

**AD HOC GROUP OF GOVERNMENTAL EXPERTS
TO IDENTIFY AND EXAMINE POTENTIAL
VERIFICATION MEASURES FROM A
SCIENTIFIC AND TECHNICAL STANDPOINT**

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SUMMARY REPORT

INTRODUCTION

1. The Third Review Conference (September 1991) of the Biological Weapons Convention agreed to establish an Ad Hoc Group of Governmental Experts, open to all States Parties to identify and examine potential verification measures from a scientific and technical standpoint.

2. The mandate of the Group was as follows:

The Conference, determined to strengthen the effectiveness and improve the implementation of the Convention and recognizing that effective verification could reinforce the Convention, decided to establish an Ad Hoc Group of Governmental Experts open to all States Parties to identify and examine potential verification measures from a scientific and technical standpoint.

The Group shall meet in Geneva for the period 30 March to 10 April 1992. The Group will hold additional meetings as appropriate to complete its work as soon as possible, preferably before the end of 1993. In accordance with the agreement reached at the Preparatory Committee, the Group shall be chaired by Ambassador Tibor Tóth (Hungary) who shall be assisted by two Vice-Chairmen to be elected by the States Parties participating in the first meeting.

The Group shall seek to identify measures which could determine:

- Whether a State Party is developing, producing, stockpiling, acquiring or retaining microbial or other biological agents or toxins, of types and in quantities that have no justification for prophylactic, protective or peaceful purposes;
- Whether a State Party is developing, producing, stockpiling, acquiring or retaining weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.

Such measures could be addressed singly or in combination. Specifically, the Group shall seek to evaluate potential verification measures, taking into account the broad range of types and quantities of microbial and other biological agents and toxins, whether naturally occurring or altered which are capable of being used as means of warfare.

At these ends the Group could examine potential verification measures in terms of the following main criteria:

- Their strengths and weaknesses based on, but not limited to, the amount and quality of information they provide, and fail to provide;
- Their ability to differentiate between prohibited and permitted activities;
- Their technology, material, manpower and equipment requirements;
- Their financial, legal, safety and organizational implications;
- Their impact on scientific research, scientific cooperation, industrial development and other permitted activities, and their implications for the confidentiality of commercial proprietary information.

In examining potential verification measures, the Group should take into account data and other information relevant to the Convention provided by the States Parties.

The Group shall adopt by consensus a report taking into account views expressed in the course of its work. The report of the Group shall be a description of its work on the identification and examination of potential verification measures from a scientific and technical standpoint, according to this mandate.

The report of the Group shall be circulated to all States Parties for their consideration. If a majority of States Parties ask for the convening of a conference to examine the report, by submitting a proposal to this effect to the Depositary Governments, such a conference will be convened. In such a case the conference shall decide on any further action. The conference shall be preceded by a preparatory committee.≡

3. The Group held four sessions, from which three Summaries and a Procedural Report were produced and annexed as part of this Summary Report:

- VEREX 1 30 March-10 April 1992 (Identification of measures; Annex I);
- VEREX 2 23 November-4 December 1992 (Examination of measures; Annex II);
- VEREX 3 24 May-4 June 1993 (Evaluation of measures; Annex III);
- VEREX 4 13-24 September 1993 (Preparation of the report; Annex IV);

IDENTIFICATION AND EXAMINATION

4. During its first session the Group identified in all 21 potential measures suggested by individual delegations under the three broad areas of development, acquisition and production, and stockpiling and retaining, for later examination and evaluation against the mandate criteria. They were included in a list. The inclusion of a measure in this list constituted no judgement by the Group as to the usefulness of the potential measure in relation to the objectives stated in the mandate. Some potential measures included in the list were considered as individual measures which might be applied individually or with other individual measures in each category. Measures were divided as follows: off-site and on-site. They were grouped in a Chairman's paper in seven broad categories for the purpose of later examination and evaluation:

Off-site Measures:

- Information Monitoring:
 - surveillance of publications;
 - surveillance of legislation;
 - data on transfers, transfer requests and production
 - multilateral information sharing.
- Data exchange:
 - declarations;
 - Notifications.
- Remote Sensing:
 - surveillance by satellite;
 - surveillance by aircraft;
 - ground-based surveillance.
- Inspections:
 - sampling and identification;
 - observation;
 - auditing.

On-site Measures:

- Exchange visits:
 - international arrangements.
- Inspections:
 - interviewing;
 - visual inspections;
 - identification of key equipment;
 - auditing;

sampling and identification;
medical examination.

- Continuous monitoring:
 - by instruments;
 - by personnel.

5. During the second session, the Group decided to modify the list of measures identified at the first session. The new list agreed upon by consensus is included in Annex II, pages 131-133.

6. Each measure was examined according to the mandate in order to determine: AWhether a State Party is developing, producing, stockpiling, acquiring or retaining microbial or other biological agents or toxins, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes.≡. Similarly, measures were examined to determine: AWhether a State Party was developing, producing, stockpiling, acquiring or retaining weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.≡.

7. A methodology for detailed examination of measures was agreed by the Group which included a definition, a description of the characteristics and technologies in terms of the state-of-the-art, the capabilities and limitations, and a discussion of potential interaction with other measures.

8. A number of national and background papers were presented by participants. Each measure was fully described and introduced for group discussion by a rapporteur (Annex II, pages 52-122). In all cases potential interaction with other measures was identified. Moderators, (Annex II, pages 127-133) designated by the Chairman, prepared discussion papers in the three broad areas of development, production and stockpiling to assist in the evaluation. The examinations represented a technical summary of the key factors to consider. These consensus summaries discussed extensively by the Group, formed the basis of consolidated texts which could be used as a starting point for evaluation (Annex II, pages 46-148 and Annex III, pages 149-327).

EVALUATION OF MEASURES SINGLY

9. Each potential measure identified in the examination phase was evaluated singly in accordance with the mandate, i.e. its strengths and weaknesses based on, but not limited to, the amount and quality of information it provides, and fails to provide; the ability to differentiate between prohibited and permitted activities; the ability to resolve ambiguities about compliance; the technology, material, manpower and equipment requirements; the financial, legal, safety and organizational implications; and the impact on scientific research, scientific cooperation, industrial development and other permitted activities, and the implication on scientific research, scientific cooperation, industrial development and other permitted activities, and its implications for the confidentiality of commercial proprietary information. On the basis of the Introduction submitted by the rapporteur, the Group discussed and evaluated the measures at both formal and informal meetings and adopted by consensus an evaluation report on each measure. Summaries of the

Group's work in relation to the individual measures are contained in a shortened form in a table attached to this report. The complete summaries of the examination and the evaluation can be found in the Summaries of Annex II, pages 52-122 and Annex III, pages 154-273.

EVALUATION OF MEASURES IN COMBINATION

10. While recognizing the possible utility of other methodologies, the Group agreed to use one methodology to assess illustrative but not exhaustive examples of measures in combination. Although the Group recognized that a large number of combinations were possible, the systematic evaluation of all possible combinations was considered to be impractical without prejudice to any future ideas that may evolve on the subject. The Group agreed that, in general, the capabilities and limitations of a combination of measures equal the sums of the capabilities and limitations of the single measures involved in the combination. This cumulative effect of measures in combination was not addressed. The analysis was intended to investigate whether, in particular cases, the application of measures in combination produces enhanced capabilities and limitations that differ from a simple accumulation of the capabilities and limitations of the single measures involved (synergy).

11. The following five combinations were proposed as examples to illustrate the evaluation of enhanced capabilities and limitations of measures in combinations:

- Declarations/Multilateral information sharing/
Satellite surveillance/Visual inspection
- Information monitoring (surveillance of publications/
surveillance of legislation/data on transfers, transfer
requests and production/multilateral information-
sharing/exchange visits)
- On-site inspection (interviewing/visual inspections;
identification of key equipment/auditing/sampling
and identification)
- Declarations/Multilateral information-sharing/
On-site visual inspection
- Declarations/Information monitoring.

12. The enumeration of these combinations was not meant to represent a proposal for combinations that would serve as a verification regime, since this is not part of the mandate of the Group (Annex III, pages 272-273). It was agreed that, in principle, States Parties could submit additional contributions related to the evaluation of measures in combination for consideration. In this context, the view was expressed that declarations and on-site inspections might be further

considered at a later stage. The Group discussed and evaluated the examples of measures in combination and adopted a report by consensus (Annex III, pages 150-153).

13. All rapporteurs have identified off-site and on-site measures which interact with the single measures. The capabilities of single measures might be enhanced if they are combined with other off-site measures and other on-site measures.

14. The measure ADeclarations \cong was most frequently identified for application in combination with other measures. The most frequently identified on-site measures in combination were on-site inspections (interviewing, visual inspection, identification of key equipment, sampling and identification, auditing). This does not mean that all the measures in parenthesis above always would be included in an on-site inspection.

OTHER ASPECTS

15. The 21 measures were grouped under the three broad areas of prohibition of Article 1 of the Convention (development; acquisition or production; stockpiling or retaining). Some measures were found to be useful for all three areas of prohibition, whereas some measures were considered useful only for one or two of the areas (Annex III, page 271; BWC/CONF.III/VEREX/6/WP.176).

16. The Group decided by consensus to include a paper recording the results of consultations on the question of types and quantities of agents. These results could be further considered at a later stage (Annex III, page 153; BWC/CONF.III/VEREX/6). According to the paper, agreed lists, which are difficult to construct at this stage, are a prerequisite to the implementation of many potential verification measures.

17. Some national background and rapporteur=s papers mentioned that microbial or other biological agents or toxins can be disseminated by weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.

18. In the course of an informal meeting, delegations discussed the experiences gained by the three countries concerned from two trial inspections carried out by the Netherlands and Canada, and the UK, respectively. Two working papers on trial inspections were submitted - ABilateral Trial Inspection in Large Vaccine Facility \cong (BWC/CONF.III/VEREX/6/WP.112) by the Netherlands and Canada, and AUK Practice Inspection: Pharmaceutical Pilot Plant \cong (BWC/CONF.III/VEREX/6/WP.141) by the United Kingdom. While work would be required on the question of protection of CPI in order to achieve consensus, the countries concerned in two national trial inspections informed delegations of their national findings that the access given had not compromised commercial confidentiality.

19. The Group examined the potential verification measures in terms, *inter alia*, of their impact on scientific research, scientific cooperation, industrial development and other permitted activities. In that context, delegations recalled Article X of the Convention according to which States Parties Aundertake to facilitate, and have the right to participate in the fullest possible exchange of

equipment, materials and scientific and technological information for the use of bacteriological (biological) agents and toxins for peaceful purposes, and the related provisions of the Final Document of the Third Review Conference. In particular those on the examination of means of improving related institutional mechanisms and those on the adoption of positive measures to promote technology transfer, consistent with all the other Articles of the Convention. Delegations recalled as well that the provisions of the Convention should not be used to impose restrictions and/or limitations on the transfer for purposes consistent with the objectives and the provisions of the Convention.

CONCLUSIONS

20. The Group identified, examined and evaluated from a scientific and technical standpoint in all 21 potential verification measures as well as some suggested examples of combinations of measures. Several of the measures evaluated singly have been identified as being closely related.

21. The findings of the identification, examination and evaluation of the 21 potential verification measures against the agreed mandate criteria indicated that capabilities and limitations existed for each measure in varying degrees, although reliance could not be placed on any single measure by itself to determine whether a State Party is developing, producing, stockpiling, acquiring or retaining: microbial or other biological agents or toxins, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes or; weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes.

22. Certain current scientific and technical shortcomings of some measures were appreciated. These included the acknowledgment that some technologies associated with particular measures are limited by the commercial availability of equipment, materials and stages of development.

23. The identified verification measures cover a variety of non-intrusive and intrusive measures. The Group described the capabilities and limitations of the measures and evaluated the impact on scientific research, scientific cooperation, industrial development and other permitted activities and their implications for the confidentiality of commercial proprietary information from a scientific and technical standpoint only. Some measures were considered inherently not capable by themselves of differentiating between prohibited and permitted activities.

24. It was difficult to assess accurately the feasibility and the effectiveness of all the 21 measures within the context and criteria laid down in the mandate for the Group. Concerns were expressed over the financial implications and the technical difficulties in the identification of biological agents.

25. Concern was also expressed that the implementation of any measure should ensure that sensitive commercial proprietary information and national security needs are protected. The issue of protection of CPI, some aspects of which were addressed in a preliminary way, needs further consideration at a later stage consistent with the effective verification needs of the BWC.

26. Taking into account already existing lists for different purposes (Annex III, pages 266-267; BWC/CONF.III/VEREX/6), illustrative lists of agents could be developed to support particular potential verification measures. Under the measure of ADeclarations, data on production, including amounts of agents produced, may be collected. Under the measure of AData on transfers, Transfer requests and on Production, data may provide background information for inspections and for other measures.

27. The development of equipment and technologies, which is difficult for some applications, is important to meet the needs of some discussed measures, and could support the technical applicability of these measures in the future.

28. Some of the measures which were identified were also subjected to an illustrative but not exhaustive evaluation of combinations of measures.

29. Some measures in combination may enhance the capabilities and/or reduce the limitations of the individual measures. However, some limitations inherent in individual measures could not be removed and in some cases combinations of measures may result in enhanced limitations. In certain cases the enhanced capabilities produced by combinations differ from a simple accumulation of the capabilities of the single measures thus creating synergy. Even if a combination does not create any synergies there will still be a cumulative effect of both capabilities and limitations.

30. Important positive and negative synergies which were not identified in the evaluation may exist for each of the combinations examined. From a technical standpoint some combinations of some potential verification measures including both off-site and on-site measures could provide information which could be useful for the main objective of the BWC.

31. The Ad Hoc Group of Governmental Experts concluded that potential verification measures as identified and evaluated could be useful to varying degrees in enhancing confidence, through increased transparency, that States Parties were fulfilling their obligations under the BWC. While it was agreed that reliance could not be placed on any single measure to differentiate conclusively between prohibited and permitted activity and to resolve ambiguities about compliance, it was also agreed that the measures could provide information of varying utility in strengthening the BWC. It was recognized that there remain a number of further technical questions to be addressed such as identity of agent, types and quantities, in the context of any future work. Some measure in combination could provide enhanced capabilities by increasing, for example, the focus and improving the quality of information, thereby improving the possibility of differentiating between prohibited and permitted activities and of resolving ambiguities about compliance.

32. Based on the examination and evaluation of the measures described above against the criteria given in the mandate, the Group considered, from the scientific and technical standpoint, that some of the potential verification measures would contribute to strengthening the effectiveness and improve the implementation of the Convention, also recognizing that appropriate and effective verification could reinforce the Convention.

DISPOSITION OF THE REPORT

33. The Ad Hoc Group of Governmental Experts recalled that the Third Review Conference had decided the following with regard to the disposition of the work of the Group:

The report of the Group shall be circulated to all States Parties for their consideration. If a majority of States Parties ask for the convening of a conference to examine the report, by submitting a proposal to this effect to the Depositary Governments, such a conference will be convened. In such a case the conference shall decide on any further action. The conference shall be preceded by a preparatory committee.≡