progress are attained.

63. Members of the Committee believe that the wide discussion of these problems which took place at the Conference of the Committee on Disarmament during 1970 will contribute to progress in this field.

64. Since the questions related to general and complete disarmament are matters of great importance and complexity and in view of the fact that in the course of its discussions a number of concrete considerations and proposals were put forward which merit broad and thorough study by Governments and further discussion in the Committee, the Conference of the Committee on Disarmament intends to continue its discussions of general and complete disarmament during 1971.

65. The Committee agreed to reconvene on a day to be established by the co-chairmen in consultation with all members of the Committee.

66. This report is transmitted by the co-chairmen on behalf of the Conference of the Committee on Disarmament.

(Signed) A. A. ROSHCIN
Union of Soviet Socialist Republics

(Signed) James F. LEONARD
United States of America

ANNEXES

- ANNEX A Draft Treaty on the Prohibition of the
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ANNEX A

Draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons
and Other Weapons of Mass Destruction on the Seabed and
the Ocean Floor and in the Subsoil Thereof

The States Parties to this Treaty,

Recognizing the common interest of mankind in the progress of the exploration and use of the seabed and the ocean floor for peaceful purposes,

Considering that the prevention of a nuclear arms race on the seabed and the ocean floor serves the interests of maintaining world peace, reduces international tensions, and strengthens friendly relations among States,

Convinced that this Treaty constitutes a step towards the exclusion of the seabed, the ocean floor and the subsoil thereof from the arms race,

Convinced that this Treaty constitutes a step towards a Treaty on general and complete disarmament under strict and effective international control, and determined to continue negotiations to this end,

Convinced that this Treaty will further the purposes and principles of the Charter of the United Nations, in a manner consistent with the principles of international law and without infringing the freedoms of the high seas,

Have agreed as follows:

ARTICLE I

1. The States Parties to this Treaty undertake not to emplant or emplace on the seabed and the ocean floor and in the subsoil thereof beyond the outer limit of a seabed zone as defined in Article II any nuclear weapons or any other types of weapons of mass destruction as well as structures, launching installations or any other facilities specifically designed for storing, testing or using such weapons.
2. The undertakings of paragraph 1 of this Article shall also apply to the seabed zone referred to in the same paragraph, except that within such seabed zone, they shall not apply either to the coastal State or to the seabed beneath its territorial waters.
3. The States Parties to this Treaty undertake not to assist, encourage or induce any State to carry out activities referred to in paragraph 1 of this Article and not to participate in any other way in such actions.

ARTICLE II

For the purpose of this Treaty the outer limit of the seabed zone referred to in Article 1 shall be coterminous with the twelve-mile outer limit of the zone referred to in Part II of the Convention on the Territorial Sea and the Contiguous Zone, signed in Geneva on 29 April 1958 and shall be measured in accordance with the provisions of Part I, Section II, of this Convention and in accordance with international law.

ARTICLE III

1. In order to promote the objectives of and ensure compliance with the provisions of this Treaty, each State Party to the Treaty shall have the right to verify through observation the activities of other States Parties to the Treaty on the seabed and the ocean floor and in the subsoil thereof beyond the zone referred to in Article I, provided that observation does not interfere with such activities.
2. If after such observation reasonable doubts remain concerning the fulfilment of the obligations assumed under the Treaty, the State Party having such doubts and the State Party that is responsible for the activities giving rise to the doubts shall consult with a view to removing the doubts. If the doubts persist, the State Party having such doubts shall notify the other States Parties, and the Parties concerned shall co-operate on such further procedures for verification as may be agreed, including appropriate inspection of objects, structures, installations or other facilities that reasonably may be expected to be of a kind described in Article I. The Parties in the region of the activities, including any coastal State, and any other Party so requesting, shall be entitled to participate in such consultation and co-operation. After completion of the further procedures for verification, an appropriate report shall be circulated to other Parties by the Party that initiated such procedures.
3. If the State responsible for the activities giving rise to the reasonable doubts is not identifiable by observation of the object, structure, installation or other facility, the State Party having such doubts shall notify and make appropriate inquiries of States Parties in the region of the activities and of any other State Party. If it is ascertained through these inquiries that a particular State Party is responsible for the activities, that State Party shall consult and co-operate with other Parties as provided in paragraph 2 of this Article. If the identity of the State responsible for the activities cannot be ascertained through these inquiries, then further verification procedures, including inspection, may be undertaken by the inquiring State Party, which shall invite the participation of the Parties in the region of the activities, including any coastal State, and of any other Party desiring to co-operate.

4. If consultation and co-operation pursuant to paragraphs 2 and 3 of this Article have not removed the doubts concerning the activities and there remains a serious question concerning fulfilment of the obligations assumed under this Treaty, a State Party may, in accordance with the provisions of the Charter of the United Nations, refer the matter to the Security Council, which may take action in accordance with the Charter.

5. Verification pursuant to this Article may be undertaken by any State Party using its own means, or with the full or partial assistance of any other State Party, or through appropriate international procedures within the framework of the United Nations and in accordance with its Charter.

6. Verification activities pursuant to this Treaty shall not interfere with activities of other States Parties and shall be conducted with due regard for rights recognized under international law including the freedoms of the high seas and the rights of coastal States with respect to the exploration and exploitation of the continental shelves.

ARTICLE IV

Nothing in this Treaty shall be interpreted as supporting or prejudicing the position of any State Party with respect to existing international conventions, including the 1958 Convention on the Territorial Sea and the Contiguous Zone, or with respect to rights or claims which such State Party may assert, or with respect to recognition or non-recognition of rights or claims asserted by any other State, related to waters off its coasts; including inter alia territorial seas and contiguous zones, or to the seabed and the ocean floor, including continental shelves.

ARTICLE V

The Parties to this Treaty undertake to continue negotiations in good faith concerning further measures in the field of disarmament for the prevention of an arms race on the seabed, the ocean floor, and the subsoil thereof.

ARTICLE VI

Any State Party may propose amendments to this Treaty. Amendments shall enter into force for each State Party accepting the amendments upon their acceptance by a majority of the States Parties to the Treaty and thereafter for each remaining State Party on the date of acceptance by it.

ARTICLE VII

Five years after the entry into force of this Treaty, a conference of Parties to the Treaty shall be held in Geneva, Switzerland, in order to review the operation of this Treaty with a view to assuring that the purposes of the preamble and the provisions of the Treaty are being realized. Such review shall take into account any relevant technological developments. The review conference shall determine in accordance with the views of a majority of those Parties attending whether and when an additional review conference shall be convened.

ARTICLE VIII

Each State Party to this Treaty shall in exercising its national sovereignty have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other States Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it considers to have jeopardized its supreme interests.

ARTICLE IX

The provisions of this Treaty shall in no way affect the obligations assumed by States Parties to the Treaty under international instruments establishing zones free from nuclear weapons.

ARTICLE X

1. This Treaty shall be open for signature to all States. Any State which does not sign the Treaty before its entry into force in accordance with paragraph 3 of this Article may accede to it at any time.
2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and of accession shall be deposited with the Governments of _____ which are hereby designated the Depositary Governments.
3. This Treaty shall enter into force after the deposit of instruments of ratification by twenty-two Governments, including the Governments designated as Depositary Governments of this Treaty.
4. For States whose instruments of ratification or accession are deposited after the entry into force of this Treaty it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depositary Governments shall promptly inform the Governments of all signatory and acceding States of the date of each signature, of the date of deposit of each instrument of ratification or of accession, of the date of the entry into force of this Treaty, and of the receipt of other notices.

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

ARTICLE XI

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

In witness whereof the undersigned, being duly authorized thereto, have signed this Treaty.

Done in _____ at _____, this

_____ day of _____, _____.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/317/Corr.1
4 September 1970

ENGLISH

Original: ENGLISH/RUSSIAN

REPORT
TO THE UNITED NATIONS GENERAL ASSEMBLY
AND TO THE UNITED NATIONS DISARMAMENT COMMISSION

CORRIGENDUM

In ANNEX B, on page 1, the date in the fifth paragraph should read: "On 6 March 1970" and not 16 March 1970.

GE.70-19358

ANNEX B

List of working papers and other documents

On 17 February 1970, the Secretary-General of the United Nations transmitted to the Co-Chairmen letters containing the resolutions of the General Assembly listed in Part II of this report (CCD/275).

On 24 February 1970, the representative of The Netherlands submitted to the Committee a Working Paper containing some introductory remarks on steps toward a comprehensive disarmament programme (CCD/276).

On 5 March 1970, the representative of Mexico submitted a Working Paper containing some comments and suggestions for making the Committee on Disarmament more effective (CCD/277).

On 10 March 1970, the representative of Yugoslavia submitted a declaration by the Government of the Socialist Federal Republic of Yugoslavia in connexion with ratification of the Treaty on the Non-Proliferation of Nuclear Weapons (CCD/278).

On 16 March 1970, the representative of the Union of Soviet Socialist Republics submitted a statement by A. N. Kosygin, Chairman of the Council of Ministers of the USSR, at the ceremony for the deposit of instruments of ratification of the Treaty on the Non-Proliferation of Nuclear Weapons (CCD/279/Rev.1).

On 9 March 1970, the representative of the United Kingdom submitted a statement made by the Prime Minister of the United Kingdom, the Rt. Hon. Harold Wilson, M.P., at Lancaster House, London, on 5 March 1970, on the occasion of the entry into force of the Treaty on the Non-Proliferation of Nuclear Weapons (CCD/280).

On 9 March 1970, the representative of the United States of America submitted remarks by President Nixon on the entry into force of the Non-Proliferation Treaty, Washington, D.C., 5 March 1970 (CCD/281).

On 11 March 1970, a statement of the Secretary-General on occasion of entry into force of the Treaty on Non-Proliferation of Nuclear Weapons, on 5 March 1970 was submitted (CCD/282).

On 16 March 1970, the representative of the United States of America submitted a Working Paper on chemical warfare agents and the commercial chemical industry (CCD/283).

On 24 March 1970, the representative of Mexico submitted an addendum to a Working Paper on the establishment of nuclear-free zones (CCD/241/Add.1).

On 8 April 1970, the Secretary-General of the United Nations transmitted to the Co-Chairmen a letter dated 30 March 1970 concerning General Assembly Document A/7967 (CCD/284); addenda 1, 2, 3 and 4 to this document were transmitted on 23 April, 16 June, 10 August, 28 August 1970.

On 4 April 1970, the representatives of Hungary, Mongolia and Poland transmitted a Working Paper in connexion with the draft Convention on the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons and on the destruction of such weapons (CCD/285).

On 21 April 1970, the representative of the United States of America submitted a Working Paper on toxins (CCD/286).

On 23 April 1970, the representatives of the Union of Soviet Socialist Republics and the United States of America submitted a Draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil Thereof (CCD/269/Rev.2).

On 30 April 1970, the representative of Sweden submitted a Working Paper presenting the ways in which verification has been dealt with in various arms control and disarmament treaties and proposals (CCD/287).

On 30 April 1970, the representative of Japan submitted a Working Paper on the question of verification for prohibition of chemical and biological weapons (CCD/288).

On 30 June 1970, the representative of Italy submitted suggestions regarding the possible convening of a group of experts to study the problem of controls over chemical weapons and the way in which such a group should function (CCD/289).

On 30 June 1970, the representative of the United States submitted a Working Paper on the toxin amendment to the United Kingdom draft Convention for the prohibition of biological methods of warfare (CCD/290).

On 14 July 1970, the representative of The Netherlands submitted a Working Paper concerning United Nations General Assembly resolution 2602 C (XXIV) (CCD/291).

On 14 July 1970, the representative of The Netherlands submitted a Working Paper concerning United Nations General Assembly resolution 2602D (XXIV) (CCD/292).

On 16 July 1970, the representative of the United States of America submitted a Working Paper comparing nerve agent facilities and civilian chemical production facilities (CCD/293).

On 21 July 1970, the representative of Mexico submitted a Working Paper on the Draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof (CCD/294).

On 28 July 1970, the representative of Morocco submitted a Working Paper on the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons and on the destruction of such weapons (CCD/295).

On 28 July 1970, the representative of the United Kingdom submitted a Working Paper on verification of a comprehensive test ban treaty (CCD/296).

On 30 July 1970, the representatives of Burma, Ethiopia, Mexico, Morocco, Nigeria, Pakistan, Sweden, United Arab Republic and Yugoslavia submitted a Working Paper on the Draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof (CCD/269/Rev.2), (CCD/297).

On 4 August 1970, the representative of the United States submitted a Working Paper introducing "Seismic Data from Rulison" (CCD/298).

On 6 August 1970, the representative of Czechoslovakia submitted a Working Paper on the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons and on the destruction of such weapons (CCD/299).

On 6 August 1970, the representative of Canada submitted a Working Paper on the verification of prohibitions of the development, production, stockpiling and the use of chemical and biological weapons (CCD/300).

On 6 August 1970, the representative of Japan submitted a Working Paper on the question of the prohibition of chemical weapons (CCD/301).

On 6 August 1970, the representative of Yugoslavia submitted a Working Paper on the elements for a system of control of the complete prohibition of chemical and biological weapons (CCD/302).

On 6 August 1970, the representative of the Union of Soviet Socialist Republics submitted a Working Paper on the complete prohibition of chemical and bacteriological weapons (CCD/303).

On 6 August 1970, the representative of Italy submitted an additional Working Paper on the problem of controls over chemical weapons (CCD/304).

On 10 August 1970, the representative of Canada submitted a Working Paper on seismological capabilities of detecting and identifying underground nuclear explosions (CCD/305).

On 12 August 1970, the representative of Sweden submitted a Working Paper on technical comparison of two systems for verification of a comprehensive test ban (CCD/306).

On 12 August 1970, the representative of the United States submitted a Working Paper on conventional arms limitation (CCD/307).

On 18 August 1970, the representative of the United Kingdom submitted a revised draft Convention for the Prohibition of Biological Methods of Warfare and accompanying draft Security Council resolution (CCD/255/Rev.2).

On 18 August 1970 the representative of the United Kingdom submitted a Working Paper on verification of CW arms control measures (CCD/308).

On 19 August 1970, the representative of Italy submitted a Working Paper on a comprehensive programme of disarmament (CCD/309).

On 25 August 1970, the representatives of Argentina, Brazil, Burma, Ethiopia, India, Mexico, Morocco, Nigeria, Pakistan, Sweden, the United Arab Republic and Yugoslavia submitted a Joint Memorandum on the question of chemical and bacteriological (biological) methods of warfare (CCD/310).

On 25 August 1970, the representative of the United States of America submitted a Working Paper on economic data monitoring as a means of verifying compliance with a ban on chemical weapons (CCD/311).

On 27 August 1970, the representative of the United States submitted a Working Paper on remarks by Dr. Joshua Lederberg at the informal meeting of CCD on 5 August 1970 (CCD/312).

On 27 August 1970, the representatives of Mexico, Sweden and Yugoslavia submitted a Draft Comprehensive Programme of Disarmament (CCD/313).

On 1 September 1970, the representative of the United Arab Republic submitted a Working Paper concerning suggestions on measures of verification of a ban on Chemical and Biological Weapons (CCD/314).

On 1 September 1970, the representatives of the Union of Soviet Socialist Republics and the United States of America submitted a Draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof (CCD/269/Rev.3)*.

On 3 September 1970, the representatives of Hungary, Mongolia and Poland submitted a working document concerning the introduction of a safeguard clause - CCD/285 - to the draft convention prohibiting the development, production and stockpiling of chemical and bacteriological (biological) weapons and on the destruction of such weapons (Doc.A/7655) made by Mr. J. Winiewicz, Deputy Minister for Foreign Affairs of the Polish People's Republic at the 464th plenary meeting of the Conference of the Committee on Disarmament (CCD/315).

*Indicates Conference document which is attached as Annex A.

ANNEX C

Texts of Working Papers and Other Committee Documents

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/275

17 February 1970

Original: ENGLISH

LETTER DATED 30 JANUARY 1970 FROM THE SECRETARY-GENERAL OF THE UNITED NATIONS TO THE CO-CHAIRMAN OF THE CONFERENCE OF THE COMMITTEE ON DISARMAMENT TRANSMITTING RESOLUTIONS A/RES/2602 (XXIV), A/RES/2603 (XXIV), A/RES/2604 (XXIV), A/RES/2499/Rev.1 (XXIV); and A/RES/2605 (XXIV) OF THE GENERAL ASSEMBLY

I have the honour to transmit herewith the following resolutions adopted by the General Assembly at its twenty-fourth session, which entrust specific responsibilities to the Conference of the Committee on Disarmament:

A/RES/2602 (XXIV) - "Question of general and complete disarmament"

A/RES/2603 (XXIV) - "Question of chemical and bacteriological (biological) weapons"

A/RES/2604 (XXIV) - "Urgent need for suspension of nuclear and thermonuclear tests".

I would draw attention particularly to the following specific references to the Conference of the Committee on Disarmament contained in the above resolutions:

In A/RES/2602 B (XXIV), operative paragraph 1 endorsing the agreement reached on the title and composition of the Conference of the Committee on Disarmament; operative paragraph 2, welcoming the new members of the Conference; operative paragraph 3, expressing conviction that to effect any change in the composition of the Conference of the Committee on Disarmament, the procedure followed at the sixteenth session of the General Assembly should be observed; and operative paragraph 4, requesting the Secretary-General to continue to render the necessary assistance and provide necessary services to the Conference.

In A/RES/2602 C (XXIV), operative paragraph 1 inviting the Conference of the Committee on Disarmament to consider, without prejudice to existing priorities, effective methods of control against the use of radiological methods of warfare conducted independently of nuclear explosions; operative paragraph 2, recommending that the Conference consider, in the context of nuclear arms control negotiations, the need for effective methods of control of nuclear weapons that maximize radioactive effects; and operative paragraph 3, requesting the Conference to inform the General Assembly at its twenty-fifth session of the results of its consideration of this subject.

In A/RES/2602 D (XXIV) recommending that the Conference of the Committee on Disarmament give consideration, without prejudice to existing priorities, to the implications of the possible military applications of laser technology.

In A/RES/2602 E (XXIV), operative paragraph 3 requesting the Conference of the Committee on Disarmament to resume its work as early as possible, bearing in mind that the ultimate goal is general and complete disarmament; operative paragraph 4, further requesting the Conference, while continuing intensive negotiations with a view to reaching the widest possible agreement on collateral measures, at the same time to work out a comprehensive programme, dealing with all aspects of the problem of the cessation of the arms race and general and complete disarmament, under effective international control, which would provide the Conference with a guideline to chart the course of its further work and its negotiations, and to report thereon to the General Assembly at its twenty-fifth session; operative paragraph 5, deciding to this effect to draw the attention of the Conference to all pertinent proposals and suggestions formulated during the debates on disarmament, referring to the Conference all documents and records of the meetings of the First Committee relating to the disarmament items.

In A/RES/2602 F (XXIV), operative paragraph 1 welcoming the submission to the General Assembly at its twenty-fourth session of the "Draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and the Subsoil Thereof", annexed to the report of the Conference of the Committee on Disarmament, and the various proposals and suggestions made in regard to that treaty; and operative paragraph 2, calling upon the Conference to take into account all proposals and suggestions that were made at the twenty-fourth session of the General Assembly and to continue its work on this subject so that the text of a draft treaty can be submitted to the General Assembly for its consideration.

In A/RES/2603 B (XXIV), part II, operative paragraph 4, recommending the report of the Secretary-General to the Conference of the Committee on Disarmament as a basis for its further consideration of the elimination of chemical and bacteriological (biological) weapons; part III, operative paragraph 2, requesting the Conference to give urgent consideration to reaching agreement on the prohibitions and other measures referred to in the draft conventions mentioned in the resolution and other relevant proposals; part III, operative paragraph 3, requesting the Conference to present a report on progress on all aspects of the problem of the elimination of chemical and bacteriological (biological) weapons to the General Assembly at its twenty-fifth session; and part III, operative paragraph 4, requesting the Secretary-General to transmit to the Conference all documents and records of the First Committee relating to questions connected with the problem of chemical and bacteriological (biological) weapons.

In A/RES/2604 A (XXIV), operative paragraph 3 requesting the Secretary-General to circulate forthwith, upon receipt, all responses to the request for information annexed to the resolution to those Governments mentioned in paragraph 1 and to members of the Conference of the Committee on Disarmament to assist the Conference in its further consideration of the achievement of a comprehensive test ban.

In A/RES/2604 B (XXIV), operative paragraph 3 requesting the Conference of the Committee on Disarmament to continue, as a matter of urgency, its deliberations on a treaty banning underground nuclear weapon tests, taking into account the proposals already made in the Conference as to the contents of such a treaty, as well as the views expressed at the twenty-fourth session of the General Assembly, and to submit a special report to the General Assembly on the results of their deliberations.

In connexion with paragraph 5 of A/RES/2602 E (XXIV), the relevant documents and records of the First Committee of the General Assembly are the following:

A/7568 and Add.1; A/7639; A/7677 and Corr.1 and Add. 1-2; A/7678 and Add.1-3; A/7681; A/7741; A/7743; A/7862; A/7887; A/7902; A/C.1/989; A/C.1/992 and Add.1; A/C.1/993/Rev.1 and Corr.1; A/C.1/994; A/C.1/995; A/C.1/997; A/C.1/L.485 and Add.1-4; A/C.1/L.486 and Add.1; A/C.1/L.490 and Add.1-2; A/C.1/L.492; A/C.1/L.493/Rev.1; A/C.1/L.494/Rev.1; A/C.1/L.495/Rev.1; A/C.1/L.497 and Add.1; A/C.1/L.499/Rev.1; A/C.1/L.501; A/C.1/L.502; A/C.1/L.503; A/C.1/L.504; A/C.1/L.512; A/C.1/P.V. 1691-1707; A/C.1/PV. 1710-1718; A/C.1/PV.1722.

In connexion with part III, paragraph 4 of A/RES/2603 B (XXIV), the relevant documents and records of the First Committee of the General Assembly are the following:

A/7575; A/7655; A/7741; A/7890; A/C.1/988; A/C.1/989; A/C.1/991; A/C.1/L.487 and Add.1; A/C.1/L.488; A/C.1/L.489 and Add.1-3; A/C.1/L.491 and Add.1; A/C.1/L.498; A/C.1/L.500 and Add.1-2; A/C.1/PV. 1691-1707; A/C.1/PV.1710-1713; A/C.1/PV. 1716; A/C.1/PV. 1717.

All these documents and records were distributed during the twenty-fourth session of the General Assembly to all Members of the United Nations, including all the members of the Conference of the Committee on Disarmament.

... I also have the honour to transmit herewith, for the information of the members of the Conference of the Committee on Disarmament, the following resolutions adopted by the General Assembly at its twenty-fourth session, which deal with disarmament matters:

A/RES/2499/Rev.1 (XXIV) - "Celebration of the twenty-fifth anniversary of the United Nations"

A/RES/2605 (XXIV) - "Conference of Non-Nuclear-Weapon States"

Accept, Sirs, the assurances of my highest consideration.

U Thant
Secretary-General

UNITED NATIONS

GENERAL
ASSEMBLY



Distr.
GENERAL

A/RES/2602 (XXIV)
21 January 1970

Twenty-fourth session
Agenda item 29

RESOLUTIONS ADOPTED BY THE GENERAL ASSEMBLY

[On the report of the First Committee (A/7902)]

2602 (XXIV). Question of general and complete disarmament

A

The General Assembly,

Recalling its resolution 2456 D (XXIII) of 20 December 1968,

Noting with satisfaction that, on 17 November 1969, the Governments of the Union of Soviet Socialist Republics and the United States of America initiated bilateral negotiations on the limitation of offensive and defensive strategic nuclear-weapon systems,

Expressing the hope that these negotiations will bring about early and positive results which would pave the way for further efforts in the field of nuclear disarmament,

Convinced of the necessity for creating the most favourable conditions for the achievement of that aim,

Appeals to the Governments of the Union of Soviet Socialist Republics and the United States of America to agree, as an urgent preliminary measure, on a moratorium on further testing and deployment of new offensive and defensive strategic nuclear-weapon systems.

1836th plenary meeting,
16 December 1969.

/...

The General Assembly,

Recalling its resolution 1660 (XVI) of 28 November 1961 on the question of disarmament,

Recalling further its resolution 1722 (XVI) of 20 December 1961 on the same question by which the General Assembly endorsed the agreement reached on the composition of a Disarmament Committee, the membership of which was as follows: Brazil, Bulgaria, Burma, Canada, Czechoslovakia, Ethiopia, France, India, Italy, Mexico, Nigeria, Poland, Romania, Sweden, Union of Soviet Socialist Republics, United Arab Republic, United Kingdom of Great Britain and Northern Ireland and United States of America,

Bearing in mind that in the debates of the First Committee during the twenty-third session, attention was drawn to the convenience of enlarging the composition of the Eighteen-Nation Committee on Disarmament in order to make it more representative of the international community,

Noting that the representatives of the Union of Soviet Socialist Republics and the United States of America have reached agreement on the inclusion of eight additional members, who have already been participating in the deliberations of the Committee,^{1/}

Recognizing that all States have a deep interest in disarmament negotiations,

1. Endorses the agreement that has been reached on the title^{2/} and on the following composition of the "Conference of the Committee on Disarmament"; Argentina, Brazil, Bulgaria, Burma, Canada, Czechoslovakia, Ethiopia, France, Hungary, India, Italy, Japan, Mexico, Mongolia, Morocco, Netherlands, Nigeria, Pakistan, Poland, Romania, Sweden, Union of Soviet Socialist Republics, United Arab Republic, United Kingdom of Great Britain and Northern Ireland, United States of America and Yugoslavia;

2. Welcomes the eight new members of the Conference of the Committee on Disarmament;

^{1/} See A/7741, paras. 10 and 11.

^{2/} Ibid., para. 12.

3. Expresses its conviction that to effect any change in the composition of the Conference of the Committee on Disarmament specified in paragraph 1 above, the procedure followed at the sixteenth session of the General Assembly should be observed;

4. Requests the Secretary-General to continue to render the necessary assistance and provide the necessary services to the Conference of the Committee on Disarmament.

1836th plenary meeting,
16 December 1969.

C

The General Assembly,

Noting with grave concern that among the possible effects of radiological warfare could be the destruction of mankind,

Aware that radiological warfare may be conducted both by maximizing the radioactive effects of nuclear explosions and through the use of radioactive agents independently of nuclear explosions,

1. Invites the Conference of the Committee on Disarmament to consider, without prejudice to existing priorities, effective methods of control against the use of radiological methods of warfare conducted independently of nuclear explosions;

2. Recommends that the Conference of the Committee on Disarmament consider, in the context of nuclear arms control negotiations, the need for effective methods of control of nuclear weapons that maximize radioactive effects;

3. Requests the Conference of the Committee on Disarmament to inform the General Assembly at its twenty-fifth session of the results of its consideration of this subject.

1836th plenary meeting,
16 December 1969.

D

The General Assembly,

Noting that continued scientific and technological advancement creates new opportunities for the application of science and technology both for peaceful and for military purposes,

Noting the rapid development of laser technology, which is becoming increasingly important in many civilian and military fields,

Concerned at the possible military applications of laser technology,

Recommends that the Conference of the Committee on Disarmament give consideration, without prejudice to existing priorities, to the implications of the possible military applications of laser technology.

1836th plenary meeting,
16 December 1969.

E

The General Assembly,

Reaffirming its resolution 1378 (XIV) of 20 November 1959, in which it considered that the question of general and complete disarmament was the most important one facing the world today,

Reaffirming further the responsibility of the United Nations in the attainment of disarmament,

Recalling its resolution 1722 (XVI) of 20 December 1961, by which it welcomed the joint statement of agreed principles for disarmament negotiations submitted on 20 September 1961 by the Union of Soviet Socialist Republics and the United States of America,^{3/} and reaffirming the recommendation that further disarmament negotiations be based on those principles,

^{3/} See Official Records of the General Assembly, Sixteenth Session, Annexes, agenda item 19, document A/4879.

Recalling its resolution 2454 B (XXIII) of 20 December 1968, whereby it requested the Conference of the Eighteen-Nation Committee on Disarmament to make renewed efforts towards achieving substantial progress in reaching agreement on the question of general and complete disarmament under effective international control, and to continue its urgent efforts to negotiate collateral measures of disarmament,

Convinced that the process of disarmament would be encouraged and stimulated by the entry into force at the earliest possible stage and the strengthening of multilateral international instruments in the field of disarmament,

Convinced that the participation of all nuclear Powers in the efforts to contain the nuclear arms race and to reduce and eliminate all armaments is indispensable for a full measure of success in these efforts,

Convinced that peace and security in the world, like development, are indivisible, and recognizing the universal responsibilities and obligations in this regard,

Further convinced of the need to pursue negotiations in good faith on effective measures relating to the cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control,

Having received the report of the Conference of the Committee on Disarmament,^{4/}

Bearing in mind the grave dangers involved in the development of new nuclear weapons through a spiralling nuclear arms race,

Believing that the diversion of enormous resources and energy, human and material, from peaceful economic and social pursuits to an unproductive and wasteful arms race, particularly in the nuclear field, places a great burden on both the developing and the developed countries,

Believing that the security and the economic and social well-being of all countries would be enhanced as progress is made towards the goal of general and complete disarmament,

^{4/} A/7741.

Reaffirming its resolution 2499 A (XXIV) of 31 October 1969, and in particular paragraph 9, in which the General Assembly endorsed the call of the Secretary-General for the proclamation of a Disarmament Decade, and paragraph 17, in which the Assembly appealed to all Member States to consider the possibility of signing or ratifying the multilateral international instruments in the field of disarmament,

1. Declares the decade of the 1970s as a Disarmament Decade;

2. Calls upon Governments to intensify without delay their concerted and concentrated efforts for effective measures relating to the cessation of the nuclear arms race at an early date and to nuclear disarmament and the elimination of other weapons of mass destruction, and for a treaty on general and complete disarmament under strict and effective international control;

3. Requests the Conference of the Committee on Disarmament to resume its work as early as possible, bearing in mind that the ultimate goal is general and complete disarmament;

4. Further requests the Conference of the Committee on Disarmament, while continuing intensive negotiations with a view to reaching the widest possible agreement on collateral measures, to work out at the same time a comprehensive programme, dealing with all aspects of the problem of the cessation of the arms race and general and complete disarmament under effective international control, which would provide the Conference with a guideline to chart the course of its further work and its negotiations, and to report thereon to the General Assembly at its twenty-fifth session;

5. Decides to this effect to draw the attention of the Conference of the Committee on Disarmament to all pertinent proposals and suggestions formulated during the debate on disarmament, referring to the Conference all documents and records of the meetings of the First Committee relating to the items on disarmament;

6. Recommends further that consideration be given to channelling a substantial part of the resources freed by measures in the field of disarmament to promote the economic development of developing countries and, in particular, their scientific and technological progress;

7. Requests the Secretary-General and Governments to publicize the Disarmament Decade by all appropriate means at their disposal in order to

acquaint public opinion with its purposes and objectives and with the negotiations and developments related thereto;

8. Requests the Secretary-General to provide all appropriate facilities and assistance with a view to furthering the fullest implementation of the present resolution.

1836th plenary meeting,
16 December 1969.

F

The General Assembly,

Recognizing the common interest of mankind in the reservation of the sea-bed and the ocean floor exclusively for peaceful purposes,

Having considered the report of the Conference of the Committee on Disarmament^{5/} and noting with appreciation the work of that Committee in the elaboration of a draft treaty on the prohibition of the emplacement of nuclear weapons and other weapons of mass destruction on the sea-bed and the ocean floor and in the subsoil thereof,

Noting the suggestions and proposals relating to the draft Treaty annexed to the report of the Conference of the Committee on Disarmament,^{6/} which were made during the course of the discussion of this matter in the First Committee, as well as the suggestions made during the special session of the Committee on the Peaceful Uses of the Sea-Bed and the Ocean Floor beyond the Limits of National Jurisdiction,

Considering that the prevention of a nuclear arms race on the sea-bed and the ocean floor serves the interests of maintaining world peace, reducing international tensions and strengthening friendly relations among States,

Convinced that the conclusion of a treaty on the prohibition of the emplacement of nuclear weapons and other weapons of mass destruction on the sea-bed and the ocean floor and in the subsoil thereof would constitute a step towards the exclusion of the sea-bed, the ocean floor and the subsoil thereof from the arms race,

5/ Ibid.

6/ Ibid., annex A

/...

1. Welcomes the submission to the General Assembly at its present session of the draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof, annexed to the report of the Conference of the Committee on Disarmament, and the various proposals and suggestions made in regard to the draft Treaty;

2. Calls upon the Conference of the Committee on Disarmament to take into account all the proposals and suggestions that have been made at the present session of the General Assembly and to continue its work on this subject so that the text of a draft treaty can be submitted to the General Assembly for its consideration.

1836th plenary meeting,
16 December 1969.

UNITED NATIONS

GENERAL
ASSEMBLY



Distr.
GENERAL

A/RES/2603 (XXIV)
21 January 1970



Twenty-fourth session
Agenda item 104

RESOLUTIONS ADOPTED BY THE GENERAL ASSEMBLY

[On the report of the First Committee (A/7890)]

2603 (XXIV). Question of chemical and bacteriological (biological) weapons

A

The General Assembly,

Considering that chemical and biological methods of warfare have always been viewed with horror and been justly condemned by the international community,

Considering that these methods of warfare are inherently reprehensible because their effects are often uncontrollable and unpredictable and may be injurious without distinction to combatants and non-combatants, and because any use would entail a serious risk of escalation,

Recalling that successive international instruments have prohibited or sought to prevent the use of such methods of warfare,

Noting specifically in this regard that:

(a) The majority of States then in existence adhered to the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925,^{1/}

(b) Since then, further States have become Parties to that Protocol,

(c) Still other States have declared that they will abide by its principles and objectives,

^{1/} League of Nations, Treaty Series, vol. XCIV (1929), No. 2138

(d) These principles and objectives have commanded broad respect in the practice of States,

(e) The General Assembly, without any dissenting vote, has called for the strict observance by all States of the principles and objectives of the Geneva Protocol,^{2/}

Recognizing therefore, in the light of all the above circumstances, that the Geneva Protocol embodies the generally recognized rules of international law prohibiting the use in international armed conflicts of all biological and chemical methods of warfare, regardless of any technical developments,

Mindful of the report of the Secretary-General, prepared with the assistance of the Group of Consultant Experts, appointed by him under General Assembly resolution 2454 A (XXIII) of 20 December 1968, and entitled Chemical and Bacteriological (Biological) Weapons and the Effects of Their Possible Use,^{3/}

Considering that this report and the foreword to it by the Secretary-General add further urgency for an affirmation of these rules and for dispelling, for the future, any uncertainty as to their scope and, by such affirmation, to assure the effectiveness of the rules and to enable all States to demonstrate their determination to comply with them,

Declares as contrary to the generally recognized rules of international law, as embodied in the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925, the use in international armed conflict of:

(a) Any chemical agents of warfare - chemical substances, whether gaseous, liquid or solid - which might be employed because of their direct toxic effects on man, animals or plants;

(b) Any biological agents of warfare - living organisms, whatever their nature, or infective material derived from them - which are intended to cause disease or death in man, animals or plants, and which depend for their effects on their ability to multiply in the person, animal or plant attacked.

1836th plenary meeting,
16 December 1969.

^{2/} Resolution 2162 B (XXI) of 5 December 1966.

^{3/} United Nations publication, Sales No.: E.69.I.24.

B

The General Assembly,

Recalling its resolution 2454 A (XXIII) of 20 December 1968,

Having considered the report of the Secretary-General, entitled Chemical and Bacteriological (Biological) Weapons and the Effects of Their Possible Use,^{3/}

Noting the conclusions of the report of the Secretary-General and the recommendations contained in the foreword to the report,

Noting also the discussion of the report of the Secretary-General at the Conference of the Committee on Disarmament and during the twenty-fourth session of the General Assembly,

Mindful of the conclusion of the report that the prospects for general and complete disarmament under effective international control and hence for peace throughout the world would brighten significantly if the development, production and stockpiling of chemical and bacteriological (biological) agents intended for purposes of war were to end and if they were eliminated from all military arsenals,

Recognizing the importance of the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925,^{4/}

Conscious of the need to maintain inviolate the Geneva Protocol and to ensure its universal applicability,

Emphasizing the urgency of the need for achieving the earliest elimination of chemical and bacteriological (biological) weapons,

I

1. Reaffirms its resolution 2162 B (XXI) of 5 December 1966 and calls anew for strict observance by all States of the principles and objectives of the Protocol for the Prohibition of the Use in War of Asphyxiation, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925;

^{4/} League of Nations, Treaty Series, vol. XCIV (1929), No. 2138.

2. Invites all States which have not yet done so to accede to or ratify the Geneva Protocol in the course of 1970 in commemoration of the forty-fifth anniversary of its signing and the twenty-fifth anniversary of the United Nations;

II

1. Welcomes the report of the Secretary-General as an authoritative statement on chemical and bacteriological (biological) weapons and the effects of their possible use, and expresses its appreciation to the Secretary-General and to the consultant experts who assisted him;

2. Requests the Secretary-General to publicize the report in as many languages as is considered desirable and practicable, making use of the facilities of the United Nations Office of Public Information;

3. Recommends to all Governments the wide distribution of the report so as to acquaint public opinion with its contents, and invites the specialized agencies, intergovernmental organizations and national and international non-governmental organizations to use their facilities to make the report widely known;

4. Recommends the report of the Secretary-General to the Conference of the Committee on Disarmament as a basis for its further consideration of the elimination of chemical and bacteriological (biological) weapons;

III

1. Takes note of the draft Convention on the Prohibition of the Development, Production and Stockpiling of Chemical and Bacteriological (Biological) Weapons and on the Destruction of such Weapons submitted to the General Assembly by the delegations of Bulgaria, the Byelorussian Soviet Socialist Republic, Czechoslovakia, Hungary, Mongolia, Poland, Romania, the Ukrainian Soviet Socialist Republic and the Union of Soviet Socialist Republics^{5/} and of the draft Convention for the Prohibition of Biological Methods of Warfare submitted to the Conference of the Committee on Disarmament by the United Kingdom of Great Britain and Northern Ireland,^{6/} as well as other proposals;

^{5/} See A/7655.

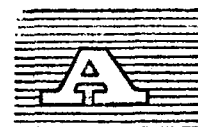
^{6/} See A/7741, annex C, document ENDC/255/Rev.1.

2. Requests the Conference of the Committee on Disarmament to give urgent consideration to reaching agreement on the prohibitions and other measures referred to in the draft conventions mentioned in paragraph 1 above and other relevant proposals;

3. Requests the Conference of the Committee on Disarmament to submit a report on progress on all aspects of the problem of the elimination of chemical and bacteriological (biological) weapons to the General Assembly at its twenty-fifth session;

4. Requests the Secretary-General to transmit to the Conference of the Committee on Disarmament all documents and records of the First Committee relating to questions connected with the problem of chemical and bacteriological (biological) weapons.

1836th plenary meeting,
16 December 1969.



UNITED NATIONS

GENERAL ASSEMBLY



Distr.
GENERAL

A/RES/2604 (XXIV)
22 January 1970

Twenty-fourth session
Agenda item 30

RESOLUTIONS ADOPTED BY THE GENERAL ASSEMBLY

[On the report of the First Committee (A/7862)]

2604 (XXIV). Urgent need for suspension of nuclear
and thermonuclear tests

A

The General Assembly,

Recognizing the urgent need for the suspension of nuclear and thermonuclear weapon tests,

Recalling its resolutions 2163 (XXI) of 5 December 1966, 2343 (XXII) of 19 December 1967 and 2455 (XXIII) of 20 December 1968,

Recalling further that the above-mentioned resolutions expressed the hope that States would contribute to an effective international exchange of seismic data,

Having considered the report of 3 November 1969 submitted by the Conference of the Committee on Disarmament,^{1/} and in particular those portions of it concerned with facilitating the achievement of a comprehensive test ban through the international exchange of seismic data, as well as other relevant proposals made in the Conference,

Noting the joint memoranda on a comprehensive test ban treaty submitted on 15 September 1965,^{2/} 17 August 1966^{3/} and 26 August 1968^{4/} by Brazil, Burma,

^{1/} A/7741.

^{2/} Official Records of the Disarmament Commission, Supplement for January to December 1965, document DC/227, annex I, sect. F.

^{3/} Ibid., Supplement for 1966, document DC/228, annex I, sect. O.

^{4/} Ibid., Supplement for 1967 and 1968, document DC/231, annex I, sect. 10.

Ethiopia, India, Mexico, Nigeria, Sweden and the United Arab Republic, which have been annexed to reports of the Conference of the Eighteen-Nation Committee on Disarmament, and all of which have suggested that the improvement of the international exchange of seismic data would facilitate the solution of the problem of verifying a comprehensive test ban,

Having studied the proposal submitted to the Conference of the Committee on Disarmament concerning the provision of information by Governments in connexion with the creation of a world-wide exchange of seismological data to facilitate the achievement of a comprehensive test ban,^{5/}

1. Requests the Secretary-General to transmit to the Governments of all States Members of the United Nations or members of any of the specialized agencies or of the International Atomic Energy Agency or parties to the Statute of the International Court of Justice, the request for information annexed to the present resolution;

2. Invites those Governments to co-operate with the Secretary-General in providing the information requested as soon as possible before 1 May 1970;

3. Requests the Secretary-General to circulate forthwith, upon receipt, all responses to those Governments mentioned in paragraph 1 above and to members of the Conference of the Committee on Disarmament to assist the Conference in its further consideration of the achievement of a comprehensive test ban.

1836th plenary meeting,
16 December 1969.

^{5/} See A/7742, annex C, document ENDC/251/Rev.1.

ANNEX

REQUEST FROM THE SECRETARY-GENERAL OF THE UNITED NATIONS TO THE GOVERNMENT
OF CONCERNING THE PROVISION OF CERTAIN INFORMATION
IN THE CONTEXT OF THE CREATION OF A WORLD-WIDE EXCHANGE OF SEISMOLOGICAL
DATA WHICH WOULD FACILITATE THE ACHIEVEMENT OF A COMPREHENSIVE TEST BAN

In order to assist in clarifying what resources would be available for the eventual establishment of an effective world-wide exchange of seismological information which would facilitate the achievement of a comprehensive test ban, the Secretary-General of the United Nations requests the Government of to supply to him, for transmission to the Conference of the Committee on Disarmament, a list of all its seismic stations from which it would be prepared to supply records on the basis of guaranteed availability and to provide certain information about each station as set out below:

A. Conventional seismograph stations

1. Name of station and name and address of the operating organization;
2. Co-ordinates of station, including elevation;
3. Instrumentation and components recorded together with speed of recording (this should include operational magnification at 1 second periods for short-period and broad-band seismographs and at 15 or 20 seconds for long-period instruments. A complete response curve in absolute units should also be provided).

The Government of is also requested to give information on the geological description of the station foundation and indicate if fully annotated records will be provided, including the precision of the time. It would also be useful to know the time window within which the Government of would be prepared to supply original records or good quality copies, and if the latter, the form of the copies (for example, 16, 35 or 70 millimetre film, Xerox copies etc.). It would be useful if it could be indicated whether the intention is to deposit copies of all records in a seismological centre which makes its data available to everyone, or whether the Government of wishes to guarantee the data only on a bilateral demand.

/...

B. Array stations

1. Name of station and the name and address of the operating organization;
2. Co-ordinates of station and array points, including elevation;
3. A general account of the instrumentation geometry of the array;
4. Instrumentation and components recorded, including magnetic tape specifications (this should include the operational magnification at 1 second periods for short-period or broad-band instrumentation and at 15 or 20 seconds for long-period instruments. A response curve in absolute units should be provided for each instrument);
5. A list of components which record on a parallel visual basis.

As under part A above, in the interest of obtaining maximum usefulness from an international exchange of data, the Government of is requested to give information on the geological foundation of the array stations, together with complete technical information on the recording medium, the precision of time-keeping, etc. It would also be useful to know the time window within which the Government of would be prepared to supply the original records or, as applicable, photographic copy, magnetic tape copy or good quality microfilm. In the event that the Government of does not envisage depositing copies of all array data automatically in a seismological centre which makes its data available to everyone, it would be useful if the Government of could indicate how long an original magnetic tape recording could be made available for individual demands before the tapes are erased and re-used.

In view of the urgency in making progress in the direction of a solution for a comprehensive test ban, the Secretary-General would greatly appreciate it if the information requested above could be forwarded to him with the least possible delay for transmission to the Conference of the Committee on Disarmament.

B

The General Assembly,

Having considered the question of the urgent need for suspension of nuclear and thermonuclear tests and the report of the Conference of the Committee on Disarmament,^{6/}

6/ A/7741.

/...

Recalling its resolutions 1762 (XVII) of 6 November 1962, 1910 (XVIII) of 27 November 1963, 2032 (XX) of 3 December 1965, 2163 (XXI) of 5 December 1966, 2343 (XXII) of 19 December 1967 and 2455 (XXIII) of 20 December 1968,

Noting with regret the fact that all States have not yet adhered to the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water, signed in Moscow on 5 August 1963,^{7/}

Noting with increasing concern that nuclear weapon tests in the atmosphere and underground are continuing,

Taking into account that several concrete suggestions have recently been set forth in the Conference of the Committee on Disarmament as to possible provisions for a treaty banning underground nuclear weapon tests,

1. Urges all States which have not done so to adhere without further delay to the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water;

2. Calls upon all nuclear-weapon States to suspend nuclear weapon tests in all environments;

3. Requests the Conference of the Committee on Disarmament to continue, as a matter of urgency, its deliberations on a treaty banning underground nuclear weapon tests, taking into account the proposals already made in the Conference as to the contents of such a treaty, as well as the views expressed at the current session of the General Assembly, and to submit a special report to the Assembly on the results of its deliberations.

1836th plenary meeting,
16 December 1969.

^{7/} United Nations, Treaty Series, vol. 480 (1963), No. 6964.

UNITED NATIONS
GENERAL
ASSEMBLY



Distr.
GENERAL

A/RES/2499 (XXIV)/Rev.1
5 January 1970



Twenty-fourth session
Agenda item 25

RESOLUTIONS ADOPTED BY THE GENERAL ASSEMBLY

[without reference to a Main Committee (A/L.571/Rev.1 and Rev.1/Add.1,
A/L.573, A/L.587/Rev.1)]

2499 (XXIV). Celebration of the twenty-fifth anniversary
of the United Nations

A

The General Assembly,

Recalling the decision adopted at its twenty-third session that the twenty-fifth anniversary of the United Nations should be commemorated in an appropriate manner,^{1/}

Convinced that the twenty-fifth anniversary should be an occasion to strengthen the United Nations and make it more effective by reaffirming the faith of Governments and peoples in the purposes and principles of the Charter of the United Nations and renewing their endeavours to give them full effect, in particular the maintenance of international peace and security, the development of friendly relations among nations based on respect for the principles of equal rights, non-intervention, non-use of force and self-determination of peoples, and achieving international co-operation in solving international problems of an economic, social, cultural or humanitarian character,

^{1/} See Official Records of the General Assembly, Twenty-third Session, Plenary Meetings, 1749th meeting.

Noting further that, in accordance with Article 2, paragraph 4, of the Charter, all Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the purposes of the United Nations,

Considering that involvement of world youth in the commemoration is most desirable in relation to the present and future tasks of the Organization,

Having considered the report of the Preparatory Committee for the Twenty-fifth Anniversary of the United Nations,^{2/}

1. Takes note of the programmes and activities recommended by the Preparatory Committee for the Twenty-fifth Anniversary of the United Nations concerning the United Nations and related organizations as well as the programmes and activities suggested for the consideration of Governments of Member States and non-governmental organizations;

2. Decides that the theme of the anniversary should be "Peace, justice and progress" and expresses the desire that the year 1970 will mark the beginning of an era of peace;

3. Decides also that a commemorative session of the General Assembly should be held during a short period, culminating on 24 October 1970 with the signing and/or adoption of a final document or documents;

4. Expresses the hope that as many Heads of State or Government as possible will be able to participate in the commemorative session;

5. Decides to establish a Committee for the Twenty-fifth Anniversary of the United Nations, composed of twenty-five members to be designated by the President of the General Assembly on the basis of equitable geographical distribution and bearing in mind the present composition of the Preparatory Committee, for the purpose of:

(a) Drawing up and co-ordinating plans for the anniversary;

(b) Organizing suitable activities for the anniversary, to be undertaken by the United Nations, in the light of the report of the Preparatory Committee

(c) Considering proposals and suggestions, in relation to the anniversary, for increasing the effectiveness of the United Nations;

6. Requests the Committee to prepare, with the assistance of the Secretary-General, a suitable text for a final document or documents to be

signed and/or adopted during the commemorative session, for consideration by the General Assembly during the early part of its twenty-fifth session;

7. Decides that the same period of the celebration of the twenty-fifth anniversary of the United Nations should provide an opportunity for the celebration of the tenth anniversary of the Declaration on the Granting of Independence to Colonial Countries and Peoples, which should conclude with the adoption of an appropriate document by the General Assembly during the commemorative session;

8. Decides also to consider during the early part of its twenty-fifth session the draft of the international development strategy for the Second United Nations Development Decade with a view to having it adopted during the commemorative session;

9. Endorses the call of the Secretary-General for the proclamation of a Disarmament Decade,^{3/} which will coincide with the Second United Nations Development Decade, and, in this respect, entrusts the competent bodies of the Organization with the task of presenting concrete proposals to the General Assembly at its twenty-fifth session;

10. Invites the Special Committee on Principles of International Law concerning Friendly Relations and Co-operation among States to expedite its work with a view to facilitating the adoption of an appropriate document by the General Assembly during the commemorative session;

11. Calls upon all relevant organs and committees of the United Nations to speed up their work and to transmit to the Committee for the Twenty-fifth Anniversary of the United Nations material which may be useful in the preparation of a text or texts for a final document or documents;

12. Decides to convene a world youth assembly within the general framework described in the report of the Preparatory Committee;

13. Invites Governments of Member States to consider the inclusion of representatives of youth in their delegations to the twenty-fifth session of the General Assembly;

14. Requests the Secretary-General to provide the necessary facilities for implementing the recommendations contained in the report of the Preparatory Committee;

^{3/} See Official Records of the General Assembly, Twenty-fourth Session, Supplement No. 1A (A/7601/Add.1), para. 42.

15. Urges Governments of Member States to implement General Assembly resolution 2445 (XXIII) of 19 December 1968 entitled "Teaching in schools of the purposes and principles of the Charter of the United Nations and the structure and activities of the United Nations and the specialized agencies, with particular reference to human rights";

16. Invites all Member States, the specialized agencies, the International Atomic Energy Agency and the non-governmental organizations concerned to take note of the observance of the twenty-fifth anniversary of the United Nations and to formulate such plans and programmes as seem to them appropriate for promoting the purposes of the observance;

17. Appeals to all Member States to give urgent consideration to the ratification of, or accession to, a number of multilateral instruments which have been adopted, endorsed or supported by the United Nations and which have not entered into force for lack of sufficient ratifications or accessions or which have entered into force but could be strengthened by additional ratifications or accessions, as well as to their effective implementation;

18. Urges appropriate organs of the United Nations to complete as early as possible the consideration of important conventions still to be concluded;

19. Requests the Committee for the Twenty-fifth Anniversary of the United Nations to submit a report on the observance of the anniversary to the General Assembly at its twenty-sixth session.

1797th plenary meeting,
31 October 1969

B

The General Assembly,

Considering that a special issue of United Nations stamps has been decided upon by the Preparatory Committee for the Twenty-fifth Anniversary of the United Nations with the words "Peace and progress" as the theme on the occasion of the anniversary,

Taking into account resolution 2499 A (XXIV) of 31 October 1969 by which the General Assembly decided that the theme of the anniversary should be "Peace, justice and progress",

Bearing in mind that steps have already been taken for the issue of stamps with the theme "Peace and progress",

1. Decides that the medals to be struck to commemorate the twenty-fifth anniversary of the United Nations will bear the emblem "Peace, justice and progress";

2. Decides that stamps with the theme "Peace and progress" may be issued;

3. Further decides that another set of stamps be issued with the theme "Peace, justice and progress" and directs the Secretariat to take the necessary steps towards that end.

1837th plenary meeting,
17 December 1969.

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* *

At the 1797th plenary meeting, on 31 October 1969, the President of the General Assembly, in pursuance of paragraph 5 of resolution A above, designated the members of the Committee for the Twenty-fifth Anniversary of the United Nations.

The Committee is composed of the following Member States: Austria, Bulgaria, Byelorussian Soviet Socialist Republic, Canada, China, France, Ghana, Guatemala, Guinea, Guyana, India, Iran, Italy, Lebanon, Mauritania, Peru, Philippines, Somalia, Sweden, Togo, Trinidad and Tobago, Uganda, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland and United States of America.

UNITED NATIONS

GENERAL
ASSEMBLY



Distr.
GENERAL



A/RES/2605 (XXIV)/Corr.1
4 February 1970

ENGLISH ONLY

Twenty-fourth session
Agenda item 31

RESOLUTIONS ADOPTED BY THE GENERAL ASSEMBLY

[on the report of the First Committee (A/7887)]

2605 (XXIV). Conference of Non-Nuclear-Weapon States

Corrigendum

Page 5

Operative paragraph 1 should read as follows:

"1. Expresses its appreciation of the studies recently made by the Secretary-General and the International Atomic Energy Agency on this subject;"

70-02606

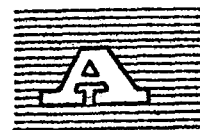
UNITED NATIONS

GENERAL
ASSEMBLY



Distr.
GENERAL

A/RES/2605 (XXIV)
22 January 1970



Twenty-fourth session
Agenda item 31

RESOLUTIONS ADOPTED BY THE GENERAL ASSEMBLY

[On the report of the First Committee (A/7887)]

2605 (XXIV). Conference of Non-Nuclear-Weapon States

A

The General Assembly,

Recalling its resolution 2456 A (XXIII) of 20 December 1968, in which it invited the specialized agencies, the International Atomic Energy Agency and other international bodies concerned to report to the Secretary-General on the action taken by them in connexion with the recommendations contained in the respective resolutions of the Conference of Non-Nuclear-Weapon States,^{1/}

Recalling also that in the same resolution it requested the Secretary-General to appoint a group of experts to prepare a full report on all possible contributions of nuclear technology to the economic and scientific advancement of the developing countries,

Appreciating the importance of ensuring the implementation of the proposals of the Conference through appropriate action by the international bodies and Governments concerned, in order to promote better international co-operation in the peaceful uses of nuclear energy in the interest of a more harmonized development of relations among the nuclear-weapon and the non-nuclear-weapon States,

^{1/} See Official Records of the General Assembly, Twenty-third Session, agenda item 96, document A/7277 and Corr.1 and 2, para. 17.

70-01779

Having reviewed the comprehensive report submitted by the Secretary-General^{2/} on the basis of the reports of the International Atomic Energy Agency and of the specialized agencies concerned on the steps they have taken to implement the results of the Conference,

Noting with appreciation that:

(a) The International Atomic Energy Agency has had under way or has initiated several activities that are directly responsive to several resolutions adopted by the Conference,

(b) The General Conference of the International Atomic Energy Agency, at its thirteenth regular session, commended the intention of the Agency's Board of Governors to continue the study of article VI of the Agency's Statute as an urgent matter and requested the Board to make every effort to present a draft amendment in sufficient time to permit its consideration by the General Conference of the Agency at its fourteenth session,^{3/}

(c) The question of a fund of special fissionable materials was considered by the General Conference at its thirteenth regular session and that some member States of the Agency that produce special fissionable materials indicated their willingness, in principle, to consider making further contributions to the already existing fund when it was necessary,^{4/}

Noting also the comments received from the International Atomic Energy Agency and the International Bank for Reconstruction and Development, which deal with the question of current arrangements for financing nuclear projects,

Having studied the report of the Secretary-General on the contributions of nuclear technology to the economic and scientific advancement of the developing countries,^{5/}

Aware of the potential contribution that atomic energy will make in fostering technical and economic progress throughout the world,

Observing that at its thirteenth regular session the General Conference of the International Atomic Energy Agency adopted resolution GC(XIII)/RES/256 on

^{2/} A/7677 and Corr.1 and Add.1 and 2.

^{3/} See A/7677/Add.2, chap. III, resolution GC(XIII)/RES/261.

^{4/} Ibid., chap. IV.

^{5/} A/7568.

29 September 1969 in which it requested the Director-General of the Agency to make a comprehensive study of the likely capital and foreign exchange requirements for nuclear projects in developing countries during the next decade, and of ways and means to secure financing for such projects from international and other sources on favourable terms, particularly in the form of grants or long-term loans at low interest, and to make suggestions concerning a constructive role which the Agency could play in this regard,

Mindful of the fact that a meaningful evaluation of projects in this field of atomic energy will depend not only on an assessment of their individual economic merit, but also on the long-term contribution such projects will make in a country's technological and economic development,

1. Invites the International Atomic Energy Agency, the United Nations Development Programme, the International Bank for Reconstruction and Development and the interested specialized agencies to take further appropriate action on the recommendations of the Conference of Non-Nuclear-Weapon States in planning and carrying out their activities;

2. Commends with appreciation the Secretary-General's report on the contributions of nuclear technology to the economic and scientific advancement of the developing countries;

3. Draws the attention of the international sources of finance to the recommendation contained in the aforementioned report which expressed the hope that they would review the positions taken on the prospects, criteria and conditions for financing major nuclear installations, bearing in mind not only the immediate benefits from initial projects but also the long-term contributions that such projects could make to developing countries;^{6/}

4. Recommends to the International Atomic Energy Agency, the various international and regional financing institutions, including the United Nations Development Programme and the International Bank for Reconstruction and Development, to co-operate in finding ways and means of financing meritorious nuclear projects, bearing in mind not only the short-range but also the long-range contribution such projects may make to economic and technical development;

^{6/} Ibid., para. 262.

5. Draws the attention of the member States of the International Atomic Energy Agency to the appeals which have been made by the Director-General of the Agency to increase the funds available to the Agency for multilateral assistance in the nuclear field;

6. Notes with satisfaction the action taken so far by the International Atomic Energy Agency regarding the fund of special fissionable materials and requests the Agency to continue its efforts to ensure the supply to member States, when required, and on a regular and long-term basis, of such materials, including materials for power reactors;

7. Invites the specialized agencies, the International Atomic Energy Agency and other international bodies concerned to report to the Secretary-General on further action taken by them concerning the recommendations contained in the resolutions of the Conference of Non-Nuclear-Weapon States which were transmitted to them by the Secretary-General in pursuance of General Assembly resolution 2456 A (XXIII);

8. Requests the Secretary-General to submit a progress report, based on the information supplied by those concerned, on the progress achieved in the implementation of the said resolutions for consideration by the General Assembly at its twenty-fifth session;

9. Further requests the Secretary-General to place on the provisional agenda of the twenty-fifth session of the General Assembly the question of the implementation of the results of the Conference of Non-Nuclear-Weapon States.

1836th plenary meeting,
16 December 1969.

B

The General Assembly,

Recalling that by its resolution 2456 C (XXIII) of 20 December 1968 it requested the Secretary-General to prepare in consultation with the States Members of the United Nations and members of the specialized agencies and of the International Atomic Energy Agency, and with the co-operation of the latter and of those specialized agencies that he might consider pertinent, a report on the

establishment, within the framework of the International Atomic Energy Agency, of an international service for nuclear explosions for peaceful purposes under appropriate international control,

Having reviewed the report of the Secretary-General on the establishment, within the framework of the International Atomic Energy Agency, of an international service for nuclear explosions for peaceful purposes under appropriate international control,^{7/} prepared in compliance with the aforementioned resolution,

Noting that over the past year the International Atomic Energy Agency has been studying, with the active participation of many member States, the role that the Agency may play in this field, and that the report of the Board of Governors of the Agency, reproduced in the Secretary-General's report,^{8/} was endorsed without objection by the General Conference of the International Atomic Energy Agency at its thirteenth regular session,^{9/}

Noting further that the conclusions of the report of the Board of Governors of the Agency state, inter alia, that the Agency's prospective responsibilities in the field of peaceful nuclear explosions fall within its statutory objectives and functions to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world,

Aware that the Agency's prospective responsibilities in this field will have to be defined on an evolutionary basis, taking into account the still experimental state of the technology,

Recognizing that the International Atomic Energy Agency has certain programmes under way, such as the convening of expert groups, designed to assure a wider appreciation of the status of this technology, and that certain nuclear-weapon States have furnished the Agency with useful information on the status of their experimental programmes in this field,

1. Expresses its appreciation of the studies recently made by the Secretary-General and the International Atomic Energy Agency so that the Agency may take these comments into account in its further studies;

2. Urges all States Members of the United Nations to communicate any further views they may have on this subject to the International Atomic Energy Agency so that the Agency may take these comments into account in its further studies;

^{7/} A/7678 and Add.1-4.

^{8/} A/7678, chap. III.

^{9/} See A/7678/Add.2, chap. II, resolution GC(XIII)/RES/258.

3. Invites the nuclear-weapon States to continue to make available to the International Atomic Energy Agency full and current information concerning the technology of applying nuclear explosions to peaceful uses for the benefit of all its members;

4. Invites the International Atomic Energy Agency to keep the development of this technology under continuing review and in particular to take steps to assure the widest exchange of information concerning developments in this field, including the benefits that may be derived from nuclear explosions for peaceful purposes;

5. Suggests that the International Atomic Energy Agency continue to give particular attention over the next year to the convening of further technical meetings to discuss the scientific and technical aspects of this technology and that the Agency initiate studies on the character of the international observation in which it might engage pursuant to article V of the Treaty on the Non-Proliferation of Nuclear Weapons, signed on 1 July 1968;

6. Invites the International Atomic Energy Agency to submit to the Secretary-General, not later than 1 October 1970, a special report on the progress of its further studies and activities in this field to be considered by the General Assembly at its twenty-fifth session;

7. Notes that the nature and contents of the special international agreement or agreements to be concluded pursuant to the provisions of article V of the Treaty on the Non-Proliferation of Nuclear Weapons, will remain open for appropriate consideration and will be the subject of further consultations;

8. Requests the Secretary-General to include in the provisional agenda of the twenty-fifth session of the General Assembly an item entitled "Establishment within the framework of the International Atomic Energy Agency of an international service for nuclear explosions for peaceful purposes under appropriate international control".

1836th plenary meeting,
16 December 1969.

THE NETHERLANDS

Working Paper Containing Some Introductory Remarks on Steps
Toward a Comprehensive Disarmament Programme

1. In resolution 1722 (XVI) of 20 December 1961 by which the General Assembly endorsed the agreement reached on the composition of the ENDC, it was recommended that the new Disarmament Committee should undertake negotiations with a view to reaching, on the basis of the joint statement of agreed principles, agreement on general and complete disarmament under effective international control. The Committee should in its work take into account, inter alia, paragraph 8 of the aforementioned principles.

2. Paragraph 8 of the agreed principles stipulates that efforts should continue without interruption until agreement upon the total programme for general and complete disarmament has been achieved. Furthermore, efforts should be undertaken to ensure early agreement on and implementation of measures of disarmament without prejudicing progress on agreement on the total programme and in such a way that these measures would facilitate and form part of that programme.

3. Since then progress has been made first and foremost in the field of collateral measures. But for reasons which are well known the hope that the main task of the Committee could be dealt with without interruption, "as a matter of the utmost urgency" (Res. 1722 (XVI)), remained unfulfilled.

In the course of its existence the Committee "gradually concentrated more of its efforts on the partial and confidence-building, or collateral measures of disarmament, as they are usually called, than on general and complete disarmament".^{*/} This trend is discernible in the Provisional Agenda of work of the Committee, adopted in August 1963. Likewise, in its report to the XXIVth session of the United Nations General Assembly, the Committee recognizes "the relationship of the various measures already achieved and those currently being considered toward the ultimate goal of general and complete disarmament under effective international control".

^{*/} The U.N. and Disarmament 1945-1965, chapter 6, page 115.

4. Mainly as a result of the initiatives of the Romanian delegation (ENDC/PV.400) and of the Secretary-General of the United Nations, the XXIVth session of the General Assembly declared the seventies as a Disarmament Decade. Disarmament and social and economic development are the main objectives of all mankind for the coming years.

5. In the relevant resolution the General Assembly endorses the view that general and complete disarmament is the ultimate goal. Toward that end, the Assembly requests this Committee:

1. to continue intensive negotiations with a view to reaching the widest possible agreement on collateral measures;
2. to work out a comprehensive programme, dealing with all aspects on the problem of the cessation of the arms race and general and complete disarmament, under effective international control, which would provide the Committee with a guideline to chart the course of its further work and its negotiations.

6. In its last report to the General Assembly the Committee expressed its conviction of the continued need to give highest priority in its work to further effective measures relating to the cessation of the nuclear arms race at an early date and to nuclear disarmament, with due consideration to maintaining a balance among various measures to prevent armament, to limit armament and of disarmament. As regards the first category some measure of success has been achieved.

7. As to the second the most hopeful event during the Committee's past session was the announcement in Moscow and Washington that discussions on the limitation of offensive strategic nuclear weapons delivery systems and systems of defense against ballistic missiles would start shortly.

The Netherlands delegation fully shares the opinion that the strategic arms limitation talks, which had a promising beginning, are of the utmost importance. They may create a new and more rational relationship in the strategic balance of the two super-powers. Their successful outcome would certainly facilitate the conclusion of further measures in the field of armaments limitation and ultimately of disarmament.

8. This should not imply, however, that no efforts are to be made in the meantime to further new agreements on such other measures. Although it is understood that there is a close relationship and interdependence between SALT and a comprehensive test ban, the Netherlands Delegation is nevertheless of the opinion that early preparatory work for a close international co-operation in the seismological field should continue to receive high priority in this context. Without prejudice to the eventual shaping of a verification system in a comprehensive test ban treaty, methods of seismological detection and identification will in any case constitute a fundamental element of such a system. Therefore, the Netherlands Delegation attaches great importance to the implementation and follow-up of the General Assembly Resolution on a world-wide exchange of seismological data.

It remains of the opinion that the question of a cut-off of the production of fissionable materials for military purposes should be examined more closely by the Committee (CCD/PV.432).

9. The Netherlands Delegation shares the view of the Italian Delegation as expressed in documents ENDC/245 and ENDC/263 that pending final results of the bilateral talks on vertical non-proliferation new and continued efforts should be made to prevent horizontal proliferation. During this session of the Committee the curtain on the Disarmament Decade could be raised by reaching agreement on the final text of a treaty on the prohibition of the emplacement of nuclear weapons and other weapons of mass destruction on the seabed and the ocean floor and in the subsoil thereof.

10. Measures of non-~~armament~~ and arms limitation certainly contribute to the creation of a climate of mutual confidence, which may pave the way to reach the final objective of general and complete disarmament. But apart from being an aid to "confidence-building", such measures have, of course, also an intrinsic merit of their own. They should not be limited to the nuclear field.

Much time of this Committee will certainly be devoted to the conclusion of new agreements regarding chemical and biological warfare.

Within the framework of the Disarmament Decade, efforts should also be made to reduce and eliminate conventional arms races. In this respect attention should be paid to the increasing build-up of arsenals and to the international trade in conventional armaments. The S.I.P.R.I. Yearbook of World Armaments and Disarmament gives an alarming picture of the dangers involved.

11. Finally, with regard to the third category mentioned in paragraph 6, it would appear that concrete negotiations on real disarmament measures can only start fruitfully, when the preparatory phase of partial measures and confidence building has been sufficiently successful.

This, however, does not exclude that during the preparatory phase attention be devoted to the problems of general and complete disarmament. In this respect the joint statement of agreed principles still serves its purpose of being a guideline for the disarmament process as a whole. Nevertheless, as suggested by the Italian Delegation in ENDC/245, it might be considered whether this statement could be suitably supplemented. In the opinion of the Netherlands Delegation this should preferably be done in the form of an additional formulation rather than as a restatement of those principles, thus leaving the standing and validity of the joint declaration of 1961 itself intact.

12. The implementation of a comprehensive programme in the field of arms control and disarmament is closely linked with further developments and progress in the overall political world situation. The three cornerstones are: Disarmament, International Security and Peace.

During our last session several delegations referred to United Nations General Assembly resolution 2454 (XXIII) requesting this Committee to renew its effort to make progress toward general and complete disarmament. The Netherlands Delegation is of the opinion that during the preliminary phase studies could take place on the question of general and complete disarmament. The Indian Delegation (ENDC/PV.404) called on the United States and the USSR to submit revised versions of their draft treaties concerning general and complete disarmament. The Polish Delegation (ENDC/PV.406) proposed more specifically that the two Co-Chairmen prepare a new draft for the first stage of disarmament. An alternative approach might also be considered by the Committee, namely to start with an examination of the characteristics and requirements of the final stage of a process of general and complete disarmament. On the basis of such a study it could be tried subsequently to trace out a route along which this final stage can be reached. A similar method was proposed by the Swedish Delegation as far back as 1964 (ENDC/PV.202). Perhaps it could offer the advantage of getting a better insight in the political requirements and structural needs of a disarming world.

13. The consideration of a comprehensive programme inevitably raises the questions of priorities and deadlines. In this connexion reference should be made to the proposal of Sweden (ENDC/PV.397) for "balanced package deals" and of India for a "selective approach" (ENDC/PV.404).

It is, of course, in the nature of things, when there is a whole range of topics, to establish some sort of order of priorities. However, in the opinion of the Netherlands delegation such a list can only be of a very tentative character. It should be flexible and may be subject to change - as has already been shown in the past - in as much as the political realities of the moment require. One should not overlook that the "partial measures" which have been adopted or are now under discussion, are, in fact, elements of different stages of the proposals for general and complete disarmament.

The very character of negotiations on arms control and disarmament is ill suited to set any meaningful timetables in the context of a "Decade". It remains to be seen what the net result will be at the end of the ten year period. No amount of pressure, nor the best efforts of the Committee to meet certain "target" dates can alter that fact. It is unlikely that a precise schedule and fixed time spans would be helpful in achieving the very goal we are trying to reach. It would therefore be undesirable to establish too rigid a programme of work or to assume that it will be possible strictly to adhere to any particular pattern.

Of course, it is a quite different matter to agree on a certain sequence of measures, to be carried out within specified periods of time, in a Treaty on General and Complete Disarmament.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/277
5 March 1970
ENGLISH
Original: SPANISH

MEXICO

Working paper containing some comments and suggestions for making the Committee on Disarmament more effective

1. In its statement on 17 February, at the first meeting of the 1970 session of the Committee on Disarmament, the Mexican delegation clearly explained its view that the Committee should help to commemorate the twenty-fifth anniversary of the United Nations by doing its utmost to achieve substantial progress, preferably on all four of the following questions the Committee is working on: Disarmament Decade, prohibition of underground nuclear weapon tests, chemical and micro-biological weapons, and treaty on the reservation of the sea-bed and the ocean floor exclusively for peaceful purposes.
2. Previously, at the 1691st meeting of the First Committee of the United Nations General Assembly, held on 17 November 1969, the Mexican representative in that Committee had reviewed a number of constitutional questions (happily since resolved by General Assembly resolution 2602 B (XXIV)) and procedural matters connected with the Committee's work; outlining certain conclusions and indicating the intention of his delegation to revert to the subject in due course in this Committee.
3. This working paper is thus inspired by the two statements to which I have referred and is also related, so far as one of the points discussed in it is concerned, to the study recently published by the International Peace Research Institute (SIPRI) entitled "The ENDC and the Press". The purpose of this paper is to present some specific comments and suggestions which, in the Mexican delegation's opinion, could increase the effectiveness of the Committee's work in the immediate future.

Disarmament Decade

4. It is well known how modest the achievements of the Committee on Disarmament have been so far. The few agreements on collateral measures which it has already reached and which, hopefully, it may achieve in the near future should not obscure the fact that the question of general and complete disarmament under effective international control is still, and must continue to be, the basic purpose, the ultimate objective, and the very raison d'être of the Conference of the Committee on Disarmament.

GE.70-3964

5. That is what makes most timely and deserving of special support resolution 2602 E (XXIV), adopted by the General Assembly on 16 December, in which the Assembly declared the decade which is now beginning as a "Disarmament Decade", and requested the Committee "to work out ... a comprehensive programme, dealing with all aspects of the problem of the cessation of the arms race and general and complete disarmament under effective international control, which would provide the Conference with a guideline to chart the course of its further work and its negotiations, and to report thereon to the General Assembly at its twenty-fifth session."

6. The Mexican delegation considers that this is a task which both because of its importance and because it has been relatively neglected in previous years should be accorded priority in the Committee's efforts. It also believes that, for the preparation of the comprehensive programme called for by the General Assembly, it would be highly desirable for the Committee to know, at least in broad outline, the present position of the two States, which act as Co-Chairmen on the subject-matter to be covered by the programme in question, so as to have a realistic and effective basis for the work entrusted to it in the above-mentioned resolution.

7. It will be recalled that, in 1962, the Committee received separate draft treaties from the Union of Soviet Socialist Republics and the United States of America: the text submitted by the Soviet Union is contained in documents ENDC/2, ENDC/2/Add.1 and ENDC/2/Rev.1, and that submitted by the United States of America will be found in documents ENDC/30, ENDC/30/Add.1 and ENDC/30/Add.2.

8. Although these two texts are still officially before the Committee, it is very probable that, as almost a decade has elapsed since they were drafted and in view of what has since taken place in disarmament negotiations, they are no longer an accurate reflection of the present position of their authors as regards the question of general and complete disarmament under effective international control. For this reason, it is extremely advisable that the Governments of the United States and the Soviet Union should submit revised versions of their respective drafts to the Committee, amended as they may deem necessary to reflect faithfully their position as at present.

Treaty on the reservation of the sea-bed and the ocean floor exclusively for peaceful purposes

9. The extensive and valuable debate that took place on this subject at the General Assembly's last session would appear to make its recapitulation in this Committee unnecessary, especially as, in addition to the records of the First Committee, there are various working papers which were submitted in New York and which contain a number of concrete suggestions for improving the draft prepared by the Co-Chairmen and reproduced in annex A to the Committee's report to the Assembly on its work in 1969.

10. In view of the stage that this subject has reached, perhaps the most constructive and appropriate procedure might be to establish a sub-committee of the whole, as suggested by the Mexican delegation on 17 February, or a smaller working group, as indicated by the Swedish delegation on 18 February or, if neither procedure is generally acceptable, to hold some informal meetings at which the bilateral consultations between the Co-Chairmen would be supplemented by a frank and clear presentation of the views of the other delegations represented in the Committee, so as to facilitate the preparation of a revised draft, offering the greatest likelihood of success.

11. Whatever may be the procedure adopted to prepare the draft treaty in question, it would appear essential that:

(a) the text of the draft should be acceptable to all members of the Committee;

(b) its preparation should be completed sufficiently in advance of the opening of the General Assembly to permit it to be duly studied by the Governments of all the other States Members of the world organization not represented in this Committee, so as to make it more likely that it will become one of the documents whose signature is intended to add lustre to the anniversary ~~session~~ of the United Nations, and

(c) in its work on the draft, the Committee should bear very much in mind the need for ensuring that that work does not result in a concentration of its activities in 1970 prejudicial to the adoption of other disarmament measures of greater importance which constitute urgent matters in the Committee's programme.

Calendar of meetings of the Committee

12. For a body such as the Committee on Disarmament, it is no doubt very useful and appropriate to have sufficient latitude to decide each year, as circumstances require,

what the calendar of its session should be. That, however, does not prevent the adoption of a minimum of rules which may themselves be flexible. On the contrary, the Mexican delegation believes that it would promote the smooth progress of the Committee's work. It therefore wishes to reiterate the suggestion it made last November in the First Committee of the General Assembly to the effect that a minimum of stability should be ensured as regards the annual opening and closing of the Committee's sessions. For example, the third Tuesday in January might be fixed as the opening date, and as to the closing date it should be decided that it should never be later than the third Tuesday in September, which, it will be remembered, is when the General Assembly begins its regular sessions.

Drafting of the Committee's annual report

13. Certain unfortunate circumstances brought out by the Committee's 1969 report, which were carefully analysed in the Mexican delegation's statement in the First Committee on 17 November 1969, have emphasized the need to adopt an appropriate procedure for the drafting of the annual report so that it faithfully reflects the facts and situations it describes and its contents are approved both by the two Co-Chairmen and by all the other members of the Committee.

14. To achieve this, it might be sufficient to employ the procedure used in the Fifth and Sixth Committees of the General Assembly which, as modified for the needs of the Committee on Disarmament, might consist of the following:

(a) Sufficiently before the end of the session, the Co-Chairmen would give the Secretariat general directives regarding the form and substance of the report in question, so that the preparation of a preliminary draft may be started at the appropriate time.

(b) The preliminary draft, prepared by the Secretariat in accordance with the Co-Chairmen's directives, would be submitted to them and after any changes they request are incorporated, it would be reproduced as the draft report and circulated to all the other members of the Committee, preferably about a month before, but in any case not less than two weeks before, the end of its session.

(c) The draft report would be discussed at as many informal or formal meetings as may be necessary. Whatever changes may be required to ensure that the final text is unanimously adopted would be made.

Publicity of results of formal meetings

15. In view of the very serious dangers which the arms race, particularly the nuclear arms race, poses for the whole world, so much so that experts have said that basically what is at stake is the very survival of mankind, it is not surprising that all peoples have a special interest in closely following the work on disarmament.

16. It is true that the Conference of the Committee on Disarmament is in part in the nature of a "negotiating body", so that a certain amount of discretion is necessary with respect to such activity. At the same time, however, it should be remembered that this is only one aspect of its work. There is another aspect which is no less important, that of its being a "deliberating body", and in that respect there does not seem to be any reason whatever to justify continuation of the method of private meetings which has been followed so far. Actually, the Committee's official or formal meetings, at which each representative confines himself to reading a carefully prepared text, are in no way different from the meetings at which year after year the First Committee of the General Assembly discusses the Committee's report and examines all questions relating to disarmament.

17. The Mexican delegation has consequently reached the conclusion that it would be highly advisable henceforth to make such meetings public, like those of the First Committee referred to. The adoption of such a decision would have obvious advantages so far as informing world opinion is concerned, including that of the presence at such meetings of the journalists accredited to the European Office of the United Nations who wished to attend and who would be able to use first-hand, complete and up-to-date documentation, to which they have hitherto as a rule had sufficiently early access only in general and incomplete terms and which has been made available to them in its totality so belatedly that it no longer served the need for news of topical interest, of capital importance to the Press. The Committee itself would gain from such a system, because it would help its work to become better known and, as is clear from the SIPRI study referred to in paragraph 3, there seem to be no disadvantages to using it and many potentially positive results.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/278
10 March 1970

Original: ENGLISH

YUGOSLAVIA

Declaration

by the Government of the Socialist Federal Republic of Yugoslavia in connexion with the Ratification of the Treaty on the Non-Proliferation of Nuclear Weapons.

In connexion with the adoption by the Federal Assembly of the Socialist Federal Republic of Yugoslavia of the Law on the Ratification of the Treaty on the Non-Proliferation of Nuclear Weapons, the Government of Yugoslavia wishes to reaffirm its conviction that the Treaty will contribute to the cessation of the nuclear arms race, facilitate the setting in motion of the process of nuclear disarmament and stimulate the trend towards general and complete disarmament. The Government of Yugoslavia attaches great importance to further efforts by all countries to create a universal system of international security that would ensure a lasting peace and create conditions for an accelerated development in the whole world. Although the realization of this objective necessarily calls for an essential change in the existing practices in international relations, which are so often characterized by inequality, interference in internal affairs of other countries and the power policy, the Government of Yugoslavia considers that the Non-Proliferation Treaty, and similar collateral measures, can constitute a beneficial contribution to the search for peace and international security.

On this occasion the Government of Yugoslavia wishes to recall that prior to the signing of the Non-Proliferation Treaty the Socialist Federal Republic of Yugoslavia had been exerting efforts, together with other countries, to eliminate some of its deficiencies in order to make it more acceptable to the non-nuclear-weapon states. These efforts have produced definite results. Many of these positions are contained in the memorandum of the Government of Yugoslavia to the United Nations Commission on Disarmament dated 3 May 1965 and in the Statement of 11 April 1968, issued by the Government of Yugoslavia relating to the problem of non-proliferation of nuclear weapons.

GE.70-4348

In this connexion the Government of Yugoslavia wishes to set forth the motives and expectations which have guided it in proposing to the Federal Assembly to ratify the Treaty on the Non-Proliferation of Nuclear Weapons.

The Government of Yugoslavia, viewing this Treaty against the background of the search for peace, general and complete disarmament, international security and development,

1. Considers the ban on the development, manufacture and use of nuclear weapons and the destruction of all stockpiles of them to be indispensable for the maintenance of a stable peace and international security, and expects the nuclear-weapon powers to display, with this objective in mind, their willingness to conclude a convention on the general renunciation of the threat of use of nuclear weapons.

2. Holds the view that the chief responsibility for the progress in this direction rests with the nuclear-weapon powers and expects them to show maximum good will and determination to embark upon that road, a matter made obligatory upon them also by the fact that non-nuclear-weapon states, party to the Treaty have voluntarily renounced to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices.

3. Expects that the already initiated talks between the super powers relating to containment and cessation of the race in the development and production of the strategic nuclear arms will be expanded also to the so-called tactical nuclear weapons and lead to the prohibition of the stationing of these arms in the areas free thereof, to the withdrawal from alien territories within one's own state borders and to the discontinuance of the training of the non-nuclear-weapon states' armed forces in the use of nuclear weapons, creating thereby favourable conditions for even more far-reaching measures in the field of nuclear disarmament.

4. Lends its support to every action aimed at creating nuclear-weapon-free zones and the thinned armament zones, as significant measures for the easing of tensions and strengthening of international security.

5. Notes that the continuance of nuclear weapons test is inconsistent with the spirit and letter of the Non-Proliferation Treaty and considers it indispensable for the nuclear-weapon powers to initiate at an early date, negotiations for the completion of the Moscow Agreement.

6. Attaches special importance to finding a satisfactory solution to the problem of safeguarding the security of non-nuclear-weapon states and expects nuclear-weapon powers, on one hand, to undertake not to use nuclear weapons against the countries having renounced them as well as against non-nuclear-weapon states in general, and to refrain from the threat to use them, and, on the other hand, expects that in the event of such a threat, the United Nations will act in a manner as shall ensure effective protection of the non-nuclear-weapon states.

7. Considers that the Non-Proliferation Treaty makes all the states parties entitled to full and unhampered utilization, on a non-discriminatory basis, of all the ~~achievements~~ of nuclear activities for peaceful purposes, including nuclear explosions, through appropriate international procedures yet to be established.

8. Believes that all countries will be ensured the same treatment with regard to the contents and modalities of control of the use of nuclear energy for peaceful purposes and that the expenditure for the system of control will be regulated in a way not burdening the non-nuclear-weapon states and, in particular, the developing countries.

9. Requests the nuclear-weapon states parties to the Non-Proliferation Treaty to render all the appropriate assistance to the non-nuclear-weapon states in the application of nuclear energy for peaceful purposes and expects the International Atomic Energy Agency to adjust itself more fully to the current needs of the international community, particularly to those of the developing countries.

The Government of Yugoslavia emphasizes once again the great significance it attaches to the universality of the efforts relating to the realization of the Non-Proliferation Treaty, in the belief that all the states parties will make their greatest possible contribution to have the spirit and letter of the Non-Proliferation Treaty fully, and constructively applied, in order to facilitate, inter alia, the accession of all countries to the Treaty.

Beograd, 27 February 1970.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/279/Rev.1

11 March 1970

ENGLISH

Original: RUSSIAN

Union of Soviet Socialist Republics

Statement by A.N. Kosygin, Chairman of the Council of Ministers
of the USSR, at the Ceremony for the deposit of
Instruments of Ratification of the Treaty on
the Non-proliferation of Nuclear Weapons

5 March 1970

Comrades,

Ladies and gentlemen,

We are participating in an event of great international importance. The Treaty on the Non-Proliferation of Nuclear Weapons enters into force today. Allow me, on behalf of the Soviet Government, to express deep gratification in this connexion.

Ever since nuclear weapons made their appearance, the policy of the Soviet Union has been invariably directed towards ridding mankind of the threat of nuclear war. The Treaty on the Non-Proliferation of Nuclear Weapons is an important step towards this objective, since it sets up a definite barrier to the further proliferation of such dangerous weapons of mass destruction as nuclear weapons.

Under the basic provisions of the Treaty, the nuclear-weapon States Parties to the Treaty undertake not to transfer such weapons to any recipient whatsoever, either directly or indirectly, and not to assist third parties in their manufacture or acquisition. Non-nuclear-weapon States, for their part, undertake not to manufacture or acquire such weapons,

This Treaty has met with wide international acceptance; it has been signed by almost 100 States. Now, with the Treaty's entry into force, the obligation to refrain from the proliferation of nuclear weapons becomes one of the most important standards of international law. Even those States which are not parties to the Treaty cannot fail to take this international standard into account. On them too lies the responsibility as to whether a limit will be set to the proliferation of nuclear weapons, a matter in which the whole of mankind is interested.

The Soviet Union, as a Party to the Treaty, has no desire to obtain any unilateral advantages for itself. We are guided above all by the desire to ensure the security and peaceful life of the peoples, and also to save future generations from the

calamities of war. It is precisely for the sake of this lofty purpose that the Treaty must prevent the proliferation of lethal nuclear weapons in the world. At the same time, the benefits of the peaceful application of nuclear technology are to be made available for peaceful purposes to all States Parties to the Treaty.

The entry into force of the Non-Proliferation Treaty places serious problems before the Parties to it. This applies above all to the question of control. Control must be reliable and must be put into operation within the time-limits laid down by the Treaty.

As is well known, the Treaty on the Non-Proliferation of Nuclear Weapons still does not eliminate the nuclear weapons themselves. For this reason it is very important at present that the nuclear Powers, and all other countries, should do everything possible to put an end to the nuclear arms race and to make progress in the cause of general and complete disarmament. The interest of a healthier international situation urgently call for this.

The Soviet Union and the other socialist countries deem it necessary to go further along this road and call upon all States to show their goodwill and readiness in practice to set about genuine disarmament. We for our part are making unremitting efforts, also within the Geneva Committee on Disarmament, to achieve agreement on the cessation of the arms race, in the first place the nuclear missile race, and on the elaboration of a treaty on general and complete disarmament. The representative of the Soviet Union in the Geneva Committee has instructions from the Soviet Government to strive for the earliest possible conclusion of an international convention on the prohibition of the development, production and stockpiling of chemical and bacteriological weapons and on the destruction of such weapons, and of a treaty on the prohibition of the emplacement of nuclear weapons and other weapons of mass destruction on the seabed and the ocean floor and in the subsoil thereof.

The Soviet Government attaches great importance to the dialogue with the United States which began at the end of last year on questions in regard to curbing the strategic arms race. We are now preparing with the utmost earnestness for negotiations on these questions which are to begin at Vienna in April of this year. The outcome of these negotiations depends, of course, on the goodwill of the two sides.

In conclusion, allow me to express the confidence that today's deposit of the instruments of ratification by the Soviet Union, the United States and other States, signifying the entry into force of the Treaty on the Non-Proliferation of Nuclear Weapons, will serve as a good stimulus towards the Treaty's acquiring a general, genuinely universal character. This is an important and necessary treaty, which meets the interests of all States and all peoples.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/280

9 March 1970

Original: ENGLISH

UNITED KINGDOM

Statement made by the Prime Minister of the United Kingdom, The Rt. Hon. Harold Wilson, M.P., at Lancaster House, London, on 5 March 1970, on the occasion of the entry into force of the Treaty on the Non-Proliferation of Nuclear Weapons

Some eighteen months ago, when the Non-Proliferation Treaty was opened for signature in Moscow, in Washington and in London, I described this treaty as the most important measure of arms control and disarmament on which agreement had yet been reached. At that historic moment we set the seal of success on nearly seven years of negotiations. Our signatures were a token of our confidence that the community of nations would agree that this was the road of wisdom.

There have been some who doubted whether there would ever be enough support to bring the treaty into force. Whenever any great endeavour is set afoot there are always doubters. In this case there may have been more than usual because the treaty needed ratification by forty-three states, about a third of the international community.

Over the months we have watched as the number of signatures and ratifications of the treaty steadily mounted; Britain ratified the treaty in the autumn of 1968. Today we have witnessed the culmination of the process, the deposit of sufficient instruments of ratification to bring the treaty into force. This ceremony, in which the distinguished representatives of our fellow depositary governments, the Ambassadors of the Soviet Union and the United States, are taking part, therefore constitutes a momentous step. It is being matched today by similar ceremonies in Moscow and Washington which are being attended by Chairman Kosygin and President Nixon.

But in our pleasure in reaching this historic milestone, let us recognize that much still remains to be done. We know that there are two forms of proliferation, vertical as well as horizontal. The countries which do not possess nuclear weapons and which are now undertaking an obligation never to possess them, have the right to expect that the nuclear weapon states will fulfil their part of the bargain. We are confident that the American and Russian negotiators will bear this obligation in mind

GE.70-4367

when they get down again next month to the complex discussions on the limitation of strategic arms, which may well themselves in turn prove the most important arms control negotiations undertaken since the last world war.

Let us remember that, although the Non-Proliferation Treaty comes into force today, there are still a number of states which have not yet adhered to the treaty. We hope that these ceremonies in the capitals of the three depositary governments will encourage those states to overcome their present hesitations and to recognise that this treaty offers to them individually and to mankind in general the best hope of avoiding nuclear war.

Finally I should like to pay on behalf of all of us a tribute to the dedicated teamwork which has brought us to this point. I am thinking particularly of the distinguished members of the Eighteen Nation Disarmament Committee in Geneva who worked with dedication and courage for so many years to lay the foundation for this treaty, and as I am speaking in London may I specially mention our own Ministers for Disarmament over this period, Lord Chalfont and Mr. Mulley. The work of this Committee shows us how goodwill and commonsense and statesmanship can triumph, whatever the political differences that separate the nations. This is perhaps the most significant and encouraging aspect of all, and augurs well for international relations in the nineteen seventies.

This is a historic occasion. It is not an end but a beginning. Now the challenge to humanity is what we can do to build on the achievement we are celebrating today.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/281
9 March 1970

original: ENGLISH

UNITED STATES OF AMERICA

Remarks by President Nixon on the entry into force of the Non-Proliferation Treaty; Washington, D.C., 5 March, 1970:

Mr. Secretary, your Excellencies, the Members of the Diplomatic Corps, Members of the Senate and the House, and our distinguished guests:

With the completion of this ceremony this Treaty is now in force and has become the Law of the Land.

Mr. Secretary, I would like to be permitted something beyond that formal statement which puts the Treaty in force.

I feel that on an occasion like this, an historic occasion, it is well to pay tribute to some of those, both in our government and in other governments, who have been responsible for the success in negotiating this Treaty.

First, in our own government, I should point out that the Treaty spans three administrations -- the Kennedy Administration, the Johnson Administration, and its completion in this Administration.

It was primarily negotiated during the Johnson Administration, and we very much regret that he was unable to attend this ceremony due to an illness, which I understand will be certainly temporary. We trust that if he is looking on television that he has seen this ceremony and the culmination of, I know, what was one of his major objectives during his administration, the ratification of the Non-Proliferation Treaty.

Having spoken of President Johnson and his administration, I think it is also appropriate to speak of the negotiating team. Seated at this table is William C. Foster. In speaking of him, I speak of all the men who worked with him.

I can speak with some experience in that respect. I remember on two occasions when I was in Geneva -- when I was out of office with no influence in the administration in Washington and very little influence in my own party -- Mr. Foster felt so strongly about this Treaty that he took much of his time to explain it and also to present the facts in an effective way as to why the Treaty was in the best interest of the United States, as well as the other nations involved. In other words, what was involved here was not only negotiation on his part and on the other members of his team, but a very effective and necessary program of education.

GE.70-4381

And for that long and at times very frustrating and at times almost, it seemed, impossible task, we can congratulate him and all the members of the Diplomatic Corps who worked as he did for that Treaty.

And on this occasion, too, I wish to pay respect to the Members of the House and the Senate that are here.

This Treaty indicates both the continuity of American foreign policy in its search for a just peace, and it also indicates its bipartisan character -- because without bipartisan support in the Senate, where the Treaty received the consent of the Senate, and bipartisan support in the House as well, this Treaty could not go into effect as it has today.

And, finally, I wish to pay tribute and express appreciation to all the representatives of the other governments that are present here today.

The fact that so many governments have brought this Treaty into effect is an indication of the immense desire that exists among all people in the world to reduce the danger of war and to find a way peacefully to settle our differences.

This is indeed an historic occasion. As I sit here today, I only hope that those of us who were fortunate enough to be present will look back one day and see that this was the first milestone on a road which led to reducing the danger of nuclear war and on a road which led to lasting peace among nations.

This milestone, as has already been indicated, results in non-proliferation of nuclear weapons to the extent that the nations participating in this ceremony and who have ratified the Treaty have indicated.

The next milestone we trust will be the limitation of nuclear weapons, the historic strategic arms limitation talks which will enter their second phase on April 16 in Vienna. And we note the fact that when Prime Minister Kosygin signed the Treaty in Moscow today, reference was made to those talks.

We trust that on April 16 the climate for progress in those talks will be good and that we can at some time in the future look forward to a ceremony in which we note the ratification of that historic treaty.

And then finally, of course, we trust that the third milestone will be continued progress in reducing the political tensions, the differences between governments

which make it necessary for us to consider that we must maintain armed forces to the degree that we maintain them.

This is the work of all of us, the work of the diplomats, the work of the men of peace and all of us I think can be so described today.

And so, Mr. Secretary, on this historic occasion, let us trust that we will look back and say that this was one of the first and major steps in that process in which the nations of the world moved from a period of confrontation to a period of negotiation and a period of lasting peace.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/282
11 March 1970
Original: ENGLISH

STATEMENT OF SECRETARY-GENERAL ON OCCASION OF ENTRY INTO FORCE OF TREATY ON NON-PROLIFERATION OF NUCLEAR WEAPONS, ON 5 MARCH 1970

It is with deep satisfaction that I welcome the entry into force of the Treaty on the Non-Proliferation of Nuclear Weapons. Thus, many years of persistent efforts and intensive negotiations in the United Nations and in the Conference of the 18-Nation Committee on Disarmament are finally coming to fruition.

It is hardly necessary for me to stress the importance of the Non-Proliferation Treaty, which has been widely acclaimed as the most important international agreement in the field of disarmament since the nuclear age began. In preventing the further spread of nuclear weapons and in establishing a safeguards system for verifying the faithful implementation of its obligations, the Treaty cannot fail to play a very significant role in containing the nuclear arms race.

At the same time, the Treaty promotes the peaceful uses of nuclear energy and creates most favourable conditions for the development of a wide international co-operation in this field. In this regard, the Treaty not only reaffirms the inalienable right of all Parties to develop research and the production and use of nuclear energy for peaceful purposes, it also provides that all the Parties will facilitate and have the right to participate in the fullest possible exchange of equipment, materials and scientific and technological information for this purpose.

It should also be stressed that the Treaty is not an end in itself but a step towards disarmament and that the Treaty imposes on all Parties a solemn obligation to pursue negotiations on effective measures relating to the cessation of the nuclear arms race, to nuclear disarmament and to general and complete disarmament. This is a most pressing task for the future and the Parties to the Treaty, and especially the nuclear-weapon Powers, have a great responsibility in fulfilling the obligation they have accepted under the terms of the Treaty.

I note with great satisfaction that as of today almost one hundred States have already signed the Non-Proliferation Treaty. Now that the Treaty has entered into force, those States which have not yet signed or ratified it will undoubtedly be encouraged to take positive action to contribute to the universality of the Treaty, so that it may fully achieve its objectives. It is my firm belief that it is in the best interests of the world community that the Non-Proliferation Treaty should command universal support.

* * * * *

UNITED STATES OF AMERICA

Working Paper on Chemical Warfare Agents and
the Commercial Chemical Industry

1. Chemical agents, the effects of their use in warfare, and the possibility of subjecting such agents to arms control have been studied extensively in recent years. The reports of the United Nations Secretary-General, World Health Organization, and SIPRI have received worldwide attention. In addition, studies of this problem have been conducted by individual nations. The United States Government completed a thorough review of this subject in the Fall of 1969.
2. In considering the possibility of negotiating a new arms control agreement for chemical weapons, one of the areas which must be studied and understood is the relationship between the production of chemical agents for war and the production of chemicals for peaceful purposes by the commercial chemical industry. The chemical industry was in its infancy during World War I, when chemical warfare was first employed. Even so, in that conflict more than 100,000 tons of chemicals were produced for use as weapons, and 1,300,000 deaths and casualties were reported from the use of poison gas. Since World War I, many additional countries have developed a chemical industry, and the chemical production facilities of the more advanced countries have increased tremendously. In the 50 years since the end of World War I, for example, gross production of the worldwide chemical industry has increased in value from an estimated \$5 billion to \$150 billion, approximately a 30-fold increase. Between 1959 and 1969, world output of chemicals increased from an estimated \$60 billion to \$150 billion, and the magnitude of increase is continuing to accelerate.
3. Many of the chemicals which caused death and casualties in World War I are today produced in large quantities for industrial use. These chemicals might have military utility for states which may be unable, or might not desire, to manufacture or import modern nerve agents. For example, among the choking agents, which resulted in more than 80 per cent of the deaths by gas in World War I, phosgene is currently produced in a number of countries. Annual production figures are unknown, but in at least some of these countries, annual production is thought to exceed 100,000 tons.

Phosgene is a widely used raw material in the manufacture of synthetic plastics, insecticides, paints, and pharmaceuticals. Being easily liquified, industrial phosgene could be diverted relatively easily for use in war should a nation decide to employ it, without necessarily requiring sophisticated delivery systems.

4. Among the blood gases developed during World War I, hydrogen cyanide (hydrocyanic acid) is a valuable intermediate in the manufacture of many organic chemical compounds, including benzyl cyanide, acrylonitrile, and dyes. Its world production volume is believed to be in excess of 1 million tons annually. Hydrogen cyanide is currently being produced by the United States, 6 Western European countries, Japan, the USSR, and Communist China. Another blood gas which also finds widespread commercial use is cyanogen chloride. It was used in limited quantities in World War I and is presently used as a fumigant and industrial intermediate.

5. Mustard gas, which was the most effective chemical weapon developed in World War I, is produced very simply from ethylene-oxide. On a worldwide basis, over one million tons of ethylene-oxide are produced annually for use, inter alia, in manufacturing detergents and disinfectants. The improper disposal of commercial mustard gas intermediates by industrial users has led on several occasions to casualties among fishermen and bathers, and has resulted in charges that mustard gas itself was the cause of injury.

6. The everyday production of commercial materials relevant to chemical warfare in the United States, as in other industrially developed countries, is quite substantial. For example, there are 19 locations for phosgene production and 11 facilities for hydrogen cyanide production in the United States. These produce in total approximately 350,000 tons of phosgene and 200,000 tons of hydrogen cyanide per year for commercial purposes. Of course, if one looks back into the commercial production of basic raw materials (for example, ethylene, sulphur, and chlorine, which are ingredients for mustard gas), the problem is much larger and the facilities more extensive.

7. Chemical agents of the World War I type, even though they may be effective against an unprepared enemy, are considered by those who have studied chemical weapons to be much less effective than the more recently discovered "nerve agents." The G and V families of organophosphorus nerve agents were discovered in 1936 and 1955, respectively, in the course of research on new commercial pesticides. These agents are similar to commercial organophosphorus pesticides, widely used in agriculture, which have, in fact, caused human deaths in cases of misuse. Both the nerve gases and

these related pesticides inhibit the enzyme acetylcholinesterase, causing death from respiratory and circulatory failure.

8. In addition to the similarities between the end products, many intermediates such as phosphorus trichloride, phosphorus oxychloride, ethyl and isopropyl alcohol, and ammonia are common to the production of pesticides and nerve agents. All are common industrial chemicals. In the mid-1960's, annual production of organophosphorus pesticides in the United States alone was approximately 30,000 tons. Present United States output is approximately 65,000 tons of organophosphorus pesticides per year, produced in the facilities of 14 basic manufacturers. Elsewhere in the world, there are at least 50 plants involved in the production or formulation, or both, of commercial organophosphorus pesticides in a total of 12 countries, including countries of Western and Eastern Europe. The total world output of the entire organophosphorus pesticide industry is estimated to be in excess of 130,000 tons annually.

9. The basic technical information for production of nerve agents, including descriptions of the chemical processes and amounts of raw materials required, is in the public domain. Such production does not present any insurmountable technical difficulties, although the problem of maintaining safety for plant personnel is, in view of the deadly character of the agents, quite complex.

10. From the foregoing discussion, it can be seen that the capacity for producing chemical warfare agents grows out of, and is linked to the commercial chemical industry of a given country. The raw materials for various chemical warfare agents, and even some agents themselves, are produced in vast amounts in a great many locations throughout the world.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/241/Add.1^{*/}
24 March 1970

ENGLISH
Original: SPANISH

MEXICO

Establishment of nuclear-free zones

Working document

Addendum

(1) The last three paragraphs of section I (pages 8 and 9 of the working document) should be replaced by the following:

By 24 March 1970, the Treaty of Tlatelolco had been signed by the twenty-one States members of the Preparatory Commission for Denuclearization of Latin America and by Barbados. Sixteen of these States - in chronological order, Mexico, El Salvador, the Dominican Republic, Uruguay, Honduras, Nicaragua, Ecuador, Bolivia, Peru, Paraguay, Barbados, Haiti, Jamaica, Costa Rica, Guatemala and Venezuela - had deposited their instruments of ratification together with declarations by which, by virtue of the provisions of article 28, paragraph 2 of the Treaty, they wholly waived the requirements laid down in article 28, paragraph 1, so that the Treaty is already in force for these sixteen States. Brazil has also deposited its instrument of ratification but has not made the declaration in question (annex IX).

On 25 April 1969, the number of signatory States for which the Treaty had entered into force reached eleven, and in pursuance of the provisions of article 28, paragraph 3, the Government of Mexico, as the Depositary Government, immediately proceeded to convene a preliminary meeting of the said States in order that the Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL) provided for in article 7 of the Treaty might be established and begin to operate. The meeting referred to, whose official title was Preliminary Meeting on the Establishment of the Agency for the Prohibition of Nuclear Weapons in Latin America (REOPANAL) was held in Mexico City from 24 to 28 June 1969 and was attended by the thirteen signatory

^{*/} The original document, to which this document is an addendum, appeared under the symbol ENDC/241 on 24 March 1969.

States which by that date had become Parties to the Treaty. It was also attended by observers from twenty-three other countries. The Final Act of REOPANAL has been reproduced and circulated as a United Nations document.^{17/}

Pursuant to resolution 1 adopted by REOPONAL the General Conference of the Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL) began its work on 2 September 1969 with a solemn inaugural meeting attended by the Secretary-General of the United Nations and the Director-General of the International Atomic Energy Agency. The first part of the first session of the General Conference ended on 9 September. Thirteen of the fourteen States which were parties to the Treaty by that time were represented. In addition, observers attended from twenty-six other countries. The Conference unanimously adopted seventeen resolutions on legal, political, technical, administrative and budgetary matters and elected the five members of the Council of OPANAL. The full text of all the above resolutions has been reproduced and circulated as a United Nations document,^{18/} and the text of resolution 1 (I), entitled "Status of Additional Protocol II of the Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlatelolco)", and the text of the messages and statements read at the inaugural meeting have been circulated as a document of the Committee on Disarmament.^{19/}

As to the Additional Protocols to the Treaty, Protocol I was signed by the United Kingdom on 20 December 1967 and by the Netherlands on 15 March 1968. Protocol II was signed by the United Kingdom on the same date as Protocol I and by the United States on 10 April 1968. The two Protocols have been ratified by one country, the United Kingdom, whose Government deposited the relevant instruments of ratification on 11 December 1969 (annex IX).

- (2) Footnotes 17, 18, 19 and 20 in section II should be renumbered 20, 21, 22 and 23.
- (3) The title of annex IX should be amended to read:

STATUS OF THE TREATY FOR THE PROHIBITION OF NUCLEAR WEAPONS
IN LATIN AMERICA (TREATY OF TLATELOLCO) AND ITS
TWO ADDITIONAL PROTOCOLS, AS AT 24 MARCH 1970

^{17/} A/7639

^{18/} A/7681

^{19/} CCD/268

(4) Sections A (2), B and C of annex IX should be replaced by the following:

2. Ratifications

*Mexico	20 September 1967
Brazil	29 January 1968
*El Salvador	22 April 1968
*Dominican Republic	14 June 1968
*Uruguay	20 August 1968
*Honduras	23 September 1968
*Nicaragua	24 October 1968
*Ecuador	11 February 1969
*Bolivia	18 February 1969
*Peru	4 March 1969
*Paraguay	19 March 1969
*Barbados	25 April 1969
*Haiti	23 May 1969
*Jamaica	26 June 1969
*Costa Rica	25 August 1969
*Guatemala	6 February 1970
*Venezuela	23 March 1970

B. Additional Protocol I

<u>States to which the Protocol is open for signature</u>	<u>Signatures</u>	<u>Ratifications</u>
United Kingdom of Great Britain and Northern Ireland	20 December 1967	11 December 1969
Kingdom of the Netherlands	15 March 1968	
United States of America		
France		

C. Additional Protocol II

<u>States to which the Protocol is open for signature</u>	<u>Signatures</u>	<u>Ratifications</u>
United Kingdom of Great Britain and Northern Ireland	20 December 1967	11 December 1969
United States of America	10 April 1968	
France		
People's Republic of China		
Union of Soviet Socialist Republics		

*States which deposited, together with their respective instruments of ratification, declarations by which, in exercise of the right accorded by article 28, paragraph 2 of the Treaty, they waived all the requirements laid down in paragraph 1 of that article, so that the Treaty is already in force for all of them.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/284
8 April 1970

Original: ENGLISH

LETTER DATED 30 MARCH 1970 FROM THE SECRETARY GENERAL
OF THE UNITED NATIONS TO THE CO-CHAIRMEN OF THE CONFERENCE
OF THE COMMITTEE ON DISARMAMENT TRANSMITTING
GENERAL ASSEMBLY DOCUMENT A/7967

I have the honour to recall that in accordance with General Assembly resolution 2604A (XXIV), I circulated on 30 January 1970 a letter to the Governments mentioned in operative paragraph 1 of the resolution, requesting certain information in the context of the creation of a world-wide exchange of seismological data which would facilitate the achievement of a comprehensive test ban.

I have the honour to transmit herewith, in pursuance of operative paragraph 3 of the resolution, for the information of the members of the Conference of the Committee on Disarmament, the text of General Assembly document A/7967*, circulating the substantive portions of the responses to my letter of 30 January, received from Governments as of 29 March 1970.

Accept, Sirs, the assurances of my highest consideration.

U Thant
Secretary-General

*Document A/7967, containing replies from Dahomey, Ethiopia, Laos, Nauru, San Marino, the Union of Soviet Socialist Republics and the United Republic of Tanzania, has been circulated to all Governments mentioned in operative paragraph 1 of resolution 2604A (XXIV), including all the members of the Conference of the Committee on Disarmament.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/284/Add.1

29 April 1970

Original: ENGLISH

LETTER DATED 24 APRIL 1970 FROM THE SECRETARY-GENERAL
OF THE UNITED NATIONS TO THE CO-CHAIRMEN OF THE
CONFERENCE OF THE COMMITTEE ON DISARMAMENT
TRANSMITTING GENERAL ASSEMBLY DOCUMENT
A/7967/Add.1

[The letter from the Secretary-General to the Co-Chairmen transmits document A/7967/Add.1 containing the substantive portions of the replies received during the period 30 March to 22 April 1970 from the Governments of Burundi, Canada, Greece, Guyana, Kuwait, Mali, Monaco, Niger, Sudan, Thailand and the Ukrainian Soviet Socialist Republic. The document has been circulated to all Governments mentioned in operative paragraph 1 of resolution 2604A (XXIV), including all the members of the Conference of the Committee on Disarmament.]

GE.70-8891

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/284/Add.2

16 June 1970

Original: ENGLISH

LETTER DATED 10 JUNE 1970 FROM THE SECRETARY-GENERAL OF THE UNITED NATIONS TO THE CO-CHAIRMEN OF THE COMMITTEE ON DISARMAMENT TRANSMITTING GENERAL ASSEMBLY DOCUMENTS A/7967/Add. 2 and A/7967/Add. 3

The letter from the Secretary-General to the Co-Chairmen transmits documents A/7967/Add.2 and A/7967/Add.3 containing the substantive portions of additional replies received from Governments in response to his letter of 30 January 1970 in accordance with General Assembly resolution 2604 A(XXIV).

Document A/7967/Add.2 contains the substantive portions of the replies received for the period 22 April to 1 May 1970 from the Governments of Belgium, Bulgaria, Costa Rica, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, Ireland, Japan, Luxembourg, Madagascar, New Zealand, Pakistan, Portugal, Singapore, Sweden and the United States of America.

Document A/7967/Add.3 contains the substantive portions of the replies received during the period 1 May to 1 June 1970 from the Governments of Australia, Austria, Brazil, Byelorussian Soviet Socialist Republic, China, Cyprus, Hungary, Indonesia, Iran, Jamaica, Malta, Morocco, Netherlands, Norway, Republic of Korea, Spain, United Arab Republic, United Kingdom of Great Britain and Northern Ireland and Venezuela. /

GE.70-11769

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/284/Add.3
10 August 1970
Original: ENGLISH

LETTER DATED 5 AUGUST 1970 FROM THE SECRETARY-GENERAL OF THE
UNITED NATIONS TO THE CO-CHAIRMEN OF THE CONFERENCE OF THE
COMMITTEE ON DISARMAMENT TRANSMITTING GENERAL ASSEMBLY
DOCUMENT A/7967/Add.4

[The letter from the Secretary-General to the Co-Chairmen transmits document A/7967/Add.4 containing the substantive portions of the replies received during the period 1 June to 15 July 1970 from the Governments of Belgium, Cambodia, Ceylon, Colombia, Israel, Malawi, Malaysia, Mongolia, Nigeria, Philippines, Republic of Viet-Nam, Romania, Switzerland, Turkey, Uganda, United Kingdom of Great Britain and Northern Ireland, and Yugoslavia. The document has been circulated to all Governments mentioned in operative paragraph 1 of resolution 2604 A (XXIV), including all the members of the Conference of the Committee on Disarmament.]

GE.70-17906

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/284/Add.4

28 August 1970

Original: ENGLISH

LETTER DATED 25 AUGUST 1970 FROM THE
SECRETARY-GENERAL OF THE UNITED NATIONS
TO THE CO-CHAIRMEN OF THE CONFERENCE OF
THE COMMITTEE ON DISARMAMENT TRANSMITTING
GENERAL ASSEMBLY DOCUMENT A/7967/Add.5

[The letter from the Secretary-General to the Co-Chairmen transmits document A/7967/Add.5 containing the substantive portions of the replies received during the period 16 July to 15 August 1970 from the Governments of Argentina, Cameroon, Ghana, India, Italy, Mexico and Zambia. The document has been circulated to all Governments mentioned in operative paragraph 1 of resolution 2604 A (XXIV), including all the members of the Conference of the Committee on Disarmament.]

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/285
14 April 1970

ENGLISH
Original: RUSSIAN

HUNGARY, MONGOLIA AND POLAND

Working paper submitted by the delegations of the Hungarian People's Republic, the Mongolian People's Republic and the Polish People's Republic in connexion with the draft Convention on the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons and on the destruction of such weapons

I

A new article is to be included in the text of the Convention reading:

- "1. Each State Party to this Convention which finds that actions of any other State Party constitute a breach of the obligations assumed under articles I and II of the Convention, may lodge a complaint with the Security Council of the United Nations. Such a complaint should include all possible evidence confirming its validity as well as a request for its consideration by the Security Council. The Security Council shall inform the States Parties to this Convention of the result of the investigation.
2. Each State Party to this Convention undertakes to cooperate in carrying out any investigations which the Security Council may undertake on the basis of the complaint received by the Council."

II

Draft Security Council Resolution

"The Security Council,

Highly appreciating the desire of a large number of States to subscribe to the Convention on the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons and on the destruction of such weapons,

Bearing in mind that under article ... of the Convention the States Parties shall have the right to lodge complaints with the Security Council together with a request for their consideration by the Council,

Recognizing the need for appropriate measures with a view to ensuring the observance of the obligations contained in the Convention,

GE.70-7118

Taking into consideration the desire of the States Parties to cooperate with the Security Council with a view to ensuring the strict observance of the obligations contained in the Convention,

I. Declares its readiness:

- to give urgent consideration to any complaints lodged under article ... of the Convention,
- to take all necessary measures for the investigation of a complaint,
- to inform the States Parties to the Convention of the result of the investigation;

2. Calls upon all States Parties to the Convention to cooperate with a view to implementing the provisions of this Convention."

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/285/Corr.1

15 April 1970

ENGLISH ONLY

HUNGARY, MONGOLIA AND POLAND

Working paper submitted by the delegations of the Hungarian People's Republic, the Mongolian People's Republic and the Polish People's Republic in connexion with the draft Convention on the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons and on the destruction of such weapons

Corrigendum

The last word of operative paragraph 2 of the draft Security Council resolution in part II of the working paper should read "resolution" instead of "convention".

GE.70-7195

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/286
21 April 1970
Original: ENGLISH

UNITED STATES OF AMERICA

Working Paper on Toxins

1. The United States has renounced the production, stockpiling and use of toxins, and has confined its military programme on toxins to research and development for defensive purposes only. Thus, the United States policy on toxins is identical to its policy on biological programmes.
2. Toxins are poisonous substances produced by biological organisms, including microbes, animals, and plants. Examples of microbial toxins are botulinum toxin, staphylococcus enterotoxin, diphtheria toxin, and tetanus toxin. Toxins produced by animals include puffer fish poison, snake and bee venom, and shellfish poison. Plant toxins include ricin, produced by the castor oil plant, cicutoxin produced by the poison hemlock, and abrin, produced by the Indian licorice seed plant. Laboratory experimentation has shown that, in general, these naturally occurring poisons are far more toxic than the known nerve agents.
3. Two bacterial toxins, botulinum toxin and staphylococcal enterotoxin, have long been discussed as potential agents of warfare. The botulinum toxin is one of the most poisonous substances known to science, and has been estimated to be up to 10,000 times as poisonous as nerve agents. For comparison purposes, if 15 tons of nerve agent would cause 50 per cent deaths over an area of up to 60 square kilometers, then about one and one-half kilograms of botulinum toxin would theoretically produce the same effect. Or, 15 tons of botulinum toxin could ~~theoretically~~ cause 50 per cent deaths in an unprotected population in an area up to 600,000 square kilometers. Effectiveness would of course depend upon dissemination technology, and actual coverage could vary significantly. Consequently, because of their inherently different characteristics (for example, toxicity), toxins and nerve agents have different possible military roles.
4. Where the target population is without protection, toxins could be delivered in a given area with relatively limited logistical effort. Even when masked, the target population would not be certain of protection against toxins because their extremely low dose rate would make masks with minor leaks ineffective, although effective masks would provide substantial protection.

5. In contrast to the biological organisms from which they are produced, toxins are not living organisms and are not capable of reproducing themselves. For this reason, the disease or poisoning caused by toxins is not transmissible from man to man. Thus, toxins cannot cause infectious disease, epidemics, or long-term sources of illness. Consequently toxins could create mass casualties among an adversary's population without risk of spreading to infect the nation initiating use of toxins. The characteristic symptoms of many bacterial diseases are caused by the toxins produced within the human body by living bacteria. Examples of diseases that can be produced by toxins are botulism, tetanus, diphtheria and staphylococcal food poisoning.
6. In common with biological agents, toxins generally have delayed poisonous effects. Their delayed action varies with the particular toxin. Because of their high potency, the effective dosage in man is extremely small if he is neither masked nor immunized. Toxins, if used as weapons, could be dispersed in aerosol form at considerable distances from the target and could cover a very large area, resembling the large areas that could be covered by biological agents. Casualties would therefore result after the target population had been subjected to extremely small quantities of the toxin.
7. With regard to the effects of toxins, botulinum toxin produces botulism, an acute and highly fatal disease. There are at present six types of this toxin of which four are known to be toxic for man. The disease, botulism, is characterized by the combination of extreme weakness, vomiting, thirst, fever, dizziness, blurred vision, dilated pupils, facial paralysis and weakness of respiratory muscles. Death is attributable to paralysis, respiratory failure, and associated cardiac arrest. These symptoms do not appear for 12 to 72 hours.
8. All persons are susceptible to the disease, which occurs naturally throughout the world. While almost completely effective immunization is possible, such measures would be effective only if administered well before any exposure. The mortality rate for naturally occurring botulism in the United States is approximately 65 percent. If effectively weaponized and delivered in a highly purified state, botulinum toxin could have a mortality rate approaching 100 percent. The toxin could be delivered either as an aerosol or through contamination of water supplies.
9. Staphylococcal enterotoxin is a stable protein which produces an acute incapacitation known as staphylococcal food poisoning. It is characterized by severe nausea, vomiting, abdominal pain, diarrhea, and prostration. Its effects generally last for 24 hours.

10. A plant toxin thought to have potential military utility is ricin, which is extracted from the castor bean. The lethal dose of ricin in man is not known, but it is estimated from animal studies to be about 80 millionths of a gram for the average man. Ricin causes death by paralysis.

11. The production of bacterial toxins in any significant quantity would require facilities similar to those needed for the production of biological agents. Though toxins of the type useful for military purposes could conceivably be produced by chemical synthesis in the future, the end products would be the same in the effects of their use and those effects would be indistinguishable from toxins produced by bacteriological or other biological processes.

UNION OF SOVIET SOCIALIST REPUBLICS

AND UNITED STATES OF AMERICA

Draft Treaty on the Prohibition of the Emplacement
of Nuclear Weapons and other Weapons of Mass
Destruction on the Seabed and the Ocean Floor
and in the Subsoil thereof

The States Parties to this Treaty,

Recognizing the common interest of mankind in the progress of the exploration and use of the seabed and the ocean floor for peaceful purposes,

Considering that the prevention of a nuclear arms race on the seabed and the ocean floor serves the interests of maintaining world peace, reduces international tensions, and strengthens friendly relations among States,

Convinced that this Treaty constitutes a step towards the exclusion of the seabed, the ocean floor and the subsoil thereof from the arms race, and determined to continue negotiations concerning further measures leading to this end,

Convinced that this Treaty constitutes a step towards a treaty on general and complete disarmament under strict and effective international control, and determined to continue negotiations to this end,

Convinced that this Treaty will further the purposes and principles of the Charter of the United Nations, in a manner consistent with the principles of international law and without infringing the freedoms of the high seas,

Have agreed as follows:

ARTICLE I

1. The States Parties to this Treaty undertake not to emplant or emplace on the seabed and the ocean floor and in the subsoil thereof beyond the outer limit of a seabed zone as defined in Article II any nuclear weapons or any other types of weapons of mass destruction as well as structures, launching installations or any other facilities specifically designed for storing, testing or using such weapons.

2. The undertakings of paragraph 1 of this Article shall also apply to the seabed zone referred to in the same paragraph, except that within such seabed zone, they shall not apply either to the coastal State or to the seabed beneath its territorial waters.

3. The States Parties to this Treaty undertake not to assist, encourage or induce any State to carry out activities referred to in paragraph 1 of this Article and not to participate in any other way in such actions.

ARTICLE II

For the purpose of this Treaty the outer limit of the seabed zone referred to in Article I shall be coterminous with the twelve-mile outer limit of the zone referred to in Part II of the Convention on the Territorial Sea and the Contiguous Zone, signed in Geneva on 29 April 1958 and shall be measured in accordance with the provisions of Part I, Section II, of that Convention and in accordance with international law.

ARTICLE III

1. In order to promote the objectives of and ensure compliance with the provisions of this Treaty, each State Party to the Treaty shall have the right to verify through observation the activities of other States Parties to the Treaty on the seabed and the ocean floor and in the subsoil thereof beyond the zone referred to in Article I, provided that observation does not interfere with such activities or otherwise infringe rights recognized under international law, including the freedoms of the high seas.

2. If after such observation reasonable doubts remain concerning the fulfilment of the obligations assumed under the Treaty, the State Party having such doubts and the State Party that is responsible for the activities giving rise to the doubts shall consult with a view to removing the doubts and, if the doubts persist, shall co-operate on such further procedures for verification, as may be agreed, including appropriate inspection of objects, structures, installations or other facilities that reasonably may be expected to be of a kind described in Article I. Parties in the region of the activities, and any other Party so requesting, shall be notified of, and may participate in, such consultation and co-operation.

3. If the State responsible for the activities giving rise to the reasonable doubts is not identifiable by observation of the object, structure, installation or other facility, the State-Party having such doubts shall notify and make appropriate inquiries of States Parties in the region of the activities and of any other State Party. If it is ascertained through these inquiries that a particular State Party is responsible for the activities, that State Party shall consult and co-operate with other Parties as provided in paragraph 2 of this Article. If the identity of the State responsible for the activities cannot be ascertained through these inquiries, then further verification procedures, including inspection, may be undertaken by the inquiring State Party, which shall invite the participation of the Parties in the region and of any other Party desiring to co-operate.
4. If consultation and co-operation pursuant to paragraphs 2 and 3 of this Article have not removed the doubts concerning the activities and there remains a serious question concerning fulfilment of the obligations assumed under this Treaty, a State Party may, in accordance with the provisions of the Charter of the United Nations, refer the matter to the Security Council, which may take action in accordance with the Charter.
5. Verification pursuant to this Article may be undertaken by any State Party using its own means, or with the full or partial assistance of any other State Party.
6. All verification activities conducted pursuant to this Treaty shall be conducted with due regard for the sovereign or exclusive rights of a coastal State with respect to the natural resources of its continental shelf under international law.

ARTICLE IV

Nothing in this Treaty shall be interpreted as supporting or prejudicing the position of any State Party with respect to existing international conventions, including the 1958 Convention on the Territorial Sea and the Contiguous Zone, or with respect to rights or claims which such State Party may assert, or with respect to

recognition or non-recognition of rights or claims asserted by any other State, related to waters off its coast; including inter alia territorial seas and contiguous zones, or to the seabed and the ocean floor, including ~~continental shelves~~.

ARTICLE V

Any State Party may propose amendments to this Treaty. Amendments shall enter into force for each State Party accepting the amendments upon their acceptance by a majority of the States Parties to the Treaty and thereafter for each remaining State Party on the date of acceptance by it.

ARTICLE VI

Five years after the entry into force of this Treaty, a conference of Parties to the Treaty shall be held in Geneva, Switzerland, in order to review the operation of this Treaty with a view to assuring that the purposes of the preamble and the provisions of the Treaty are being realized. Such review shall take into account any relevant technological developments. The review conference shall determine in accordance with the views of a majority of those Parties attending whether and when an additional review conference shall be convened.

ARTICLE VII

Each State Party to this Treaty shall in exercising its national sovereignty have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other States Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it considers to have jeopardized its supreme interests.

ARTICLE VIII

The provisions of this Treaty shall in no way affect the obligations assumed by States Parties to the Treaty under international instruments establishing zones free from nuclear weapons.

ARTICLE IX

1. This Treaty shall be open for signature to all States. Any State which does not sign the Treaty before its entry into force in accordance with paragraph 3 of this Article may accede to it at any time.
2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and of accession shall be deposited with the Governments of which are hereby designated the Depositary Governments.
3. This Treaty shall enter into force after the deposit of instruments of ratification by twenty-two Governments, including the Governments designated as Depositary Governments of this Treaty.
4. For States whose instruments of ratification or accession are deposited after the entry into force of this Treaty it shall enter into force on the date of the deposit of their instruments of ratification or accession.
5. The Depositary Governments shall promptly inform the Governments of all signatory and acceding States of the date of each signature, of the date of deposit of each instrument of ratification or of accession, of the date of the entry into force of this Treaty, and of the receipt of other notices.
6. This Treaty shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

ARTICLE X

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

In witness whereof the undersigned, being duly authorized thereto, have signed this Treaty.

Done in _____ at _____ this
_____ day of _____, _____.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/287
30 April 1970
Original: ENGLISH

S W E D E N

Working Paper presenting the ways in which verification has been dealt with in various arms control and disarmament treaties and proposals

I. The Swedish delegation considers that it might be useful, particularly in any forthcoming discussion of a Comprehensive Disarmament Programme in accordance with General Assembly Resolution 2602 E (XXIV), to present in an abridged form material indicating how the question of verification of collateral arms control or disarmament measures has been dealt with in the recent past in agreed treaties and in proposals put forward, mainly in the Committee on Disarmament or its predecessor, the ENDC. It would seem that the verification methods are not established in any systematic way. It might, upon discussion, be possible to arrive at some conclusions, suggesting how verification needs might best be met in various cases in the future.

II. The following treaties and proposals are relevant and may provide precedents:

(a) Treaties

1. The Antarctic Treaty, 1959.
2. Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space, and Under Water, 1963.
3. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and other Celestial Bodies, 1967.
4. Treaty for the Prohibition of Nuclear Weapons in Latin America, "Treaty of Tlatelolco", 1967.
5. Treaty on the Non-Proliferation of Nuclear Weapons, 1968, with the IAEA Safeguards System.

(b) Proposals

6. Agreed Parts of the Draft Treaty on the Discontinuance of Nuclear Weapon Tests, 1959 (Documents on Disarmament 1960, Appendix I).
7. Poland. Memorandum concerning the establishment of a non-nuclearized and limited armaments zone in Europe, 1962 (ENDC/C.1/1) and Memorandum on Freezing Nuclear and Thermo-nuclear Weapons in Central Europe, 1964 (Documents on Disarmament 1964 p. 53).

8. United States, Proposal on a Freeze of the Number and Characteristics of Strategic Nuclear Offensive and Defensive Vehicles, 1964 (ENDC/PV.184 p.13).
9. United States, Proposal on a Cut-Off of the Production of Fissionable Material for Weapon Uses, 1964 (ENDC/PV.207 p.19) and changed proposal, 1969 (ENDC/PV.401 p.5).
10. United Kingdom, Working Paper on the Comprehensive Test Ban Treaty, 1968 (ENDC/232).
11. Sweden, Working Paper with suggestions as to possible provisions of a Treaty Banning Underground Nuclear Weapon Tests, 1969 (ENDC/242).
12. United Kingdom, Revised draft Convention for the Prohibition of Biological Methods of Warfare and accompanying draft Security Council Resolution, 1969 (ENDC/255/Rev.1).
13. Bulgaria etc., Draft Convention on the Prohibition of the Development, Production and Stockpiling of Chemical and Bacteriological (Biological) Weapons and on the Destruction of such Weapons, 1969 (A/7655), and Hungary etc., additional Working Paper including accompanying draft Security Council Resolution, 1970 (CCD/285).
14. Draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil thereof, 1969, revised 1970 (CCD/269/Rev.2).

III. In order to see if there were any common features in the methods employed in these measures and proposals to solve the generally recurring problem of verification, some significant headings have been chosen, meant to illustrate the goals and targets of the various verification measures. The headings used are the following:

1. Collection of information.
2. Inquiry.
3. On-site inspection by parties.
4. International supervision and inspection.
5. National self-supervision and-inspection
6. Complaint procedures.
7. Review of the verification system.

Some of these headings have been given sub-headings.

IV. Our scrutiny of the treaties and proposals listed under para II in the light of these headings has given the following results. (For a detailed table, the reader is referred to the Annex to this Paper.)

1. Collection of information. This method is used, explicitly or implicitly, in the vast majority of the cases. It can take the form of an obligation on the Parties to give notifications or declarations as for instance in the Antarctic Treaty, or to make regular or special reports as in the Treaty of Tlatelolco. Provision is made for ground, naval and air observation, as in the draft Seabed Treaty. Special detection and identification techniques are provided for in the proposals made to prohibit all nuclear weapon tests. Still other methods are the international exchange of reports or data, either among the parties or through some international body or organ (IAEA Safeguards System, Tlatelolco Treaty).
2. Inquiry. The right of a party or of an international organ to make routine or special inquiries in cases requiring clarification, and the obligation of parties to co-operate in furnishing replies, has been provided for, as in the Treaty of Tlatelolco, in the Swedish draft Treaty Banning Underground Nuclear Weapon Tests, and in the draft Seabed Treaty.
3. On-site inspection by parties has been proposed as a method in a number of cases, either in obligatory form, as in the proposals on a Freeze of Strategic Nuclear Vehicles, or on the basis of free access (Antarctic Treaty, Outer Space Treaty, IAEA Safeguards System), or based on consultation, cooperation or invitation (Outer Space Treaty, draft Treaty Banning Underground Nuclear Tests, draft Seabed Treaty). Special inspections in cases of suspected violations have been provided for in the Treaty of Tlatelolco.
4. International supervision and inspection, which is of course the main method chosen in the provisions for an International Disarmament Organization (IDO) within the draft treaties on General and Complete Disarmament of 1962 -- which do not figure in this Paper -- has taken the form of a specially established control organization (Tlatelolco Treaty), use of an existing international organization (Non-Proliferation Treaty with the IAEA Safeguards System, Tlatelolco Treaty), or investigation procedure by the UN Secretary-General (British proposal for a convention on biological warfare).
5. National self-supervision and -inspection has been explicitly stated in some cases such as the Antarctic Treaty, the Outer Space Treaty, and the Socialist draft convention on C-and B-weapons (containing an obligation on the Parties to adopt necessary legislative and administrative measures) and is, of course, implicit in others.

6. Complaint procedures have been dealt with by several different means, such as consultation and cooperation between the Parties (the Antarctic Treaty, the draft Seabed Treaty), reference to a conference of the Parties (Polish zone proposals, Tlatelolco Treaty), reference to the International Court of Justice (Antarctic Treaty) or recourse to the UN Security Council (draft Seabed Treaty, British draft Convention on B-warfare and Socialist draft convention on C- and B-weapons).
7. Finally, several of the treaties and proposals listed contain an explicit provision concerning review of the verification system in the form of a conference or conferences of the Parties.
- V. The conclusion seems warranted that in most cases a combination of several methods mentioned above has been deemed necessary. Such a combination seems particularly interesting and relevant for the future when it has taken the form of a system of successive steps or measures of increasing severity, where the initial step or steps in the chain are mainly of a factfinding nature. Only when the factfinding machinery leads to a high degree of suspicion or certainty that circumvention of an obligation has taken place has it been deemed necessary to resort to more far-reaching steps. Examples of such gradual systems can be found in the Tlatelolco Treaty, in the Swedish proposal for a Treaty Banning Underground Nuclear Weapon Tests and in the draft Seabed Treaty.

Verification system:

1. Collection of information
obligatory declaration and notification

ground, naval and air observation
special detection and identification techniques
international exchange of reports or data
2. Inquiry
3. On-site inspection by parties
obligatory continuing, periodic or in a limited number

on the basis of free access
on the basis of consultation, co-operation or invitation
4. International supervision and inspection
specially established control organization

existing organization
investigation by the UN Secretary-General
5. National self-supervision and -inspection
6. Complaint procedure
consultation and co-operation
reference to a conference of the parties

reference to the International Court of Justice
recourse to the UN Security Council
7. Review of verification system

1	2	3	4	5	6	7	8	9	10	11	12	13	14
x		x	x				x	x					
x						x							x
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JAPAN

Working Paper on the Question of Verification for Prohibition of
Chemical and Biological Weapons

1. Chemical characteristics of nerve agents

(1) Tabun, Sarin, Soman and VX are known as typical nerve agents used for chemical weapons. All these agents are organophosphorus compounds. While Tabun which was developed in earlier stage, can be produced from yellow phosphorus and through phosphorus oxychloride, Sarin, Soman and VX can be produced from yellow phosphorus and through such common intermediates as phosphorus trichloride, dimethylphosphite or methylphosphonic dichloride (or difluoride). It is pointed out in this connexion that these three agents contain methylphosphorus bond (alkyl-phosphorus bond) causing particularly strong poisonous effects on warm-blooded animals.

(2) Among the agricultural chemicals of organophosphorus family, which are widely used as insecticides or bactericides, there are some (for example, Parathion or TEPP) which can be used, due to their highly poisonous effects and depending upon their dosage, as nerve agents for weapon purposes. These agricultural chemicals of organophosphorus family can be produced from phosphorus trichloride, phosphorus oxychloride, phosphorus pentasulfide and phosphorus pentachloride.

(3) All of these organophosphorus compounds are produced from yellow phosphorus as their starting material which is then converted to phosphorus trichloride, phosphorus oxychloride, phosphorus pentasulfide or phosphorus pentachloride by chemical reactions. It is further noted that dimethylphosphite and/or methylphosphonic dichloride (or difluoride) which are the intermediates derived mainly from phosphorus trichloride, lead to the production of Sarin, Soman and VX.

2. Peaceful uses of raw materials and intermediates

(1) Yellow phosphorus is mass-produced as the material for various inorganic and organic phosphorus compounds.

(2) Phosphorus trichloride, phosphorus oxychloride, phosphorus pentasulfide and phosphorus pentachloride are produced from yellow phosphorus and are the common raw materials used widely for the production of agricultural chemicals, pharmaceuticals and dyestuffs, etc.

(3) Dimethylphosphite is mainly produced from phosphorus trichloride and is widely used for peaceful industry as synthesizing materials for insecticides, bactericides, flame retardants, and as additives to lubricants.

(4) Methylphosphonic dichloride (or difluoride) is mainly produced from dimethylphosphite. Detailed information regarding its use for peaceful purposes is limited. However, as this agent is reported to be used as material for the preparation of phosphorus polymer, it is likely that other peaceful uses of that agent might be found in future.

3. Possible check points

As shown above, the production of nerve agents and agricultural chemicals of organophosphorus family having poisonous effects equivalent to nerve agents, requires particular kind of materials which are widely used for the production of other industrial goods.

Therefore, it should become possible to see whether or not these materials are being used for the production of chemical weapons if we can trace the flow of such materials in each State by checking the amount of their production, import and export, or the amount of their consumption for different purposes, these materials are enumerated as follows: yellow phosphorus, phosphorus trichloride, phosphorus oxychloride, phosphorus pentasulfide, phosphorus pentachloride, dimethylphosphite and methylphosphonic dichloride (or difluoride).

In so doing, it should be possible to prevent these particular materials from being diverted into the production of nerve agents or to deter improper use of highly poisonous organophosphorus agricultural chemicals as chemical warfare agents.

N.B. It is understood that our study should be pursued on new intermediates which may be discovered in future, as organophosphorus chemical industry develops.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/289

30 June 1970

Original: ENGLISH

ITALY

Suggestions regarding the possible convening of a group of experts to study the problem of controls over chemical weapons and the way in which such a group should function

1. In the course of the informal meeting of the CCD on 22 April 1970, devoted to the question of the prohibition of chemical and biological weapons, discussions were mainly concentrated on the problem of control over the production and stockpiling of chemical weapons.

It thus appeared to be confirmed, in the opinion of various delegations, that the establishment of an effective system of controls is still the major problem among those that the Committee will have to solve with a view to achieving an agreement for the prohibition of chemical weapons.

Moreover, the participation in that same meeting of experts from various countries gave emphasis to the fact that the problem of controls presents some aspects that are predominantly scientific and a knowledge of which is essential before the various delegations can profitably embark on discussion of a draft treaty.

2. For the purposes of such a discussion, the committee has at its disposal, at the moment, three highly valuable scientific studies: the "Report of the Secretary-General on chemical and bacteriological (biological) weapons and the effects of their possible use"; the report by the World Health Organization entitled "Health aspects of Chemical and Biological Weapons"; and the as yet unfinished report by the Stockholm International Peace Research Institute (SIPRI) "The problem of chemical and biological warfare".

Of these three documents, the first aims at giving a scientific evaluation of the effects of chemical and biological weapons and informing the Governments of the consequences of any use that might be made of them, while the second is intended specially for the public-health authorities and leaves aside the purely military aspects of the problem. Neither of these two studies goes specifically or in any depth into the question of controls.

The SIPRI report, on the other hand, tackles all the different aspects of the problem, including that of verification, to which the whole of Volume IV is devoted.

This part of the report, although of exceptional interest and usefulness, is nevertheless of an incomplete and preliminary nature. Moreover, it was conceived with a more general purpose in view, not with the specific aim of being able to provide the Committee on Disarmament with an exhaustive technical study as a working tool.

3. The Italian Delegation accordingly believes that the above mentioned studies could be usefully supplemented by a specific study on the problem of controls of chemical weapons, which could constitute a background document for the work of the Conference. Such a study could be drawn up, as has been suggested by various Delegations, and in particular by the Japanese Delegation (ENDC/PV.428; CCD/PV.456), by an ad hoc group of experts. The group could include, among others, some of the experts who have already collaborated in producing the SIPRI report and the Report of the Secretary-General of the United Nations.

4. To enable the group of experts to produce, within a relatively short time, a document of use for the purposes indicated above, the Committee, in the Italian Delegation's view, should itself guide the group in its labours, deciding beforehand the lines on which it should work and the specific subjects with which it should deal.

5. On the basis of these considerations the Italian Delegation has thought fit to put forward the following suggestions:

- (a) The C.C.D. should set up a group of experts whose task would be to study the technical questions connected with the problem of the control of chemical weapons and to draw up a report thereon which would serve as a background document for the Committee in its work.
- (b) The C.C.D. should itself, as a preliminary step, single out the basic subjects which need to be clarified having recourse to expert opinion (for example, it could ask for a study of the possibility of control over the production of chemical agents used solely for warlike purposes, or again it could ask for the study to be extended to substances which can be used for both peaceful and warlike purposes, etc.).

- (c) Once the general picture of the subjects to be investigated has been outlined, each Delegation should instruct the appropriate body in its own country to suggest a list of specific technical themes to be developed and studied in more detail (e.g., supposing that the C.C.D. had stated that it thought a technical opinion necessary in regard to the problem of control solely over chemical agents of warfare, the appropriate national bodies in a particular country might propose an investigation of the possibility of instituting controls over the raw materials and intermediates needed for the production of nerve gases and vesicants. In particular, with reference to nerve gases such bodies might propose that the possibility be examined of controlling international trade in phosphorus and the industrial production of organic-phosphorus esters [parathion].)
- (d) Each proposal would be transmitted to the group of experts set up by the Committee. The group would have a first meeting to compare and examine the various proposals and then to combine them into a single document to serve as a programme of work.
- (e) On the basis of this programme, the group of experts would meet with a view to drawing up a final report. This document should deal in detail with all the problems relating to controls of chemical weapons which are of interest to the Committee, and would constitute the technical background document for further discussions in the C.C.D.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/290

30 June 1970

Original: ENGLISH

UNITED STATES OF AMERICA

Working Paper on the Toxin Amendment to the United Kingdom draft Convention for the Prohibition of Biological Methods of Warfare

The United States proposes that toxins be added to the agents whose use is prohibited by Article I of the UK draft Convention (ENDC/255/Rev.1 of 26 August 1969). The U.S. also proposes that the phrase "by infection or infestation" be deleted. Article I would then read as follows:

ARTICLE I

Each of the Parties to the Convention undertakes, insofar as it may not already be committed in that respect under Treaties or other instruments in force prohibiting the use of chemical and biological methods of warfare, never, in any circumstances, by making use for hostile purposes of microbial or other biological agents or toxins causing death, damage or disease to man, other animals, or crops, to engage in biological methods of warfare.

With reference to Article II(a)(i), the United States proposes that the words "or toxins" be inserted after the phrase "microbial or other biological agents" so that the prohibitions and requirements contained in that Article apply to toxins as well.

The first part of Article II, amended, would then read as follows:

ARTICLE II

"Each of the Parties to the Convention undertakes:

(a) not to produce or otherwise acquire, or assist in or permit the production or acquisition of:

- (i) microbial or other biological agents or toxins of types and in quantities that have no independent justification for prophylactic or other peaceful purposes;"

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/291
14 July 1970

Original: ENGLISH

The Netherlands

Working Paper concerning United Nations General Assembly resolution 2602 C (XXIV)

A. Prospects for radiological warfare

Two modes of radiological warfare are distinguished in the literature, and also in the United Nations General Assembly resolution: on the one hand the use of nuclear weapons in such a way as to maximize their radioactive effects, on the other hand the use of radioactive agents independently of nuclear explosions.

It is technically possible to manufacture nuclear weapons in such a way that they will cause a maximal amount of fall-out. But it is not probable that a country would deliberately do so, because it would hardly offer distinct military advantages. If nuclear weapons would ever be used, it may be assumed that they will be used with the aim of achieving a decisive effect against an opponent in a short span of time. The short-term lethal effects of a nuclear explosion are caused by blast, heat and initial radiation. Increasing the fall-out would cause harmful effects after weeks, months and even years. Normally, such long-term effects would seem not to be interesting from a military point of view. Moreover, the attacked area would become badly accessible on account of its radioactive contamination. The trend in nuclear weapons technology is going in the direction of cleaner weapons rather than dirtier ones.

The second method of radiological warfare, namely the use of radioactive agents independently of nuclear explosions, is likewise not very plausible.

In order to kill or harm people within a few hours, a radiation dose would be required of at least 1,000 roentgen. But the highly radioactive isotopes one would need for that purpose all have a short or very short half-life. This implies that they cannot be stored for later use. It is true, such isotopes can be produced. For instance, by irradiating uranium in a high-flux reactor one would obtain a considerable amount of highly radioactive material which would remain lethal during a few days. But the transport of this material to the target area would be a very difficult and cumbersome job, in the first place on account of the heavy protective shielding which would be needed for this extremely dangerous material. Large-scale use of such isotopes for so-called strategic purposes is out of the question.

Whereas the use of highly radioactive materials for causing short-term effects would run into almost unsurmountable practical difficulties, the same does not apply to the use of less radioactive materials which can harm life or health after months or years. For this purpose one might use materials having a long half-life, for instance strontium-90, which has a half-life of thirty years. Such materials are not so difficult to handle and can be obtained relatively easily from the radioactive waste of reactors. But here the same would apply as with regard to the deliberate manufacture of "dirty" nuclear weapons: What would be the military rationale for achieving these long-term harmful effects?

Summing up: judging by the available information possibilities for radiological warfare do exist theoretically, but do not seem to be of much or even of any practical significance.

B. Arms control aspects of radiological warfare

In the light of the foregoing considerations it is difficult to see the practical usefulness of discussing arms control measures related to radiological warfare.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/292
14 July 1970
Original: ENGLISH

The Netherlands

Working Paper concerning United Nations General Assembly Resolution 2602 D (XXIV)

A. Survey of possible military applications of laser technology

For the purpose of this survey possible military applications can be divided into three categories.

1. Applications which, by themselves, are not weapons, some of which are already in an advanced stage of development or, in some cases, operational.

First of all, there are applications which have no typical military character but may prove to be equally important for civil and for military purposes. One such application is the use of laser beams for communication purposes. Lasers offer far-reaching possibilities for communications. It is theoretically possible that a great number of messages can be transmitted simultaneously by means of one single laser beam. Another example of laser technology is the construction of optical computers. Both laser communication systems and laser optical computers could be suited for military uses.

Another form of laser technology, which is more directly relevant to warfare, is the laser range-finder. Here lasers can be used instead of radar for measuring distances.

Other military applications comprise the use of laser beams for surveillance and reconnaissance purposes. For instance in the line-scanning camera, and the development of laser devices for navigation systems for missiles and aircraft and possibly, in the future, for submarines and for detection of submarines.

Next we come to applications of lasers which, though not constituting a weapon as such, are very closely connected with the use of weapons, as a valuable aid to increase their effectiveness. This is the laser illuminator or designator; a laser beam is used to designate a target to be attacked by bombs, rockets, missiles or artillery. The designator can be operated by a forward air controller on the ground or from an aircraft. At the same time, a seeking device must be used in the attacking weapon in order to enable it to lock on the designated target and to home in on it. It appears

that this method of laser designation and guidance for air bombardment has already been tested and used in prototype form and proven to increase attack accuracy. Significant increases in accuracy would provide economies in the operation of weapon systems. This development of laser technology, therefore, offers both military and financial advantages.

2. Direct use of lasers as weapons. In this instance the heat of a laser beam is used to destroy a target. It is now already possible to pierce and to cut objects by means of laser beams at a distance of several yards. For use as weapons it would be necessary to achieve such effects at much larger distances. A number of difficult technological problems are yet to be solved.

Among the future largely tactical applications for which laser weapons appear to be conceivable are:

- defence of naval vessels against low-flying cruise missiles;
- defence against low-flying targets at forward air bases;
- defence against tanks on the battlefield;
- defence against optically guided weapons like optical or infrared missiles, and countermeasures against a host of night vision, infrared and photograph surveillance devices.

An even more remote possibility might be the use of laser weapons for ballistic missile defence. The laser could offer some potential advantages over present A.B.M. systems. Because laser beams travel at the speed of light, the defence could have more time to detect, track, and intercept incoming missiles. Further, a laser A.B.M. weapon would not, itself, produce fall-out. On the other hand, the practical difficulties in developing this type of weapon are likely to be much greater than those of the close-range weapons discussed above. Generating and directing the large amounts of energy, aiming the laser beam, and transmitting it to the target are very difficult technical problems. Further, such a weapon system depends upon the transmission of optical energy and would, therefore, be severely limited for use on cloudy days or in the presence of precipitation.

It has also been speculated that lasers might conceivably be used as weapons of mass destruction in outer space. In addition to certain of the limitations described above, there are inherent characteristics of the laser, notably its narrow beam width and its short effective range, which would militate against its use as a

weapon of mass destruction. In the unlikely event that such a weapon were developed, it should be noted that the Outer Space Treaty already prohibits stationing weapons of mass destruction in outer space.

3. Lastly, a third category of potential military laser technology has recently been referred to in the press. This is the possible use of lasers, instead of fissionable materials, to set off thermonuclear weapons. For that purpose, a laser device which could produce an incredibly high temperature during an incredibly short time would be required. Moreover, such a device would have to be of such moderate dimensions that it could be included in a warhead or bomb. Again, a number of extremely difficult problems would appear to require solution before this type of weapon could be developed. In any event, were such a weapon to be developed, articles I and II of the N.P.T. would continue to apply to the thermonuclear weapons involved.

B. Arms control problems in connexion with the military application of laser technology

With respect to the first category, i.e. applications of laser technology for non-weapon military purposes, it would not seem fruitful to consider the possibility of restrictive measures. It is true that such applications as the laser designator can have an important impact on the conduct of military operations, but it is unlikely that agreement could be reached on a ban or restrictions on devices that are not weapons.

As to the second category, i.e. laser weapons, it would perhaps seem rather premature to consider the possibility of any arms control ban. This is because it is not clear at this stage, whether independent laser weapons systems are a practical and significant possibility.

With respect to the third category, the laser device for exploding a thermonuclear weapon, it has already been pointed out that a number of extremely difficult problems would appear to require solution before this type of weapon could be developed and that articles I and II of the N.P.T. would be applicable to such weapons if developed.

Accordingly, the highly speculative character of the conceivable military applications mentioned in the preceding paragraphs does not seem to substantiate the need for arms control consideration at this time. On the other hand, it seems appropriate to follow attentively further developments in the field of military applications of laser technology with a view to possible future arms control discussion.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/293
16 July 1970
Original: ENGLISH

UNITED STATES OF AMERICA

Working Paper Comparing Nerve Agent Facilities and Civilian Chemical Production Facilities

1. A working paper submitted by the United States delegation on March 16, 1970 (CCD 283) described the complex relationship between the production of chemicals for peaceful purposes by commercial chemical industries and the production of chemical agents for war. Another question related to a comprehensive ban on chemical weapons and also requiring further study is the extent of the external similarity between plants producing chemical weapons and plants producing industrial and commercial chemical products. In this paper the question is examined with respect to the production of nerve agents.
2. The chemical processing industry encompasses the conversion of various chemical raw materials into usable products of all descriptions. Chemical process plants through-out the world range in production rate from a few hundred pounds to several million pounds of finished product a year, and in area from a few thousand square feet to several thousand acres. The production of chemical nerve agents involves a chemical process in which the production facilities and equipment utilized are similar to the equipment and processes used by a major segment of the world chemical industry. With the advent of highly complex, inter-related chemical complexes, it is also possible that a wide variety of chemical products, including nerve agents, could be produced within a single chemical complex.
3. The US has undertaken as a part of its research programme to examine whether it would be possible by "off-site observation," either from the air or from the ground, to determine whether a particular chemical processing facility or complex was producing, or was capable of producing, lethal nerve agents. Three United States chemical processing plants that are similar in size and general appearance were examined by external inspection. The first of these plants is a cryogenic (low-temperature) natural-gas processing plant; the second is a high-energy fuel facility; and the third (the Newport Chemical Plant), is a VX nerve-agent production facility. The three plants were examined on the basis of general external appearance, e.g. raw-material input, storage facilities, consumption of utilities, and waste disposal, and more specifically on the basis of process equipment and safety features.

4. Raw Material Input - With respect to rail and truck deliveries, it was concluded that aerial observation cannot determine what materials are being supplied to the facility. Moreover, since many of the same basic raw materials used in producing nerve agents, e.g., elemental phosphorus, chlorine, and various petrochemicals, are widely used in commercial production, the identification of some deliveries, even if possible, would not in itself indicate that nerve agents, rather than plasticizers or pesticides, were being produced in the plant. In fact, observation of the containers used in shipping might not even indicate in a general way which of hundreds of chemicals or gases were being transported to the plant. (See paragraph 5 below).
5. Storage Facilities - The raw materials and the intermediate and end products commonly stored in the chemical process industry can be in solid, liquid, or gaseous forms. In all three forms materials can be stored in bulk or in unit containers, outdoors or under shelter. Unit containers are indistinguishable from facility to facility. Solid bulk materials are stored both outdoors and indoors in piles or in bins or bunkers. The bulk storage of all types of liquid materials is, of course, generally carried out in some form of tank, vertical, horizontal, rectangular, or spherical in shape. Tanks are constructed of metal, wood or concrete, and their storage capacity can range from 200 to 1 million gallons. Liquid materials can also be stored in barrels, kegs, drums, cans or glass containers, generally holding less than 75 gallons. Gases stored in bulk are also usually contained in tanks. The most common types of readily observable containers are the large spherical, cylindrical, or horizontal tanks which are used throughout the chemical industry to hold hundreds of different chemicals and gases. These same kinds of containers are also used in nerve agent production.
6. Utilities - The utilities requirements for nerve-agent production are not greatly different from those of regular chemical operations. Electrical power may be required in greater than normal amounts but not to a degree which is unique. This requirement and the more normal water requirement could affect the location of a plant. The availability of large amounts of these utilities to a plant would not, however, be a particular indicator of nerve-agent production since location of industrial chemical facilities near ample electrical and water supplies is common practice.
7. Wastes - The nontoxic wastes of a nerve-agent plant would be similar to those produced by some industrial chemical plants. On the other hand, the chemical waste from the final unit processes for nerve-agent production requires ~~neutralization and~~

detoxification before it enters the final waste disposal system. Analysis of disposed materials might provide some indication of nerve-agent production, but this could not be done by off-site observation; rather on-site sampling with extremely sensitive instruments would be required. Disposal of toxic wastes is not, of course, a problem peculiar to nerve-agent manufacture.

8. Process Equipment - There are many basic types of chemical processing equipment used for the production of both nerve agents and industrial chemicals, and these basic types can often be converted from the manufacture of one chemical to another, with varying degrees of ease. While this equipment can often be readily observed from outside the plant, very little can be determined about its function or rate of operation.

a. Distillation equipment - Distillation is one of the ~~fundamental~~ processes used to separate a specific chemical or group of chemicals from a mixture. Separation is accomplished in what are generally referred to as distillation columns. These are vertical, cylindrical vessels whose height is usually much greater than their diameter. They range in size from less than 1 foot in diameter and 10 feet in height to more than 15 feet in diameter and 300 feet in height. It is not possible to identify by outside observation the processes taking place within the column. In many chemical plants, distillation columns, like other pieces of equipment, are frequently used in processes other than the one for which they were originally designed.

b. Furnaces - Furnaces are one of the principal components of chemical processing facilities. These industrial furnaces are found in a great variety of sizes and designs, and there is no particular type which would be characteristic of nerve-agent plants.

c. Reactors - A reactor is the processing vessel in which chemical reactions take place. Reactors of all shapes, sizes and configurations are used in the chemical industry, depending upon the specific process in which they are to be used. Some reactors differ only slightly from small storage tanks and small heat exchangers. Reactors can differ substantially in size and shape even though they are designed for similar processes. Again, there is no shape or other characteristic which is unique to nerve-agent production.

d. Scrubbers - There is a rather large variety of equipment generally referred to as scrubbers for the separation of solids, liquids, or specific gases from air or from a gas stream by using water to scrub out the unwanted materials. These scrubbers are

vertical, cylindrical vessels with a relatively large height-to-diameter ratio. The size of the scrubber depends on the amount of air that must be treated. External observation does not reveal the materials that are being treated within the scrubber, and almost any size or shape might be used in a nerve-agent plant.

e. Flare Stacks - These are tall thin towers, up to several hundred of feet high, containing at their centres pipes which carry waste gases to the top where they are burned in the atmosphere. Although flare stacks are highly visible, their appearance would provide no means of distinguishing one plant from another.

9. Safety - Because of the highly lethal nature of the agents being produced, a nerve-agent plant requires special safety measures. In particular, the containment of toxic chemicals requires rigid control of plant air. Air coming out of the toxic process area would need to be scrubbed to remove any toxic materials, and precautions would need to be taken to prevent any air from flowing out of the toxic process area into the non-toxic operating areas. Access between the toxic and non-toxic areas would require special controls such as airlocks. Personnel entering the toxic process area would have to wear masks and protective clothing. Such features, however, would not be observable from outside the plant, since they all pertain to operations within closed structures.

10. Summary - Our research indicates that the problem of identification of nerve-agent production facilities cannot be solved by off-site observation. Chemical process facilities are to be found in numerous locations throughout the world which contain many of the same raw materials, processes, operations, equipment, and support installations as those required to produce nerve agents.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/294
21 July 1970
ENGLISH
Original: SPANISH

MEXICO

Working Paper

Draft Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other weapons of mass destruction on the seabed and the ocean floor and in the subsoil thereof

A second paragraph should be added to article VIII of the draft treaty, to read as follows:

"2. The States Parties to this treaty undertake not to contribute in any way to the commission in the zone referred to in article I, of acts involving a violation of such obligations".

COMMENTS

The reasons which necessitate the addition of this paragraph, as proposed by Mexico on 1 December 1969 in the working paper submitted to the General Assembly and circulated as document A/C.1/995, may be summarized as follows:

1. It is self-evident that any treaty on the prohibition of the emplacement of nuclear weapons and other weapons of mass destruction on the seabed and the ocean floor and in the subsoil thereof that may be concluded should not adversely affect the progress it has been possible to achieve through other international instruments in force.

2. The Treaty for the Prohibition of Nuclear Weapons in Latin America or Treaty of Tlatelolco, which is at present in force for sixteen States, has created the first zone including densely populated territories to be free from nuclear weapons. The zone covers at present an area of approximately six million kilometres and has a population of about 100 million inhabitants.

3. The regime established in article I of the Treaty of Tlatelolco is one of total absence of nuclear weapons, a concept of the greatest clarity which entails for the States Parties, inter alia, the following double prohibition:

- (a) They may not emplant or emplace nuclear weapons in their respective territories, whether acting on their own behalf or through others, and
- (b) They may not allow other States to emplant or emplace nuclear arms in those territories,

For the purposes of those prohibitions the term "territory" includes, inter alia, the territorial sea, and the bed and subsoil thereof.

4. On the other hand, article I of the draft treaty submitted to the Disarmament Committee by the delegations of the United States and the Soviet Union, which is contained in document CCD/269/Rev.2, undoubtedly implies a double right:

(a) The right of any coastal State, whether acting on its own behalf or through others, to emplant or emplace nuclear weapons on the seabed and ocean floor and the subsoil thereof within a belt of sea twelve miles in breadth adjacent to its coasts, and

(b) The right of the nuclear Powers to emplant or emplace nuclear weapons in that zone with the consent of the coastal State concerned.

5. It is obvious from a comparison of the provisions referred to in the two preceding paragraphs that if it is not to vitiate the progress achieved so far in respect of the zones free from nuclear weapons, the new treaty must include an article containing two paragraphs like those proposed in the Mexican working paper A/C.1/995 mentioned above, which read as follows:

"1. The provisions of this Treaty shall in no way affect the obligations assumed by States Parties to it under international instruments establishing zones free from nuclear weapons.

"2. The States Parties to this Treaty undertake not to contribute in any way to the commission, in the zone referred to in article I, of acts involving a violation of such obligations."

6. The purpose of the first of these two paragraphs - which, as is known, has already been incorporated as article VIII in the revised text of the draft treaty - is to prevent the right referred to in paragraph 4 (a) of this document from being interpreted as invalidating the prohibition referred to in paragraph 3 (a).

7. For the same reason, the inclusion of the proposed second paragraph - which should be paragraph 2 of article VIII - is imperative, since this is the only way of ruling out the interpretation that the right referred to in paragraph 4 (b) tacitly modifies the prohibition referred to in paragraph 3 (b).

8. The Mexican proposal has no purpose other than the one stated at the beginning: to prevent the new treaty from adversely affecting certain essential agreements already reached in the field of zones free from nuclear weapons.

9. The paragraph 2 which Mexico is proposing for additions to article VIII of the revised draft treaty has this as its sole and exclusive object. The obligation assumed under it would be a passive obligation, an obligation not to do something, consisting merely in agreeing not to contribute to non-fulfilment or violation of any international agreements on nuclear disarmament to which certain States are parties or may be parties in the future.

10. The basis of this provision is to be found in the principles of international law and the United Nations Charter, particularly with regard to respect for the sovereign equality of States.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/295
28 July 1970
ENGLISH
Original: FRENCH

MOROCCO

Working paper on the prohibition of the development,
production and stockpiling of chemical and bacteriological
(biological) weapons and on the destruction of such weapons.

The use of chemical and bacteriological (biological) agents for non-peaceful purposes may inevitably lead to the greatest death-dealing catastrophe and the worst immediate and long-range, predictable and unpredictable, disasters that mankind has ever experienced or imagined. The reports of experts at our disposal and the observations of a large number of delegations both in the Conference of the Committee on Disarmament and in the United Nations at New York are unanimous in affirming that primary fact. We strongly believe that we would be failing in our duty as human beings and as members of the United Nations family if we ever stopped worrying about that fact even for a moment. In keeping with this attitude, the delegation of Morocco is submitting to the Committee this working paper, which in four points outlines a system that permits the insertion of procedures for prohibiting the production of chemical and bacteriological weapons and for verifying such prohibition.

1. The development, production and stockpiling of chemical and bacteriological (biological) weapons should be jointly prohibited by the terms of one principal legal instrument which would also make provision for the destruction of such weapons.

2. The procedures concerning verification and guarantees ensuring observance of obligations would be dealt with separately for bacteriological (biological) agents and for chemical agents.

3. The verification procedures relating to bacteriological (biological) weapons would be laid down definitively in the provisions of the principal instrument, and the total elimination of such weapons could be effective upon the entry into force of that instrument.

4. In view of the technical difficulties connected with the verification problem as regards chemical weapons, the principal instrument should provide in quite precise terms for the manner in which a subsequent examination will be held with the object of arriving, within a period of time prescribed by the principal instrument, at the text of a supplementary document which would definitively lay down verification procedures for chemical weapons.

The supplementary document, whose legal form would be determined by the principal instrument, would put into effect the total and definitive implementation of the provisions prohibiting such weapons.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/296

28 July 1970

Original: ENGLISH

UNITED KINGDOM

Working Paper on Verification of a Comprehensive Test Ban Treaty

1. In August 1969 the United Kingdom tabled a working paper entitled "Further Notes on United Kingdom Research on Techniques for Distinguishing Between Earthquakes and Underground Explosions" (ENDC/258). This paper described developments in seismic methods for monitoring underground explosions, in particular the U.K. studies made of events in 1966. The results of these studies formed the basis of the SIPRI Study Group Report in 1968 which concluded that explosions with a yield down to 10 kilotons in hard rock could be identified, given the deployment of an improved seismic system. The conclusion reached in ENDC/258 was that the next step might be a detailed study of the ways and means of deploying an operational system based on the new techniques, in order to achieve the identification capability predicted by the SIPRI Report.
2. There is increasing interest in the international exchange of seismic data as an aid to verification of a Comprehensive Test Ban Treaty. Replies to the Secretary-General's enquiry called for in General Assembly Resolution 2604A(XXIV) will enable a comprehensive review to be made of the present status of seismic monitoring of underground nuclear events. In the meantime the United Kingdom Atomic Energy Authority, as a contribution to such a review, has carried out a study aimed at determining what detection/identification capability could now be achieved in support of a Comprehensive Test Ban Treaty, at what cost and on what time scale. The study presupposed that maximum use would be made of existing stations known to have the required sensitivity. It was assumed that the estimated capability must not only take into consideration hard rock conditions, but also decoupling and other possible evasion methods. The study was world-wide, but it was recognised that the main interest would be in the Northern Hemisphere. It has not, of course, attempted to take into account the replies to the Secretary General's enquiry.
3. ~~This~~ working paper takes into account only those improvements which the SIPRI Study Group considered to be sufficiently proven for the effects of incorporating them in a postulated network to be predicted with some accuracy. Other improvements are, of course, under research and development study, such as the application of very long wave techniques, but this paper has not attempted to benefit from these since they remain to be investigated more thoroughly before they could be deployed.

4. To the existing four U.K. type (21 element short period) arrays and the three large arrays ALPA, LASA and NORSAR there are assumed to be added 19 more U.K. type stations making a total of 26 world-wide. Stations can be moved up to 1000 km without significantly changing the detection threshold as shown by map A. The printed m_b values have been contoured. A minimum of four stations must detect the P signal in order to locate the event with a signal to noise ratio of 2. (A similar study, presented at the SIPRI sponsored conference on this subject, adopted a ratio of 1.5 which we believe to be too small.)

5. Each station would also be equipped with a 16 element long period array using American instruments. Map B displays the detection threshold for Rayleigh waves in terms of earthquake m_b values; add one order of magnitude to each value to obtain the detection threshold for explosion R waves after optimum processing of the array sum. A minimum number of three stations must detect the R signal to allow for accidental masking by other events and for the radiation pattern of earthquakes. The signal to noise ratio of 2 follows the SIPRI study but the minimum number of detecting stations (four) required by the SIPRI study is reduced by one.

6. Should it not prove possible to install all the stations, the overall capability of the system would of course be reduced.

DETECTION AND IDENTIFICATION THRESHOLD

7. In the Northern Hemisphere, 90% of all earthquakes down to a magnitude of at least m_b 4 (1-2 kilotons in hard rock) will be detected and identified by a minimum of four stations (location) and three stations (identification). These figures assume optimum processing, especially of the surface wave recordings where gains of $\frac{1}{2} m_b$ after processing have been confirmed. The term "threshold" refers to a probability of 90%. No station is said to detect at signal to noise ratios of less than 2, and noise levels are assumed to be the mean annual root mean square values.

8. These figures for detection and location apply also to explosions. However, explosion generated surface waves are nearly an order of magnitude lower in amplitude for a given m_b value, so the identification threshold in the Northern Hemisphere for these events would be about m_b $4\frac{1}{2}$ (3-6 kilotons in hard rock). The explosion identification threshold in parts of Central Asia would rise to about m_b $4\frac{3}{4}$ (6-12 kilotons in hard rock) if the four stations located in the USSR were not in fact installed.

9. In principle it would be possible to improve detection of surface waves by $1/4$ of a magnitude unit by including 36 elements in the long period arrays. Each station would then occupy an area of 15000 km^2 compared with the 7500 km^2 which would be occupied by each of the assumed stations, and there would be a proportionate increase in costs. This possibility was not considered:-

- (a) Because more Research and Development is required to confirm whether or not the discrimination criteria apply with equally high probabilities to events in the magnitude range $m_b 4 - m_b 4\frac{1}{2}$.
- (b) Because dry alluvium of sufficient thickness (about 1000 ft) to contain an explosion up to 10 kilotons is thought to be of fairly common occurrence in the interiors of large continents, so the network, external to the country concerned, could not detect the P signal.

CRITERIA

10. Four parameters have established themselves as reliable criteria for discriminating between earthquakes and explosions:-

- (a) P wave: R wave ratios. Amplitude ($m_p:m_s$), area under the wave train (AR) or spectral ratio distributions for earthquakes and explosions from the same regions are separated such that decisions with 95% probability can be made.
- (b) Depth of source: separates all located events into shallow (less than 50 km deep) and deep.
- (c) First motion.
- (d) Complexity of P wave.

11. Using these criteria, the great majority of earthquakes would be identified at individual stations after relatively simple analysis techniques. A small computer would be installed at each station to assist with data handling and processing.

DATA PROCESSING AND COLLATION

12. A Data Collection and Collation Centre would appear from this study to be a desirable part of the network described. Without it, the network would not maintain common standards of operating, quality control and reporting. The detection/discrimination capacity predicted would not be achieved on a continuing basis.

13. Amplitude, period, and character of P and R waves of unidentified earthquakes, and any explosions, would be transmitted to the Data Collection and Collation Centre by the best available communication channels, together with P onset times of all events. All epicentres would be determined by the Data Centre. Records of events still unidentified would be sent by air mail on request by the Data Centre.

14. The Data Centre would collate and store data which it would provide to any contributing country on request.
15. If it were thought advisable, the Data Centre could also present analyses and the results of applying the criteria to a decision making (technical) body.
16. Experience with Research and Development programmes indicates that the acquisition of this extensive data from the proposed world-wide network of stations should further the physical understanding of the seismic phenomena and of techniques for discrimination, and may thereby lower the identification threshold for explosions.
17. The criteria given above refer to the probabilities of identifying nuclear events which have in fact occurred, but there is a further uncertainty which must be recognised. Seismic records show that one or two earthquakes with magnitudes between $m_b 4\frac{1}{2}$ and $m_b 5$ occur annually in the Northern Hemisphere, which, because of their so far unexplained low surface wave amplitudes, may be wrongly identified as nuclear events.

COST OF THE SYSTEM

18. A very approximate estimate has been made of the cost of installing and operating such a system, based on experience with UK arrays. Excluding any installation costs for the seven existing stations, the cost of installing short and long period arrays at each station, together with a data analysis system for each station, and including the cost of a Data Centre, would not be less than £15m. These costs would include site surveys and engineering, drilling, transport of equipment, and would also include a terminal at the Data Centre for NORSAR, LASA and ALPA long period channels, and for the best short period beam from these arrays. It however assumes that the Data Centre would be so situated that it could draw on computing facilities without capital costs.
19. The total cost of operating the system would not be less than about £5m a year. However, it is expected that the costs of housing and of staff would be borne by the host country for each particular station, and excluding these, the central costs of operating the network would amount to something like £2m a year. This would include station technical maintenance replacements and modification at stations other than ALPA, NORSAR and LASA; data and message communications (existing telegram or telex civil facilities, postage of records - we assume delays of several days to confirm a given event); the costs of staffing and running the Data Centre; and the costs of buying computer time for use by the Data Centre.

HOUSING AND STAFF

20. The basic concept of the network is that each country would house and staff its own station, and would have the right to ask the Data Centre for data from other stations to supplement data from its own.

TIME SCALE

21. It would be technically possible to install the network in about five years following approval to enter the sites chosen. It would then take a year or so for the network to settle down and operate as a unit.
22. The question of location of the Data Centre would need to be discussed. For the purposes of this study, we have assumed a location in the UK, centred on the existing research centre at Blacknest. The Data Centre could be engineered and installed on the same time scale as the rest of the system.

EVASION

23. Apart from "soft rock" decoupling, theoretically it is possible to decouple by a factor of 300 relative to hard rock containment by firing in a cavity excavated in hard rock or salt. Experimentally factors of 50 to 100 have been observed using chemical charges and one nuclear explosion of 0.35 kiloton. A cavity to decouple 10 kilotons would be about 450 ft in diameter, the volume of its spoil being something like that of a coal mine's spoil heap. The extra cost and inconvenience to weapon trials would be considerable. For example, an oil storage reservoir of suitable dimensions has been dissolved out of a salt dome over a period of 4 years at a cost of \$14m. It is not yet known whether such cavities could be used repeatedly, though refrigeration of the cavity may be necessary for repeats at less than two-year intervals. It may be possible to increase the fully decoupled yield in cavities by factors of 2, and the use of heat sinks in the cavity may result in a reduction in the size of the cavity required to decouple a given yield, but no experimental data are available to date.
24. Yields of up to 100 kilotons could be tested, without being seismically detected, by correctly timing the firing sequence in relation to suitably located larger earthquakes, thereby deliberately masking the explosion signals by those of the earthquakes. Earthquakes of magnitudes $m_b 7\frac{1}{2}$ which are required to successfully blanket signals generated by explosions of 100 kilotons occur sporadically at intervals of about once a year on average. Like the "big hole", this adds greatly to the cost and speed of development.
25. Simulation of an earthquake is possible by firing a series of weapons of different yield up to several tens of kilotons. This method of evasion may fail however because, unlike decoupling and signal masking, the signals would be detected and analysed; the surface wave spectra for example could be characteristic of explosions. This uncertainty constitutes a considerable deterrent.

26. Other than soft rock decoupling, none of these evasion techniques has been demonstrated experimentally for yields greater than 0.35 kiloton.

CONCLUSION

27. This working paper defines the capability and costs of a practical monitoring network given the present state of the art in seismology and evasion. There seems to be little point in defining a more elaborate and costly system at this stage because discrimination criteria for low magnitude events ($m_b 4 - m_b 4\frac{1}{2}$) are not yet proven, and because in the larger countries signals from explosions of about 10 kilotons ($m_b 4\frac{3}{4} - m_b 5$) and less, fired in dry alluvium, may not be detected by the external portion of the network.

28. More detailed studies of siting, communication and system problems could be made available, and work on these in the UK is continuing.

APPENDIX A

A TEST BAN GLOSSARY

Detection	Recognizable P signal at one station.
Location	Recognizable P signal at four stations.
Identification, discrimination	Earthquake or explosion source diagnosed with 90% probability of being correct by ratio of P:R wave recordings at three stations.
Unidentified	Evidence for one or other with less than 90% probability.
P wave	Elastic body wave in which particle motion is in the direction of propagation. Optimum signal/noise in the (short period) 1 - 2 Hz band at long distances.
R wave	A type of wave propagated along a free surface of an elastic body, e.g. the earth. Particle motion is elliptical and retrograde in the vertical plane containing the direction of propagation. Velocity of wave propagation increases with depth, so the wave is frequency dispersive. At long distance the optimum signal/noise lies in the (long period) band 12 - 40 s period for relatively small events. (Relatively small source volumes.)
First motion	Initial displacement of ground under seismometer. Caused by compressional (upward) or dilational (downward) P wave. Indicates motion away from or towards source respectively. Only earthquakes have mechanism which can cause downward motion towards the source.
Depth of focus	Depth below ground zero (epicentre) of weapon or earthquake.
Complexity	Ratio of first 5 s to next 25 s of seismic energy arriving at recording station.
Seismic area	Linear zones in which earthquakes frequently occur - usually areas of new or very recent mountain building.
Aseismic area	Area in which earthquakes rarely occur - usually low lying areas of very ancient rocks (= shield areas).

Signal to Noise Ratio
(SNR)

The amplitude, or energy, ratio of the detected signal with respect to background noise.

Background Noise

Seismic noise which peaks sharply in amplitude at 6 s period, i.e. between the optimum (SNR) bands of the P and R waves, with minor peak at 18 s. Characteristic periods are determined by crustal structure. For oceanic crust this period is 6 s, for the continental crust 18 s.

Magnitude

m_b derived from
observed P wave
amplitude

m_s derived from
observed R wave
amplitude

An arbitrary (logarithmic) scale devised to measure the relative sizes of earthquakes. Magnitude zero is defined with respect to a trace amplitude of 1 mm recorded by a specified instrument at a distance of 100 km. Empirical amplitude-distance curves are used to normalize observed amplitudes. Scatter of $\pm \frac{1}{2}$ magnitude due to deviations from a homogeneous condition at source and receiver, to interference of P wave by surface reflected echo, and to lobe pattern of radiation by earthquakes. Magnitude-yield relation varies with rock type and regional structure; for "hard" rock, observed to be 1 - 3 ktons at $m_b 4$, and 10 - 30 ktons at $m_b 5$.

Decoupling

Reduction of magnitude for a given yield with respect to a "hard" rock source by firing:-

- (a) in "soft" rocks. Dry alluvium, the most common of the high porosity ("soft") rocks, reduces the amplitude of the P signal by an order of magnitude relative to that radiated from a granite ("hard") source rock.
- (b) in a cavity large enough to deform elastically when the pressure pulse reaches the cavity walls. The radius required is smaller than that of the elastic "cavity" round a fully coupled explosion and the radiated seismic energy is reduced by a factor of 104, corresponding amplitudes by 10^2 relative to hard rock source. (b) is the extreme case of (a).

Evasion

Any method by which a country can carry out a nuclear test and not be found out by seismic observation. Methods of evasion include: (assuming a monitoring system outside the country making the test), firing an explosion that is too small to be identified; decoupling

larger explosions to reduce seismic signals to below the identification threshold; firing an explosion soon after an earthquake so that the explosion signal gets confused with the earthquake signal; attempting to simulate an earthquake by firing a series of explosions at carefully chosen intervals. The technical capability of the monitoring network must be estimated beforehand.

"Hard" rocks

(Igneous: crystallized from a melt)

(Sedimentary: eroded and redeposited by water or wind, consolidated, "cemented")

Low porosity rocks. Granitic rocks are characterized by SiO_2 (quartz) and alkali silicate minerals (feldspars). The glassy (rapidly cooled) rock of this composition is called rhyolite. Basaltic rocks are characterized by the absence of free silica and the presence of ferro-magnesium silicates (olivines). LONGSHOT was fired in this kind of material. Among the sedimentary rocks, some limestones and shales have low porosities.

"Soft" rocks

(Unconsolidated or partly consolidated sedimentary rocks)

Medium to highly porous rocks. Tuff is an example of moderately porous, friable rock formed from volcanic dust. Water saturated tuff couples almost as well as does hard rocks. Alluvium is a highly porous, unconsolidated, wind blown (loess) or waterborne material, mainly composed of silica and clay minerals. Usually water saturated at depths of a few hundred feet, but in arid or semi arid upland plains (e.g. Nevada) thicknesses of several hundred feet of dry alluvium may be found. The thick deposits of loess in China are fully documented in school texts as giving the Yangtse Kiang its name. Decoupling factors drop from between 10/20 to between 2 and 4 in water saturated alluvium.

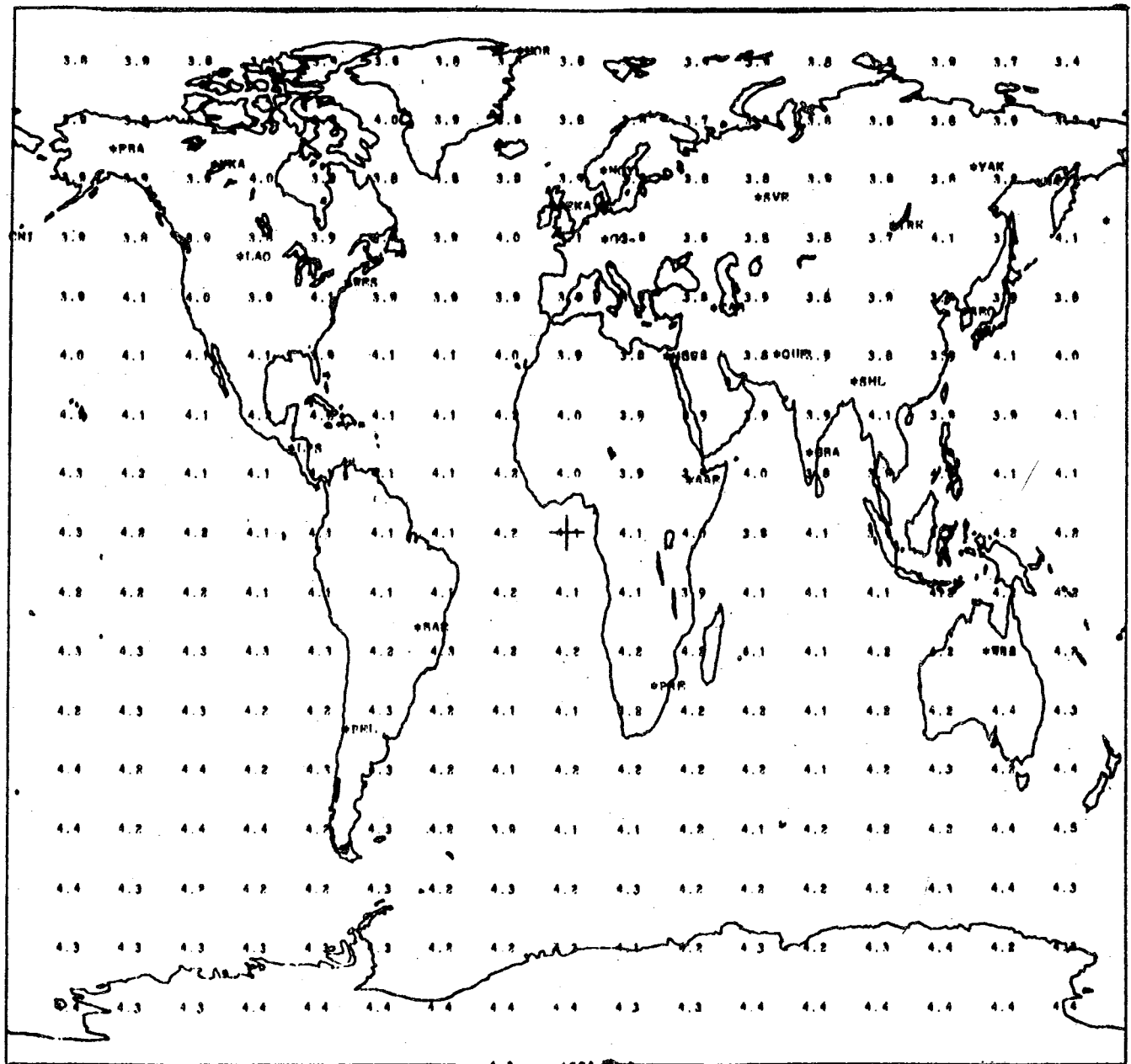
One rock type grades into the next. The above types are all found in Nevada, and probably represent the extremes in the context of magnitude/yield. Flowshare experiments which are planned in other varieties can be used to test this statement.

LASA, ALPA, NORSA

Large arrays sponsored by ARPA for Vela Uniform programme. Sited in Montana, Alaska and Norway respectively. The latter two are still under construction.

MAP A

The P-wave detection threshold for earthquakes and explosions, which is predicted when the stations specified in the text are deployed as illustrated. At least four stations are specified to locate events. The figures are in m_b units.

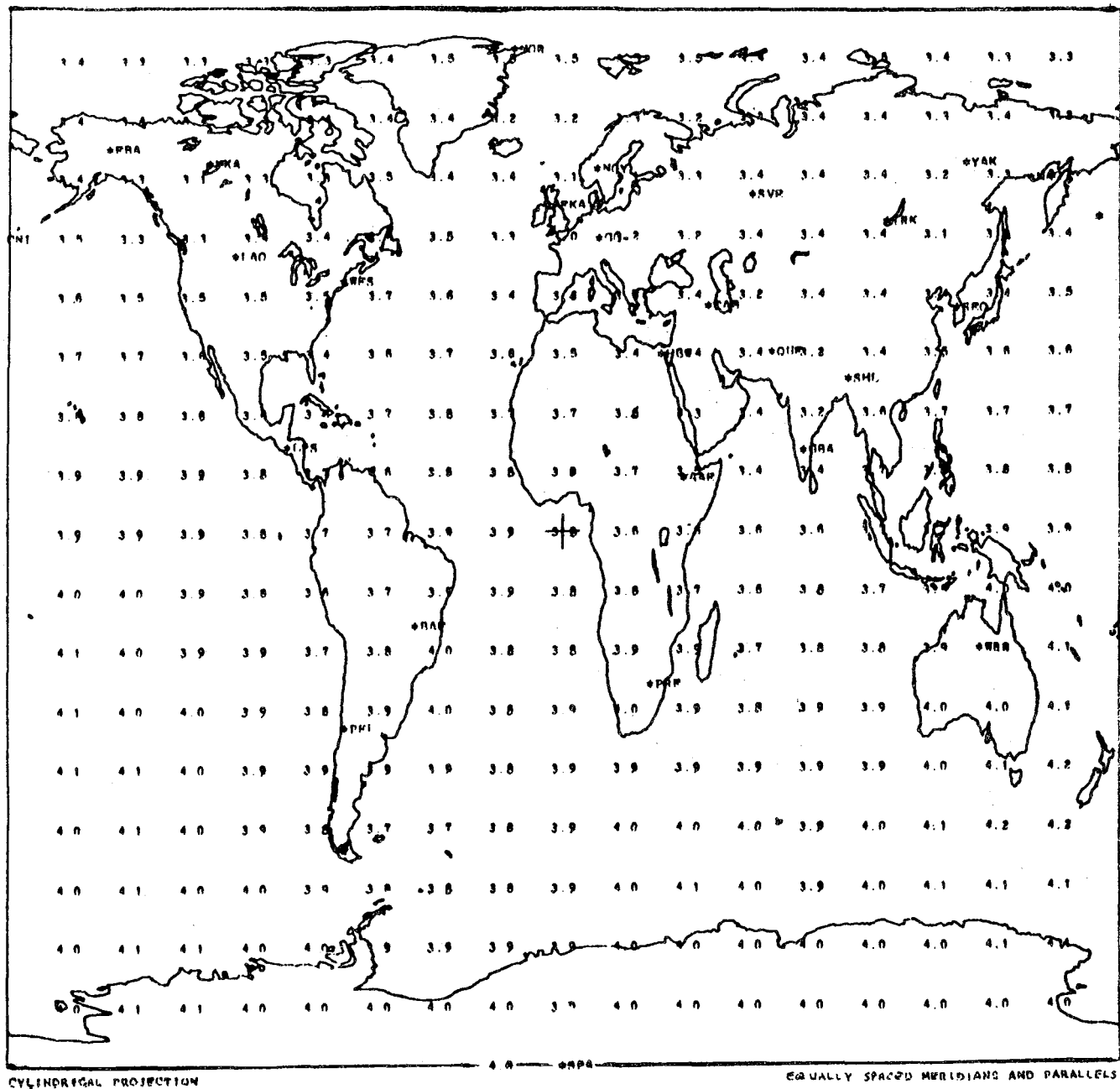


CYLINDRICAL PROJECTION

EQUALLY SPACED MERIDIANS AND PARALLELS

KAR B

The R-wave detection threshold in terms of m_b for earthquakes, which is predicted after completing the processing of the record, and assuming the seismometers have individual magnifications of 100,000. At least three stations, of the kind specified in the text, must record the signal at a signal-to-noise ratio of 2.



CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/297

30 July 1970

Original: ENGLISH

BURMA, ETHIOPIA, MEXICO, MOROCCO, NIGERIA,
PAKISTAN, SWEDEN, UNITED ARAB REPUBLIC AND
YUGOSLAVIA

Working Paper on the Draft Treaty on the Prohibition of the
Emplacement of Nuclear Weapons and other Weapons of Mass
Destruction on the Sea-bed and the Ocean Floor and in the
Subsoil thereof (CCD/269/Rev.2)

1. In Article III, para 2, the words "shall be notified of, and" should be deleted and the following added: "The State Party initiating the verification procedure shall notify all other Parties of the beginning of such a procedure, as well as of the results of the verification, directly or through the United Nations."
2. To Article III, para 5, should be added the words "or through appropriate international procedures within the framework of the United Nations and in accordance with its Charter."
3. A new article should be added to the present text, preferably after the present Article IV. This new article, which would thus become Article V, would read:
"Each of the Parties to the Treaty undertakes to continue negotiations in good faith on further measures relating to a more comprehensive prohibition of the use for military purposes of the sea-bed and the ocean floor and the subsoil thereof."

GE.70-16902

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/298

4 August 1970

Original: ENGLISH

UNITED STATES

Working Paper introducing "Seismic Data from Rulison"

On September 10, 1969, the Atomic Energy Commission detonated an underground nuclear device in northwestern Colorado. The experiment, designated Project RULISON, was carried out under the AEC's Flowshare programme to develop peaceful uses of nuclear energy. RULISON, which was designed to stimulate natural gas recovery from a formation of low permeability, had the following source parameters:

Date:	September 10, 1969
Origin time:	21:00:00.1 G.M.T.
Geographic Co-ordinates:	39.406° N 107.948° W
Surface Elevation:	8,154 feet (above sea level)
Shot depth:	8,425 feet (beneath the surface)
Yield:	40 kilotons (planned)
Medium:	Cretaceous sandstone and shale

In addition, RULISON was utilized as a seismic experiment by fielding temporary measurement stations and by collecting data from permanent seismic stations. RULISON thereby served as the initial implementation of the U.S. Seismic Investigation Proposal presented to the United Nations General Assembly on December 5, 1968. To foster the exchange of seismic data and to assure that studies concerning the seismic character of explosions could be conducted, the Coast and Geodetic Survey sent pre- and post-shot advisories to the international seismological community. Those notified included seismograph station directors and scientific organizations throughout the world. After the explosion, the Coast and Geodetic Survey collected seismograms covering the event and arranged to make copies of the records available upon request from the Seismological Data Center of the Environmental Science Services Administration.

It is on the basis of the above information that the report being circulated to the CCD today, entitled "Seismic Data from RULISON," was prepared by the Coast and Geodetic Survey under the sponsorship of the United States Arms Control and

GE.70-17433

Disarmament Agency. The purpose of the report is to present a comprehensive resume of seismic data from RULISON, including travel times and amplitudes of the principal phases and the associated body- and surface-wave magnitudes. A representative collection of RULISON seismic signals, arranged in order of increasing distance, has also been included.

In summary, teleseismic data from RULISON indicated an average body-wave magnitude of 4.9. Teleseismic surface waves with periods primarily in the 10- to 12-sec range indicated an associated surface-wave magnitude of 4.5. The amplitudes of principal phases from RULISON indicate more efficient wave propagation in Eastern North America than in Western North America.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/299
6 August 1970

Original: ENGLISH

CZECHOSLOVAKIA

Working paper on the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons and on the destruction of such weapons

The resolution of the XXIV General Assembly of the United Nations A/2603 (XXIV) has expressed the conviction that the "prospects for peace throughout the world would brighten significantly if the development, production and stockpiling of chemical and bacteriological (biological) agents intended for purposes of war were to end and if they were eliminated from all military arsenals" and therefore requested the Conference of the Committee on Disarmament "to submit a report on progress on all aspects of the problem of the elimination of chemical and bacteriological (biological) weapons to the General Assembly at its twenty-fifth session".

The Czechoslovak delegation considers it necessary to point out to the following aspects of the prohibition of chemical and bacteriological weapons:

1. Chemical and bacteriological weapons form one whole. Prohibition of one type of these weapons could incite the equipment of armies with the other type of weapons. Both categories of these warfare means as a whole create the possibility of a special warfare - the so-called "toxic war" in the terminology of some military experts (cf. for example, Rothschild, Tomorrow's Weapons). The basic characteristics of the two categories of agents is their non-selectiveness, small foreseeability of their effect, impossibility of an effective protection of population, etc. These properties evoke a general moral opposition to chemical and bacteriological weapons as a whole.

Chemical and bacteriological weapons form a special group of means of warfare aimed at:

- temporary disablement of men,
- or their liquidation without affecting other (material) values,
- or selective extermination of farm animals or plants.

Should individual agents (biological as well as chemical ones) be effectively used for military purposes, they would have to be incorporated in a "weapon system" (cf. Secretary-General's report A/7575/Rev.1, page 9).

GE.70-17452

The "weapon system" is the same for both categories of weapons: analogical ways of spreading, means of delivery to the target, verification of their effectiveness in the field, appropriate storing, personnel training, principles of protection, etc. Therefore both types of weapons are usually concentrated in one branch of army.

Separate prohibition of one type would therefore permit the existence and development of the whole system which could be completed with the other type of weapons at any time and without any greater difficulty.

The tendency to separate chemical and bacteriological weapons, motivated by allegations that they are completely different, can therefore be explained only by political and military considerations of some countries and is incompatible with the approach that has been applied in all international negotiations on this question, namely in the Geneva Protocol of 1925, in the Paris Treaty of 1954, in the Austria Treaty of 1955, in both draft treaties on general and complete disarmament submitted by the USSR and the United States of America respectively, and in military manuals and considerations of all countries.

2. Bacteriological and chemical weapons represent two categories of means of warfare which can be defined by their origin, way of interaction with organism and by other characteristic properties. Classification of some substances is uncertain: for example bacterial toxins (biological substances by their origin, chemical by the character of their effect on organism) are the best-known representatives of this group today, but the number of such substances may increase as the time goes on. Better knowledge of the effects of the agents we know today may lead to changes in their classification, or new substances with uncertain (mixed) characteristics may be synthesized, etc. It is known, for example, that nucleic acids, which are carriers of virus activity and can cause disease themselves, can be isolated from pathogenic viruses. Detailed enumeration of agents of both categories, having a lasting or sufficiently long validity, is impossible due to the permanent progress of knowledge and to the expansion of both categories.

The determining principle for classifying biological agents or chemical substances as bacteriological or chemical weapon is, however, their military use against men, farm animals or plants.

3. Bacterial toxins are by the way of their production and by the character of their effect closely related to other poisons and are normally - despite their biological origin - listed under chemical weapons (cf. Secretary-General's report A/7575/Rev.1). Toxins do not differ from other poisons used as a chemical weapon. If their effect and

military use are the same as those of other poisonous substances, this proves that a dividing line cannot be drawn between biological and chemical weapons. Separation of toxins could be an attempt to a new treatment of chemical and bacteriological weapons, that is, to their division into deadly and temporary disabling ones (defoliants, herbicides, etc.).

Separation of toxins has political aspects connected with new concepts of military strategy of some countries. Such a development would not lead to any solution -- on the contrary, it would make the whole question even more complicated.

4. All studies dealing with the possible way of verification as regards the production of chemical and bacteriological weapons show that this question is very complicated, that it cannot be solved by purely technical methods on international scale. Difficulties connected with the verification problem, however, must not become a determining factor for the possibility of an agreement which would require, above all, a political decision. This idea is also contained in the report of SIPRI, 1970, where in its Part IV it is stated that in the last few years it has become increasingly true to say that the real obstacles to disarmament are the momentum of the arms race and the political problems of stopping it, not the technical problems of verification.

If the question of verification is not to become an artificial brake of the treaty by bringing in complicated technical problems, it is necessary that the parties to the treaty should agree upon such a procedure which would be based on a certain degree of trust.

National self-inspection and supervision seem to be the most suitable fundamental methods of verification. Each State would adopt, in conformity with its constitutional procedure, the necessary legislative and administrative measures concerning the prohibition of the development, production and stockpiling of chemical and bacteriological weapons and the destruction of such weapons. National self-supervision could be carried out by national bodies having an international reputation (for example, Academy of Sciences, etc.) or in other forms.

Problems arising in connexion with the verification would be clarified at consultations between the parties to the treaty. Complaints on the violation of the treaty would be considered by the Security Council which would adopt the most suitable procedure for this purpose.

CANADA

Working Paper on the Verification of Prohibitions of
the Development, Production, Stockpiling and the Use
of Chemical and Biological Weapons

1. The central problem area in the negotiations to strengthen and to supplement the Geneva Protocol of 1925 by prohibiting the development, production and stockpiling of chemical and biological weapons, is verification. Clearly, the technical and political considerations related to the negotiation of verification procedures are intrinsically interdependent. Although science may provide assistance in devising methods of detection, surveillance and data analysis, the political intentions of all countries concerned will be the decisive factor in resolving the verification problem.
2. Every international agreement involves the acceptance, by parties to the agreement, of an element of risk of evasion or violation of the agreement. In arms control agreements this risk is directly related to vital security interests. Any country contemplating a violation of an arms control agreement would undoubtedly estimate the probability of detection or of successful evasion of any agreed prohibitions, and the adverse consequences resulting from verification of such a violation. The verification regime should serve as a deterrent to any violation. The risk that some party might successfully evade or violate an agreement should be reduced to the lowest possible level through verification procedures that are adequate and politically acceptable.
3. Verification procedures which are adequate for the prohibition of chemical and biological warfare will have to be complex, sophisticated and as reliable as can be conceived by utilizing modern data-processing methods. The relative ease with which chemical or biological weapons can be acquired through clandestine development, production and stockpiling renders detection of contravention of a ban on chemical and biological weapons particularly difficult.
4. The verification of a prohibition of chemical warfare involves difficulties of a different dimension from those encountered in the prohibition of biological warfare because of the widespread use in commercial industry of many chemicals which can also be used in the production of chemical agents of warfare. Although there are some common integers, many more are unique to each type of warfare.

5. Verification by complaint procedure as proposed in the British draft convention is, at present, probably the only feasible approach to supplementary prohibitions of biological warfare. This type of warfare is at a relatively early stage of development; moreover, there is no evidence that biological agents have ever been used as modern military weapons, and their utility as a weapon is open to question. Efforts to devise verification mechanisms other than those involved in the investigation of complaints concerning use, development, production or stockpiling of biological weapons seem technically futile because of the high risk of undetected evasion of any other procedures that might be promulgated. In the light of all these factors a political decision by governments accepting the risks inherent in verification through a complaint procedure for biological warfare would appear to be the most logical solution.
6. Different criteria must be considered in relation to chemical warfare which has been used extensively during this century and has attained a relatively sophisticated degree of development. Chemical weapons or components of them are known to be stockpiled in the arsenals of a number of countries and their potential uses in warfare are not in question.
7. Virtually all of the working papers submitted to the Committee to date concentrate on efforts to overcome the difficulties in verification for chemical weapons; they are postulated on the apparent consensus that the prohibition of the development, production and stockpiling of chemical and biological weapons cannot be verified by national means alone and that there is a requirement for some "international" procedures.
8. Within and beyond the broadly accepted point of view that verification is the crux of the problem and that international procedures for this purpose are required, there is a wide array of opinions and suggestions, some procedural and some substantive, ranging from proposals for verification by challenge to arguments for on-site inspection. Without attempting to interpret these views, the following represents a summary of the various proposals put forward to date as an indication of the types of approach which have been suggested.
 - (a) The draft convention on biological warfare proposed by Britain (ENDC/255/Rev.1) specifies verification procedures that call for any complaint concerning use of biological warfare to be lodged with the Secretary-General of the United Nations and any other complaint concerning breach of the convention to be lodged with the Security Council. Complaints of all kinds would be investigated immediately and a report would be submitted to the Security Council.

- (b) The draft convention proposed by the USSR and its allies (A/7655) envisages an "obligation to consult and co-operate in solving questions which may arise in connexion with the observation of the provisions of the present convention". A separate article notes that "each State party to the convention shall be internationally responsible for compliance with its provisions by legal and physical persons exercising their activities in its territory and also by its legal and physical persons outside its territory".
- (c) Hungary, Mongolia and Poland introduced an amendment to the Soviet-sponsored draft convention (CCD/285) providing for complaints of alleged violation of the convention to be lodged with the United Nations Security Council which would undertake any necessary measures to investigate complaints.
- (d) Sweden has presented suggestions (CCD/PV.463) based on the concepts of "open information and internationalization" and has outlined a system of verification by challenge and of the obligations on parties with respect to verification which would be incorporated in a comprehensive convention.
- (e) Yugoslavia has suggested (CCD/PV.465) a systematic elaboration of legal measures for national renunciations and controls, declarations and analysis of open information as a basis for further controls and international measures to be taken in cases of suspicion or of actual violations.
- (f) Mongolia has suggested (CCD/PV.464) that special government agencies might be established to enforce compliance with prohibitions on chemical and biological warfare in a manner similar to that in the 1961 Single Convention on Narcotic Drugs.
- (g) Japan has proposed that a group of experts study various technical aspects of verifying a ban on chemical and biological weapons. It has also elaborated (CCD/PV.456) a complaints procedure through a roster of experts on call by the United Nations Secretary-General and proposed other procedures based on possible checkpoints in the weapons production cycle.
- (h) A USA working paper (CCD/293) on the relationship between chemical weapons and peaceful chemical production deals with one of the specific problems to be overcome in the establishment of satisfactory verification procedures and concludes that off-site observation is inadequate.
- (i) An Italian working paper (CCD/289) outlined a negotiating process for further detailed explorations of the problem of verification of any convention or conventions.

(j) Morocco has proposed (CCD/295) a comprehensive agreement prohibiting chemical and biological warfare with separate verification procedures for biological and chemical weapons. Verification procedures for biological weapons would be included in the treaty; verification procedures for chemical weapons would be negotiated in a prescribed period of time and then attached to the Convention as a supplementary document.

9. Even a cursory analysis of these proposals, which merit the most careful consideration, reveals that in the establishment of any adequate verification system, a combination of national and international procedures will be required. Various proposals relating to verification of a ban on chemical weapons urge the development of some monitoring system based on economic information. Others suggest the exploration of the sources of all available data - both that which has been published or is freely available, and that which governments would be prepared to make available. Compilation and collation of this information in a coherent form would serve as a useful first step in the development and negotiation of agreed verification procedures. For these purposes various relevant questions might serve to differentiate between aspects on which adequate information may be already available and other areas where special procedures may have to be devised.

10. It is evident that additional information is needed to facilitate the examination of the complex political and technical problems involved in verifying a ban on the development, production, stockpiling and use of chemical and biological agents of warfare. If such information could be made available, it would assist in developing a consensus concerning which measures to strengthen and supplement the Geneva Protocol could be negotiated. With this view in mind, member governments might consider the following questions:

A. National Policy and Controls

- (1) Some governments have made declarations concerning their present policies on the development, production and stockpiling of chemical and biological weapons or agents of warfare and their views concerning the right of retaliation retained through reservations they may attach to the Geneva Protocol of 1925. Would other governments be willing to state or present their policies or views on these issues?
- (2) What national controls are already in force governing the development, production, stockpiling or use of chemical and biological agents that are capable of being used or converted to use in the development or production of chemical or biological weapons?

B. Chemical Warfare

I. Production

- (1) Are annual production figures for the years 1968 and 1969 published or readily available for the following chemicals: phosphorus, phosphorus pentasulphide, phosphorus pentachloride, phosphorus trichloride, phosphorus oxychloride, dimethylphosphite, methylphosphonic dichloride, diethylamino ethyl alcohol, pinacolyl alcohol, carbonyl chloride (phosgene), hydrogen cyanide, cyanogen chloride, thiodiglycol, sulphur dichloride, ethylene, all organophosphorus compounds with a toxicity less than 200 micrograms per Kg intravenously?
- (2) Is information concerning end-products of these chemicals available and are governments prepared to collect and provide such data?
- (3) Is governmental approval or licensing required for the production of any of the above chemicals or for products using these chemicals in their production?
- (4) Is it feasible to obtain information concerning all governmental and non-governmental facilities producing or using any of the above chemicals?

II. Stockpiling of Chemicals

- (1) Are figures available for 1968 and 1969 on quantities of the above chemicals or end-products that are stockpiled in the countries concerned?
- (2) Would governments be prepared to provide a list of locations where any of the above chemicals or end-products derived from them are stockpiled?
- (3) Are export or import permits or declarations required and if so are any of the above chemicals or end-products derived from them imported or exported from the country?
- (4) Is it possible to identify the importer or exporter?
- (5) What safety regulations are applicable to the production, stockpiling and transportation of any of the above chemicals?

III. Research and Development

- (1) Are the locations and descriptions of government controlled facilities for research and development of chemical agents and similar information concerning all non-governmental research and development facilities available or can these be provided?
- (2) Under what conditions would governments be willing to consider the cessation of all training of troops for offensive action related to chemical and biological warfare?

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/301

6 August 1970

Original: ENGLISH

JAPAN

Working Paper on the Question of the Prohibition of Chemical Weapons

1. Report of statistics

(1) With regard to the verification of compliance with the prohibition of the production of chemical agents, we shall have to be content with recourse to ad hoc inspections based on complaint procedures. At the same time, it would be desirable to establish a reporting system on the statistics of certain chemical substances concerning the amount of their production, preferably on a factory basis, exportation and importation as well as consumption for different purposes, so that those statistics might be used as part of the data forming the evidence for a possible complaint.

Since it is impracticable to report the statistics of all chemical substances, it would be necessary to limit the scope of the items to be reported on. We feel that a certain level of lethal dose by hypodermic injection could be employed as a criterion for this purpose. In suggesting this, we have taken into account the fact that the information we have on the lethal dose of various chemicals has been obtained more from experiments on animals by hypodermic injection than from those by intraperitoneal or intravenous injection or by dosing through their mouths.

As the level of lethal dose (LD 50) to be employed as the criterion, we suggest 0.5 milligrams per kilogram of body weight. That suggestion is based on the consideration that among organophosphorus compounds, which have the most poisonous effects of all chemically synthesized substances today, none, having a poisonous effect not less than the level mentioned above, is used for peaceful purposes. A dose of 0.5 milligrams per kilogram of body weight by hypodermic injection has a lethal effect equivalent to that of a dose of about 1.0 milligram per kilogram of body weight administered through the mouth.

(2) The following are the categories which the chemical substances mentioned above come under.

GE.70-17464

(a) Nerve agents (e.g.)

VX
Sarin
Soman
Tabun
Diethoxyphosphorylthiocholine
Diethyl-S-(2-triethylammonium-ethyl)-
thiophosphate
Dimethyl-S- $\sqrt{2}$ -(S'-ethyl-S'-ethylthioethyl-
sulfonium)-ethyl]-thiophosphate

(b) Toxins (e.g.)

Botulinus toxin
Tetrodotoxin
Ricin
Shikkimotoxin

(c) Alkaloids

Aconitine
Gelsemicine

(d) Plant heart poisons (Cardiac-active glycoside)

Scillaren
Digitoxin

The substances listed in (a) are nerve agents of the organophosphorus family. Although they do have the same effects as ordinary insecticides and bacteriocides, they are unsuitable for such peaceful purposes because their toxic effects are much too powerful. Toxins, alkaloids and plant heart poisons are chemical substances derived from animals, plants or microbes. While toxins are high molecular substances consisting mainly of protein and have an antigenous effect, alkaloids are low molecular substances and have no antigenous effects. Alkaloids and plant heart poisons are used for medical purposes in very small doses. Although some of the alkaloids and plant heart poisons may be chemically synthesized for academic purposes, it is through the extraction from plants that those substances are produced in any significant quantity.

(3) On the basis of the above considerations, relevant items to be reported on would be nerve agents of the organophosphorus family and the intermediates in their production. Since nerve agents themselves cannot be used for peaceful purposes and should be unconditionally prohibited, it would not make sense to require statistics

on them. Accordingly, the items to be reported on could be limited to the following seven kinds of substances: yellow phosphorus, phosphorus trichloride, phosphorus oxychloride, phosphorus pentachloride, phosphorus pentasulfide, dimethylphosphite and methylphosphonic dichloride. They are intermediates not only in the production of nerve agents but also in industry for peaceful purposes.

If new chemical substances were discovered whose poisonous effect equals or exceeds the level mentioned earlier, it would be necessary to consider the addition of such substances and their intermediates to the list of items to be reported on. In order to do this, those chemicals whose poisonous effects are reported in academic periodicals or meetings to be the same or more than the level suggested above and new chemicals which have been made public without any reference to their toxic effects and which experts picked out as those which might have considerable toxic effects must be tested by an appropriate international research institute.

2. Technical method of on-site inspection

As a possible technical method of on-site inspection of the production of chemical agents, the following one might be considered.

In recent years techniques of microanalysis have been developed to check quantitatively the contamination of rivers or living things by agricultural chemicals. Those techniques could also be applied in on-site inspections. For instance, we should be able to apply improved gaschromatography to microanalyze substances from the chemical plant concerned existing in very small quantities in liquid wastes, the soil and dust in and around the premises, on the production devices or on the workers' clothes. If an emission electrode for a flame thermionic detector is attached to the nozzle of a flame ionization detector in gaschromatography, a high sensitivity will be shown by phosphorus compounds and the minimum amount detectable will be 1×10^{-13} g/sec. Therefore, by using this method of gaschromatography, it would be possible to identify an unknown substance contained in a sample by comparing its retention time with that of authentic substances, such as VX.

Even when the substance itself cannot be identified through the method described above, we could obtain considerable information by detecting the

phosphorus, halogens and sulphur possibly contained in the substance. If we use a coulometry detector, the minimum amount required for detecting sulphur and halogen compounds will be 1×10^{-8} g. Employing that method in combination with other analytical methods, it might be possible even to determine the chemical structure of the unknown substance.

VX, Sarin and Soman have in their structures phosphoromethyl (alkyl) bonds which do not cleave in mild decomposition. Therefore, it would be useful for the detection of the development, production and stockpiling of nerve agents of the organophosphorus family to check whether chemicals with phosphorus-methyl (alkyl) bonds might be found in liquid wastes, etc.

YUGOSLAVIA

Working Paper

on the Elements for a System of Control of the Complete
Prohibition of Chemical and Biological Weapons

Consideration of the complex problem of chemical and biological weapons clearly indicates, that in the assessment of most countries it is indispensable and possible to reach as a matter of urgency an agreement on the prohibition of the development, production and stockpiling of all chemical and biological agents for war purposes and on their elimination from existing arsenals.

Consideration of this question has also demonstrated that one of the key problems of its solution is the question of control or verification of the fulfilment of the obligations under a treaty on the total prohibition of these weapons.

A study of the question of control leads to certain conclusions which could provide a basis for further efforts:

First, there is a need to control the fulfilment of the complete prohibition of chemical and biological weapons under the treaty.

Second, it appears that it would be possible to introduce a type of control that would be appropriate, adequate and politically acceptable even under the conditions prevailing in the world today.

Third, the success of the control will largely depend on the degree of political readiness on the part of governments to accept control. Technical problems do exist, but their solution seems to be possible if a positive political decision is taken.

Control of the complete prohibition of chemical and biological weapons, in order to be purposeful and at the same time politically acceptable, should above all meet the following requirements:

1. It should be effective to the point of leaving no possibility for secret violation of the treaty of major significance.

2. It should not inflict commercial or other damage through the disclosure of industrial, scientific or other secrets.

3. Its functioning should be relatively easy and simple, at both the national and international level.

4. The cost of control system should be kept to a minimum.

Obviously, it would be impossible to maintain one hundred per cent control over all institutions and installations which could be utilized for research, development and production of chemical and biological weapons. However, such control is not necessary to achieve the desired objective.

It is evident that it would not be possible by any reasonable kind of control to prevent the clandestine production of limited quantities of chemical and biological weapons, which would have no real military significance.

In devising such a control system the overall operation of which would provide sufficient guarantees for each party to a treaty, two categories of measures may be required:

1. NATIONAL LEGISLATIVE MEASURES OF RENUNCIATION AND SELF-CONTROL BY EACH COUNTRY

(a) The enactment of a law prohibiting research for weapons purposes and of the development, production or stockpiling of agents for chemical and biological weapons.

(b) The enactment of a law for the compulsory publication of certain data from this sphere, which would facilitate international control, as for instance, the names of institutions and facilities engaged in or which, by their nature, could engage in the activities prohibited under the treaty. Certain data concerning the production of such materials or agents which could be used for the production of chemical or biological weapons would be regularly submitted to an international organ. The general list of such data would be established by the treaty itself, in an annex.

(c) The taking and promulgation of a decision to eliminate existing stockpiles and to abolish proving grounds for the testing of these weapons, and all installations related exclusively to such weapons.

(d) The cessation of training of troops in the use of chemical and biological weapons and the deletion from army manuals of all such instructions with the exception of those sections dealing with protection against chemical and biological weapons.

It is self-evident that a treaty on the Complete Prohibition of All Chemical and Biological Weapons will also preserve the rights of countries to continue research, development and production of means of protection.

Some of the present military institutions in this field could be re-adapted for research work for peaceful purposes or for protection, in keeping with the provisions of the treaty regulating these matters.

In enacting such laws, an exception could be made, in line with the provisions of the treaty on the Complete Prohibition of Chemical and Biological Weapons, for types and quantities of agents used for riot control purposes within the country.

The enforcement of these laws would be left up to each individual state.

National legislative measures of renunciation and self-control should represent the most important group of measures and the main deterrent to possible violation of the treaty on the complete prohibition of chemical and biological weapons.

All national legislative measures of renunciation and self-control by each country should be preceded by the enactment of a law placing under civilian administration or control - the Ministry of Health, the Ministry of Industry or a similar organ - all institutions now engaged in the research, development or production of chemical and biological weapons. Such a measure would significantly facilitate the implementation of the treaty and reduce the possibilities for illegal production of chemical and biological weapons.

2. MEASURES OF INTERNATIONAL CONTROL

(a) The collection of certain data which States would publish and report in line with their internal legislation (Item (b) from the first group of measures), and other relevant information which could indicate whether any prohibited activity was being undertaken.

The collection, receipt of reports and analysis of these data would be carried out by an international organ, one of those already in existence or one that would be especially set up for this purpose, which might also discharge other functions in connexion with the control of the prohibition of chemical and biological weapons.

(b) Governments should, at their own initiative, and within the framework of consultations and co-operation in good faith, if the need arises, make it possible through an appropriately regulated procedure, in accordance with the concept of verification by challenge, to ascertain that there is no activity on their territory prohibited by the treaty.

(c) The complaints procedure to the Security Council.

PROCEDURE IN CASE OF SUSPICION OF VIOLATION

In case any party to the treaty harbours any doubts about the implementation of provisions of the treaty by any other party, it should enter into discussions and consultations with such other party with a view to clarifying the situation and removing such doubts.

In case of suspicion that the treaty on the complete prohibition of chemical and biological weapons has been violated, a State harbouring the suspicion, should inform other parties to the treaty and also apply to the international organ, submitting the necessary information for the purpose of preliminary investigation, which should be provided for.

On this basis, the international organ would contact the state under suspicion, for the purpose of making relevant enquiries or conducting a preliminary investigation to ascertain whether the suspicion is founded.

If the procedure undertaken does not yield a satisfactory solution, the country under suspicion may offer verification under the "verification by challenge" procedure.

If the State harbouring the suspicion considers it has not received a satisfactory reply after this procedure, it may address itself to the Security Council which would endeavour urgently to find a solution.

The right of countries to address themselves to the Security Council remains unaffected and they may resort to it at any stage of the above procedure.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/303
6 August 1970

ENGLISH
Original: RUSSIAN

Union of Soviet Socialist Republics

Working Paper on the complete prohibition of chemical and bacteriological weapons

1. The main problem as regards chemical and bacteriological weapons is to achieve their complete prohibition, namely the prohibition of their use, development, production and stockpiling and the destruction of stocks of such weapons.

The problem of prohibiting the use of chemical and bacteriological weapons is solved by the Geneva Protocol of 1925. This Protocol, to which about seventy States are parties, embodies an important and generally recognized rule of international law prohibiting the use of chemical and bacteriological warfare methods. It may be noted with satisfaction that the Protocol has recently been ratified by Japan and Brazil. However, the United States of America, which has a very highly developed chemical industry and produces and uses chemical means of warfare, is as yet not a party to it. In the present situation, in order to bring about a general renunciation of the use of chemical and bacteriological weapons and thereby make the Geneva Protocol more effective, all States of military importance, and in particular the United States of America, must by acceding to the Geneva Protocol undertake not to use chemical or bacteriological means for military purposes.

The complete prohibition of chemical and bacteriological weapons can only be achieved by the renunciation on the part of States of the development, production and stockpiling of such weapons and by their undertaking to destroy such weapons. It is this solution of the problem of chemical and bacteriological weapons which is envisaged in the draft convention of the nine socialist countries.

2. The conclusion of a convention on the prohibition of the production and stockpiling of chemical and bacteriological weapons and on the destruction of such weapons, widely acceded to by States throughout the world, is aimed to lead to the complete elimination of such weapons. This would complete the process which was initiated by

the conclusion of the 1925 Geneva Protocol. It would also solve the question of the reservations to the Protocol entered by a number of States. Those reservations, which have the effect of providing that the prohibitions of the Protocol are binding only with respect to States which are Parties and that they cease to be binding with respect to any State whose armed forces do not observe the restrictions laid down in the Protocol, have played their part in preventing the unleashing of a war involving the widespread use of chemical and bacteriological methods. The reservations served as the basis for the warning issued by the Allied Powers to the Government of Hitler Germany concerning the possible use of chemical weapons by the latter during the Second World War.

The conclusion of a convention aimed at the complete elimination of chemical and bacteriological weapons from the military arsenals of States will make the question of reservations to the 1925 Geneva Protocol superfluous.

3. The proposal by the United Kingdom to conclude a convention solely for the prohibition of biological weapons not only fails to solve the problem of the complete prohibition of chemical and biological weapons, but in essence means the expansion and legalization of chemical means of warfare. Given the present rapid progress of science and technology, it is precisely the chemical weapons which present the greatest danger, since they have assumed an important place in the armed forces of a number of States. Such weapons have already been widely used in the past and are being used at the present time. It is generally recognized, however, that the use of biological weapons involves tremendous risks, even to the country that might use them as a means of warfare.

Chemical and bacteriological weapons have consistently been considered together in view of the common characteristics of these types of weapons of mass destruction. The prohibition of the use of chemical and bacteriological weapons is provided for in a single international instrument - the Geneva Protocol of 1925. Attempts to adopt a different approach to the prohibition of chemical weapons and biological weapons and proposals to provide for their prohibition in separate agreements will mean undermining the existing generally recognized rules of international law embodied in the Geneva Protocol, which adopts a unified approach to chemical and bacteriological (biological) weapons alike. In these conditions, the implementation of the United Kingdom proposal, which is based on a separate approach to chemical and bacteriological weapons and provides for the prohibition of the latter alone, constitutes a direct danger in that it will promote the build-up by States of arsenals of chemical weapons and increase the risk of the use of such weapons in international conflicts.

4. The draft convention on the prohibition of the development, production and stockpiling of chemical and bacteriological weapons and on their destruction, proposed by the nine socialist countries, contains provisions ensuring the strict observance of the terms of the agreement by the parties to the Convention. Those provisions have been arrived at on the assumption that the establishment of a system of international verification to determine whether chemical and bacteriological weapons are or are not being produced in a given country is an exceptionally complex and practically impossible task, since the process of manufacturing chemical and bacteriological substances for peaceful purposes is essentially no different from that of their production for military purposes. Under such circumstances, the most reasonable method is control exercised by national Governments, each of which will thus be internationally responsible for ensuring that not a single industrial undertaking or citizen in its country engages in the development or production of chemical or bacteriological weapons and that no such weapons are being stockpiled in the country's military arsenals. The relevant provisions are contained in articles 4 and 5 of the draft convention proposed by the socialist countries. They are supplemented by article 6, whereby the parties to the convention undertake to consult and co-operate with one another in solving problems connected with the application of the convention.

Of great importance also are the additions to the draft convention of the socialist countries, sponsored by Hungary, Mongolia and Poland (CCD/285), concerning the involvement of the United Nations Security Council in the investigation of cases of violation of the convention.

The measures embodied in the draft convention of the nine socialist States for ensuring the implementation of the convention are sufficiently strict and at the same time sufficiently flexible, and they enable the Governments themselves to choose such methods of control as, in their view, will most effectively guarantee implementation of the terms of the convention. Those measures do not limit the right of States, if they so wish and if they reach agreement on the matter, to have recourse to methods of an international character. That possibility is covered by the provisions of article 6.

5. A number of proposals put forward by members of the Disarmament Committee, including Sweden, Morocco and Yugoslavia, with a view to developing the system of control envisaged in the draft convention of the nine Socialist countries, are interesting and merit careful consideration and further elaboration.

Nevertheless, it is quite obviously necessary to maintain a balance in considering the political aspects of the problem of the prohibition of the development, production

and stockpiling of chemical and bacteriological weapons and the technical aspects of the problem of control over such prohibition. The attempts being made to base the work of the Committee on just the study of the technical features of the problem of control may hinder or in any case considerably delay the adoption of a political decision, which is necessarily the priority task in solving the problem of the prohibition of chemical and bacteriological weapons. Past experience, and in particular the activities of the League of Nations, shows that channelling disarmament discussions along the lines of technical expertise and deferment of political decisions resulted in failure to reach an agreement. This should not be lost sight of during consideration of the problem of the complete prohibition of chemical and bacteriological weapons.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/304
6 August 1970

Original: ENGLISH

ITALY

Additional Working Paper on the Problem of Controls Over Chemical Weapons

- (1) In the working paper tabled by the Italian delegation on June 30, 1970 (CCD/289) the following concepts were, in particular, stressed: (a) the establishment of an effective system of controls is still the major problem among those that the Committee will have to solve with a view to achieving an agreement for the prohibition of chemical weapons; (b) the problem of controls presents some aspects that are predominantly scientific and a knowledge of which is essential before the various delegations can profitably embark on the discussion of a draft treaty; (c) for the purposes of such discussion, the technical studies which are already at the disposal of the Committee should be appropriately supplemented by a specific study on the problem of controls of chemical weapons to be undertaken by a special group of experts; (d) the Committee should itself guide the group on its labours deciding beforehand the lines on which it should work and the specific subjects with which it should deal.
- (2) During the informal meeting held on August 5, 1970 and on other previous occasions, many delegations made valuable contributions to the discussions of the Committee by presenting their views and asking technical questions on the problem of controls over chemical weapons.

The Italian delegation wishes, on its part, to formulate a number of questions of technical nature, in the hope that this may help the work of the Committee:

- (a) Assuming that, for the substances listed in the Japanese and Canadian papers (CCD/288 and CCD/300) a control problem arises only when considerable quantities are involved, is it possible to establish, by mutual consent, a listing of the large chemical industries which produce and practically control the products concerned?

- (b) Taking for granted that such a possibility exists, does the fact that large quantities of these substances are mainly used by big industries involved in peaceful production make it easier to control any leak of such products towards non-peaceful uses?
- (c) Granted the hypothesis that it is possible to exercise an overall control of the production and the flow of these substances, what is then the minimum percentage variation which, if not justified on economic grounds, could give rise to the suspicion that the final destination is not meant for peaceful uses?
- (d) If a percentage variation of a specific factor in itself is not suitable as an indicator as to the destination of the product for warfare purposes, could this same factor acquire a decisive importance when combined with the percentage variation of another factor related to the former?
- (e) Does an international organization exist which could contribute effectively to verifying the production and the flow of the substances concerned and, if it exists, could it include this task in its present structure or could it do so through minor structural and organizational changes?
- (f) Taking for granted that such an organization exists, could its contribution be sufficient to establish a founded suspicion that a violation has been committed and thus justify a complaint?
- (g) Could the present trend which aims at eliminating phosphates organic compounds as insecticides help the solution of the problem of controls?
- (3) In the opinion of the Italian delegation, technical documents such as the ones mentioned above represent examples of the very contributions which, in working paper CCD/289, we suggested should be tabled by the various delegations to the C.C.D.

It will be recalled that in paragraph 5 (c) of the same working paper it was proposed that "each delegation should instruct the appropriate body in its own country to suggest a list of specific technical themes to be developed and studied in more detail".

We believe, however, that tabling such technical documents cannot be considered sufficient in itself. In our opinion, more appropriate methods should be envisaged so that contributions by individual countries could be fully utilized by the C.C.D.

To this end, we supported the idea of setting up a group of experts with a view to organizing the work that each competent national body would carry out. Moreover, in order to enable the group of experts to produce, within a relatively short time, a useful document for the specific purposes of the Committee, we also suggested under paragraph 5 b, c, d, e, of our working paper, a particular procedure according to which the group should be given appropriate guidance by the Committee itself.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/305

10 August 1970

Original: ENGLISH

CANADA

Working Paper on Seismological Capabilities in Detecting and Identifying Underground Nuclear Explosions

1. United Nations General Assembly Resolution

At the XXIVth United Nations General Assembly, Canada proposed a resolution, 2604A, which was adopted at the 1836th plenary meeting on December 16 1969. In summary form, the resolution requested the United Nations Secretary-General to circulate to governments a request that they supply by May 1, 1970, information concerning seismological stations from which they would be prepared to supply records on the basis of guaranteed availability and to provide certain information about each of such stations.

This resolution, which had been proposed and discussed in the Conference of the Committee on Disarmament (CCD) in Geneva in 1969, was designed to assist in clarifying what resources would be available for the eventual establishment of an effective world-wide exchange of seismological information which would facilitate the achievement of a comprehensive test ban (ENDC/251/Rev.1).

The proposal in Resolution 2604A was exploratory in nature and designed to elicit information on the quantity and quality of the data records that could be made available, and not to prejudge the form that might eventually be decided for any exchange system. The Canadian Delegation believes that it is by no means clear that any eventual seismic exchange system would involve the circulation of data on a continuous, as distinct from, an ad-hoc basis, or that the seismic data exchange concept, if proven viable on technical examination, would necessitate the establishment of any sort of international control agency or data centre.

The aim of the resolution was to achieve a limited step of clarification. This modest proposal is a first step in any process whereby seismology could assist in clarifying for national states the implications of the essentially political decision involved in the prohibition of underground testing.

GE.70-17914

2. Response to Request for Information

Pursuant to Resolution 2604A, the Secretary-General circulated on January 30, 1970, a note (P0134/611) soliciting responses to the questionnaire appended to the resolution, which specified the details concerning conventional seismograph stations and array stations that governments were invited to submit to the Secretary-General.

At the time of preparation of the Canadian assessment of the significance of the returns, 54 returns were available: 33 countries reporting information for seismograph stations on their territory, 15 countries reporting no operational seismograph stations on their territory, and 6 countries indicating that in their view the purposes of the resolution were unnecessary or preferring to maintain a voluntary form of seismological data exchange and including no data on seismograph stations in their returns.

3. Assessment of Returns

A preliminary Canadian assessment has been circulated which represents an analysis of the UN seismological returns up to and including Document A7967/Add 3. Canada has studied the heterogeneous network of stations and arrays described in the returns, and attempted to find a way to define and describe the intrinsic potential application of this world-wide network to the detection, location and identification of underground nuclear explosions at any location throughout the world.

Briefly, this ensemble of stations can detect P waves (body waves) of both earthquakes and underground explosions down to body wave magnitudes, $m_{4.0}$ to $m_{4.2}$ occurring anywhere in the northern hemisphere: the definition used involves greater than, or equal to, 50 per cent interval probability at a minimum of 5 stations, and with a corresponding location capability between 20 and 45 km. When conversion is made to 90 per cent probability of detection of an event by at least five stations, the lower limit in the northern hemisphere is between $m_{4.5}$ and $m_{4.7}$. As the definitions are relaxed by reducing the minimum number of detecting stations, there is some improvement at the expense of location accuracy.

Identification is a much more severe problem: the earthquake Rayleigh wave (surface wave) detection capability is generally between $m_{4.6}$ and $m_{5.0}$ in the northern hemisphere with an analogous 50 per cent probability definition (we have converted in this statement to body wave magnitudes). An improvement of 0.4 magnitude units is possible for some test sites and station paths and matched filtering capability at certain stations can produce a further improvement of between 0.2 and 0.3 magnitude units. There is, therefore, a potential for a range $m_{4.0}$ to $m_{4.4}$ for earthquake Rayleigh surface wave detection at the 50 per cent probability level, although this

requires some relaxation of the definition used. Again, conversion to 90 per cent probabilities increases this estimate to $m_{4.5}$ to $m_{4.9}$. The corresponding figures for the detection of explosion Rayleigh waves and thus for positive identification of explosions are 1 magnitude higher, namely, between $m_{5.0}$ and $m_{5.4}$ at the 50 per cent level and 0.5 magnitude units higher at the 90 per cent level. Extensive research could allow the application of negative long-period criteria capable of producing a decrease estimated at 0.6 magnitude units in these figures provided some further relaxation in the rigour of the definitions used is accepted: this is probably only satisfactory with the application of a suite of non-perfect criteria to the analysis of any doubtful event. The magnitude yield relation varies with rock type and regional effects: $m_{4.75}$ can be equated with a yield between 8 and 20 ktons in hard rock.

On the basis of this preliminary assessment, the Canadian Delegation recommends extensive studies of other discriminants and particularly of short-period ones for which signal detection capability is more simple to achieve. The assessment made demonstrates useful positive discrimination for certain test sites down to $m_{4.5}$ at the 50 per cent probability level of application.

For the first time, as a result of the UN questionnaire, a station ensemble exists with a form of government assurances, or potential assurances, which can be used by any state to make its own study of the problems of seismological verification. This is a fundamental first step, and the response on the whole has been very satisfactory. States should conduct their own examination of this situation, so that, at the very least, a consensus might emerge of the present state-of-the-art and capability.

Typical questions which might usefully be examined in assessing the significance of the UN questionnaire results with respect to progress towards a CTB would, in the view of the Canadian Delegation, include the following:

- (1) To what extent do the replies to the questionnaire, supplement or modify existing scientific information concerning seismic facilities for detecting and identifying underground nuclear weapon tests?
- (2) Is it possible to estimate from the information provided about national seismic facilities, the extent to which the identification capabilities for underground nuclear explosions may be improved through guaranteed international access to additional seismological data?
- (3) Have the results of the questionnaire identified any sectors of the globe or geographic areas for which the levels of nuclear explosion identification are perceptibly higher or lower than average? Would these areas be of vital significance in the enforcement of any Comprehensive Test Ban?

(4) Could the response of governments to the Secretary-General's questionnaire help such governments identify methods for improving the effectiveness of their own seismic detection techniques, or would any further information be required for this purpose?

(5) Is further examination warranted into the concept of the international exchange of seismic data, as well as into the quantity and quality of data that may be made available from national means of identification?

(6) Do the results of this survey warrant further consultation in the near future among nations ready to contribute to an examination of the facilities for identification of nuclear explosions by seismological means, and to an examination of the most effective attainable measures to supplement the Partial Test Ban of 1963?

(7) Is it possible yet to establish the degree to which national verification procedures may be adequate, with or without an international exchange of seismic data, and the degree to which a prohibition of underground nuclear tests could be effective on either basis?

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/306

12 August 1970

Original: ENGLISH

S W E D E N

Technical Working Paper on a comparison of two systems for verification of a comprehensive test ban

1. On August 4, 1970, the delegation of Canada distributed a technical paper entitled "A preliminary assessment of world-wide seismological capabilities in detecting and identifying underground nuclear explosions based on information submitted by co-operating countries in accordance with the United Nations General Assembly resolution 2604 A (XXIV)", see also Working paper CCD/305, submitted by the delegation of Canada. These documents describe the verification capabilities, in terms of seismological body wave magnitudes, of those parts of the present seismographic resources which are explicitly available for a global data exchange. On July 28, 1970, the delegation of the United Kingdom tabled the "Working paper on Verification of a Comprehensive Test Ban Treaty", CCD/296, describing, in terms of explosion yields and body wave magnitudes, the verification capabilities of a hypothetical global system of 26 array stations, of which 19 remain to be installed.
2. The present paper compares the identification capabilities of the two systems in terms of the yield of underground nuclear explosions in hard rock. This is done by interpretation of the body wave magnitude limits given in the two above mentioned papers.
3. The body wave magnitude limits given in the Canadian paper for the present data exchange resources and in the British paper for a system of 26 arrays were interpreted according to one common relationship between yield W in kilotons and body wave magnitude m_b :

$$m_b = 3.49 + 0.93 \log W \pm 0.50$$

obtained as a mean from US explosion yields and Canadian magnitudes. The material

GE.70-17992

used covered yields from 70 to 1200 kilotons and its use here therefore involves some extrapolation. The \pm term above gives the body wave standard deviation for a single measurement at a randomly selected station. In a system of stations it would be roughly inversely proportional to the square root of the number of stations involved. If the stations in the system were individually calibrated for explosion yields, the \pm term would decrease from 0.50 to 0.30. The relationship above is different from the one used in the British document CCD/296, making the magnitudes there lower by about 0.4 units.

4. As a result, the following yield limits for detection and identification of nuclear explosions in hard rock in the Northern Hemisphere were obtained:

	data exchange today	26 arrays
Detection	8 kilotons	3 kilotons
Identification	90 "	12 "

5. In view of the considerable uncertainties involved the two identification limits given above should be quoted as a 100 kiloton and a 10 kiloton system respectively. The difference between them is mainly due to the large number of long-period arrays considered in the 26-array system but also due to the fact that the interpreted magnitudes were differently calculated in the two documents studied. The British analysis of the array system has considered the parallel use of several identification methods, whereas the Canadian analysis of the data exchange capabilities considered one identification method only, by body and surface wave magnitudes.

6. The data exchange system would improve if identification by complexity were included and both systems would improve if identification by short period spectral ratio and negative identification by not seeing surface waves were included. The limits would also decrease if the possibilities for effective compounding of identification by different methods and from different stations were further explored.

7. The 90 kiloton limit for the data exchange system mentioned under paragraph 4 above was obtained as a conservative compromise between the 40 and 150 kiloton limits corresponding to the alternative body wave limits 5.0 and 5.5 given on page 10-10 in the Canadian technical document.

8. The 12 kiloton identification limit for the 26-array system corresponds to the body wave magnitude limit 4.5 referred to on page 2 of the British document.

9. Four arrays of the 26 arrays were taken to be located in the USSR. If they were left out, the identification limit in Central Asia would rise to about 20 kilotons.
10. The yield and magnitude material referred to in paragraph 3 above also provided the formula

$$M^* = 2.67 + 1.19 \log W \pm 0.3$$

for the mean vertical Airy phase magnitude of continental Rayleigh waves. The two formulae given above, or other similar ones, can be used for an assessment of explosion identification capability directly in terms of hard rock explosion yields and continental Rayleigh wave magnitudes, thus circumventing the precarious use of various relationships between body and surface wave magnitudes. The use of earthquake body and surface wave data would then be confined to the assessment of the false alarm rate.

UNITED STATES

Working Paper on Conventional Arms Limitation

On 19th April, 1966, the US representative to the ENDC, Ambassador William C. Foster, described in the ENDC certain principles for regional conventional arms limitation agreements (ENDC/PV.257, pp 15-19). The US continues to believe that these principles could provide the basis for regional conventional arms agreements that would prove universally beneficial by reducing the likelihood and the potential levels of regional conflict.. Moreover, we believe that agreements based on these principles would promote rather than undermine the vital interests of all the nations with direct interest in the security of the region concerned. The principles, as set forth in 1966, were as follows:

First, the arrangement should contain an undertaking by the affected countries not to acquire from any source, whether indigenous production or importation, those types of military equipment which they agree to regulate. These would include the types of equipment that the participants decided were not required to meet their security needs, after taking into account the effect of the arrangements on other nations in the region. Restrictions would have to be placed on production as well as importation. It would serve little purpose if a country agreed to forego importation of certain military equipment while at the same time it undertook to manufacture such equipment. Nor would a regional arms race be averted if a country within the region agreed to forego production of certain costly military equipment but then imported it from supplier nations.

Second, the initiative for an arrangement should come from within the region concerned. We have already seen that constructive initiatives in regional arms control are possible. This Committee cannot itself work out measures for particular regions. It can, however, provide encouragement and support. Such support might be furnished by discussing principles such as the ones I am suggesting today.

A third guiding principle is that the arrangements should include all States in the region whose participation is deemed important by the other participants. An arrangement could apply, as agreed by the participants, to either an entire region, a sub-region, or any two or more countries in the region.

Fourth, potential suppliers should undertake to respect the regional arrangement by not supplying the prescribed types of equipment to the affected countries. Suppliers would, of course, be free to continue to assist in the economic development of the affected countries. They could supply equipment of types not prescribed and render other types of support and assistance deemed necessary to meet the defense and internal security arrangements of the affected countries.

Fifth, the arrangement should contribute to the security of the States concerned and to the maintenance of a stable military balance. This principle should assist in guarding against any possible attempts to use regional arrangements to undermine existing security arrangements, contrary to the wishes of the States concerned. In addition, the arrangement should contain enough flexibility to permit adjustment to major changes in the political-military environment.

Sixth, adequate provision should be made for satisfying all interested parties that the arrangement is being respected.

We again commend these principles to the Committee. We note, however, that they relate principally to the general nature of the undertaking rather than to its arms control content. We note also that they do not attempt to suggest means of approaching the goal of regional armament limitation in situations, perhaps more the rule than the exception, in which achievement of a formal multilateral arrangement in one step, and as a first step, is extremely difficult. We therefore propose three more guidelines which touch on these aspects:

1. One or more countries in a region might unilaterally undertake not to acquire certain types of expensive, technologically advanced combat equipment. Countries need from time to time to replace obsolete and worn out equipment and to modernize their forces. It should be possible, however, to distinguish the kinds of equipment suitable for replacing outmoded items in existing inventories from the types of highly sophisticated equipment whose acquisition would alter the balance of military capabilities within a region. The types of equipment that countries might undertake not to acquire would vary depending on the region in question, and it should be recognized that requirements for weapons systems for a region and within a region will change over time. The cumulative effect of unilateral decisions by a number of countries not to acquire certain categories of arms might well lead to the de facto exclusion from the region of major items of military equipment. The resulting stabilization of the arms situation in the region could then serve as the basis for formal agreement constructed along the lines of the principles described by Ambassador Foster.

2. Responding to the initiatives of countries in a region that had taken the unilateral steps described above, states outside the region capable of supplying the equipment in question might similarly undertake, after consultation with the countries having taken the initiative, not to turn over the specified types of equipment to the countries involved. If other major suppliers were to undertake similar unilateral commitments, the effect would be to create a dual guarantee against the acquisition of the specified types of equipment by countries in the region. This double guarantee could be incorporated in an appropriate agreement.

3. Countries might unilaterally undertake to make available to others in the region information regarding national policies as to production, purchase or supply of arms. While they might not wish to divulge order of battle or tables of organization and equipment, they might find no prejudice to their security interests in making known to others major policy decisions affecting acquisitions of armaments. Where appropriate, this information could perhaps be disseminated through existing regional organizations. If the example set by one or more nations in a region were to stimulate others to adopt similar practices, the result might be greater mutual understanding. The countries within a region that were exchanging information on their arms procurement policies might agree, in such an atmosphere, to discuss among themselves policies regarding specified types of equipment that would be most likely to cause new tensions and imbalances in the area. In the end, some degree of uniformity of policy might thus be achieved within the region.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/255/Rev.2^{*/}

18 August 1970

Original: ENGLISH

UNITED KINGDOM

Revised draft Convention for the Prohibition of Biological Methods of Warfare and accompanying draft Security Council Resolution

REVISED DRAFT CONVENTION

THE STATES CONCLUDING THIS CONVENTION, hereinafter referred to as the "Parties to the Convention".

RECALLING that many States have become Parties to the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925,

RECOGNIZING the contribution that the said Protocol has already made, and continues to make, to mitigating the horrors of war,

RECALLING FURTHER United Nations General Assembly Resolutions 2162 B (XXI) of 5 December 1966, and 2454 A (XXIII) of 20 December 1968, which called for strict observance by all States of the principles and objectives of the Geneva Protocol and invited all States to accede to it,

BELIEVING that chemical and biological discoveries should be used only for the betterment of human life,

RECOGNIZING nevertheless that the development of scientific knowledge throughout the world will increase the risk of eventual use of biological methods of warfare,

CONVINCED that such use would be repugnant to the conscience of mankind and that no effort should be spared to minimize this risk,

DESIRING therefore to reinforce the Geneva Protocol by the conclusion of a Convention making special provision in this field,

DECLARING their belief that, in particular, provision should be made for the prohibition of recourse to biological methods of warfare in any circumstances.

HAVE AGREED as follows:

^{*/} The original documents, to which this document is a revision 2, appeared under the symbols ENDC/255 on 10 July 1969 and ENDC/255/Rev.1 on 26 August 1969.

ARTICLE I

Each of the Parties to the Convention undertakes, insofar as it may not already be committed in that respect under Treaties or other instruments in force prohibiting the use of chemical and biological methods of warfare, never in any circumstances, by making use for hostile purposes of microbial or other biological agents or toxins causing death, damage or disease to man, other animals, or crops, to engage in biological methods of warfare.

ARTICLE II

Each of the Parties to the Convention undertakes:

- (a) not to produce or otherwise acquire, or assist in or permit the production or acquisition of:
 - (i) microbial or other biological agents or toxins of types and in quantities that have no justification for prophylactic or other peaceful purposes;
 - (ii) ancillary equipment or vectors the purpose of which is to facilitate the use of such agents or toxins for hostile purposes;
- (b) not to conduct, assist or permit research aimed at production of the kind prohibited in sub-paragraph (a) of this Article; and
- (c) to destroy, or divert to peaceful purposes, within three months after the Convention comes into force for that Party, any stocks in its possession of such agents or toxins or ancillary equipment or vectors as have been produced or otherwise acquired for hostile purposes.

ARTICLE III

1. Any Party to the Convention which believes that biological methods of warfare have been used against it may lodge a complaint with the Secretary-General of the United Nations, submitting all evidence at its disposal in support of the complaint, and request that the complaint be investigated and that a report on the result of the investigation be submitted to the Security Council.

2. Any Party to the Convention which believes that another Party is in breach of any of its undertakings under Articles I and II of the Convention, but which is not entitled to lodge a complaint under Paragraph I of this Article, may lodge a complaint with the Security Council, submitting all evidence at its disposal, and request that the complaint be investigated.

3. Each of the Parties to the Convention undertakes to co-operate fully with the Secretary-General and his authorized representatives in any investigation he may carry out, as a result of a complaint, in accordance with Security Council Resolution No

ARTICLE IV

Each of the Parties to the Convention affirms its intention to provide or support appropriate assistance, in accordance with the United Nations Charter, to any Party to the Convention, if the Security Council concludes that biological methods of warfare have been used against that Party.

ARTICLE V

Each of the Parties to the Convention undertakes to pursue negotiations in good faith on effective measures to strengthen the existing constraints on chemical methods of warfare.

ARTICLE VI

Nothing contained in the present Convention shall be construed as in any way limiting or derogating from obligations assumed by any State under the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925.

ARTICLE VII

[Provisions for amendments.]

ARTICLE VIII

[Provisions for Signature, Ratification, Entry into Force, etc.]

ARTICLE IX

1. This Convention shall be of unlimited duration.
2. Each Party shall in exercising its national sovereignty have the right to withdraw from the Convention, if it decides that extraordinary events, related to the subject matter of this Convention, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Convention and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.

ARTICLE X

[Provisions on languages of texts, etc.]

REVISED DRAFT SECURITY COUNCIL RESOLUTION

THE SECURITY COUNCIL,

WELCOMING the desire of a large number of States to subscribe to the Convention for the Prohibition of Biological Methods of Warfare, and thereby undertake never to engage in such methods of warfare; to prohibit the production and research aimed at the production of biological weapons; and to destroy, or divert to peaceful purposes, such weapons as may already be in their possession,

NOTING that under Article III of the Convention, Parties will have the right to lodge complaints and to request that the complaints be investigated,

RECOGNIZING the need, if confidence in the Convention is to be established, for appropriate arrangements to be made in advance for the investigation of any such complaints, and the particular need for urgency in the investigation of complaints of the use of biological methods of warfare,

NOTING further the declared intention of Parties to the Convention to provide or support appropriate assistance, in accordance with the Charter, to any other Party to the Convention, if the Security Council concludes that biological methods of warfare have been used against that Party,

REAFFIRMING in particular the inherent right, recognized under Article 51 of the Charter, of individual and collective self-defence if an armed attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security.

1. Requests the Secretary-General

(a) to take such measures as will enable him

(i) to investigate without delay any complaints lodged with him in accordance with Article III.1 of the Convention;

(ii) if so requested by the Security Council, to investigate any complaint made in accordance with Article III.2 of the Convention; and

(b) to report to the Security Council on the result of any such investigation.

2. Declares its readiness to give urgent consideration

(a) to any complaint that may be lodged with it under Article III.2 of the Convention; and

- (b) to any report that the Secretary-General may submit in accordance with operative paragraph 1 of this Resolution on the result of his investigation of a complaint; and if it concludes that the complaint is well-founded, to consider urgently what action it should take or recommend in accordance with the Charter.

3. Calls upon Member States and upon Specialized Agencies of the United Nations to co-operate as appropriate with the Secretary-General for the fulfilment of the purposes of this Resolution.

UNITED KINGDOM

Working Paper on Verification of CW Arms Control Measures

1. Any consideration of the possibilities of verifying an arms control agreement in the field of C and BW must take account of all possibilities, both political and technical, by examining the feasibility of available technical methods in the light of existing political constraints.
2. The verification requirements can be simply stated in the form of a question: "What technically feasible, and politically acceptable, measures would be adequate to guarantee any international agreement for chemical and biological arms control at the present time?" This paper sets out to examine in this light and in a preliminary way, a number of suggested techniques as a contribution to informal discussion of the subject.
3. In the case of BW which is not yet established as a military weapon, we have made it clear that we consider that no verification of production, testing and stockpiling is possible, but that the complaints procedures associated with the UK draft Convention on Biological Methods of Warfare, and designed to deter any would-be violators, would reduce the risk of accepting an unverified Convention to a level which would be acceptable at the present time.
4. Chemical weapons, on the other hand, were used extensively in the First World War, and stockpiles of vastly more lethal CW agents exist today and military doctrine openly envisages their use on an extensive scale in war. The fear of this is enough to lead a number of states to develop and deploy expensive defensive equipment. Verification of a CW agreement covering the production, testing and stockpiling, as well as use, of CW would therefore need to be extremely reliable before the risk of entering into such an agreement could be reduced to an acceptable level. This is the problem we must try to solve.

Requirements:

5. To ensure compliance with any CW agreement, one might need to verify, to an acceptable level of risk, all or any of the following:

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- (a) that existing weapons or their component parts have been destroyed and/or that no such weapons or component parts are held;
- (b) absence (or cessation) of production of CW agents at declared facilities;
- (c) absence of any undeclared production, testing and storage facilities.

Verification measures involving even a modest degree of intrusiveness appear to be unacceptable to a number of states. Direct confirmation that international agreements were not being broken might thus have to depend entirely on information obtained by external means, and the only such means so far suggested are observation satellites and remote sensors.

Observation Satellites:

6. This possibility has been carefully studied. In our view detection of CW field tests by this technique presents serious difficulties. First the possible test site itself must be detected (and it may not require fixed installations). Then the tests themselves must be detected, and differentiated from other possible types of field tests, including tests of CW defensive equipment. Additionally, one must assume that a state wishing to test in contravention of an agreement will attempt to conceal the fact - as, for example, by testing at night or in conditions of cloud cover. Altogether it would seem that the likelihood of detecting field tests by satellite observation would be very low. Identification by satellite photo-reconnaissance of a chemical agent plant (which might be part of a large industrial complex) would be even more difficult.

Atmospheric Sensors:

7. We have also looked into the possibility of identifying the minute atmospheric concentrations in which chemical agents resulting from field tests might reach extra-territorial detectors. Here we are faced with the problems of discriminating such concentrations from a background of normal industrial air pollution. An indication of the atmospheric concentrations in which agents might occur at various distances from a field test may be obtained by extrapolation of data published by the Swedish Defence Research Institute. This gives the concentration at various distances downwind of an initial airborne source of 10 kg of an involatile agent; by about 7 km the concentration is only 0.05 mg/cu. metre, and simple extrapolation gives a concentration at 50 km of the order of 10^{-12} mg/cu.m (a million millionth of a milligramme). This rough estimate is given to indicate the order of magnitude of the problem of remote detection - the exact values are not important.

8. At the far greater distances at which sensors would probably have to operate, the concentration would not only be much lower by reason of simple dilution, but important additional factors could reduce it still further: for example, wash-out by precipitation, and horizontal separation of air masses, with subsequent differing wind directions at different levels. The effect of dilution could, in theory at least, be offset by the sampling and concentration of very large volumes of air, but even if this were practicable it seems unlikely that it could compensate for extreme dilutions.

9. Because of the mass of other chemical and biological pollutants in concentrated air samples, highly specific and sophisticated analytical techniques would have to be developed. The only technique which currently appears feasible is the use of gas-liquid chromatography incorporating a phosphorus detector, followed by the examination of appropriate fractions by mass spectrometry to identify the actual nature of the phosphorus-containing material by comparison with the spectra of known compounds. However, it is not known whether the sensitivity of even such an advanced technique would be sufficient, and its practical application would pose many problems. For example, if the sensitivity of a technique were of the order of 10^{-9} mg (i.e. not less than a millionth of a milligramme could be detected) then in order to detect the field test quoted earlier, at only 50 km from the source a million cubic metres of air would have to be concentrated to give a detectable sample. This also assumes that the large quantities of other pollutants which would thereby be concentrated would not interfere with the detection process.

10. Positive results, assuming that sufficiently sensitive techniques were developed in the future, would also demand an assessment of the source of the material detected. This would certainly require the provision of extensive meteorological data (from within the suspected neighbouring country) and even then might prove impossible in the present state of the art.

Effluent Sensors:

11. The possibility of establishing the existence of a chemical agent production plant by the detection of unique indicators (if they exist) in rivers downstream of an effluent discharge has also been suggested, though this technique has yet to be fully evaluated.

12. Large scale production of nerve gases might be possible at only a relatively few riverside sites in any particular country. However, a factory in which these agents were made might also manufacture unobjectionable phosphorus compounds, resulting in an effluent discharge analogous to that from nerve gas manufacture. Thus, as well as having a high dilution in the effluent of nerve gas products or their intermediaries, there is also the likelihood of other waste products having similar chemical properties. Such a complication would be further exacerbated if the plant were situated in an industrial complex such as those found on major rivers. Similar considerations would apply to the detection of effluent discharged in the sea.

13. Should particular agents be made on a smaller scale, the effluent might be run to a sewage disposal system where its dilution would become enormous. Of course, as in the case of the US Newport Chemical Plant described in the US Working Paper CCD/293, a nerve gas plant could dispose of waste products into deep wells rather than by discharge into a river or the sea.

Defensive Measures:

14. If all the techniques discussed above were developed and applied, the almost insoluble problem would remain of attempting to prove a negative, especially from limited and uncertain indicators.

15. Where access to deployed military forces was not possible, confirmation of the absence of chemical weapons or of destruction of stocks could not be guaranteed. A consequence of this might well be the continued development and issue of defensive equipment, and its use in training exercises. Evidence of such defensive training alone provides no proof of the possession, or lack, of offensive C weapons; the use of chemical weapon simulants, for example, could either be a means of reinforcing defensive measures, or of providing practical training in the employment of actual chemical weapons.

16. On the other hand, the continued absence of chemical defensive equipment and associated training from the military forces of a state might well contribute, in conjunction with other factors, to confidence in the absence of a chemical weapon capability. However, the collection of such information would necessitate a reduction in the level of the political constraints implied in the preceding discussion; and one must accept that a CW agreement would need to take account of the degrees of access which differing political systems allow.

The Problem of Access:

17. Many of the verification suggestions already made in the Committee, for example the control of phosphorus production (suggested by the Delegation of Japan) a system of openness and reporting (outlined by the Swedish Delegation) and a variety of on-site inspection procedures (discussed by the USA, and included in the SIPRI Report Part IV), would either require a high degree of intrusiveness or depend to a considerable extent on the availability of detailed published information. This might involve, for example:

- (a) budgetary and fiscal information on defence research, development and production;
- (b) identification of likely targets for on-site inspection;
- (c) examination of statistics of chemical industry production and distribution;
- (d) access to, and monitoring of, national transportation networks;
- (e) examination and sampling of effluent disposal systems at suspected sites;
- (f) direct inspection of plant and equipment at suspected sites;
- (g) examination and identification of raw materials entering suspected sites.

18. A number of these factors have already been examined, both in interventions and in working papers laid before the Committee. But to take the single example of (d), that of national transport networks, the size of the task involved - quite apart from the question of the political conditions in which close observation of trains and roads would be possible - can readily be illustrated. There were for example in the UK at the end of 1969, 12,098 miles of major rail routes, and 19,000 rail bulk liquid carriers (tank cars). On the roads, there were estimated to be upwards of 20,000 licensed road tankers.

19. A nation intending to contravene a ban on the production of Chemical Weapons need not, of course, move the necessary raw materials or finished agents by means of such obvious verification targets as tank cars or road tankers. Almost any road or rail vehicle, and many aircraft, could carry containers or such materials or agents.

20. Clearly some of the techniques listed above might have considerable relevance in certain circumstances, for example where a state wished to invite inspection of a particular facility in order to disprove allegations by others; but not all of them would be practicable. Equally, by no means all states would seem likely to accept the application of such techniques where they themselves are concerned.

21. We conclude, therefore, that considerable problems still lie ahead if the verification requirements for an acceptable CW agreement are to be met. It is, however, the intention of the United Kingdom to consider every approach, both technical and political, which might help to achieve the goal of an effective abolition of the possibility of chemicals as of biological warfare.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/309
19 August 1970
ENGLISH
Original: FRENCH

ITALY

Working Paper on a comprehensive programme of disarmament

The Italian delegation considers that the Conference of the Committee on Disarmament should increase its efforts to give effect to resolution 2602 E concerning the question of general and complete disarmament adopted by the United Nations General Assembly at its twenty-fourth session.

The part of that resolution which seems to us most faithfully to reflect the arguments presented in the United Nations by a large number of countries wishing to give a fresh impetus to the disarmament negotiations is to be found in paragraph 4 of the operative part.

The instructions given in that paragraph are closely related to the proposals for the preparation of a comprehensive programme of disarmament submitted by Italy at Geneva at the two preceding sessions of the Conference (see Working Papers ENDC/245 of 21 April 1969 and ENDC/263 of 23 August 1969).

With a view to facilitating the opening of a highly desirable discussion on this comprehensive programme of disarmament, the Italian delegation, as members of the Conference are aware, has at the present session taken the initiative of organizing contacts with a number of other interested delegations with the idea of engaging in exchanges of view such as may give rise to a basic plan for possible subsequent discussion by the Conference.

The Italian delegation has already described, in its statement of 2 July 1970, the nature and characteristics of the outline which was jointly prepared, and which is reproduced below.

"Preliminary considerations representing, in general terms, the views of a number of delegations with which the delegation of Italy has been in consultation.

A. Goal, principles and mandates

United Nations General Assembly resolution 1378 (XIV) of 20 November 1959 and the Joint Statement of Agreed Principles of 20 September 1961 (ENDC/5), endorsed by United Nations General Assembly resolution 1722 (XVI), represent the basis for disarmament negotiations and for new efforts towards general and complete disarmament under effective international control. Draft treaties on general and complete disarmament were presented in 1962 by the Soviet Union (ENDC/2/Rev.1) and the United States (ENDC/30 and Add.1-3). Several countries suggested that these draft treaties could be revised and brought up to date.

United Nations General Resolution 2602 E (XXIV) of 16 December 1969 requests the Conference of the Committee on Disarmament: '.... to work out a comprehensive programme, dealing with all aspects of the problem of the cessation of the arms race and general and complete disarmament under effective international control, which would provide the Conference with a guideline to chart the course of its further work and its negotiations' (CCD/275).

Both in the Agreed Principles and in resolution 2602 E (XXIV) it is recognized that negotiations should continue with a view to reaching agreements on partial or collateral measures, facilitating and forming part of a programme of general and complete disarmament under effective international control.

B. Main elements of the programme

Progress in disarmament is not an isolated matter but is intimately connected with and influenced by problems of international peace and security and the peaceful settlement of disputes.

In order to establish the international climate of confidence and good will necessary for progress, specific measures to build up confidence should urgently be agreed upon, including special studies on certain subjects.

While progress is being made to build up confidence, the States members of the Conference of the Committee on Disarmament should engage themselves to negotiate meaningful measures to prevent and limit armament as well as measures of disarmament, taking into account, inter alia, the special studies mentioned above.

In the achievement of general and complete disarmament under effective international control through measures to prevent and limit armament as well as through measures of disarmament, there should be a balance among these categories of measures.

C. Phases of the programme

The need for flexibility has been generally recognized. The highest priority should be accorded to measures for the cessation of the nuclear arms race and for nuclear disarmament. Taking into account the Agreed Principles and the United Nations General Assembly resolutions mentioned above, and further taking into account agreements already achieved on collateral measures, the Conference of the Committee on Disarmament should envisage dealing in successive phases with the main elements mentioned under the second paragraph. An attempt should be made to decide upon these various phases and to outline the possible content of each phase.

A review of the programme of disarmament could take place each year in the First Committee of the United Nations General Assembly.

D. General considerations

Various problems closely related to disarmament negotiations would have to be examined. The following points were tentatively singled out for further discussion and elaboration: priorities, balance, verification, regional arrangements, universal participation, public opinion and methods of work."

The Italian delegation considers that this document should be exhaustively discussed by the Conference, and it wishes that all delegations would contribute to the consideration of the problem dealt with. For its part, and to facilitate the development of the ideas summarily expressed in the text, we should like to present our observations on some main points and, in particular, on Section B, entitled "Main elements of the programme":

In our opinion, the Conference should adopt a programme to guide its work and future negotiations, as recommended by the above-mentioned General Assembly resolution. The programme, in the preparation of which all governments members of the Conference should participate, might include the items indicated in the text prepared by the interested delegations. These items come under Section B and may be summarized as follows:

- measures for increasing international confidence;
- studies on particular points;
- measures to prevent and limit armament;
- disarmament measures;
- general and complete disarmament.

Each of the items in this list might provide the basis for the subsequent more thorough consideration which is necessary for establishing the programme.

(1) Measures for increasing international confidence

The development of the international situation and the improvement of confidence among States will obviously have a direct and favourable effect on the work of the Conference. The Conference should and can, however, contribute to the increase in international confidence by adopting a programme of work defining its undertakings and aims.

(2) Studies

The Italian delegation believes that, with a view to helping to create favourable conditions for negotiations, the Conference of the Committee on Disarmament might now initiate programmes of studies relating to the question of the reduction of armed forces and conventional armaments. Negotiations might also benefit from a preliminary work which would provide necessary clarification of certain important aspects of that question.

In connexion with the above programmes, the Conference might in particular examine the following points in depth:

(a) Relationship between nuclear disarmament and the beginning of reductions in conventional means of warfare;

(b) Determination of the geographical areas within which the first reductions in conventional means of warfare would take place. In other words, the Conference should address itself to the question whether the first "round" of reductions affecting armed forces and conventional armaments should be global in scope and apply to all States without distinction or whether it should initially apply only to some States. In the latter case, it would be necessary to study the criteria to be used for determining the States to which this first "round" of reductions would apply. Such States might be the principal world military Powers, or they might be States determined on the basis of a criterion that provides for the reduction of armed forces and conventional armaments in a particular regional context. Before negotiations began, it would be necessary to clarify this important question of principle, for it is on the answer to this question that the political dimensions of the problem will depend. The nature of the negotiations would vary in more than one respect depending on whether the reductions to be negotiated applied to more or less numerous States and whether those reductions would be partial or global. (It should be noted, by the way, that the United States draft treaty on general and complete disarmament provided that the first phase of the reductions would be applicable only to some of the States parties to the treaty);

(c) Elaboration of technical criteria necessary for the implementation of reductions (categories of armaments to be reduced, levels, initial declarations, unit of measurement to be used in reductions, extent of reductions, creation of a disarmament organization, verifications, etc.);

(d) Relationship between armament reductions and controls.

(3) Measures to prevent and limit armament

This concerns mainly the "collateral" measures to which the Conference has devoted most of its efforts since the start of the discussions concerning the two draft treaties on general and complete disarmament of 1962. Negotiations on these collateral measures were moreover envisaged in paragraph 8 of the USSR-United States Joint Statement of 1961. In spite of the fact that the procedure of negotiating collateral measures has caused certain imbalances which are not insignificant, it

has had positive results, as is shown by the conclusion of some important international agreements. These collateral measures have, in addition, made another positive contribution: that of reviving hope for the resumption of discussions on general and complete disarmament. Nevertheless, the Italian delegation feels that the Conference should make a maximum effort to pursue negotiations on measures designed to prevent and limit armament. Among such measures, and apart from those which are now the subject of active negotiations (denuclearization of the sea-bed and ocean floor, and prohibition of chemical and biological weapons), the most important and most urgent are the following: cessation of the production of fissionable materials for military purposes, and agreement on the total prohibition of nuclear weapon tests. In the opinion of the Italian delegation, the Conference, in adopting its programme of work, should expressly confirm the fact that it is giving priority to negotiations relating to these two measures so necessary to the cessation of the nuclear arms race.

(4) Disarmament measures

The Italian delegation would like to reaffirm that the raison d'être of the Conference of the Committee on Disarmament is to negotiate disarmament measures, i.e. effective reductions of armed force and armaments. Such negotiations must begin as soon as possible. They could obviously be facilitated by the creation of an international climate of increased confidence and by the completion of the studies referred to above. Although it would be difficult to fix a precise time-limit for the start of these negotiations, we feel that it would be extremely useful if a specific commitment on the subject were assumed now. This would have the important result of reassuring public opinion, which is demanding more effective action by the CCD on disarmament. Such a commitment would be an incentive to Governments to take the necessary decisions, an incentive that would be strengthened if the commitment were assumed collectively by the States members of the Committee on Disarmament, which is the competent body for disarmament negotiations.

Accordingly, at the time it adopts its own programme, the CCD should - in the opinion of the Italian delegation - give expression to the commitment of its States members to open negotiations on a first "round" of reductions of armed forces and armaments. This would better ensure a balance among the various categories: preventive, limitative and effective measures of disarmament.

(5) General and complete disarmament

General and complete disarmament is the final goal of all CCD negotiations; and that has recently been confirmed by General Assembly resolution 2602 E. Consequently, a re-examination of general and complete disarmament plans by the CCD, as suggested by

some delegations, should reflect the will of the States members of the CCD to pursue that objective. So far as the Italian delegation is concerned, it believes that it will be necessary for the CCD to bear in mind past experience so as to be able to resume the discussion on new bases. With that in view, and taking as its point of departure the USSR-United States General Statement of Agreed Principles of 20 September 1961, the CCD might adopt a more articulated directive for the elaboration of a "programme" in line with that joint statement. A single treaty could hardly govern the implementation of the process of disarmament in all its phases. The "programme" should therefore serve as an overall agreement whose purpose would be to lay down in broad outline the approach to general and complete disarmament: it might envisage the conclusion of a series of treaties or agreements relating to the various phases of effective implementation of disarmament. This would avoid the rigidity inherent in a single treaty and the difficulty of discussing problems which are not ready for negotiation. At the same time, it would maintain the concept of a prior commitment with respect to the evolution of the whole process, in its successive phases.

As regards the nature of the programme which the CCD should adopt, the Italian delegation feels that it should be both a programme of work and a commitment: a programme of work with respect to negotiations on the categories of measures being examined and to the suggested studies on international disarmament, and a commitment to open negotiations on a first round of reductions of armed force and armaments.

Finally, as to the form of the programme, we might consider, among other solutions, a joint statement of the Governments members of the CCD or, more simply, the adoption by the CCD of its own programme of work.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/310
25 August 1970

Original: ENGLISH

ARGENTINA, BRAZIL, BURMA, ETHIOPIA, INDIA, MEXICO,
MOROCCO, NIGERIA, PAKISTAN, SWEDEN, UNITED ARAB REPUBLIC AND YUGOSLAVIA

Joint Memorandum on the question of Chemical and Bacteriological (Biological) Methods of Warfare

1. The international community has, during recent years, been increasingly concerned by developments in the field of chemical and bacteriological (biological) weapons and by the grave dangers posed by such weapons to humanity and the ecological balance of nature.
2. It is now universally recognized that prospects of international peace and security, as well as the achievement of the goal of general and complete disarmament under effective international control, would be enhanced if the development, production and stockpiling of chemical and bacteriological (biological) agents intended for purposes of war were to end and if they were eliminated from all military arsenals.
3. The Geneva Protocol of 1925 prohibits the use in war of all chemical and bacteriological (biological) agents. The General Assembly has, by resolution 2162 B(XXI), called for the strict observance by all States of the principles and objectives of the Geneva Protocol of 1925, condemned all actions contrary to those objectives and invited all States, which had not already done so, to accede to the Protocol. The General Assembly has, by resolution 2603 A(XXIV), also made a clear affirmation that the prohibition embodied in that Protocol was comprehensive and covered the use in international armed conflicts of all biological and chemical methods of warfare, regardless of any technical developments.
4. In addition to the existing parties to the Geneva Protocol of 1925 there are other States which are considering accession to or ratification of the Protocol. There are some who have unilaterally and unconditionally renounced one or both types of weapons. These are welcome developments.
5. The Report prepared by the United Nations Secretary-General, in accordance with the General Assembly resolution 2454 A(XXIII) with the assistance of consultant experts, on chemical and bacteriological (biological) weapons and the effects of their possible use, and the Report of the World Health Organization's group of consultants

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on health aspects of chemical and biological weapons, and other studies on the subject, underline the immense importance and urgency universally felt in regard to reaching agreement to halt the development, production and stockpiling of all chemical and bacteriological (biological) agents for purposes of war and to achieve their effective elimination from the arsenals of weapons.

6. It is essential that both chemical and bacteriological (biological) weapons should continue to be dealt with together in taking steps towards the prohibition of their development, production and stockpiling and their effective elimination from the arsenals of all States. It is the conviction of the Group of Twelve that an effective solution of the problem should be sought on this basis.

7. The issue of verification is important in the field of chemical and bacteriological (biological) weapons, as indeed adequate verification is also essential in regard to the success of any measure in the field of disarmament. Reasonable guarantees and safeguards should, therefore, be devised to inspire confidence in the implementation of any agreement in the field of C and B weapons. Verification should be based on a combination of appropriate national and international measures, which would complement and supplement each other, thereby providing an acceptable system which would ensure effective implementation of the prohibition.

8. The Group expresses the hope that the basic approach, as outlined in the preceding paragraphs, concerning the task before the Conference of the Committee on Disarmament in the field of chemical and bacteriological (biological) weapons would receive general acceptance so that an early solution could be found in regard to the prohibition of the production, development and stockpiling of such weapons and their effective elimination from the arsenals of all States.

UNITED STATES

Working Paper on Economic Data Monitoring as a Means of
Verifying Compliance with a Ban on Chemical Weapons

This paper discusses the contribution which might be made by economic data monitoring to the verification of compliance with a treaty banning the production and stockpiling of chemical weapons. Over the past six years, the United States Arms Control and Disarmament Agency has investigated the potential of economic monitoring as applied to chemical weapons. The material in this paper is drawn very largely from the results of this research. In the interests of economy of presentation and because of their importance, the discussion will be restricted to organophosphorous nerve agents only. Most of the research was performed within the context of the US economy. Generalizations based largely on experience in one country only should be treated with reserve.

Operation of an Economic Monitoring System

Economic monitoring of a CW ban would aim at identifying changes or inconsistencies in economic data series that could indicate the development of a CW capability. While there is no pre-established method for utilizing economic data for arms control verification purposes, we have found it useful in the case of the organophosphorous nerve agents to consider how this technique might be used to monitor the production and consumption of materials which could be used to produce these agents. The analysis might proceed as follows.

The group of agents to be examined--in this case all nerve agents--is defined. Our analytical starting point is the molecular structure common to all nerve agents. The basic structure of organophosphorous poisons is that of a phosphorous atom bonded at four points to other chemical groups. These groups are joined to the phosphorous atom by some combination of four reaction processes: oxidation, esterification, alkylation, and either amination or fluorination. Although the exact make-up of the attached chemical groups can vary, each must contain one of five elements: oxygen, either sulphur or selenium, nitrogen, fluorine or carbon. All known organophosphorous poisons conform to these general structural rules.

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Given the five bonding elements and four bonding positions, the total number of combinations into which they can be arranged equals 625. About 20 of these possible structural combinations, or classes, have been found to be sufficiently toxic to be useful as poisons, and only six classes are considered toxic enough to be effective as nerve agents. (Discovery of additional highly toxic classes is possible).

Within these six classes of nerve agents, there is an almost infinite number of specific chemical compounds which could meet the common structural requirements. However, as with the agent classes, not all of these compounds would be sufficiently toxic to be useful as nerve agents. Also, the practicalities of the production processes involved reduce further the number of potential agents. These considerations refine the number of nerve agents we must consider from a theoretically immense number down to several thousand.

Our research determined that, with certain limiting assumptions concerning the state of the art of organophosphorous chemistry, all the potential agents could be manufactured using about 90 component materials (raw materials and intermediates). If, at this point, it were possible to say that, of the 90 materials only a few were required for the production of all nerve agents, our monitoring tasks could be greatly simplified. Such is not the case however; on the contrary, a rather low degree of "commonality" of materials was discovered. (The one exception to this statement relates to elemental phosphorous, which is the only material common to all nerve agents. Elemental phosphorous, however, is used throughout the world in a variety of commercial processes. To be conclusive alone, monitoring of the importation, production and consumption of elemental phosphorous would have to be completely foolproof). Thus, to make any useful statement about the manufacture of a given nerve agent, an economic monitoring system must consider simultaneously all, or almost all, of the 90 potential components.

There are several methods by which a nation can provide the component materials for agent production: (a) by increasing its own production of the required materials; (b) by diverting materials from existing uses or from stockpiles; (c) by importing the required materials; and (d) by a combination of the above. From the standpoint of a nation wishing to violate a ban on nerve agent production, the least detectable options would be to increase production, especially if excess production capacity is available, or to draw on stockpiles. Diversion from existing uses is more risky since it necessarily affects people and institutions downstream in the production cycle. Importing would be the least attractive option because the supply must be sought in other nations, making disclosure much more likely.

For statistical monitoring to be successful, the pattern of production and consumption of the various materials would have to be "visible" against the background of economic statistics of the country being monitored. This "visibility" would be affected by (1) the quantity of nerve agent to be produced, which in turn defines the quantities of materials required, (2) the ability of the country to supply the required materials from indigenous production, (3) the complexity of the economy, and (4) the amount, quality, precision and timeliness of the data supplied.

The actual monitoring process would call for detailed data, for each country monitored, on each potential component material in terms of (1) imports, (2) the process of its manufacture, working backwards to initial raw materials, and (3) its commercial end uses, including exports if any. Current data would need to be reported frequently and with minimum delay. Historical data would also be required comparable to current data to serve as a background against which to measure current trends and deviations.

The actual effort involved in gathering information would vary greatly from case to case. It would be least difficult in a small country with a simple economy, willing to co-operate freely, with fast, accurate statistical reporting, with many open sources of information, providing reliable consistent historical data, and which possessed and/or imported few of the materials used to produce nerve agents. As we move away from this example, the level of effort required would increase sharply and the reliability of the data being monitored would diminish.

Limitations and Problems of Economic Monitoring

Our research indicates that the success of an economic monitoring system depends on having a free flow of accurate, consistent, timely data, over a considerable span of time. Cross-checking with related statistics would be necessary.

Even assuming full compliance by all parties to a treaty involving economic monitoring, there are certain disadvantages and problems inherent in the method itself.

(1) With the best of intentions, the problem of honest error exists. In deriving statistics for non-arms-control purposes, problems such as in-process waste, variations in process yield or efficiency, changes in the nature of the product, and fluctuations in inventory can lead to significant error in the statistical results.

(2) A related problem, again not peculiar to arms control, is that statistical data are not always uniform or consistent in terms of terminology and coverage, and therefore, may not be strictly comparable.

(3) Statistical data are often published only after a considerable time lag, especially where the data are voluminous, complex or require considerable analysis.

(4) In some cases, the collection of data might become intrusive. If the data were detailed and extensive enough they might disclose more than just CW-related activities, perhaps even some of military significance. In some cases proprietary commercial processes and secrets might be disclosed to competitors.

(5) For purposes of verifying a CW treaty, some data which might be assumed to be useful in fact could be misleading. For example, statistics on chemical industry employment and investment are often hard to relate to figures in production, due to variations in factors such as classification terminology and labour productivity.

Apart from the problems, above, inherent in the method of economic monitoring, a second order of problems arises if one assumes that an economic monitoring system must be capable of identifying deliberate attempts at deception. Our studies on economic monitoring have been able to develop no effective way of dealing with the problem of existing stockpiles of CW agents. Also, they underline the problem of identifying small evasions. Should a nation not now possessing CW stockpiles so desire, it could possibly initiate CW agent production by gradually increasing production of raw materials and intermediates without altering its reported statistics, or by small diversions, or both. Such a gradual approach would be extremely difficult to detect by statistical methods, especially in a large complex economy.

Preliminary Conclusions and Comments

(1) The indirect nature of economic monitoring, which deals with records of events rather than the events themselves, is both its strength and its weakness. On the one hand, such monitoring is non-intrusive and relies entirely on unilateral analysis of reported data. However, even at best, it can show only the symptoms of a violation and not the violation itself.

(2) The role of economic monitoring will vary greatly with the characteristics of the country being monitored. It would be most effective when applied to small countries with open societies and non-autarchic economies. Large countries with closed societies and self-sufficient economies should face little difficulty in rendering it ineffective. Any nation capable of producing and stockpiling CW agents, and motivated to do so, would also be likely to be able to conceal this activity from the outside world, in terms of reported data.

(3) Although our investigation of the contribution of economic monitoring is still going on, our preliminary conclusions are that, under optimum conditions, economic monitoring could be of ancillary use, but alone would not provide an answer to the verification problem. It can serve as a precursor, guide, support and focusing technique, but not as a substitute for direct technical on-site inspection.

UNITED STATES

Working Paper on remarks by Dr. Joshua Lederberg at
Informal Meeting of CCD, 5 August 1970

This is the first occasion at which I have been invited to attend a meeting of this kind. It is also a twenty-fourth anniversary of another occasion when I was a young medical student attending my first scientific conference. This was an international meeting at Cold Spring Harbor, near New York, and it could be truly labelled as the birthdate of a new scientific field, the genetics of bacteria and of viruses. My first published work was presented at that meeting and it concerned the discovery, contrary to decades of previous supposition to the contrary, that bacteria were indeed possessed of a mechanism like sexual reproduction which made it possible to crossbreed different bacterial strains. These observations, together with related ones by many other colleagues have gone into the emergence of the most powerful of new methods and insights in experimental biology, going generally under the name of molecular biology.

From the very beginning it was inescapable to me that these new approaches for the understanding and manipulation of living organisms had potential implications for human progress of very great significance. On the one hand molecular biology could increase man's knowledge about himself and lead to revolutionary changes in medicine in such fields as cancer, aging, congenital disease, and virus infections. It might also play a vital role in industry and in agriculture. On the other side it might be exploited for military purposes and eventuate in a biological weapons race whose aim could well become the most efficient means for removing man from the planet. As a student of evolution, and having studied it in the microcosmos with bacterial cultures, I knew that man had no guaranteed place on our earth. He has faced and continues to face natural disasters like the infestations that have wiped out the American chestnut and the European grapevine. To these long-standing threats would now be added new ones, potentially of our own invention.

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These past twenty-five years, in the course of which the world community has reached a certain degree of familiarity with the problems of nuclear power, and has undertaken some of the steps needed to contain it as a servant for rather than against human aims, have seen a sustained, remarkable development of molecular biology. For example, Professor Gobind Khorana recently reported the synthetic assembly of a small gene through chemical operations on DNA components. It will be a step of another order of magnitude to extend this technical capability to the synthesis of small viruses, but this surely will be accomplished within the next decade. This procedure will allow an unlimited range of experimental variations of the genetic structure of different viruses, a process which has many important potential applications for human health. It also offers us the prospect of engineering the design of viruses to exquisite detail. Accomplishments like Khorana's have been possible in a small laboratory on an annual research budget which is miniscule compared to weapons hardware. A serious military investment in this area could be expected to outstrip this already breathtaking pace of advance by many fold.

I could mention many other intriguing scientific advances from my own work and that of others, and fear only that my enthusiasm in discussing these details might outrun your patience in hearing about them. I will be glad to engage later in informal discussions on any aspect of molecular biology that may be of interest to you. I will just mention the discoveries of three methods of modifying the genetic structure of microbes: (1) cross-breeding them through what is, essentially, sexual reproduction; (2) inserting new genes carried by a virus, a process called "transduction", and (3) direct manipulation of DNA as a chemical substance, and reintroducing this into microbial cells.

I deeply appreciate the gravity and importance of the work of this Committee. Its principal significance is, of course, for the security of all the people of the world; and to that it is only a small addition to mention my own moral pre-occupation with whether my own career will have been labelled a blessing or a curse to the humanity from which I spring. This comment may have more force if I offer it as not only a personal testimony but as typical of the dilemma that faces my entire generation of biological research scientists and our younger students at this very moment. I am therefore many times indebted to you not only for your present labours but also for having offered me the privilege of a more personal participation in a process that may yet result in "civilizing" this branch of science.

For many years BW has been given only incidental attention as a subject of diplomatic discussion; for it seemed to have little bearing on the adjustments of power that were the main work of specialists in foreign affairs. However, BW does have something to do with efforts to reduce the barbarity of warfare. BW stands apart from all other devices in the actual threat that it poses to the health and life-expectancy of every human being whether or not he is politically involved in belligerent actions. In a word, the intentional release of an infectious particle, be it a virus or bacterium, from the confines of the laboratory or of medical practice must be condemned as an irresponsible threat against the whole human community.

The Black Death, the great bubonic plague that ravaged Europe in the mid-14th century is in fact a well documented historic example of just this process. The plague first entered Europe in 1346 via the sailors, rats, and fleas on the ships that returned to Genoa after having been expelled from Theodosia in the Crimea where the attacking Tartars had catapulted some of their corpses into the Genoese fortifications. This plague which reduced the population of Europe by at least one-third, would of course, almost surely have made its way West sooner or later, the nature of the disease being quite beyond the comprehension of the medical science of that era.

The Black Death in Europe was only one of many visitations of the plague suffered by Europe during the last 2000 years. We do not know why this one should have been so much more disastrous than many others. The progress of a disease in any given individual is subject to many factors of which only a few are well understood. A large epidemic, involving millions of people spread over time and space, is an immensely more complicated phenomenon about which it is very difficult to make accurate scientific predictions. This combination of very grave potential hazard with a high degree of unpredictability is a peculiar attribute of biological weaponry at its present stage of development. This has a great deal to do with the rational doctrine that so far has placed a relatively low value on its military utility.

The present situation thus might provide the most favourable opportunity for international action to regulate the further development and proliferation of BW. I am convinced we know enough about it to have legitimate concern about its future prospects. Until now no nation appears to have staked its security to any significant degree on BW armaments. I would therefore hope this provides a basis for accord. If we wait until BW has been developed into a reliable armament for use under a range of military doctrine, we must all fear that it could then be too late to disengage important powers from their commitment to it.

If I may return to the Black Death, the main barriers that may today keep bubonic plague from being a great threat in civilized countries are: (1) understanding of and the use of quarantine, (2) the suppression of rats and fleas by general urban hygiene, and (3) the use of modern therapy, especially antibiotics, to control the disease. Each one of these barriers could be breached by further technical developments if a substantial effort were to be applied during the next decade to making the plague bacillus into a weapon.

Other infectious agents might be even more adaptable. Some of man's deadliest enemies are viruses which, like yellow fever, are transmitted by mosquitos or other arthropods. These have the advantage, from a military standpoint, that they may not start a potentially retroactive epidemic in areas where the vector insect does not normally abound. It is already evident that such insect-borne viruses could be applied in the first instance by direct aerial dissemination, with little or no further spread from the first wave of infected targets. Recent reports of airborne or pneumonic rabies, a terrible disease, which as you know is normally spread by the bite of an infected dog or other animal, illustrate this possibility. There is then the danger that, if a large nucleus of people is attacked in this way, further evolution of the virus will occur to give rise to a new form of the disease that does spread from person to person, contrary to the calculations of the attacker. The Black Death itself underwent a similar evolution from the original bubonic flea-borne plague to outbreaks of the far more contagious pneumonic variety.

We have learned in recent years that viruses undergo constant evolution in their own natural history, not only by mutations within a given strain, but also by the natural cross-hybridization of viruses that superficially appear to be only remotely related to one another. Furthermore, many of us already carry viruses in our body cells of which we are unaware for years, and which may be harmless -- though they may eventually cause the formation of a tumor, or of brain degeneration, or of other diseases. At least in the laboratory, however, we can show that such latent viruses can still cross-breed with other viruses to give rise to many new forms.

My gravest concern is that similar scientific breakthroughs of a rather predictable kind will be made and their potential military significance exploited, so as to result in a transformation of current doctrine about "unreliable" biological weapons. We are all familiar with the process of mutual escalation in which the defensive efforts of one side inevitably contribute to further technical developments

on the other and vice versa. The mere existence of such a contest produces a mutual stimulation of effort; moreover, there is no practical system of counter-intelligence that will protect secret work for an indefinite period of time from becoming known to others. And the potential undoubtedly exists for the design and development of infective agents against which no credible defence is possible, through the genetic and chemical manipulation of these agents. It is thus clear to me that if we do not do something about this possibility, work will go forward and my fears will become realities.

Permit me, now, to ask a rhetorical question: Can we establish a world order that will, in effect, protect "you", as representatives of the global community, from the subversion of the scientific advances to which my own peers and myself have dedicated their careers.

I wish I could be sure that such a remark would always be received with an understanding of the ironic spirit with which it is uttered. I do not have to tell you of the worldwide attack on science, the flight from reason that has tempted so many young people and makes so many dilemmas for those of us in university life. This generational revolt has probably had its worst impact in countries which have already achieved a degree of affluence, but it is eroding the morale of the young even in those countries whose economic future most depends on their development of a high level of technical and scientific skill. What the youth see as the perversion of knowledge is, I believe, an important aspect of their repudiation of us. Among the undergraduates at my own university, there is no prospect more disheartening than the idea that even health research is subject to exploitation in the most inhumane direction imaginable.

For many years I have advocated that the control of biological warfare be given a special place in international and national initiatives for reasons I have mentioned. I am deeply gratified that President Nixon's announcement (last November 25) which disavowed offensive biological warfare development has made it possible for me to address these issues in terms fully consistent with the policy of the government of my own country.

As you know, soon after President Nixon's announcement it became apparent that the problem of toxins had been left ambiguous. "Toxins", as the term is understood by biologists, are chemical substances, usually (but not always) proteins of modest molecular size which are by-products of bacterial growth and which may play a lesser or greater role in the disease manifestations of a bacterial infection.

For present purposes we might think of a toxin as a chemical substance which would be unknown to science except for its association with microbial growth and one which has an extraordinarily high lethality per unit weight. Many toxins are nerve poisons, resembling the nerve gases in their effect on the body, but far more potent. For example, the lethal dose of botulinus toxin is about one millionth of a gram. This means that one could easily carry in a despatch case a quantity of toxin sufficient to wipe out the human population, although the image would imply that the human herd would line up for the slaughter. The very high potency of such toxins is certainly a factor in their military potential but may even be outweighed by other considerations, like the possibility of specific immunization of an aggressor force or population.

* * * * *

Even after agreement to eliminate biological weapons, we will still remain very vulnerable to a form of biological warfare which is beyond the reach of any covenant that we can make. This is the warfare practised upon us by nature, the unremitting barrage of infection by old and by new agents that still constitute a very large part of the perils to normal and healthy life.

We have all had vexing, perhaps even tragic, personal experiences with virus infections. You will all recall the global epidemic of influenza that was first identified in Hong Kong about three years ago. This was not a particularly severe form of the virus and its eventual mortality was probably only in the tens of thousands. It is wrong, however, to believe that there is any assurance that the next epidemic of this kind will be as mild; and we have still developed only the most feeble and precarious protection against this threat whose impact is shared by all the nations, but against which very little common defence has been erected.

You will also recall having read from time to time about small outbreaks of mysterious new diseases like "Lassa fever" and the "Marbug virus". These were both extremely dangerous threats; and while much credit must be given to the diligence of the medical people who dealt with the outbreaks, a large element of pure luck was involved in localizing these incidents. We must expect that there are many additional viruses already indigenous to primate and human populations in primitive areas and to which the inhabitants of advanced countries are extremely vulnerable.

Yellow fever is a historically important disease which now belongs in the same category. It is now maintained on earth mainly through an animal reservoir of infection, in the monkeys in tropical jungles. Urban populations are now protected

from yellow fever by campaigns to abolish the fever-carrying species of mosquitos in South America and by the availability of excellent vaccines in advanced countries. Mosquito species very well capable of transmitting yellow fever are, however, abundant in South Asia and the accidental introduction of yellow fever, for example, into India would be a human tragedy of catastrophic dimensions. Specialists in epidemiology are quite puzzled that this accident has not already eventuated and we have no good explanation for this good fortune. I would not mention facts like these which might stimulate psychotic imaginations if they were not already well known. My purpose is not to suggest the vulnerability of the Asian continent to biological military attack but rather to point out immense gaps in the pattern of international co-operative defences that should be mounted but which have a relatively feeble standing in the present-day world. This is in no way a derogation of the splendid efforts of the World Health Organization which is centred here in Geneva but an indication of the limitations of its budget and a suggestion that much more needs to be done and could be done with resources that might be given over to biological work in the future.

Countries which are undergoing a transition in the development of their agriculture are vulnerable to analogous threats in biological warfare directed against crops as distinguished from human targets. The introduction of new crop varieties, that has had all of the human benefits attached to the expression "the green revolution", also means that the food supplies of vast territories are now committed to specialized strains of wheat, rice, and so forth. These are now newly vulnerable to destruction by plant pests of either natural or artificial origin. A potentially tragic outbreak of "coffee rust" is at this moment a serious threat to the agriculture and economy of Brazil.

The promulgation of an international agreement to control biological warfare in a negative sense should, therefore, be accompanied by steps urgently needed to build positive efforts at international co-operation, a kind of defensive biological research against natural enemies of the human species.

One of the best assurances that any country might have that the microbiological research of its neighbours was directed towards human purposes would be constantly expanding participation in international health programmes. Any country that publicly and avowedly subscribed to the total renunciation of secret BW research might conceivably be able to continue clandestine efforts without revealing their substantial content. It would, however, have great difficulty in maintaining such an

effort, at any substantial level or quality of operation, while still keeping its very existence secret. This applied especially to those among its own citizens who are specialists in health-oriented research and who are deeply involved in furthering health research activities within the framework of the international community. Therefore, besides the obvious direct health benefits of expanded international co-operation we would also be rewarded by a higher level of mutual assurance that every party was indeed living up to the spirit of its obligations under a BW convention.

In conclusion, let me say that some of the speculations I have mentioned are ones which all of us must fervently hope will never materialize. But it would seem to me both foolish and arrogant to assume that our good will alone, without concrete arrangements, will serve to forestall the further development, proliferation and possible eventual recourse to what surely is one of the most ghastly methods of warfare imaginable.

As a scientist whose research career has centred on the genetics of bacteria, I have a profound personal interest in efforts being made in this forum to minimize the risk that infectious disease will become a routine weapon in future conflicts, civil or international. You have heard reasons, that I believe are compelling, for promptly reaching a ban on the development, production, proliferation or use of biological weapons. I will be indebted to you for this opportunity if I can return to my laboratory with the hope of having made the most modest contribution to the fulfilment of the urgent task before you.

Good luck.

MEXICO, SWEDEN AND YUGOSLAVIA

Draft Comprehensive Programme of Disarmament

Introduction

The present Comprehensive Programme of Disarmament has been elaborated by the Conference of the Committee on Disarmament in compliance with the request made by the General Assembly of the United Nations in resolution 2602 E (XXIV) approved on 16 December 1969, by which the Assembly declared the decade of the 1970s as a Disarmament Decade.

From the contents of this resolution it follows that the General Assembly:

- (1) Has reaffirmed the responsibility of the United Nations in the attainment of disarmament.
- (2) Continues to consider, as it did in 1959, that the question of general and complete disarmament is the most important one facing the world today.
- (3) Has recommended that the negotiations related to disarmament should be based on the principles incorporated in the Joint Statement submitted by the Union of Soviet Socialist Republics and the United States of America on 20 September 1961, which was welcomed by the General Assembly.
- (4) Has the conviction that the current negotiations which must be continued and intensified, as well as the ones to be initiated should strive to achieve, in a parallel form, the cessation at an early date of the nuclear arms race, the conclusion of additional agreements on specific collateral measures, the elimination of nuclear weapons and other weapons of mass destruction and the conclusion of a treaty on general and complete disarmament under effective international control.
- (5) Has the conviction that all Governments should intensify without delay their concerted efforts towards the achievement of the objectives defined in the previous paragraph, and that the participation of all nuclear weapon powers is indispensable for a full measure of success in these efforts.

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(6) Has the conviction that peace, security and the strengthening of confidence in the world are correlated with progress in the field of disarmament and that from this progress particularly important economic and social consequences may derive.

(7) Has the conviction that the diversion of enormous resources and energy, human and material, from peaceful economic and social pursuits to an unproductive and wasteful arms race, particularly in the nuclear field, places a great burden on both the developing and the developed countries.

(8) Has recommended that consideration be given to channelling a substantial part of the resources freed by measures in the field of disarmament to promote the economic development of developing countries and, in particular, their scientific and technological progress.

In the light of the above it would seem fully justified to state that the request of the General Assembly implies that the comprehensive programme of disarmament should embrace not only the work of the Conference of the Committee on Disarmament, but all negotiations and other acts on this matter, whichever the forum and the form in which they may take place, and that the programme should include effective procedures in order to facilitate the co-ordination of such activities and ensure that the United Nations General Assembly be kept informed on their progress so as to permit it the proper performance of its functions including the constant evaluation of the situation.

In preparing the comprehensive programme, the Conference of the Committee on Disarmament has endeavoured to adjust itself not only to the last two requisites but also to the basic points that have been outlined at the beginning derived from an analysis of resolution 2602 E (XXIV). It is therefore in the light of those elements that the contents of the comprehensive programme that is now hereby submitted to the General Assembly for its consideration at its twenty fifth session, should be interpreted.

It seems advisable to point out likewise that the term "Disarmament" is used here in the same manner as it has been done in the various forums of the United Nations, that is, as a generic term which encompasses and may designate any type of measures relating to the matter, whether they are measures for the prevention, the limitation, the reduction, or the elimination of armaments.

I. Objective

The aim of the comprehensive programme is to achieve tangible progress in order that the goal of general and complete disarmament under effective international control may become a reality in a world in which international peace and security prevail, and economic and social progress are attained.

II. Principles

1. The measures in the comprehensive programme should be carried out in accordance with the Joint Statement of Agreed Principles for Disarmament Negotiations of September 1961, taking into account the obligations undertaken in various treaties of disarmament and the relevant resolutions of the UN, and all new elements and possibilities in this area.

The programme should be sufficiently realistic to be widely acceptable but at the same time ambitious enough to give thrust to the negotiations on disarmament.

2. Priority should be given to disarmament measures dealing with nuclear and other weapons of mass destruction. This does not mean, however, that progress should not be sought in any field of disarmament. Action should be taken as soon as possible whenever a measure or group of measures is ripe for agreement. The scope of the term "mass destruction weapons" should be studied.

3. The problem of general and complete disarmament should be given intensive treatment, parallel to the negotiations of partial disarmament measures, in order to facilitate further clarification of positions and possibilities, including the revision and updating of the existing draft treaties submitted by the USSR and the USA respectively, or the submission of new proposals.

4. The principle of balance should be kept in mind. It concerns both a numerical decrease of men in arms and types of arms to prefixed levels, and packages of disarmament measures by which an overall balance is achieved which is judged by all parties to be satisfactory in the light of their own security. Particular efforts will have to be undertaken by major powers in order to reduce the gap which exists between them and medium and smaller countries.

5. Verification methods form an indispensable part of disarmament measures. When elaborating such methods it must be recognized that a hundred percent certainty can never be obtained by any such system. A single method of control is rarely sufficient. As a rule, a combination of several methods should be employed, mutually reinforcing one another in order to achieve the necessary assurances that a certain disarmament measure is being observed by all parties.

6. The comprehensive programme is correlated with other United Nations programmes for peace-keeping and international security. Progress in the former should not however be made dependant on progress in the latter and vice versa.

7. The necessity should be kept in mind of avoiding, when concluding disarmament agreements, any adverse effects on the scientific, technological or economic future of nations.

8. A substantial portion of the savings derived from measures in the field of disarmament should be devoted to the benefit of the developing countries.

9. In disarmament agreements every effort should be made not to prejudice or prejudice juridical or other unresolved issues in any outside field.

10. Concerted efforts should be made to associate militarily significant States, in particular all nuclear-weapon powers, with the negotiations for disarmament.

11. Regional agreements in conformity with the UN Charter should play an important role for the attainment of the objectives envisaged. Measures in such a context might not only be concerned with disarmament but might also contain elements of a confidence-building nature.

12. The United Nations, which has specific responsibility for disarmament under the Charter, should be kept informed of all efforts thereon, whether unilateral, bilateral, regional or multilateral.

Public opinion should be given adequate information about armament and disarmament, so that it might bring its influence to bear on the strengthening of disarmament efforts.

III. Elements and phases of the programme

A. Disarmament treaties in force or in preparation

1. The results achieved so far in the disarmament field and the agreements anticipated for the immediate future consist of partial or collateral measures, facilitating and forming part of the final aim of general and complete disarmament under effective international control. Such results consist mainly of the following treaties:

- (a) The 1925 Geneva Protocol;
- (b) The Antarctic Treaty of 1959;
- (c) The partial Test Ban Treaty of 1963;
- (d) The Outer Space Treaty of 1967;
- (e) The Treaty of Tlatelolco and its two Additional Protocols of 1967, and
- (f) The Non-Proliferation Treaty of 1968.

Particular attention should be paid to the fulfilment of the obligations arising from these treaties, to the review conferences provided for in some of them, and when that is the case, to the adoption of measures intended to complete them.

2. Efforts and negotiations to reach agreement at an early stage of the Disarmament Decade on treaties and conventions whose contents have been for some time under consideration by the General Assembly, the Conference of the Committee on Disarmament and other competent international forums should be urgently intensified.

These instruments deal mainly with:

- (a) The prohibition of the development, production and stockpiling of chemical and biological weapons and the destruction of existing stocks of such weapons;
- (b) The prohibition of the emplacement of nuclear weapons and other weapons of mass destruction on the seabed and the ocean floor and in the subsoil thereof;
- (c) The ban on underground nuclear-weapon tests, and
- (d) The establishment of an international regime for nuclear explosions for peaceful purposes, including an international service, within the framework of the IAEA, for such explosions.

B. Other measures of disarmament

1. Prevention and limitation of armaments

The possibilities of giving effect as soon as possible to the measures specified below should be the object of persistent scrutiny and negotiation.

(1) Nuclear weapons

- (a) A moratorium or cessation of testing and deploying new strategic nuclear-weapon systems.
- (b) The cessation of production of fissionable material for military purposes and the transfer of existing stocks to civilian uses.
- (c) A freeze or limitation on the deployment of all types of nuclear weapons.
- (d) The conclusion of regional agreements for the establishment of additional nuclear-weapon free zones.
- (e) A solution of the problem concerning the prohibition of the use of or the threat to use nuclear weapons.

(2) Conventional armaments and armed forces

- (a) Convening of regional disarmament conferences at the initiative of the States of the region.
- (b) The establishment of freezes or ceilings on the level and types of conventional armaments and the number of armed forces.
- (c) Restrictions on the creation of foreign military bases and the stationing of troops and military equipment in foreign territories.
- (d) Further prohibitions of the use for military purposes of the sea-bed and the ocean floor and the subsoil thereof.

2. Reduction of all armaments, armed forces and military expenditures

At the appropriate stage in the disarmament negotiations ways and means of carrying out the following measures should be thoroughly explored and actively negotiated:

- (a) The conclusion of regional non-aggression, security and disarmament treaties.
- (b) Gradual reductions in nuclear and conventional armaments and armed forces.
- (c) Gradual withdrawal of troops and bases from foreign territories.
- (d) Reduction in military expenditures.

3. Elimination of armaments

In accordance with the Agreed Principles for Disarmament Negotiations of 1961, the final stage of the comprehensive programme should be the conclusion of a treaty on general and complete disarmament under effective international control, providing for the prohibition and elimination of nuclear weapons and the reduction of conventional armaments and armed forces to levels required for the maintenance of internal order and for international peace-keeping.

IV. Peace-keeping and Security

1. It is recognized that there is a close inter-relationship among disarmament, international security, peaceful settlement of disputes and a climate of confidence.

2. During the period of the negotiations for the disarmament measures listed above, there should be parallel negotiations in the appropriate forums for the establishment or development of United Nations peace-making and peace-keeping machinery and procedures in order to increase, and ensure the maintenance of international peace and security.

3. Agreement on such measures will facilitate the success of disarmament efforts, just as the adoption of disarmament measures will create favourable conditions for the strengthening of international security. Nevertheless, as already pointed out above, progress in one of these categories of measures should not be made dependant on progress in the other and vice versa.

V. Procedure

1. The General Assembly should consider, annually, the progress made in the implementation of the comprehensive programme. Every three years, the General Assembly should review the comprehensive programme and revise it as warranted. This will entail an evaluation of the overall situation in the field of disarmament and a comparison between the development in regard to armaments and disarmament. The United Nations Disarmament Commission might be reactivated and entrusted with a part of this task.

2. The practice of requesting the Secretary General to prepare, with the assistance of expert consultants, authoritative studies on concrete questions relating to the arms race and disarmament should be continued.

3. There should be more conferences and scientific exchanges among scientists and experts from various countries on the problem of the arms race and disarmament.

4. Universities and academic institutes should be encouraged to establish continuing courses and seminars to study problems of the arms race, military expenditures and disarmament.

5. The increased exchanges and publications of relevant information and data should lead to greater openness, to the establishment of greater confidence among States and increased knowledge and interest in these matters among public opinion.

6. The feasibility of convening in due time and after appropriate preparatory work, a world disarmament conference of all States should be thoroughly studied.

UNITED ARAB REPUBLIC

Working Paper concerning suggestions on measures of
verification of a ban on Chemical and Biological Weapons

1. When dealing with the issue of verification of CBW, the following points need to be taken into account:
 - (a) CW cannot be banned without adequate verification.
 - (b) Agreement on a procedure of verification, despite apparent difficulties, is not out of reach.
 - (c) Verification need not be 100 per cent effective. That would be both unnecessary and impossible to achieve.
 - (d) Verification has both a technical and a political aspect. These two aspects must be, as much as possible, reconciled.
 - (e) Aspects of verification must be considered in such a way as to produce a solution properly adjusted to present day facts and conditions.
 - (f) Procedures of verification should be both national and international. They should complement one another in the most suitable manner.
2. Procedures of verification should fulfill two purposes: a preventive one, seeking the non-occurrence of a violation, and a curative one, to ascertain responsibilities in case a violation has been committed. These purposes could, perhaps, be best achieved by the following means:
 - (a) Each state party to the treaty is to undertake, within a certain period of time from the entry into force of the treaty, all necessary legal, administrative and otherwise practical measures, conducive to ensure the respect of the prohibitions and the elimination of stockpiles of the banned weapons. Furthermore, each party should inform the Security Council, or perhaps an impartial international body agreed to, on the steps it took in this regard, as well as on the completion of the elimination of its stockpiles. This procedure could be repeated whenever deemed necessary.

(b) Each state party is to undertake the forwarding of relevant and basic information to be agreed upon to the above mentioned impartial international body with a view to assist the technical process of verification. Furthermore, assistance of existing competent international organs such as WHO, FAO etc. ... could be called upon.

(c) In case of doubt arising concerning the activities of a state this would have to be reported to the Security Council which could take the necessary measures of investigation. A complaint could be, of course, directly lodged with the Security Council.

3. These procedures would notably increase in efficacy and credibility if there would be incorporated in the treaty a provision on withdrawal therefrom as well as another regarding a review conference. This would be a proper safeguard for ensuring the respect by all of the obligations entered upon.

CONFERENCE OF THE COMMITTEE ON DISARMAMENT

CCD/315

3 September 1970

Original: ENGLISH

HUNGARY, MONGOLIA AND POLAND

Working document concerning the introduction of a safeguard clause - CCD/285 - to the draft convention prohibiting the development, production and stock-piling of chemical and bacteriological (biological) weapons and on the destruction of such weapons (Doc.A/7655) made by Mr. J. Winiewicz, Deputy-Minister for Foreign Affairs of the Polish People's Republic at the 464th plenary meeting of the Conference of the Committee on Disarmament

... After hearing the statements of practically all the Members of this Committee it has become obvious that its overwhelming majority definitely favours a joint treatment of chemical and bacteriological means of warfare.

I shall then proceed with few comments on our working paper (No.CCD/285) in connexion with certain articles of the draft Convention as contained in doc.A/7655.

The system of complaints embodied in our proposal, now before you, has been, to a large extent, inspired by the provisions in respect of verification formulated in the British draft Convention dealing with biological warfare. By referring all problems having a direct impact on the security of nations to the Security Council we are making use of the only organ of the United Nations which has the power to enforce necessary decisions and is authorized to undertake such forms of investigation as necessary and deriving from the character of the complaint.

In the second paragraph of the proposed new article we are stating the obligation of every State to the Convention to co-operate in carrying out any investigation, which might be decided upon by the Security Council. Should the Security Council decide for example on the need for an on site inspection, then, of course, the inspection should be carried out. In order to secure a speedy action in such a circumstance I think that a very interesting suggestion has been put forward here by the distinguished representative of Japan, Ambassador Abe in his statement of 10 March, when he proposed that a roster of experts on B and C warfare prepared by the Secretary-General of the United Nations to be used for on site inspection should such need arise. The Polish delegation will not fail to give this proposal a more thorough analysis.

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When we speak of a system of verification and control our primary concern must be to ensure that it is within the scope of obligations assumed under the Treaty. Proposing the said addition to the draft convention we are fully aware of the fact, that any system of complaint and verification must be credible and has to inspire confidence in order to avert suspicion on the part of the signatories.

On the other hand we must always keep in mind that when exploring the most perfect methods of compliance with any measure of disarmament, political realism should remain our guide, if we really desire to make progress. Indeed, we fully share the view expressed by the distinguished representative of Sweden, Madame Myrdal when, in her statement of April 9, 1970, she said:

"The main objective of any verification procedure is that it should generate mutual trust".

We agree and accept this to be the very essential element and factor of co-operation; based on goodwill it may prove to be the most efficient if not the only way to solve differences that might originate in the future between parties to the Convention.

We also accept the view of the distinguished representative of Sweden, that complaint procedure does not secure full positive observance of the provisions of the Convention by all parties concerned. But we should like to draw the Committee's attention that in the last two preambular paragraphs of the draft resolution of the Security Council, proposed in our working paper, we are twice stressing the necessity to undertake proper steps as to ensure the strict adherence to the obligations stemming out of the Convention. It means that the Security Council, in accordance with its statutory function deriving from the Charter of the United Nations is in a position to take all appropriate steps resulting from the process of the investigation so as any would-be violator could have no chance to escape sanctions.

There are delegations hesitating in relying solely on the Security Council on questions related to the application of safeguard of measures of disarmament because of the veto power of its permanent Members. We would not argue that one could not theoretically conceive a more sophisticated and more efficient system of security than the one provided for in the Charter of the United Nations. No better system of security has been elaborated up till now, and we doubt whether the foreseeable future can bring changes in this field. We are convinced that the present system is valid and fully sufficient for the purpose of the Convention on CBW.

On the other hand we have to add, that many a painful problem in international relations remained and there are some which still remain unsolved not as the result of any shortcomings of the Charter but simply as the result of insidious disregard of its provisions and of the decisions of the Security Council.

The consideration of our working paper should in no way be separated from other provisions of the draft convention and in particular from its art. V and VI.

Article V is an important instrument safeguarding compliance with the provisions of the Convention. It provides for the early adoption and enforcement by States - in accordance with their constitutional procedure - of the necessary legislative and administrative measures pertaining to the prohibition of development, production and stockpiling of chemical and bacteriological (biological) weapons and to their destruction. One should not underestimate the importance of the subject matter and the enforcement power of its provisions. Like in other wellknown international instruments of that type, the draft Convention envisages the need of supplementing international obligations of States with corresponding national and administrative measures.

A pertinent interpretation of administrative measures that may be undertaken in the fulfilment of the provision of Art.V of the Draft has been spelled out by the distinguished representative of Yugoslavia, Minister Vratusa, in his statement of March 10 when he suggested that all States should place their institutions engaged in CBW research, development and production under civilian administration.

Another possible important administrative measure connected with the implementation of art.V of the Draft Convention could be the inclusion into textbooks dealing with chemistry and biology of a formula indicating that the use of any chemical formula or biological agent for any warlike purposes constitute a violation of international law and will be prosecuted in accordance with the appropriate national legislation. Every individual must become aware of the danger represented in CBW and has to be prepared for some form of participation in the enforcement of the Convention banning the development and production of those inhumane means warfare. I cannot abuse the patience of this Committee multiplying examples of possible measures in this field. We are ready to co-operate in spelling out other possible practical measures to this end. In these considerations of ours we are guided by our deep conviction on the necessity of mobilizing the masses of the peoples of the world against all the dangers of modern warfare. That they might be not taken by surprise out of ignorance of the lethal armory - sometimes compiled by their own governments. As Mr. Gornulka said in his speech at the United Nations General Assembly in 1960:

"It is of the utmost importance that mankind be fully aware of the dangers inherent in modern warfare. We have no right to conceal from the nations the truth about the real effects of nuclear arms and of weapons of mass destruction. On the contrary, we are in duty bound to spread this truth in order to make it easier for all nations to join their efforts in the struggle against the threat of war for general and complete disarmament".

The unfailing value of the safeguard provisions contained in art.V of the draft Convention is based on the consciousness and awareness of millions of peoples. Particularly those workers, farmers and technicians proud of their participation in the setting up of a better world and not of its utter destruction. Together with the scientists engaged in research, given the proper instrument of international law, their attitude can constitute a valuable guarantee that the Convention proposed now by the socialist States will not be violated.

The problem was raised as to how the national enforcement in different economic and social systems could be carried out. It does not seem to be a great problem. When the interests of entire populations are at stake, when we deal with crucial problems of peace and human survival - the feelings and actions of individuals are very much the same, irrespective of political systems under which they are living. As far as we are concerned, we firmly believe in their final judgement. ...

ANNEX D

List of Verbatim Records

449th Meeting to 469th Meeting (17 February to 30 April 1970)

CCD/PV.449 to 469

470th Meeting to 494th Meeting (16 June to 3 September 1970)

CCD/PV.470 to 494

ANNEX D

List of Verbatim Records

395th Meeting to 430th Meeting (18 March to 21 August 1969):

ENDC/PV395 to 430

430th Meeting to 448th Meeting (26 August to 30 October 1969):

CCD/431 to 448.