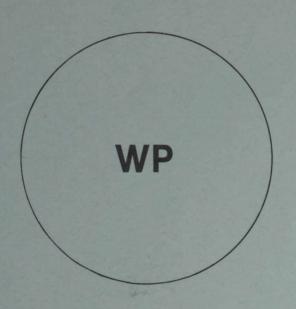
COMMITTEE ON DISARMAMENT AND CONFERENCE ON DISARMAMENT

CHEMICAL WEAPONS

WORKING PAPERS

1983 - 1985 SESSIONS



COMPILED AND EDITED BY:

ARMS CONTROL AND DISARMAMENT DIVISION OF
THE DEPARTMENT OF EXTERNAL AFFAIRS
OTTAWA, CANADA

FEBRUARY 1986

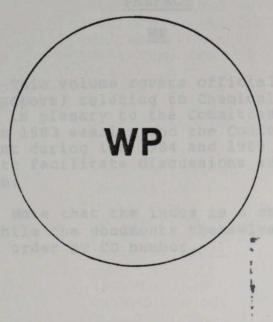


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PREFACE

WP

This volume covers official documents (working papers) relating to Chemical Weapons submitted in plenary to the Committee on Disarmament during its 1983 session and the Conference on Disarmament during its 1984 and 1985 sessions. It is compiled to facilitate discussions and research on this issue.

Note that the index is a chronological listing while the documents themselves are arranged in numerical order by CD number.

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Serial	Reference	Country	Description	Date
			1983	
209	CD/342	Chairman AHWGCW	Report of the Ad Hoc Working Group on Chemical Weapons on its Work During the Period 17-28 January 1983 (also issued as CD/CW/WP.45, 28.1.83)	8.2.83
210	CD/343	USA	United States Detailed Views on the Contents of a Chemical Weapons Ban	10.2.83
211	CD/349	Cuba	Final Summary Report of the International Symposium on Herbicides and Defoliants in War: The Long Term Effects on Man and Nature, Held in Ho Chi Minh City from 13 to 20 January 1983	21.2.83
212	CD/350	Spain	Working Paper: Technical Aspects of a Convention on Chemical Weapons	28.2.83
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216.1	CD/378	China	On the Prohibition Regime of the Future Convention Banning Chemical Weapons	21.4.83
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223	CD/392	Finland	Letter Dated 11 July 1983 from the Permanent Representative of Finland Addressed to the Chairman of the Committee on Disarmament Transmitting a Document Entitled "Systematic Identification of Chemical Warfare Agents: Identification of Precursors of	13.7.83

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231	CD/425	Sweden	Verification of the Destruction of Stockpiles of Chemical Weapons (also issued as CD/CW/WP.60)	18.1.84
233	CD/424	USA	Verification of Chemical Weapons Stockpile Destruction (also issued as CD/CW/WP.61)	20.1.84

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234	CD/426	Sweden	The Prohibition of Military Preparations for Use of Chemical Weapons (also issued as CD/CW/WP.62)	23.1.84
239	CD/429	Chairman AHWGCW	Report of the Ad Hoc Working Group on Chemical Weapons on Its Work During the Period 16 January - 6 February 1984	7.2.84
240	CD/431	United Kingdom	Chemical Weapons Convention: Verification and Compliance - The Challenge Element	10.2.84
241	CD/432	Iran	Letter Dated 30 January 1984 from the Permanent Representative of the Islamic Republic of Iran Addressed to the President of the Conference on Disarmament Transmitting a Report Containing a Description of an Attack with Chemical Weapons in Piranshahr, Iran	13.2.84
242	CD/435	Socialist Group	Improved Effectiveness of the Work of the Conference on Disarmament in the Field of the Prohibition of Chemical Weapons	20.2.84
243	CD/437	Czechoslo- vakia	Letter Dated 23 February 1984 Addressed to the President of the Conference on Disarmament from the Permanent Representative of Czechoslovakia Transmitting a Proposal of Warsaw Treaty Member States to the Member States of NATO on the Question of Freeing Europe from Chemical Weapons, Presented at the USSR Ministry of	23.2.84
244	ent of the		Presented at the USSR Ministry of Foreign Affairs, 10 January 1984	
244	CD/439	Federal Republic of Germany	Working Paper: Proposals on "Prohibition of Transfer" and "Permitted Transfers" in a Future CW Agreement	24.2.84

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246	CD/443	China	Proposals on Major Elements of a Future Convention on the Complete Prohibition and Total Destruction of Chemical Weapons (also issued as CD/CW/WP.68)	5.3.84
247	CD/445	Nether- lands	Size and Structure of a Chemical Disarmament Inspectorate	7.3.84
251	CD/482	Yugoslavia	Working Paper: National Verification Measures (also issued as CD/CW/WP.73)	26.3.84
253	CD/483	Iran	Letter Dated 20 March 1984 from the Permanent Representative of the Islamic Republic of Iran Addressed to the President of the Conference on Disarmament Containing Proposals on Some Elements of a Future Convention on the Complete Prohibition and Total Destruction of Chemical Weapons (also issued as CD/CW/WP.74)	27.3.84
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257	CD/496	Federal Republic of Germany	Considerations on Including a Ban on the Use of Chemical Weapons and the Right of Withdrawal in a Future Chemical Weapons Convention	4.4.84
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261	CD/505	Finland	Letter Dated 12 June 1984 Addressed to the President of the Conference on Disarmament from the Permanent Representative of Finland, Transmitting a Document Entitled "Technical Evaluation of	13.6.84

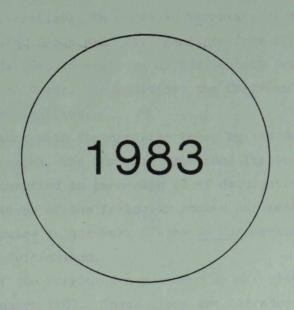
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			Selected Scientific Methods for the Verification of Chemical Disarmament"	
262	CD/508	Norway	Working Paper: Verification of a Chemical Weapons Convention- Sampling and Analysis of Chemical Warfare Agents Under Winter Conditions	15.6.84
263	CD/514	United Kingdom	Verification of Non-production of Chemical Weapons	10.7.84
264	CD/516	USA	The Declaration and Interim Monitoring of Chemical Weapons Stockpiles	13.7.84
265	CD/518	Federal Republic of Germany	Verification of the Destruction of Chemical Weapons	17.7.84
266	CD/519	Iran	Letter Dated 16 July 1984 from the Permanent Representative of the Islamic Republic of Iran Addressed to the President of the Conference on Disarmament	18.7.84
			Transmitting the Text of the Response of His Excellency Seyyed Ali Khameini, President of the Islamic Republic of Iran, to a Message of the Secretary-General of the United Nations	
267	CD/532	Socialist Group	The Organisation and Functioning of the Consultative Committee (also issued as CD/CW/WP.84)	8.8.84
270	CD/537	Denmark	Letter Dated 14 August 1984 from the Charge d'Affaires a.i. of the Permanent Mission of Denmark, Transmitting a Working Paper on the Verification of Non-production of Chemical Weapons	17.8.84

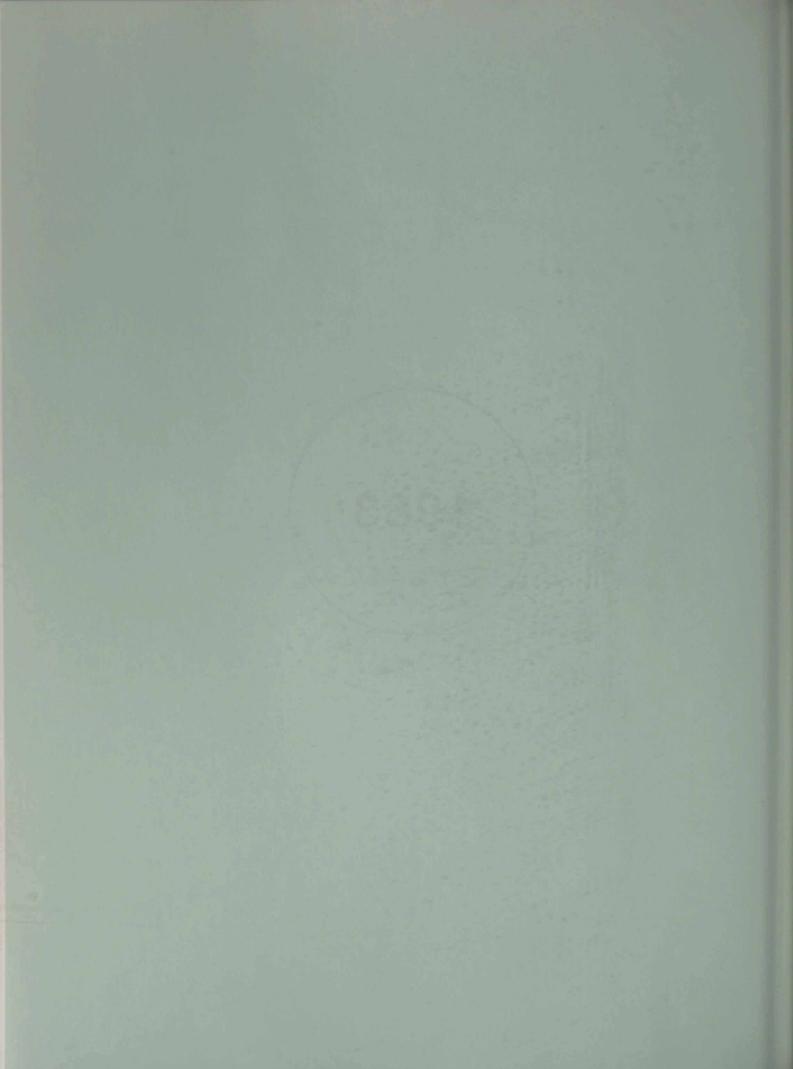
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271	CD/539 and Corr.1	Chairman AHCCW	Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Diarmament	31.8.84
272	CD/541	Australia	Verification of Non-production of Chemical Weapons (also issued as CD/CW/WP.87)	9.10.84
			1985	
280	CD/546	Chairman AHCCW	Report of the Ad Hoc Committee on Chemical Weapons on its Work During the Period 14 January - 1	1.2.85
			February 1985 (also issued as CD/CW/WP.97)	
280.1	CD/551		Decision on the Re-establishment of the Ad Hoc Committee on Chemical Weapons	8.2.85
283	CD/575	United Kingdom	Verification of Non-production of Chemical Weapons: Proposals for Inspection Procedures and Data Exchange (also issued as CD/CW/WP.100)	6.3.85
287	CD/585	Spain	Letter Dated 25 March 1985 from the Permanent Representative of Spain Addressed to the President	2.4.85
			of the Conference on Disarmament Transmitting a Document Entitled "Verification of Non-production of Chemical Weapons"	
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289	CD/589	United Kingdom	Chemical Weapons Convention: the Organs and Constitution of the Organisation	11.4.85
297	CD/500	Norway	Lotter Dated 10 June 1995	20.6.85
297	CD/598	Norway	Letter Dated 19 June 1985 Addressed to the President of the Conference on Disarmament from the Permament Representative of Norway Transmitting a Research Report Entitled "Verification of	20.5.65

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			a Chemical Weapons Convention. Sampling and Analysis of Chemical Warfare Agents Under Winter Conditions Part IV".	
298	CD/600	Norway	Verification of a Chemical Weapons Convention - Sampling and Analysis of Chemical Warfare Agents Under Winter Conditions	20.6.85
299	CD/601	Norway	Working Paper: Verification of Alleged Use of Chemical Warfare Agents Under Winter Conditions	20.6.85
301	CD/605	China	Working Paper: Destruction of Chemical Weapons (also issued as CD/CW/WP.114)	4.7.85
302	CD/613	Yugoslavia	Permitted Activities - Verification Measures (also issued as CD/CW/WP.115)	10.7.85
303	CD/614	Finland	Letter Dated 12 July 1985 Addressed to the President of the Conference on Disarmament from the Charge d'Affaires a.i. of the Permament Mission of Finland, Transmitting a Document Entitled "Air Monitoring as a Means for Verification of Chemical Disarmament; C.2 Development and Evaluation of Basic Techniques, Part I"	12.7.85
304.1	CD/615	USSR	Letter Dated 15 July 1985 Addressed to the President of the Conference on Disarmament from the Representative of the Union of Soviet Socialist Republics Transmitting the Text of the TASS Statement Published on 11 July 1985	15.7.85

Serial	Reference	Country	Description	Date
306	CD/617	Iran	Letter Dated 19 July 1985 Addressed to the President of the Conference on Disarmament from the Charge d'Affaires a.i. of the Permanent Mission of the Islamic Republic of Iran Transmitting the "Report of the Specialists Appointed by the	22.7.85
			Secretary-General to Investigate Allegations by the Islamic Republic of Iran Concerning the Use of Chemical Weapons"	
308	CD/619	Japan	Application of (Nuclear) Safeguards Remote Verification Technology to Verification of a Chemical Weapons Convention	23.7.85
309	CD/620	German Democratic Republic	National Verification Measures to Implement the Convention on the Prohibition of Chemical Weapons (also issued as CD/CW/WP.119)	23.7.85
310	CD/623	Iran	Letter Dated 18 July 1985 Addressed to the President of the Conference on Disarmament from the Charge d'Affaires of the Permament Mission of the Islamic Republic of Iran	26.7.85
313	CD/627	Federal Republic of Germany	Verification of the Non-production of Chemical Warfare Agents by Means of Inspections in the Civilian Chemical Industry	1.8.85
315	CD/630	France	Chemical Weapons; Elimination of Stocks of Chemical Weapons: Irreversible Neutralization of Means of Production	5.8.85
321	CD/632	Sweden	A Comprehensive Approach for Elaborating Regimes for Chemicals in a Future Chemical Weapons Convention	20.8.85

Serial	Reference	Country	Description Date
322	CD/636	AHCCW	Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Disarmament





CD/342 8 February 1963 Original: ENGLISH

Report of the At Hoc Working Group on Chemical Meadons on its work during the period 17-28 January 1983

- I. ORGANIZATION OF WORK
- 1. In accordance with the decision taken by the Committee on Disarmament at its 138th plenary meeting held on 17 September 1982, the Ad Hoc Working Group resumed its work on 17 January 1983 under the Chairmanship of Ambassador Bogumil Sujka of Poland. Mr. Abdelkader Bensmail, Senior Political Affairs Officer, Department for Disarmament Affairs, continued to serve as Secretary of the Ad Hoc Working Group.
- 2. The Ad Hoc Working Group held five meetings from 17 to 28 January, and the remaining time was devoted to meetings of the Contact Groups set up during the summer session of the Working Group. In addition, the Chairman held a number of informal consultations with delegations.
- 3. Also in accordance with the decision taken by the Committee on Disarmament at its 188th plenary meeting, the Chairman held consultations with delegations on the technical issues identified in paragraph 12 of document CD/334.
- 4. The representatives of the following States not members of the Committee on Disarmament participated in the work of the Ad Hoc Working Group: Austria, Denmark, Finland, Norway and Switzerland.
- 5. The Chairman of the Working Group summed up his views on the work done during the period 17-28 January 1983. These views are reproduced below in part II of this report.
- 6. The reports of the Co-ordinators of the Contact Groups are reproduced below in part III of this report.
- 7. The Chairman's views and the Co-ordinators' reports are without prejudice to the views and positions of the delegations.
- II. CHAIRMAN'S VIENS ON THE COURSE OF THE DISCUSSION DURING THE PERIOD 17-28 JANUARY 1983
- 8. The Group continued the process of elaboration of the convention, taking into consideration the reports of the Co-ordinators of the Contact Groups as contained in document CD/334, and the views of the Chairman on possible compromise wordings of the elements of the future convention as contained in document CD/333. In the course of the deliberations both in plenary meetings of the Working Group and in the contact groups, views were expressed and comments made on these two documents which reflect

the present stage of the negotiations on a chemical weapons convention. Due account was also taken of other existing proposals. Some delegations were of the view that, on certain aspects of the convention, the actual stage of negotiations allowed to proceed to the drafting process, while others considered that further discussion on specific aspects was needed.

- 9. In the plenary meetings of the Working Group, in the meetings of the Contact Groups and in the informal consultations, the following aspects of the convention were addressed:
 - scope of the convention
 - definitions
 - destruction, diversion, dismantling and conversion
 - national implementation measures
 - national technical means of verification
 - consultation and co-operation; consultative committee
 - preamble and final clauses of the convention .
- 10. The discussion on the scope of the future convention was conducted in close connection with the preamble and final clauses of the convention. It was generally agreed that the basic positions on the inclusion or not of a prohibition of use of chemical weapons as contained in the Annex to document CD/334 could not meet with consensus. A view has been expressed that the working hypothesis proposed by the co-ordinator of the Contact Group should be further elaborated. In this context, a concept of a new element recognising that any use of chemical weapons will ipsc jure constitute an evidence of a violation of the convention (paragraph 3 of the working hypothesis) was suggested. An acceptable proposal for the text of this new article could not be worked out by the co-ordinator during this period, and this effort should be pursued.
- 11. Due to the fact that the definitions of precursors and key precursors were under discussion in the Chairman's consultations on technical issues, these matters were not brought up in the Contact Group on definitions. Also, due to the time factor, some other matters trought up in the report were not discussed. On the questions that were discussed the following main results were noticed: some delegations pointed out that in their opinion the areas of agreement which occurred in the report of the co-ordinator (CD/334) had been adequately reflected and precisely worded in CD/333, and in particular, that the general definitions contained therein covered all chemicals which should be prohibited by the Convention. Some delegations put forward new ideas to include very toxic and incapacitating, but not lethal, compounds into the same of super-toxic lethal chemicals by recognizing also the possibility to set the same toxicity limit for these types of compounds as for the super-toxic substance by relating also to the effective done.

- 12. With regard to destruction, diversion, dismansling and conversion, the Contact group reviewed the report of the Co-ordinator, as contained in document CD/354. In the course of this review, the Group attempted to determine whether there had been changes in the positions of delegations as recorded in that report, and also endeavoured to refine and clarify concepts and formulations relating to the destruction of stocks and finities. Some of these concepts were clarified and some others need further elaboration.
- 13. With regard to national implementation measures, there was general agreement that States Parties should take the appropriate measures to implement the convention and organize and employ their national implementation system in accordance with their own legislation. Whereas some delegations felt that for those reasons it was not necessary to reflect on the internal functions of this system, others deemed it appropriate to establish an Annex to the convention containing guidelines concerning the functions of the national implementation system. These delegations felt that the corresponding examples given in documents CD/354 and CD/353 served this purpose and could be further elaborated. Concerning the co-operation between the national and international bodies in implementing the Convention, there was general agreement that the tasks reflected in the above-mentioned documents were relevant and should be further elaborated.

 Questions with regard to the legal nature of the Annex and its place in the Convention should be solved at a later stage.
 - 14. Some proposals were made to revise the druft element on national technical means of verification contained in document CD/335 by inserting some ideas from the relevant part of document CD/334. Proceeding from this, the co-ordinator proposed a new wording which in his view could be of come assistance in drafting a possible Article on national technical means at a later stage. At the same time and in order to take into account the positions of all sides he provided a second alternative which in a general way would foresee the possibility to use national technical means of verification for the purpose of monitoria, compliance with the convention. For the next stage of the work of the Chemical Weapons Working Group it has been suggested to discuss jointly all aspects of the verification system of the future convention in order to reach a clear understanding on the interrelationship between the different elements of this system. 15. With regard to Consultation and Co-operation and the Consultative Committee, the Contact Group reviewed the concepts pertaining to the chapter on consultations and co-operation as well as the section corresponding to the fact-finding procedures. Discussions were also focured on the functions and eventual structure of the Consultative Committee. These in-depth discussions helped to clarify the different positions of delegations with respect to the sub-elements identified in 1982, and brought the Crour closes to the elaboration of specific providiose in this regard. In the course of the discussione, references were made to various documents already tailed by delegations as well as is the suggest) in as possible compromise wordings presented by the Chairman of the W rking Cropy in document OV3 3.

III. REPORTS OF THE CO-ORDINATORS OF THE CONTACT GROUPS

A. Report of the Co-ordinator of the Contact Group on the scope of the future convention

The Contact Group on the scope of the future convention met once and informal consultations did also take place. The main conclusion which appeared during these activities was that the basic positions on the inclusion or not of a prohibition to use chemical weapons, as contained in the Annex to document CD/334 could not meet with consensus and that other solutions should be explored. The view was expressed that the "working hypothesis" proposed by the co-ordinator of the Contact Group should be further elaborated in order to give all participants the possibility of considering it as a possible solution for the scope of the future convention. In this context, it was recommended that the concept of a new article in the future convention recognizing that any use of chemical weapons will ipso jure constitute an evidence of a violation of the convention (paragraph 3 of the "working hypothesis") should be further elaborated and detailed.

An acceptable proposal for the text of this new article could not be worked out by the co-ordinator during this period, and this effort should be pursued.

B. Report of the Co-ordinator of the Contact Group on Definitions

The aim of the discussion was to find out if any new developments had occurred with respect to some of the items treated in the previous report, CD/334, Annex I, pp. 3-10: paragraph 6 on a Working Hypothesis for a definition of chemical weapons and paragraph 7 on a Working Hypothesis on definition of permitted purposes. Due to the fact that the definitions of precursors and key precursors were under discussion in the Chairman's consultations on technical matters these matters were not brought up. Also, as the remaining matters in the report had not been brought up during the period they were left aside.

The following main results were noticed:

- Some delegations pointed to that in their opinion the areas of agreement which occurred in the report of the Co-ordinator had been adequately reflected and precisely worded in the CD/333.
- Some delegations put forward new ideas to include also very toxic and incapacitating, but not lethal, compounds into the same class of supertoxic lethal chemicals by recognizing also the possibility to set the same toxicity limit for these types of compounds as for the supertoxic substance by relating also to the effective dose. This "effective" toxicity could be measured by any scientifically sound method, but would only need to be done so following

allegations on complaints, verification of stockpiles etc. In addition the quartity criterion should apply, so that such incapacitating chemicals, which had also use for permitted purposes, might be subject to different kinds of verification methods. This should allow e.g. tear gases to be covered by the convention, provided that their use for non-hostile purposes such as low-enforcement internally in a country, was allowed, as was pointed out by one delegation.

- A discussion arose on whether all protective activities and equipment had to be accepted for permitted purposes. Some ideas on protective measures as specially useful for offensive purposes were put forward. There was no objection that further investigation should be done with respect to whether the protective measures should in any way be limited or specified under the convention when defining permitted purposes.

Revision by the Co-ordinator of the Contact Group on definitions of paragraphs 6 and 7 of his report in CD/334, Annex pages 4-6

Paragraph 5 (b)

Remove the first comment.

Add after the second comment a new one: "The field utility of chemicals referred to in 6 (b) should also be considered".

Add after the last comment a new one: "It was pointed out that any use of herbicides was already prohibited in war by the Geneva protocol and the Convention against environmental warfare, why a reference to these conventions might be sufficient".

Paragraph 6 (e)

Add a first new comment: "The general purpose criterion should expressly be related to among the criteria for superlethal toxic, other lethal and other harmful chemicals".

Add a new third comment: "- Some delegations suggested to include also very toxic and incapacitating, but not lethal, compounds into the same class of supertoxic lethal chemicals. This could be done by setting the same toxicity limit for these types of compounds as for the supertoxic substance by relating to the 'effective' toxicity, as measured by a scientifically sound method. Under certain circumstances tear gases could be classified in this way."

Remove in the third comment, third line: "and tear gases".

Paragraph 7 (b)

Add: "Comment: Some questioned whether all protective activities and equipment has to be accepted for permitted purposes".

C. Report of the Co-ordinator of the Contact Group on Destruction, Diversion, Dismantling and Conversion

The Contact Group on Element V.held three meetings. The Group reviewed the report presented by its Co-ordinator at the end of the 1982 Session, and which appears as an armex to document CD/334.

In the course of the review, the Group attempted to determine whether there had been changes in positions as recorded in that report, and also endeavoured to refine and clarify concepts and formulations relevant to Element V.

As a result of the discussions in the Contact Group and individual consultations held by the Co-ordinator, the latter prepared a revised version of his previous report, which was considered by the Contact Group to reflect the work undertaken in its 1983 meetings. The revised report of the Co-ordinator appears below.

- A Agreed subelements which apply both to destruction of stocks and to destruction of facilities and which could be incorporated into a separate Article in the Convention:
- (a) obligation to utilize safe methods of destruction that will avoid harm to the environment and to populations;
- (b) provision on international co-operation to facilitate implementation of the Convention regarding destruction of stocks and facilities.
 - B DESTRUCTION OF STOCKS
 - I ARTICLE Agreed subelements to be included:
 - (a) general obligation to destroy all existing stocks of chemical weapons;
- (b) possibility of diversion of stocks of chemicals for permitted purposes, subject to conditions and circumstances set forth in the Annex;
- (c) provision on the possibility of transfer of chemical weapons to another State Party for the purpose of destruction;

^{*/} It was suggested that the Element on the functions of the Consultative Committee contain adequate mention of such co-operation.

Suggested addition: "This includes all items defined as 'chemical weapons', including all types of precursors". If under the Element "Definitions" all precursors fall within the definition of chemical weapons, this addition would render unnecessary the proposed subelement (a) for the Article.

It was noted that the term "permitted" needs to be further clarified and that a suitable definition must be found.

of old stocks, whose existence on the territory of a Party is not known at the time of the entry into force of the Convention, to another State Party for destruction, as well as for the possibility of on-site destruction of such old stocks (see Element IV).

- (d) obligation to utilize methods of destruction which exclude the possibility of re-utilization of final products for the purposes of chemical weapons, under adequate verification;
- (e) indication of the over-all timing of the process of destruction, to be counted from the time the Convention enters into force for each State Party (suggestion: 10 years):
 - time of start of actual destruction (alternatives):
- (i) not later than six months after the Convention enters into force for each State Party;
 - (ii) not later than two years after the Convention enters into force for each State Party.

Other subelements proposed by some delegations:

- (a) obligation to destroy precursors that may be used for binary weapons;
- (b) placement of all stocks under international supervision at the time the Convention enters into force for each State Party;
- (c) obligation to utilize methods of destruction that will permit adequate verification.

II - AFWEM - Agreed subslements to be included:

- (a) conditions and circumstances for the diversion of stocks for permitted purposes (to be further elaborated);
- (b) procedures and operations to be accomplished during the over-all period of destruction:
 - (i) initial stage (from the time the Convention enters into force for each State Party to the time of start of actual destruction):
 - submission of plans for destruction of stocks; such plans should include:

^{-/} See foot-note on page 1 under (**).

It was noted that the term "permitted" needs to be further clarified and that a suitable definition must be found.

Suggested conditions and circumstances:

⁽a) list of agents the diversion of which would be permitted;

⁽b) international supervision of diversion;

⁽c) diversion to be carried out in an irreversible manner, so as to prevent the re-utilization of component agents as weapons.

- + quantities and types of chemical weapons to be destroyed;
- + time scheduled for the process of destruction;
- + description, in general terms, of method(s) to be employed for destruction:
- indication of place(s) of facility(ies) used for destruction.
- (ii) destruction stage (from the start of actual destruction to the end of the over-all period of destruction):
 - to be seen in connection with the declarations required from Parties relating to destruction of stocks).

Other subelements proposed by some delegations:

- (a) provisions for ensuring adequate balance during the destruction stage so as to avoid the acquisition of military advantage by one State Party over another (p.ex., agreed rates of destruction).
 - C DESTRUCTION OF FACILITIES
 - I ARTICLE Agreed subelements to be included:
- (a) general obligation to destroy and dismantle facilities and not to construct new ones;
- (b) obligation to close down such facilities at the time the Convention enters into force for each State Party, and to cease production of chemical weapons at that time;
- (c) provision for the possibility of temporary conversion of production facilities into facilities for the purpose of destruction of stocks;
- (d) obligation not to reconvert such converted facilities, and to destroy them as soon as they are no longer needed for the purpose of destruction of stocks;
- (e) indication of over-all maximum duration of the process of destruction, to be counted from the time the Convention enters into force for each State Party (suggestion: 10 years):
 - time of start of actual destruction (alternative suggestions):
 - (i) six months after Convention enters into force for each Party;
 - (ii) not later than eight years after the Convention enters into force for each Party.

^{*/} It was suggested that the contents of the chemical weapons be specified by name.

The term "facility" should be understood as defined in Element II. The following definition was suggested by some delegations: "Facilities and/or equipment designed or used for the production of any chemical which is primarily useful for chemical weapons purposes, or for filling chemical munitions".

Other subelements proposed by some delegations:

- (a) provision for the possibility of re-utilization in peaceful industry of certain types and categories of equipment, according to specification to be set forth in the Annex.
- (b) obligation to utilize methods of destruction that permit adequate verification.
 - II ANNEX Agreed subelements to be included:
- (a) elaboration of procedures and operations to be accomplished during the over-all period of destruction:
 - (i) initial stage (from the time the Convention enters into force for each State Party to the time of start of the actual destruction):
 - immediate cessation of production and closing down of facility(ies);
 - submission of detailed plans for destruction of facilities;
 such plans should include:
 - + location of facility(ies);
 - + description of method(s) to be employed for destruction, which should ensure that those elements which have a decisive role in the final process of production are destroyed as soon as possible;
 - + indication of facility to be temporarily converted for destruction of stocks;
 - + plans for the destruction of such converted facility.
 - (ii) destruction stage (from the start of actual destruction to the end of the over-all period):
 - to be seen in connection with the declarations required from Parties regarding the destruction of facilities.

Other subelements proposed by some delegations:

(a) specification of the types and categories of equipment that could be re-used in peaceful industry;

- (b) provisions for ensuring adequate balance during the destruction stage, so as to avoid the acquisition of military advantage by one State Party over another (p.ex., agreed rates of destruction).
 - D QUESTIONS BEARING ON ELEMENT V THAT SHOULD BE DEALT WITH ELSEWHERE IN THE CONVENTION
 - (a) issues pertaining to "Definitions";
 - definition of weapons and agents prohibited under the Convention and which should thus be destroyed (see Section B on 'Destruction of Stocks' and note to agreed subelement (a) of the Article and to the proposed subelement (ε);
 - definition of the terms "non-hostile" and "permitted" purposes;
 - definition of facilities and/or equipment for the production of chemical weapons which should thus be destroyed (see Section C on Destruction of Facilities" and note to agreed subelement (a) of the Article);
 - definition of the concept of destruction/dismantling, both with regard to stocks and with regard to facilities.
 - (b) issues pertaining to "Declarations":
 - specification of all declarations to be required from States Parties relating to the process of destruction/dismantling, both of stocks and facilities, including periodical declarations (suggestion: annual declarations during the destruction stage);
 - specification of the authority to which plans for destruction of stocks and facilities should be submitted (suggestion: the Consultative Committee);
 - (c) issues pertaining to "Verification":
 - adequate procedures for the verification of compliance with the obligations set forth in Element V.
 - (d) issues pertaining to the prohibition of transfer of chemical weapons:
 - exception to the obligation not to transfer chemical weapons, so as to permit the transfer of stocks for destruction purposes as set forth in the Article on stocks (see Section B, 'Destruction of Stocks', subelement (c)) of the Article.

D. Report of the Co-ordinator of the Contact Group on National Implementation Measures

Article on national measures

Working hypothesis:

Each State Farty should take any measures it considers necessary in accordance with its constitutional processes to implement the Convention, and in particular to prohibit and prevent any activity in violation of the Convention anywhere under its jurisdiction or control.

Each State Party would also inform the Consultative Committee of what legislative and administrative measures it had taken with respect to the implementation of the Convention.

2. Possible article on national body

Options:

- Each State Party would designate a central authority and point of contact having responsibility with regard to overseeing the implementation of the Convention and to co-operating with the Consultative Committee and the central authorities of other States Parties. Guidelines concerning the functions of this central authority could be set out in Annex ...
- Each State Party would identify its point of contact being responsible for the co-operation with the Consultative Committee.
- No special reference to national body in an article of the Convention, but refer to it and determine its role and functions in an Annex to the Convention.
- No special reference to national body, since this question could be regarded as covered by the article on national measures.
- Possible Annex containing guidelines concerning the functions of the national body

Options:

- The Annex should only serve illustrative purposes in order to assist interested States Parties in setting up, if necessary, and employing their respective national implementation systems. The Annex would be of no obligatory nature.
- A detailed list of the functions of the national system would amount to an infringement into national legislation; therefore such an Annex should not be established.

According to the first view, such an Annex could include the following provisions:

- (a) The central authority to be designated by each State Party under Article .. should be organized and employed by each State Party in accordance with its own legislation.
- (b) The central authority will oversee the implementation of the obligations concerning
 - prohibition of development, production, other acquisition, stockpiling, retention and transfer of chemical weapons;
 - destruction of stocks of chemical weapons;
 - destruction or dismantling of means of production of chemical weapons;
 - temporary conversion of means of production of chemical weapons for the purpose of destroying stocks of such weapons;
 - super-toxic lethal chemicals for non-hostile military purposes;

 (This list would be specified in accordance with the final agreement on the scope of prohibition.).
- (c) To fulfil these tasks the functions of the central authority may include the following:
 - to get the necessary information from the relevant organs, agencies and enterprises to investigate the actual state of affairs concerning compliance with the Convention;
 - to examine reports on development activities as well as the productive and commercial activities of enterprises of the chemical industry and related fields, including productive commercial documentations of the enterprises of industrial firms engaged in the manufacture of chemical and other products which could be related to the scope of the Convention:
 - to visit enterprises producing super-toxic lethal chemicals, harmful chemicals, and precursors, which fall under the scope of the Convention;
 - to visit enterprises being dismantled or already dismantled, or converted to the production of the above-mentioned chemicals for permitted purposes;
- to sample probes of waste gases, waste water and soil,
 - to install in the above-mentioned enterprises sensing devices and make the necessary measurements;
 - to get the financial means necessary for the implementation of its functions;
 - to submit to the government concerned reports on its activities which would be publicized;
 - to co-ordinate the activities of other national bodies with regard to the implementation of the Convention and the co-operation with the Consultative Committee.

- 4. Co-operation between the central authority ("national level", "State Parties" and the Consultative Committee
- (a) The Convention should contain provisions with regard to the co-operation/relationship between the central authority ("national level", "States Parties") and the Consultative Committee. The concrete formulation of these provisions and the determination of their place in the Convention (in article on national measures, in the above-mentioned Annex or in the context of the provisions on the Consultative Committee) would be a task for a further stage of the work on the Convention.
 - (b) These provisions may include the following:
 - to provide the Consultative Committee with all data necessary to the execution of the task of the Committee with respect to implementing the Convention, including verification of compliance with the Convention;
 - to extend in case of international inspections all assistance requested including technical assistance and the provision of data;
 - to have access to a selection of inspection personnel both technical and non-technical;
 - to be prepared to maintain documentation of the type required to satisfy international verification requirements and, if necessary, to make it available to the Consultative Committee;
 - to co-operate in providing expertise to the Consultative Committee;
 - to co-operate with the central authorities of other States Parties and with corresponding international organizations concerning issues connected with the implementation of the Convention.
- E. Report of the Co-ordinator of the Contact Group on National Technical Means of Verification

Options:

- Article on NTM may include provisions with regard to the use of NTM in a manner consistent with international law, assistance to other parties, including the provision of relevant information, and non-concealment measures.
- If these provisions would not be far-reaching enough, some delegations deemed a general reference to the possibility to use NTM and to assist other States Parties sufficiently.

In accordance with both views the following two alternatives are proposed and could be taken into account in drafting the provisions on the verification system as a whole.

First alternative:

1. Each State Party to this Convention may use national technical means of verification at its disposal for the purpose of monitoring compliance with the provisions of the Convention in a manner consistent with generally recognized principles of international law.

- 2. Monitoring in accordance with paragraph 1 of this Element may be carried out be each State Party to this Convention by the employment of its own national technical means of verification or with full or partial assistance on the part of any other State Party.
- 3. Any State Party which possesses national technical means of verification may, where necessary, place at the disposal of other Parties and/or the Consultative Committee information which it has obtained through those means and which is important for the purposes of the Convention.

Such information would be confidential to the State Party which carried out monitoring, unless or until evidence was sufficient to suggest non-compliance by another State Party.

4. Each State Party to this Convention should not impede, including through the use of deliberate concealment measures, the national technical means of verification of other States Parties operating in accordance with paragraph 1 of this Element.

Second alternative:

Verification of compliance with this Convention may be undertaken by any State Party using its own means, or with the full or partial assistance of any other State Party.

- F. Report of the Co-ordinator of the Contact Group on Consultation and Co-operation
- I. It was generally agreed that the Convention should include a provision regarding normal consultations and co-operation according to the following lines:
 - (a) Commitment by States Parties to consult and co-operate.
 - (b) Consultations and co-operation may be undertaken:
 directly between two or more parties;
 through appropriate international procedures including the services of
 appropriate international organizations and of the Consultative Committee.
 It was generally agreed to include a specific reference to the Consultative
 Committee underscoring its special role.

It was suggested that certain international organizations (e.g. WHO) should be clearly specified in the Convention.

(c) Substance of consultations and co-operation: any matter in relation to the objectives of, or in application of, the provisions of the Convention. For further consideration:

Alternatives:

- Specific reference to the United Nations General Assembly and/or Security Council.
- General reference to the United Nations Charter.

- II. Fact-finding procedures concerning alleged ambiguities in or violations of the compliance with the Convention.
- (a) General formulation encouraging States Parties to hold bilateral contacts in order to clarify ambiguities or settle disputes at the lowest possible level.
- (b) Right for every State Party (challenging or challenged) to request the Consultative Committee to carry out fact-finding procedures, including on-site inspections.
 - (c) Such request must be substantiated.
- (d) Obligation to co-operate in fact-finding procedures carried out by the Consultative Committee.
- (e) Obligation of the Consultative Committee to inform States Parties about the results of its procedures. Right of the States Parties to be informed about the procedures carried out by the Consultative Committee.
- (f) General reference to the right of every State Party to resort to the mechanisms provided with by the Charter of the United Nations.

For further consideration:

- Timeliness of the fact-finding procedure
- Schema (sequences) of the whole process of the fact-finding procedure.

It was suggested:

- 1. Desirability of bilateral contacts as a first step
- 2. Substantiated request addressed to the Consultative Committee by the challenging State Party
- 3. Immediate or automatic transmission of the request to the pertinent suborgan of the Consultative Committee (fact-finding panel)
- 4. Assessment of the request on scientific basis by the appropriate suborgan of the Consultative Committee (fact-finding panel) with the participation of representatives of the challenging and challenged States.
- 5. Decision by the appropriate suborgan of the Consultative Committee on the merits of the request and on the appropriate activity to be carried out for a fact-finding procedure concerning alleged ambiguities in or violations of the compliance with the Convention.

- Right of every State Party to refuse to an on-site inspection providing appropriate scientific explanations.

Alternatives:

Obligation of all States Parties to accept an on-site inspection requested by the Consultative Committee.

Right of a State Party to reject an on-site inspection only if the overwhelming majority of the members of the Consultative Committee or its appropriate suborgan consider the request in question as totally unfounded.

- Action the Consultative Committee might take after a refusal by a State Party to an on-site inspection:

Alternatives:

- request further information
- request a reconsideration of the decision
- reiterate the request for an on-site inspection which in this case should be mandatory for the challenged State
- Provision requesting States Parties to make the necessary domestic arrangements to designate a body which should take part in international on-site inspections on behalf of the State Party including in its own territory.
- Action a State Party can take in case of a violation of the Convention which may constitute a threat to peace or a breach of peace:

Alternatives:

- subsumed in the general reference to the right of every State Party to resort to the mechanisms provided with by the Charter of the United Nations
- specific reference to the Security Council and/or General Assembly
- Provision of assistance to a State Party in case of breach of the Convention:
 - . subsumed in the general reference to the United Nations Charter
 - or formulated in specific terms
- Question of falsifying the actual state of affairs with regard to compliance with the Convention by other States Parties.

G. Report of the Co-ordinator of the Contact Group on the Preamble and Final Clauses of the future Chemical Weapons Convention

PREAMBLE

Concepts

- (i) Bringing about general and complete disarmament
- (ii) CW ban as a necessary disarmament step
- (iii) Prohibition on CW use (repugnant to the conscience of mankind)
- (iv) Strengthening peaceful co-operation in scientific fields
- (v) BW Convention undertaking on CW negotiations
- (vi) Recognizing significance of 1925 Protocol and BW Convention
- (vii) Charter of the United Nations
- (viii) CW convention important for social and economic development

Options

- chemistry for the benefit of mankind
- minimization of economic damage and unnecessary interference with peaceful chemical industry
- principle of non-diminished security (at lower levels of armaments)

ELEMENT VII - RELATIONSHIP WITH OTHER TREATIES

Concepts

No limiting or detracting from the obligations assumed under 1925 Protocol or any other international treaties.

Options

- specific reference to obligations under Biological Weapons Convention
- specific reference to obligations under MEMOD
- possibility of linking CW convention to 1925 Protocol.

ELEMENT VIII - INTERNATIONAL CO-OPERATION

Concepts

- (i) Avoidance of hampering international co-operation in peaceful and protective chemical activities;
- (ii) Undertaking to facilitate, promote and participate in exchange of materials and information
- (iii) Undertaking to allocate any savings as a result of CW Convention

Options

- facilitate international co-operation in peaceful chemical activities
- participate in fullest possible exchange (including co-operation on training and equipping with protective measures)
- undertaking to assist other Parties on request.

LLEMENT XIV - AMENDMENTS

Concepts

- (i) Amendments proposed by any Party; submitted to Depositary; circulated to other Parties;
- (ii) Entry into force of amendments for each Party accepting amendments upon acceptance by majority of Parties; thereafter for each remaining Party on date of acceptance by it.

Octions

- Amendments considered at Review Conference.
- Party after entry into force, failing expression of a different intention, considered as party to treaty as amended.

ELEMENT XV - REVIEW CONFERENCE

Concepts

- (i) Review after five years if majority of Parties agree
- (ii) Five year intervals.

ELEMENT XVI - DURATION AND WITHDRAWALS

Concepts

- (i) Unlimited duration
- (ii) Right of withdrawal; three months notice to depositary; statement of extraordinary events jeopardizing supreme interests;
- (iii) Notification to Security Council.

SLEMENT XVII - SIGNATURE, RATIFICATION, ACCESSION

Concepts

- (i) Open to all States; accession at any time
- (ii) Subject to ratification; deposited with United Nations Secretary-General
- (iii) Entry into force with specified number of ratifications
- (iv) Entry into force for late accession
- (v) Depositary to notify all Parties of each signature, ratification or accession
- (vi) Registered in accordance with United Nations Charter
- (vii) Annexes of convention integral.

Options

- twenty ratifications for entry into force
- entry into force requires ratification by all permanent members of Security Council

ELEMENT XVIII - DISTRIBUTION OF THE CONVENTION

Texts, in all United Nations languages, distributed by Depositary.

SECTION B: VARIOUS SPECIFIC PROPOSALS

PREAMBLE

(i) Disarmament

Reaffirming their adherence to the objectives of general and complete disarmament, including the prohibition and elimination of all types of weapons of mass destruction:

(ii) CW

Convinced that the prohibition of the development, production and stockpiling of chemical weapons and their destruction represent a necessary step towards the achievement of general and complete disarmament under effective international control:

(iii) Use

Determined, for the sake of all mankind to exclude completely the possibility of chemical agents being used as weapons; convinced that such use would be repugnant to the conscience of mankind and that no effort should be spared to minimize this risk;

(iv) Peaceful co-operation

Considering that peaceful co-operation among States should strengthen international co-operation in scientific fields, especially in that of chemistry;

Alternative Considering that the achievements in the field of chemistry should be used exclusively for the benefit of mankind.

(v) BW Convention

In conformity with the undertaking contained in the Convention on the Prohibition of the Development. Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, to continue negotiations in good faith with a view to reaching early agreement on effective measures for the prohibition of the development, production and stockpiling of chemical weapons and on their destruction:

(vi) 1925 Protocol

Recognizing the important significance of the Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases and of Pacteriological Methods of Warfare, signed at Geneva on 17 June 1925 and also of the Convention on the Prohibition of the Development, Production and Stockpiling of Becteriological (Biological) and Toxin Weapons and on Their Destruction, in force since 26 March 1975, and calling upon all States to comply strictly with the said agreements;

(vii) United Nations Charter

Desiring also to contribute to the realization of the purposes and principles of the Cl rter of the United Nations;

(viii) Social and Economic Development

Recognizing the important contribution that the Convention can make through its implementation to the social and economic development of States, especially developing countries.

Option

Guided by the principle of non-diminished security of any State or group of States.

ELEMENT VII - RELATIONSHIP WITH OTHER TREATIES

Draft Element

Nothing in this Convention should be interpreted as in any way limiting or detracting from the obligations assumed by States 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, or any other international treaty or any existing rules of international law governing armed conflicts.

Reference to BW

Nothing in this Convention should be interpreted as in any way limiting or detracting from the obligations assumed by States 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, or under the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, opened for signature on 10 August 1972, or any other international treaty or any existing rules of international law governing armed conflicts.

Reference to ENMOD

Nothing in this Convention should be interpreted as in any way limiting or detracting from the obligations assumed by States 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, or under the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, opened for signature on 10 April 1972, and the Convention on Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD), or any other international treaty or any existing rules of international law governing armed conflicts.

ELEMENT VIII - INTERNATIONAL CO-OPERATION

Draft Element

- (1) This Convention should be implemented in a manner designed to avoid hampering the economic or technological development of States Parties to the Convention or international co-operation in the field of peaceful and protective chemical activities, including the international exchange of chemicals and equipment for production, processing or use of chemical agents for peaceful and protective purposes in accordance with the provisions of the Convention.
- (2) Each State Party to this Convention should undertake to facilitate, promote and participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the use of chemicals for peaceful and protective purposes consonant with the aims of this Convention.
- (3) Each State Party to this Convention should undertake to allocate a substantial part of possible savings in military expenditures as a result of disarmament measures agreed upon in this Convention to economic and social development, particularly of the developing countries.

Fullest possible exchange

Each State Party to this Convention should undertake to facilitate, promote and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the use of chemicals for peaceful purposes consonant with the aims of this Convention. Where appropriate such exchange should extend to co-operation on protective measures.

Assistance to Parties

Each State Party to this Convention undertakes to provide or support assistance, in accordance with the United Nations Charter, to any Party to the Convention which so requests, if the Security Council decides that such Party has been exposed to danger as a result of violation of the Convention.

ELEMENT XIV - AMENDMENTS

Draft Element

- (1) Any State Party to this Convention may propose amendments to the Convention.

 The text of any proposed amendment shall be submitted to the Depositary, who shall promptly circulate it to all States Parties.
- (2) An amendment shall enter into force for all States Parties to this Convention which have accepted it, upon the deposit with the Depositary of instruments of acceptance by a majority of States Parties. Thereafter it shall enter into force for any remaining States Party on the date of deposit of its instrument of acceptance.

ELEMENT XV - REVIEW CONFERENCE

Draft Element

- (1) Five years after the entry into force of this Convention, or earlier if it is requested by a majority of Parties to the Convention by submitting a proposal to this effect to the Depositary, a conference of States Parties to the Convention should be held at Geneva, Switzerland, to review the operation of the Convention, with a view to assuring that the purposes of the Convention are being realized. Such review should take into account any new scientific and technological development relevant to the Convention.
- (2) Further review conferences should be held at intervals of five years thereafter, and at other times if requested by a majority of the States Parties to this Convention.

ELEMENT XVI - DURATION AND WITHDRAWALS

Draft Element

- (1) This Convention should be of unlimited duration.
- (2) Each State Party to this Convention should 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 the Convention, have jeopardized its supreme interests. It should give notice of such withdrawal to the Depositary three months in advance. Such notice should include a statement of the extraordinary events it regards as having jeopardized its supreme interests.
- (3) The Depositary on its part should immediately inform the Security Council of the United Nations of the submission of a notice of withdrawal from a State Party to the Convention.

ELEMENT XVII - SIGNATURE, RATEFICATION; ACCESSION

Draft Element

- (1) This Convention should be open to all States for signature. Any State which does not sign the Convention before its entry into force in accordance with paragraph 3 of this Element should accede to it at any time.
- (2) This Convention should be subject to ratification by signatory States.

 Instruments of ratification or accession should be deposited with the Secretary-General of the United Nations.

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(3) This Convention should enter into force upon the deposit of instruments of ratification by ... Governments, in accordance with paragraph 2 of this Element.

- (4) For those States whose instrument of ratification or accession are deposited after the entry into force of this Convention, it should enter into force on the date of the deposit of their instruments of ratification or accession.
- (5) The Depositary should promptly inform all signatory States and States Parties of the date of each signature, the date of deposit of each instrument of ratification or accession and the date of the entry into force of this Convention and of any amendments thereto, as well as of the receipt of other notices.
- (6) This Convention should be registered by the Depositary in accordance with Article 102 of the Charter of the United Nations.
- (7) Annexes of the Convention should be considered an integral part of this Convention.

Twenty Ratifications

This Convention should enter into force upon the deposit of instruments of ratification by 20 Governments, in accordance with paragraph 2 of this Element.

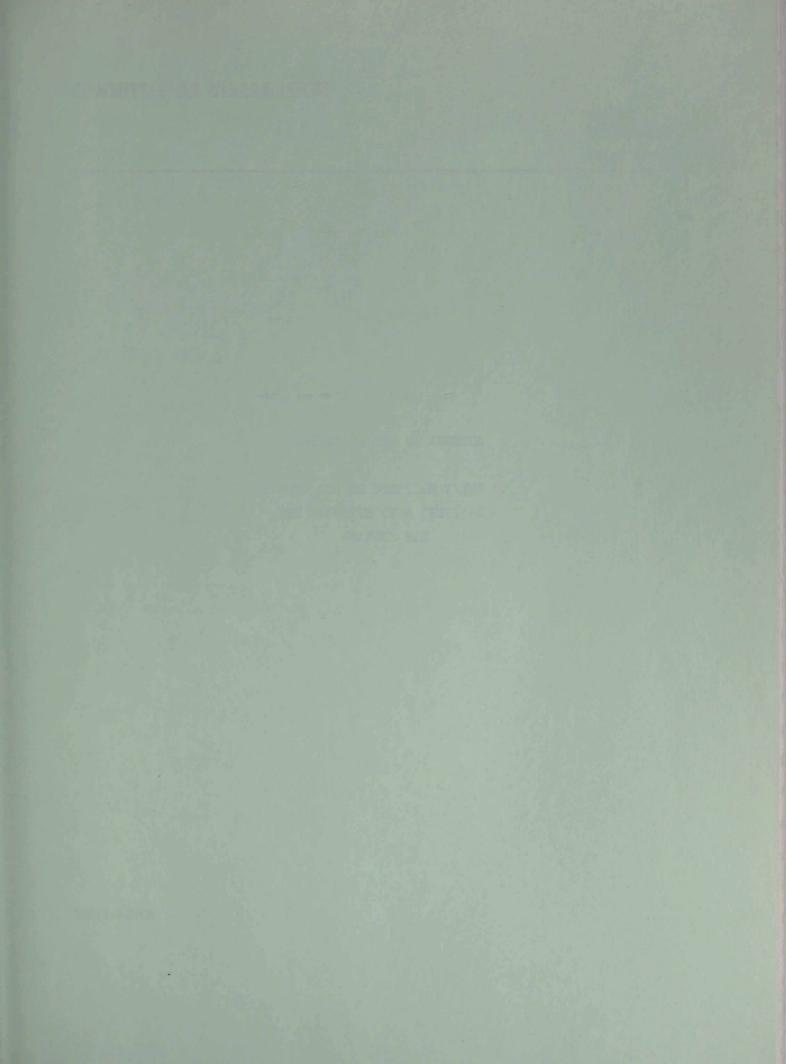
All Security Council Members

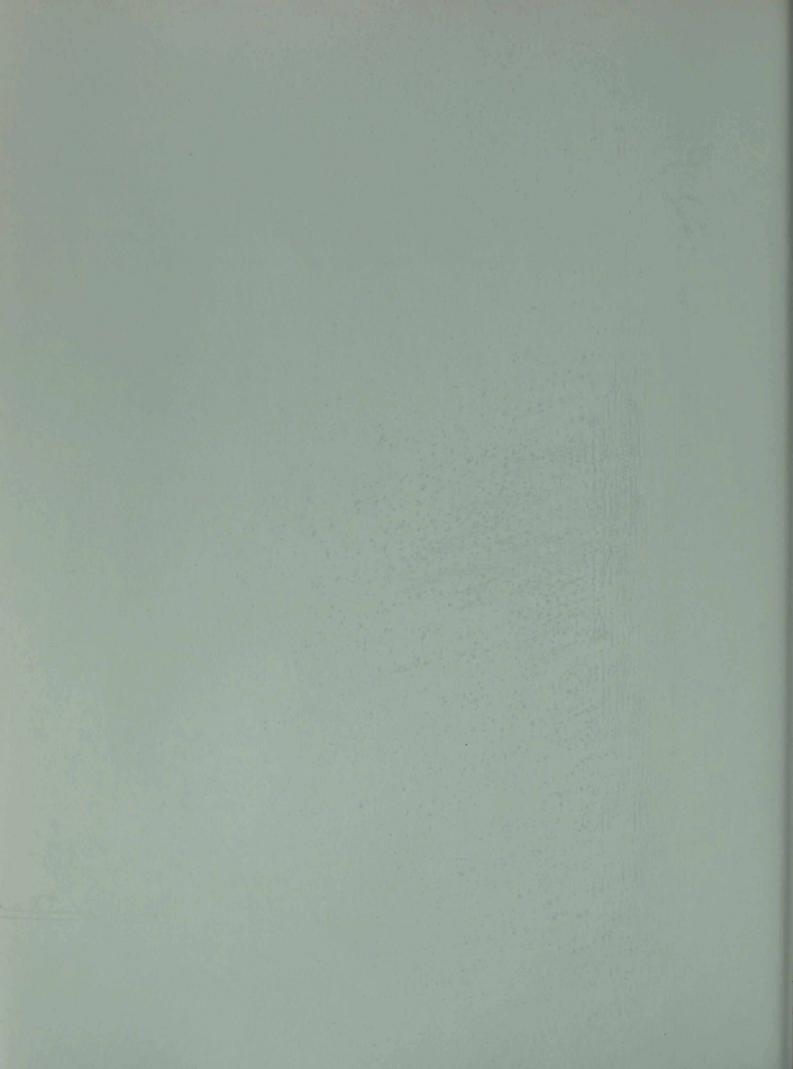
This Convention shall enter into force upon the deposit of instruments of ratification by ... Governments, including the Governments of the States permanent members of the United Nations Security Council.

ELEMENT XVIII - DISTRIBUTION OF THE CONVENTION

Draft Element

This Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, should be deposited with the Secretary-General of the United Nations, who should send duly certified copies thereof to the Governments of States Members of the United Nations and its specialized agencies.





CD/343 10 February 1983 Original: ENGLISH

UNITED STATES OF AMERICA

UNITED STATES DETAILED VIEWS ON THE CONTENTS OF A CHEMICAL WEAPONS BAN

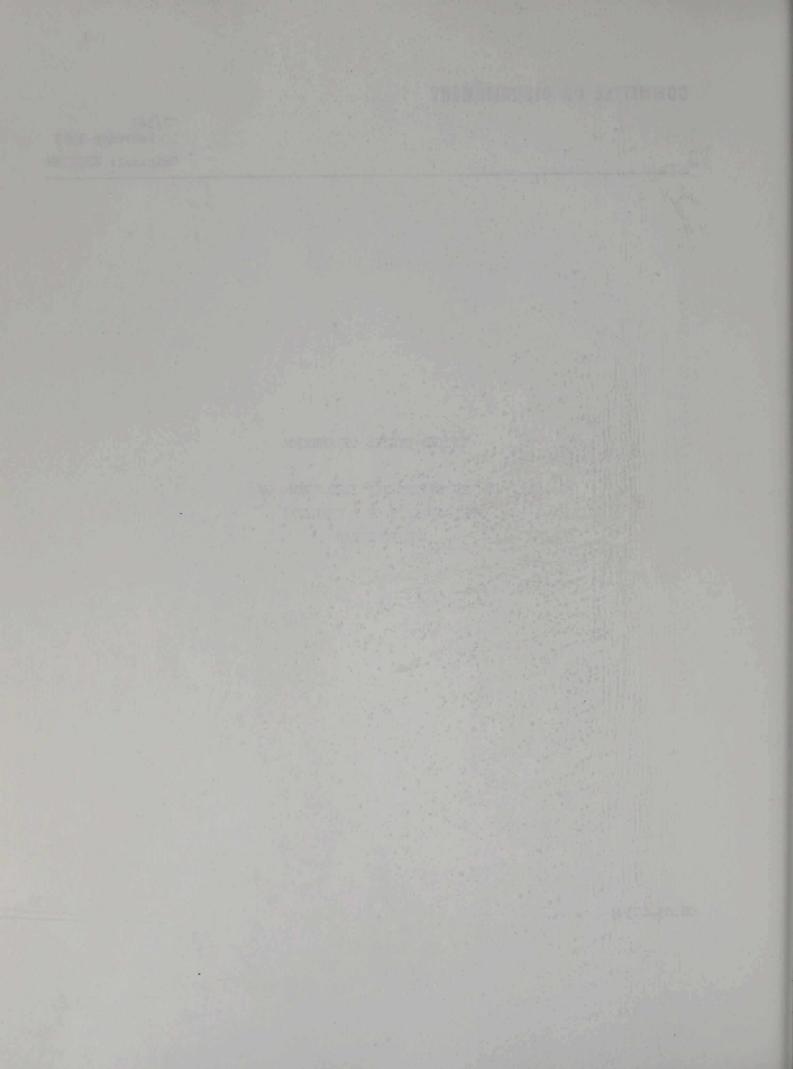


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INTRODUCTION

INTRODUCTION

This paper presents current United States views on the contents of a chemical weapons convention. It is subject to further modification and refinement.

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I. SCOPE OF PROHIBITION

Basic Prohibition

The Convention should require a party: (a) never to develop, produce, otherwise acquire, stockpile, retain, or transfer chemical weapons; (b) to eliminate existing stockpiles of chemical weapons; (c) to eliminate facilities for production or filling of chemical weapons; (d) not to conduct activities directly related to use of chemical weapons (for example, not to practice employment of chemical weapons - protective activities would be unaffected); (e) not to use chemical weapons in any circumstances where use is not already prohibited by the 1925 Geneva Protocol (according to the terms of the Protocol, its provisions apply, for example, only in "war" and only between Parties).

The provisions of the Convention should cover super-toxic lethal, other lethal, other harmful chemicals (such as incapacitating chemicals), and their precursor chemicals, but not riot-control agents or herbicides. Toxins would be included implicitly since they are toxic chemicals.

Non-Transfer/Non-Assistance

The Convention should prohibit:

- (a) transfer to anyone, directly or indirectly, of any chemical weapons;
- (b) transfer to anyone, directly or indirectly, other than another party, of any super-toxic lethal chemical or key precursor produced or otherwise acquired for protective purposes. Transfers would be limited to a maximum of 100 grams in any 12-month period. Advance notification of the Depositary (as specified in an annex) of any transfers of such a super-toxic lethal chemical or key precursor should be required.
 - (c) assisting, encouraging, or inducing, directly or indirectly, anyone to engage in activities prohibited to a party under the Convention.

Terminology

Key terms used in the Convention should be carefully defined to ensure that the Convention's provisions are clear and precise. Important terms that need to be defined, and the United States understanding of them, are given below:

The term "chemical weapons" should be used to mean:

- (a) super-toxic lethal, other lethal, and other harmful chemicals, and their precursor chemicals, regardless of the method of production, except for those intended for permitted purposes as long as the types and quantities involved are consistent with such purposes; or
- (b) munitions or devices specifically designed to cause death or other harm through the toxic properties of chemicals released as a result of the employment of such munitions and devices; or
 - (c) any equipment or chemical specifically designed for use directly in connection with the employment of such munitions or devices.

The term "super-toxic lethal chemical" should be applied to any toxic chemical with a median lethal dose which is less than or equal to 0.5 mg/kg (subcutaneous administration) or 2,000 mg-min/m² (by inhalation), when measured by an agreed method (this category is intended to include nerve gas and mustard gas, but not-such agents as hydrogen cyanide);

The term "other lethal chemical" should mean any toxic chemical with a median lethal dose which is greater than 0.5 mg/kg (subcutaneous administration or 2,000 mg-min/m³ (by inhalation) and which is less than or equal to 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m³ (by inhalation), when measured by an agreed method;

The term "other harmful chemical" should be applied to any toxic chemical with a median lethal dose which is greater than 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m³ (by inhalation), when measured by an agreed method;

The term "precursor chemical" should be applied to any chemical which may be used in production of a super-toxic lethal chemical, other lethal chemical, or other harmful chemical;

The term "key precursor" should be applied to any precursor chemical which, based on agreed guidelines, is agreed to be of particular importance;

The term "non-hostile purposes" should cover industrial, agricultural, research, medical or other peaceful purposes, law-enforcement purposes, or protective purposes;

The term "permitted purposes" should cover non-hostile purposes and military purposes which are not dependent on the toxic properties of chemicals;

The term "protective purposes" should cover purposes directly related to protection against chemical weapons;

The term "chemical weapons production or filling facility" should be used for any building or any equipment which in any degree was designed, constructed or used since (blank) for the production of any chemicals, including key precursors, primarily useful for chemical weapons, or designed, constructed or used since (blank) for filling chemical weapons.

Permitted Activities

Each party should be allowed to retain, produce, acquire, or use any toxic chemical, and its precursor chemicals, for permitted purposes, of types and in quantities consistent with such purposes. The aggregate quantity of super-toxic lethal chemicals and their key precursors produced, diverted from chemical weapon stocks, or otherwise acquired, or on hand at any one time for protective purposes, should be as low as possible and should not exceed one metric ton for any party.

Any party which produces super-toxic lethal chemicals for protective purposes should be required to carry out the production at a single specialized facility, the capacity of which should not exceed an agreed limit.

Each party should be required to make an annual declaration regarding all toxic chemicals which are useful for chemical weapons but are devoted to protective activities.

II. DECLARATION/DESTRUCTION

Shortly after a State becomes a party certain key information regarding its chemical weapons capability should be provided, as outlined below. Other declarations relating to required or permitted activities would be made subsequently. Detailed requirements for the contents of all declarations should be specified in annexes.

Initial Declaration

The Convention should require a declaration from each party, within 30 days after the convention enters into force for it, regarding the following:

- (a) whether or not any chemical weapons, or any chemical weapons production or filling facility, are under its jurisdiction or control;
- (b) the presence on its territory of stocks of chemical weapons and/or of chemical weapons production or filling facilities, which are under the jurisdiction or control of anyone else, and the locations of such stocks and facilities;
- (c) the location of any chemical weapons stocks which are under its jurisdiction or control and the detailed composition of the stocks at each location; (Chemicals should be declared by scientific chemical name, toxicity and weight. The fraction in munitions/devices should be given. Munitions/devices should be declared by type and quantity. "Specifically-designed" equipment should be declared by type and quantity);
 - (d) its plans for destruction of any stocks under its jurisdiction or control;
- (e) the location, nature, and capacity of any chemical weapons production or filling facility which has been under its jurisdiction or control at any time since (blank). (Such facilities should be declared even if they were or are dual-purpose facilities designed or used in part for civilian production, have been destroyed, or are now being used for other purposes. The declaration should also specify the chemical name of any chemical ever produced at the facility, including civilian products, if any);
- (f) its plans for closing and eventually destroying any chemical weapons production or filling facilities under its jurisdiction or control;
- (g) the location and capacity of the small-scale production facility, if any, for super-toxic lethal chemicals for protective purposes;
- (h) the location and nature of any other facility designed, constructed or used, since (blank) for the production of certain commercial chemicals deemed by the Consultative Committee to pose a particular risk (such as key precursors or chemicals closely related to them);

(i) the location and nature of any facility under its jurisdiction or control designed, constructed, or used since (blank) for development of chemical weapons. (This would include test and evaluation sites).

Locations should be specified with sufficient precision to permit unambiguous identification of sites and facilities.

Other Declarations

Each Party should be obligated to provide information (as specified in an annex) regarding the production and use of key precursors and other specific commercial chemicals deemed to pose a particular risk.

Elimination of Stocks

The Convention should require that any party having chemical weapons stocks under its jurisdiction or control must:

- (a) permit systematic international on-site inspection of its stocks promptly after declaration, on an agreed basis;
 - (b) eliminate these chemical weapons by destroying them;
- (c) begin the elimination process not later than six months after the Convention enters into force for it and complete the process not later than ten years after that date:
- (d) carry out, according to an agreed schedule, the elimination process, employing agreed procedures which permit systematic international on-site verification;
- (e) permit systematic international on-site verification of the destruction process on a continuous basis until destruction is completed; (Both inspectors and sensors should be utilized).
- (f) notify the Depositary annually regarding implementation of its plans for elimination of chemical weapons stocks;
- (g) certify to the Depositary that its stocks have been eliminated, not later than 30 days after the elimination process has been completed.

Provisions for Chemical Weapons Found After the Initial Declaration Has Been Made

Experience has shown that small quantities of chemical weapons may from time to time be found. The provisions of the Convention must take into account that such discoveries may occur after the initial declaration has been made. Care must also be taken to ensure that an opportunity for evasion is not created.

The Convention should require any party which discovers any chemical weapons anywhere under its jurisdiction or control which have not been declared to:

(a) notify the Depositary within 30 days of the discovery of the approximate quantity and type of the chemical weapons found. The notification should also specify how, where, and when the chemical weapons were found, why they were previously unknown, and where they are being stored;

(b) notify the Depositary within 90 days of the discovery of the exact quantity and type of the chemical weapons found, including the scientific chemical name and formula of any toxic chemical found and its quantity. The notification should specify plans for destruction of the chemical weapons.

The chemical weapons found should be subject to:

- (a) prompt and systematic international on-site inspection;
 - (b) internationally-monitored storage;
- (c) destruction within one year if found more than nine years after the Convention entered into force for the party;
 - (d) systematic international on-site inspection of destruction.

Closure and Destruction of Facilities

The Convention should require each party to:

- (a) cease immediately all activity, except that required for closure, at any chemical weapons production or filling facility;
- (b) close each facility according to agreed procedures which would render the facility inoperative;
- (c) permit systematic international on-site inspection of each such facility promptly after declaration, and subsequently at agreed intervals until the facility is destroyed;
- (d) permit monitoring of each facility by appropriate types of sensors installed at the facility;
- (e) destroy each facility by razing it, employing agreed procedures which permit systematic international on-site verification and according to an agreed schedule:
- (f) begin destruction of its chemical weapons production and filling facilities not later than six months after the date on which the Convention entered into force for it and complete it not later than ten years after that date;
- (g) permit systematic international on-site verification of the destruction of such facilities, at an agreed level until the facilities are destroyed;
- (h) undertake not to construct any new facilities, or modify any existing facilities, for purposes proscribed by the Convention;
- (i) notify the Depositary annually regarding implementation of its plan for destruction of facilities;
- (j) certify to the Depositary that its facilities have been destroyed, not later than 30 days after the destruction process has been completed.

A chemical weapons production or filling facility could be temporarily converted for destruction of chemical weapons. The converted facility would have to be destroyed as soon as it was no longer in use for destruction of stocks and not later than ten years after the date on which the Convention entered into force for the party.

III. VERIFICATION AND ASSURANCE

Consultative Committee

The Convention should provide for establishment of a Consultative Committee. The Committee should hold its first meeting within one month after entry into force of the Convention. Each party should be allowed to designate a representative to the Consultative Committee.

The Consultative Committee should:

- (a) Develop and revise, as necessary, detailed provisions for exchange of information, declarations, and technical matters related to implementation of the Convention;
- (b) Review new scientific and technical developments which could affect the operation of the Convention;
- (c) Provide a forum for timely and responsive discussion of questions regarding compliance;
 - (d) Conduct (as specified in annexes) systematic on-site inspection of:
 - (1) declared stockpiles, on an agreed basis;
 - destruction of declared stocks, on a continuous basis until destruction is completed;
 - (3) closure and destruction of declared production and filling facilities, at an agreed level until the facilities are destroyed;
 - (4) permitted small-scale production and facilities for super-toxic lethal chemicals for protective purposes, at an agreed level for as long as a facility is maintained for this purpose;
 - (5) production for permitted purposes, of specified types of chemicals which are deemed to pose a particular risk, on a random basis and at an agreed level.
 - Such systematic international on-site inspection would be agreed to in advance in the Convention and thus would be mandatory in nature.
 - (e) Conduct ad hoc on-site inspections for fact-finding purposes;
 - (f) Participate in <u>ad hoc</u> on-site inspection for fact-finding purposes agreed between two or more parties, if requested to do so by one of the parties involved.

All on-site inspections, both systematic and <u>ad hoc</u>, should be carried out according to procedures agreed in advance. An annex to the Convention should specify the objectives for inspections, contain guidelines for inspection procedures, and specify the rights and functions of inspectors and of host-State personnel.

The Consultative Committee should not take any decisions as to whether or not a party is in compliance with the provisions of the Convention.

The Consultative Committee should be organized, and should function, as specified in an annex. The full Committee should meet at agreed intervals.

To assist in carrying out the activities of the Consultative Committee, a Committee Secretariat should be established. The over-all composition of the Secretariat should be generally consistent with the composition of the Consultative Committee. The Committee may, for specific tasks, set up other subordinate bodies which may continue their work between meetings of the Committee.

For the purpose of providing confidence in compliance, each party should be obligated:

- (a) To co-operate fully with the Consultative Committee in the exercise of its verification responsibilities;
 - (b) Not to interfere, through deliberate concealment measures or in any other manner, with the conduct of verification activities. This should apply to activities conducted by the designated representatives of the Consultative Committee or by parties, including those using national technical means at their disposal in a manner consistent with generally recognized principles of international law.

The Consultative Committee should present an annual report on its activities to the States Parties.

Provisions should be included for meeting the expenses of the Committee.

Preparatory Commission

In order to facilitate prompt implementation of the provisions of the Convention after entry into force, an annex to the Convention should provide that a Preparatory Commission would come into existence soon after the Convention is opened for signature. Further views concerning the Preparatory Commission are outlined in Appendix I to this paper.

Consultation and Co-operation; Resolving Compliance Issues

The Convention should contain an undertaking by countries to consult one another and to co-operate in solving any problems which may be raised in relation to the objectives of, or in the application of the provisions of, the convention.

Parties should agree to provide in a timely manner, bilaterally or multilaterally, information to assure confidence in its compliance with the obligations assumed. Such provision of information could be accomplished by, but should not be limited to, inspection of the areas of concern, carried out in accordance with agreed procedures.

Consultation and co-operation might in addition be undertaken through appropriate international procedures within the framework of the United Nations and in accordance with its Charter. These international procedures would include the services of appropriate international organizations, as well as the Consultative Committee and its subordinate bodies.

The Convention should establish a sequential process for resolving compliance issues, beginning, if possible, with discussions among the parties directly involved. If initial bilateral efforts were not possible or were unsuccessful, the issue could be discussed by a subordinate body of the Consultative Committee, by the Committee itself, and by the appropriate United Nations body. (Further details on this process is given below.)

Any party which has reason to believe that any other party may not be in compliance with the provisions of the treaty, or which has concerns about a related situation that may be considered ambiguous, should be entitled to request clarification of the actual state of affairs bilaterally or through the Consultative Committee. Such a request, which may include a request for an ad hoc on-site inspection, should be accompanied by an explanation. (A party should not be expected to present conclusive evidence, but only its reasons for concern. Also, any bilateral action taken under this procedure should not preclude recourse to multilateral action by a party.)

The Depositary should be obligated to convene, as soon as possible and in any case within 10 days, upon request by any party, the fact-finding panel of the Consultative Committee (outlined in Appendix II). The panel should promptly conduct a fact-finding inquiry, including any ad hoc on-site inspections considered necessary by at least five members of the panel, and transmit to the Depositary a report on its work, whether interim or final, within six months of the date of the convening of the panel: Reports of the panel should include all views and information presented to the panel during its proceedings. The Depositary should distribute the report to all parties.

Any party whose concerns about compliance have not been resolved by the fact-finding panel within six months should be able to request the Depositary to convene a special meeting of the Consultative Committee to consider a compliance issue. The Depositary should convene such a meeting as soon as possible and in any case within one month of the receipt of the request. Any party should be able to participate in such a meeting, whose functions and rules of procedures should be established in an annex.

Each party receiving a request for an <u>ad hoc</u> on-site inspection from the fact-finding panel or the Consultative Committee should have a stringent obligation to permit the inspection. If a party refuses such a request, the Depositary should promptly notify the Security Council.

The complaint provisions should not be interpreted as affecting the rights and duties of parties under international law, particularly as regards bringing to the attention of the Security Council concerns about compliance with the Convention.

Since questions arising about use of chemical weapons would also raise questions about compliance with the Convention's ban on production and stockpiling of chemical weapons, the fact-finding procedures should enable reports of chemical weapons use to be investigated. Evidence of use should constitute evidence of violation of the Convention.

Domestic Implementation Measures

Each party should: (a) take any measures necessary in accordance with its constitutional processes to implement the Convention, and in particular to prohibit and prevent any activity in violation of the Convention anywhere under its jurisdiction or control, and (b) inform the Consultative Committee of the legislative and administrative measures it had taken to implement the Convention.

Confidence-Building Measures

Further legally binding measures should be developed specifically for the purpose of building confidence in compliance.

Efforts should be made to identify, and place limitations on, any specific protective equipment and activities which are particularly valuable for use of chemical weapons. For confidence-building purposes, information should be provided on activities related to protection against chemical weapons.

Confidence in the declaration of stocks is particularly important for confidence in the effectiveness of the treaty regime as a whole. Additional measures should be developed which will promote, at the earliest possible stage, confidence in the stockpile declaration.

Until the destruction process has been completed, the existence of chemical weapons stocks poses a risk that these chemical weapons may be used in a surprise attack. Confidence-building measures should be devised to provide confirmation that chemical weapons have not been moved from declared storage sites and that any effort to do so would be detected promptly.

IV. OTHER PROVISIONS

Withdrawal

The Convention should contain a withdrawal provision along the lines of those in previous arms control agreements.

Entry into force

To be effective and durable, a future Convention on the prohibition of chemical weapons should be adhered to by as many States as possible. The United States hopes that all States would deem it to be in their interest to join in the Convention. The United States can support an approach under which the Convention would enter into force on ratification by a suitable number of States.

Additional Provisions

The Convention should also contain a preamble and provisions regarding:

- (a) international co-operation in the field of chemistry;
- (b) the relationship with other treaties;
- (c) amendment;
- (d) review conferences;
- (e) duration;
- (f) signature, ratification and accession;
- (g) languages and distribution.

Annexes

The annexes to the Convention should be considered an integral part of the Convention.

Appendix I. Preparatory Commission

The Commission should include one representative from each signatory. The Preparatory Commission should remain in existence until the Convention comes into force and thereafter until the first meeting of the Consultative Committee. Its actions must be consistent with the principles and objectives of the Convention.

Specific provisions should be made for meeting the expenses of the Preparatory Commission,

The Preparatory Commission should:

- (a) elect its own officers, adopt its own rules of procedure, meet as often as necessary, determine its own place of meeting and establish such committees as it deems necessary;
- (b) appoint an executive secretary and staff, who should exercise powers and perform such duties as the Commission determines;
- (c) make arrangements for the first session of the Consultative Committee, including preparing a provisional agenda, drafting rules of procedure, and choosing the site;
- (d) make studies, reports and recommendations for the consideration of the Consultative Committee at its first meeting on procedural matters of concern to the Committee which would require immediate attention, including:
 - (1) financing of the activities for which the Committee is responsible;
 - (2) the programmes and budget for the first year of the Committee's activities;
 - (3) technical problems relevant to advance planning of Committee activities;
 - (4) staffing of the Secretariat;
 - (5) the location of the permanent offices of the Committee.

The Preparatory Commission should submit a comprehensive report on its activities to the Consultative Committee at the Committee's first session.

Appendix II. Fact-finding panel

The Convention should contain an annex with provisions along the lines outlined below.

Within 30 days after entry-into force of the Convention the Depositary should establish a fact-finding panel. The panel should undertake to conduct a prompt fact-finding inquiry, including any necessary ad hoc on-site inspections, to make appropriate findings of fact, and to provide expert views, on any problem referred to it by the Depositary upon request by a party.

The fact-finding panel should be composed of not more than 15 members ... representing parties:

- (a) ten members should be appointed by the Depositary after consultation with parties. In selecting these members due regard should be given to ensuring an appropriate geographic balance. Members should be named for a two-year period, with five members being replaced each year;
- (b) in addition, those permanent members of the Security Council who are parties to the Convention should also be represented on the fact-finding panel;
- (c) each member could be assisted at meetings by one or more technical or other advisers.

The Depositary or his representative should serve as Chairman of the panel, unless the panel decides otherwise. The work of the fact-finding panel should be rganized in such a way as to permit it to perform its functions. At the first meeting of the panel, to be held not later than 60 days after entry into force of the Convention, the Depositary should submit recommendations, based on consultations with parties and signatories, as to the organization of the work of the panel, including any necessary technical resources. The panel should decide procedural questions relative to the organization of its work, where possible by consensus but otherwise by a majority of those present and voting. There should be no voting on matters of substance.

Each member should have the right, through the chairman, to request from parties and from international organizations such information and assistance as the member considers desirable for the accomplishment of the work of the panel.

Appendix III. Special Meeting of the Consultative Committee

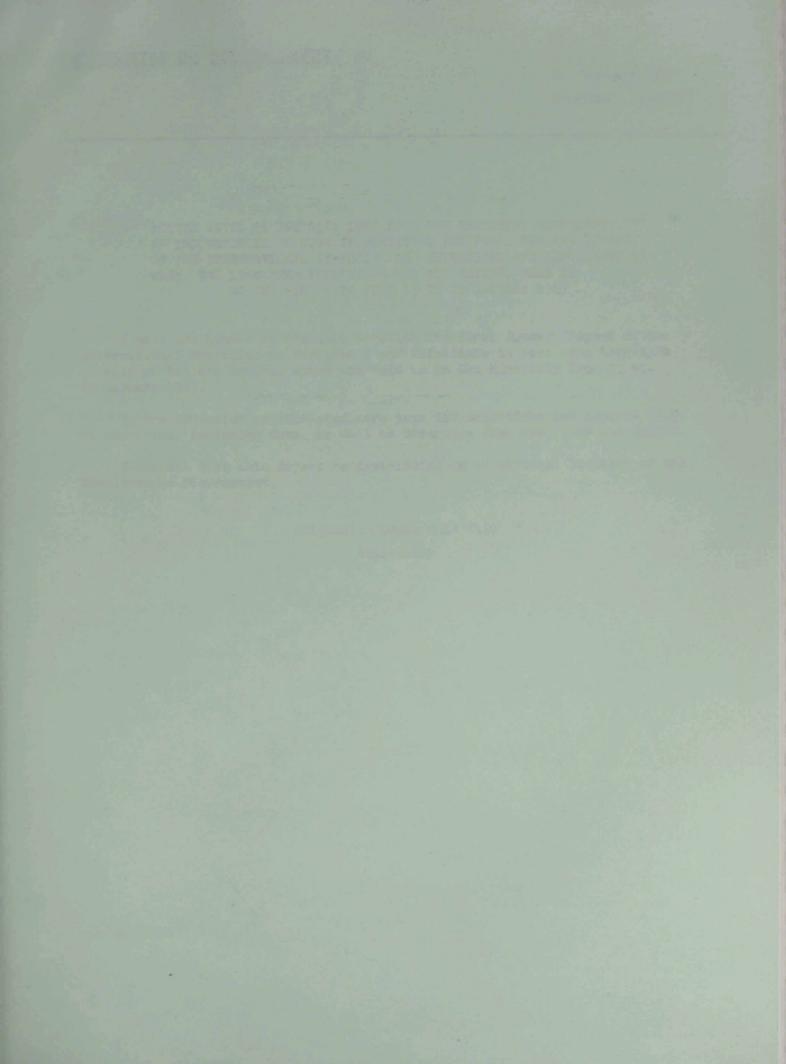
The Convention should contain an annex with provisions along the lines outlined below. The special meeting of the Consultative Committee provided for in the Convention should undertake to solve any problem which may be raised by the parties requesting the meeting. For this purpose, the assembled parties should be entitled to request and receive any information which a party is in a position to communicate.

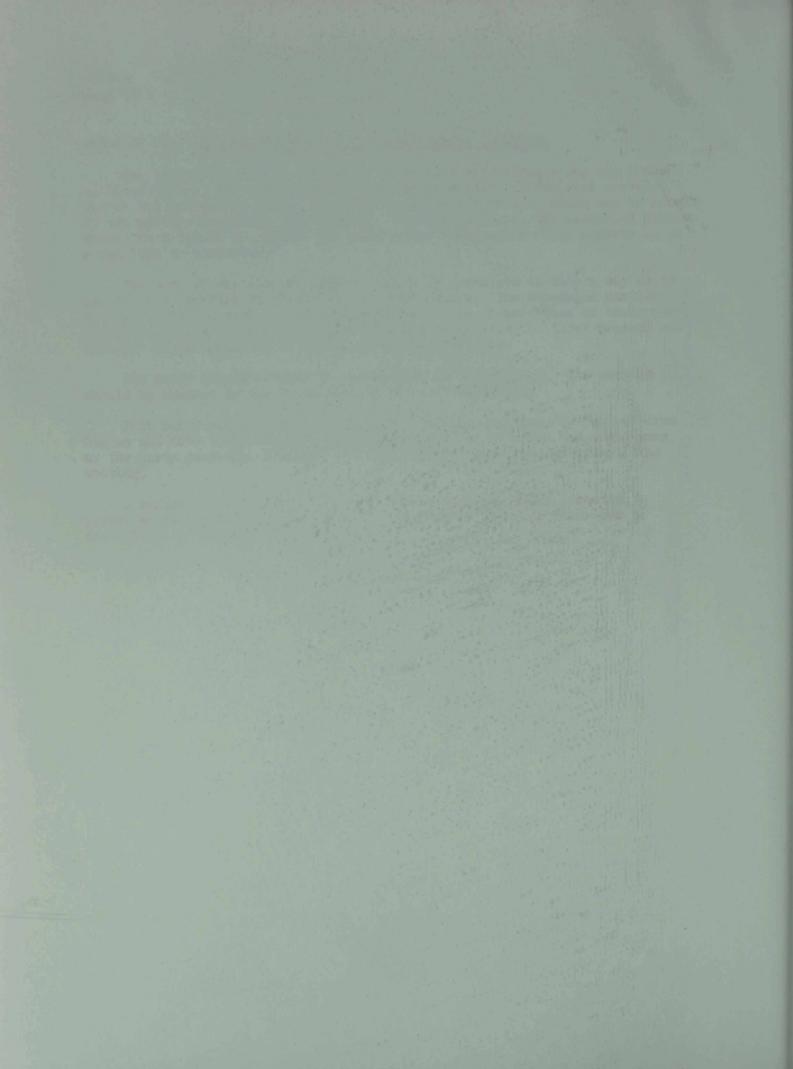
The work of the special meeting should be organized in such a way as to permit it to perform the functions set forth above. The assembled parties should decide procedural questions relative to the organization of their work, where possible by consensus, but otherwise by a majority of those present and voting. There should be no voting on findings of fact.

Any party should be able to participate in the meeting. The meeting should be chaired by the Depositary or his representative.

Each party should have the right, through the chairman, to request from States and from international organizations such information and assistance as the party considers desirable for the accomplishment of the work of the meeting.

A summary of the meeting, incorporating all views and information presented during the meeting, should be prepared. The Depositary should distribute the summary to all parties.





CD/349 21 February 1983 Original: ENGLISH

LETTER DATED 21 FEBRUARY 1903 FROM THE PERMANENT REPRESENTATIVE
OF THE REPUBLIC OF CUBA TRANSMITTING THE FINAL SUMMARY REPORT
OF THE INTERNATIONAL SYMPOSIUM ON HERBICIDES AND DEFOLIANTS IN
WAR: THE LONG-TERM EFFECTS ON MAN AND NATURE, HELD IN
HO CHI MINH CITY FROM 13 TO 20 JANUARY 1983

I have the honour to transmit herewith the Final Summary Report of the International Symposium on Herbicides and Defoliants in War: The Long-Term Effects on Man and Nature, which was held in Ho Chi Minh City from 13 to 20 January 1983.

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In the Symposium participated more than 160 scientists and experts from 21 countries, including Cuba, as well as Observers from FAO, UNEP and UNESCO.

I request that this Report be distributed as an Official Document of the Committee on Disarmament.

(Signed): Louis Sola Vila Ambassador

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INTERNATIONAL SYMPOSIUM ON HERBICIES AND DEFOLIANTS IN WAR: THE LONG-TERM EFFECTS ON MAN AND NATURE Ho Chi Minh City, 13-20 January 1983

FINAL SUMMARY REPORT OF THE SYMPOSIUM

The "International Symposium on herbicides and defoliants in war: the long-term effects on man and nature" was held in Ho Chi Minh City from 13 to 20 January 1983.

Attending the symposium were more than 160 scientists and experts from 21 countries as well as Observers from FAO, UNEP and UNESCO. The symposium discussed the long-term effects of herbicides and defoliants used by the United States army forces together with the agreement of the Saigon administration on man and nature during the second Indochina war, 1961-1975.

At the plenary sessions and working groups the scientists presented some 72 scientific reports and papers dealing with the following problems:

- The scope and nature of operation Ranch hand conducted in Vietnam from 1961-1971.
- The long-term effects of military herbicides and defoliants on man (about 29 reports) and on nature (about 43 reports),
- The results of experimental studies on herbicides in laboratories or in the field on a small scale,
- The results of studies on the consequences of herbicides from accidents occurring in factories producing them and their effects on groups of workers dealing with chemicals used in agriculture.

Scientists exchanged views, evaluated the results of studies in laboratories and in field experiments. They discussed the research work to be conducted in the near future aimed at eliminating the consequences of the indiscriminate use of herbicides and defoliants on a large scale. They also discussed the possibilities of international co-operation in the field of research.

During the time the symposium was held the scientists visited an exhibition displaying all kinds of chemical weapons used during the war and the effects of herbicides and defoliants on nature and man.

Participants to the symposium also visited the Mada - forest area, Dong Nai province (in the former Long Khanh province, war zone of South Vietnam). Here wartime destruction caused to nature remains very apparent. Mada can in effects be considered one model for experimental field studies as regards the direct and indirect effects of herbicides and defoliants on tropical inland forests, the latter including fire. The visit to the Mada forest gave participants a clear idea of the lengthy duration of effects of herbicides disturbance on the natural restoration of tropical inland forests.

At the symposium scientists were engaged in active work in a friendly atmospher. Although most scientists met one another for the first time, their discussions and exchanges of views were conducted in an open, straightforward and frank way and in their private capacities, and this helped ensure good results for the symposium.

The majority of the participants have reached agreement on the following:

l. Operation Ranchhand was essentially a chemical war conducted with herbicides on a large scale in space and time, the first such massive employment in mankind's history of war and differed completely from explosion accidents or failures in chemical factories.

It was conducted in a tropical country and a geographical area which differs from much smaller-scale experiments in laboratories in any country in the world, or from small experiments of partial usefulness to evaluate what had happened to Vietnam and the Vietnamese people during operation Ranch hand.

The herbicide employed in operation Ranch hand included primarily:

- (1) 2,4-d
 - (2) 2,4,5-t (containing dioxin)
 - (3) picloram
 - (4) dimethyl arsini (cacodylic acid)

These four chemicals were applied primarily in the following three mixtures:

- (1) agent orange (a mixture of 2,4-d and 2,4,5-t)
- (2) agent white (a mixture of 2,4-d and picloram)
- (3) agent blue (dimethyl arsinic or cacodylic acid).

According to official United States figures, about 44 million litres of agent orange were used between 1961-1970, about 20 million litres of agent white were used between 1966-1971, and about 3 million litres of agent blue were used between 1961-1971. There is no source of independent verification. It is impossible to determine how much dioxin was in the agent orange, but a conservative estimate is that the total amount was no less than 170 kg.

- 2. Over the last twenty-odd years, many experimental studies on herbicides and defoliants have been conducted in research bases of many countries. No full agreement has been reached yet on the results and conclusions regarding the effects of chemicals on experimental animals. However, through many years of research with admirable patience and increasingly precise methods, the majority of scientists recognize that phenoxy and certain other herbicides and defoliants used at a high dose or at a low dose for a long period of time will affect animals: they may be variously mutagenic, carcinogenic or teratogenic:
- 3. Studies on workers in factories over the last few years. Those studies confirm the toxicity of herbicides, especially of 2,4,5-t (2,4,5-trichloro phenoxy acetic acid) and of 2,3,7,8, tetrachlorodibenzo-para-dioxin (TCDD) or dioxin.

The signs of immediate and long-term poisoning due to chlorophenoxy acetic substances have been described in the medical literature in which manifestations considered as characterizing such poisoning are: chlorane, porphyria cutanea tarda, asthenia, etc. In human pathology reactions to the pathogenic agents differ from one individual to another, so do the manifestations of the reactions, which render evaluation and statistics difficult.

- 4. The symposium reserved most of its time for the evaluation of the long-term effect of chemical warfare in Vietnam. Scientists attending the symposium highly valued the contribution made by Vietnamese scientists who, despite the limited facilities and other difficulties during and after the war, were able to overcome these problems and made valuable research contributions. The reports and suggestions made by Vietnamese scientists at the symposium provided a crucial basis for discussions in the working groups and at the plenary session. Large-scale field studies done by Vietnamese scientists in localities in Southern Vietnam as well as Northern Vietnam have provided many materials of scientific value not previously demonstrated in other countries.
- 5. Mature in Vietnam has been substantially damaged. This destruction is due to a complexity of reasons. The delegates agreed that the main and most important cause of this extensive damage to nature is the use of herbicides and defoliants on a large scale.

Immediately after the spraying the toxic substances exerted their direct destructive effects on the vegetation and to some extent on animals living in inland or mangrove forests, and on saline water or fresh water animals. The direct and indirect repercussions of these immediate effects have lasted until today. Time has only slowly helped to eliminate these effects, they are not yet complete, the restoration can only be slow and occurs most readily on very small areas. Photographs taken from the air or space have reflected the real state of the restoration of tropical forests sprayed with defoliants.

- 6. Toxic chemicals sprayed on a large scale, with a high concentration and in a large amount, have changed the composition of some soils, destroyed useful microcrganisms, and in some areas made the soil to lose fertility and to deterioriate in other ways. Many areas which had been covered with trees and other woody plants throughout the year have become savannas of low productivity with only wild grasses or a number of secondary successional plant species having little economic value, and with rodents, which are disease-carriers. Evidence from aerial photography and elsewhere indicates that some of these savannas are continuing to expand in size. Some species of precious tropical wood are facing the danger of extermination, as are some precious terrestrial or aquatic animals and algae, etc. Transforming these savannas and building them into economic zones, areas for agricultural cultivation and reforestation, are difficult problems, the solution of which is far beyond the present abilities of the Vietnamese people. Moreover, the various impacts on nature undermined the whole human life support system.
- 7. Toxic chemicals sprayed on the land were washed away to lowland areas, far from the sprayed areas and decomposed in time. The most dangerous among them was agent orange, which was widely used from 1961-1970. Agent orange contains an impurity, 2,3,7,8-tetrachlorodibenzo-para-dioxin (TCDD) generally known as dioxin, a very toxic and resistant substance which exists for a long time in nature. What was the amount of toxic chemicals sprayed? According to published data, more than 90,000 tons of herbicides were sprayed including more than 37,000 tons of agent orange, containing the toxic substance dioxin. The most important thing one should know is whether there still exists dioxin in nature in Vietnam. In 1981 analysis was made of seven soil samples taken in a rural area of 80 Chi Minh City, at different depth levels. On a sample taken at a depth of 1 metre there was a trace of dioxin, with a concentration below 5PPT of soil. On wet sample on the soil surface the concentration was 15PPT of soil.

8. There are as yet not many scientific studies identifying the biological cycle of dioxin from the soil into plant, species, into food, into animals and people.

Dioxin and decomposition products herbicides and defoliants have probably been carried to lowland areas in Vietnam and neighbour countries, and into the seas around Vietnam. Where will substances end up? How will they be decomposed? What danger will they cause? When will the dioxin be decomposed? These points could not yet be established. The opinions put forward at the symposium were only estimates which must be verified over a long period of time.

9. The evaluation of the long-term effects of herbicides and defoliants is a most difficult and complex task. It is therefore difficult to reach full agreement, since the conditions in which scientists work differ from one country to another. However, most of the conclusions of their reports have elaborated the results of experiments conducted by the majority of scientists in the world and Vietnam. Reports by Vietnamese scientists have suggested that herbicides and defoliants affected chromosomes and caused congenital abnormalities, molar pregnancies and choric epithelioma. Vietnam war veterans exposed to toxic chemicals for a long time during the war years may pass on those abnormalities to their offspring. The rate of monsters in families of Vietnam war veterans seems to be higher than in others. Chemicals affect man's health and how they cause cancer. Herbicides penetrating into human bodies may cause long-term effects, even though the victims have already left the contaminated areas. Of course, such effects would be clearer for those who remain in the affected areas.

Many preliminary conclusions of Vietnamese scientists are new points, which were observed in the realities of Vietnamese society, and have never been dealt with or else have been only inadequately dealt with in foreign research works.

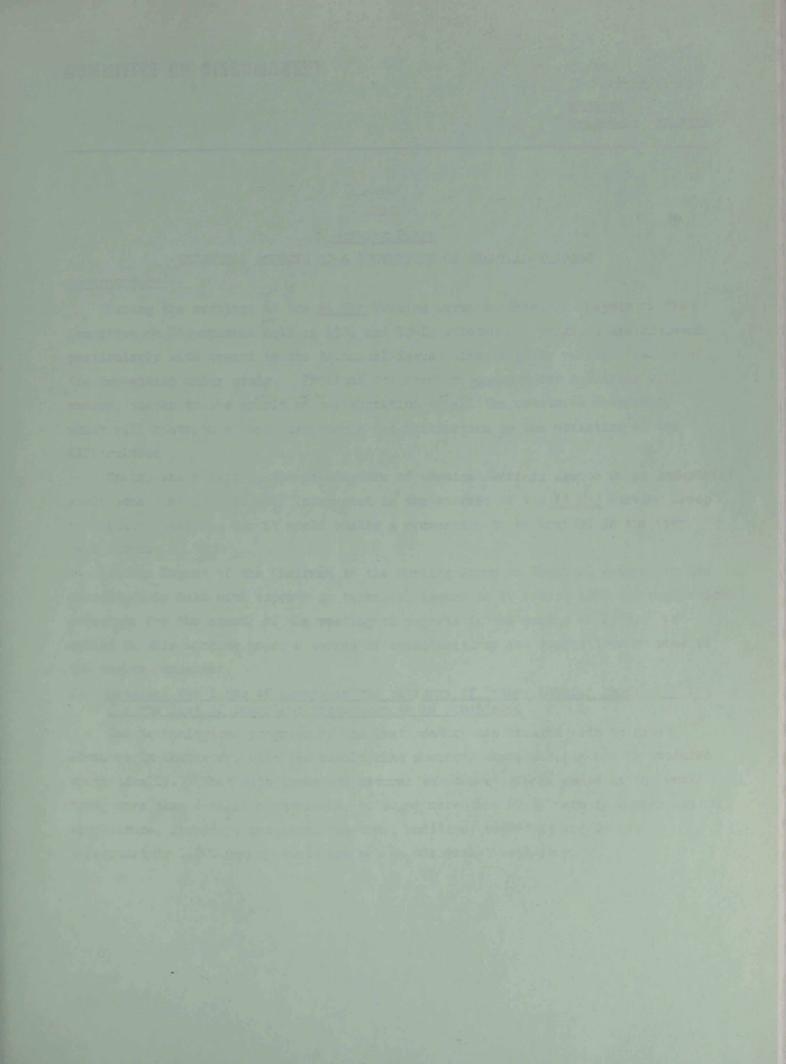
- 10. During the symposium scientists agreed that:
- (a) Further studies should be continued for many years on the long-term effects of herbicides and defoliants used in the war on man and nature in Vietnam.
- (b) International co-operation between Vietnamese scientists and their foreign colleagues is necessary to promote study and to determine the effects of herbicides and defoliants, and find measures to cope with them, in the interest of the Vietnamese people and other peoples. Thus, this international symposium in Ho Chi Minh City has had a humanitarian character, which is serving the interest of the people.
- (c) Measures to cope with the effects of herbicides and defoliants are complicated and difficult. They involve many fields of science, technology, culture, economy and management and call for appropriate governmental policies. They require a high level of science and technology divorced from politics, the co-operation and commitment of the whole population, and significant investments of money and material. Unrestricted assistance from the international community in all fields related to this endeavour is an urgent necessity.

Finally, a brief separate document provides background information on the subject of the symposium and the following seven additional documents, provide official summaries of the symposium working groups:

- 1. Plant ecology and forestry,
- 2. Animal ecology,
- 3. Soil ecology,
- 4. Coastal and aquatic ecology,
- 5. Cancer and clinical epidemiology,
- 6. Reproductive epidemiology and
- 7. Experimental toxicology and chemistry.

Ho Chi Minh City, 19 January 1983

ON BEHALF OF THE PRESIDIUM AND PARTICIPANTS
OF THE SYMPOSIUM





CD/350 28 February 1983 ENGLISH Original: SPANISH

SPAIN

Working Paper

TECHNICAL ASPECTS OF A CONVENTION ON CHEMICAL MEAPONS

INTRODUCTION

During the meetings of the Ad Hoc Working Group on Chemical Weapons of the Committee on Disarmament held in 1931 and 1982, substantive progress was achieved, particularly with regard to the technical issues affecting the various clauses of the Convention under study. Problems do, however, pareist, but solutions will emerge, thanks to the spirit of collaboration of all the countries concerned, which will contribute their experience and information to the obviation of the difficulties.

Spain, which gave up the manufacture of chemical warfare agents on an industrial scale some time ago, is very interested in the success of the Ad Hoc Working Group on Chemical Weapons, for it would enable a convention to be drafted in the very near future.

In the Report of the Chairman to the Working Group on Chemical Weapons on the consultations held with experts on technical issues on 10 August 1932 (1) suggestions were made for the agenda of the meeting of experts in the spring of 1933. We submit in this working paper a series of considerations and suggestions on some of the topics concerned.

I. Material for lists of agents in the category of "other harmful chemicals" and for the list of important precursors to be considered

The technological progress of the last century has brought with it great advances in chemistry, with the result that numerous chemicals can now be produced synthetically. What with these and natural substances, there exist in the world today more than A million chemicals, of which more than 60,000 are in common use in agriculture, forestry, industry, the home, medicine, cosmetics and so on.

Approximately 1,000 new products are put on the market each year.

Along with the considerable positive element, however, toxic products have meant new dangers and risks for man and his environment. These risks are not easily assessed because their consequences take a long time to appear; because those who enjoy the benefits of the new products are not the same as those who are exposed to the risks; because of the incipient state of research in this field and because of the many lacunae in our knowledge of it.

In all countries, questions of the harmful nature of chemicals are usually the responsibility of the institutes of hygiene and labour safety and the health and environmental organizations.

In this regard, there is wide-ranging international collaboration with various national and international bodies which study the toxic effects and maximum admissible doses in the working environment of, and the symptomatology and treatment of poisoning by, industrial chemicals.

For example, the American Conference of Governmental Industrial Hygienists annually publishes a list of chemicals containing all the data referred to above.

The interesting thing about this publication is that it constitutes an open list, with values subject to annual review, and that proposals may be made for its amendment.

These proposals and the annual acceptance of substances for inclusion in the list must be accompanied by substantive evidence and tests.

It would be interesting to study the possibility of setting up a similar "open list" system for other harmful chemicals and important precursors, with annual registrations (and possibly exclusions) at the proposal of the countries concerned by the treaty, and with a technical report which would cover the synthesis of warfare agents containing the substances and possibly toxicity tests (of the precursors of the end products of organic synthesis of which they are part, or of the final physical mixture produced).

II. Elaboration of recommendations for methods of aerosel inhalation toxicity determination

The toxicity of a chemical increases when it is administered by inhalation in the form of an aerosol.

Particles which are normally physiologically inert become aggressive when they are the carriers of toxic gases by adsorption. The gases are carried deep into the respiratory system, where they are deposited, producing centres of high toxin concentration.

The danger from chemicals is different when they merely pollute the environment and when their vapours are mixed with aerosols.

Although it is of interest for toxicological studies of aerosols to cover, in addition to the danger from inhalation, the danger deriving from contact with the mucous membranes, eyes or skin, and the dangers of ingestion and its local and systemic effects, tests for the quantitative determination of LTC 50 should be independent so as to permit the calculation of the proportion of aerosol actually absorbed by respiration. Responses of a psychological nature due to alarm or fear should not be omitted, although they are less important for the purposes of a convention (incapacitating and psychochemical agents).

For a study of the acute toxicity of aerosols, the methods recommended by the National Research Council of North America (2) or the World Health Organization (3) can be used.

The Federal Hazardous Substances Labelling Act (4) recommends the use of a test chamber containing rats, rabbits and guinea pigs at three levels, with constant humidity and temperature. The quantity of aerosol injected into the chamber together with filtered air and the concentration of the substances inside the chamber are determined by experiment. The lethal dose for 50 per cent (LD 50) of the animals is determined.

The systemic response to the quantity of aerosol reaching the bloodstream can be studied by sophisticated instruments (polygraphs, etc) or detected by elementary observation.

Sachsse, Ullmann and others (5) have designed a device comprising four independent units, each constituted by two cylinders of rigid polyvinyl placed one above the other. The upper cylinder is approximately 650 mm high and 300 mm in diameter; the lower cylinder is 300 mm high and under it is placed a rotating disc. This lower cylinder has, at 120 mm and 240 mm from its base, two equidistant threaded orifices of a diameter of 50 mm to which are connected the tubes (160 x 152 mm for rats) containing the animals.

The entire lower cylinder is contained in a protecting box.

The atomizer is placed at the upper end of the top cylinder, while the lower cylinder contains a cascade impactor, a hygrometer, a flow-meter and a vacuum pump which extracts the air from the entire apparatus at a rate of approximately 13 litres per cinute; the exiting aerosol is neutralized by being passed through a 10 per cent solution of sodium hydroxide with 0.5 per cent hydrogen peroxide and a final filter.

The technical difficulty of the inhalation experiments led Clark (6) to draw up a protocol for the study of the toxic effects of an aerosol at stages of increasing complexity:

Stage I: Acute toxicity.

Determination of the LD 50 by oral, intravenous, and intra-tracheal means. Simple irritation studies (eyes, etc.).

Stage II: Acute inhalation.

Determination of the LC 50 (lethal concentration) in four hours of "breathable" atmosphere, with particles of an aerodynamic size of $1-5~\mu$.

Stage III: Sub-acute inhalation.

Determination in two species (rat, dog) of the MPD (maximum permissible dose) in a "breathable" atmosphere, increasing the doses every three to four days until clinical indications appear. A histopathological examination is then made. Stage IV: Chronic inhalation.

(This, like the succeeding stages, would not be important for the purposes of the treaty).

The use of two types of animal, rodents and non-rodents (such as dogs or monkeys) is recommended.

Stage V: Teratology.

The use of rats and rabbits is recommended for this stage (foetal mortality, foetal development or growth).

Stage VI: Special studies.

(Possible synergisms between propellants, adjuvants; hypertensive or sympathomimetic activity, etc.).

Since the variety of toxicological methods described in the literature and used by toxicologists is very considerable, it would be of interest to adopt a standardized method for the purposes of the treaty and to homologate a group of methods which each State could use and which would be contrasted with that adopted, using reference substances, with a statistical analysis of differences in means and the homogeneity of variances.

In this way, the national verification bodies would be at liberty to use their own toxicological methods for the purposes of the convention on chemical weapons with homologation and contract with the international method as the only requisites.

III. Technical evaluation of the use of specialized information-gathering systems (black boxes) as components of a CW verification system

Owing to the technical limitation of present-day specialized systems (black boxes) for the gathering of information on chemical processes and installations, it would be helpful if as many countries as possible took part in the planning and the development of suitable sensors for chemical verification, so that the latter can in the near future and in very specialized cases replace on-site inspections.

The "black box" might be defined as "a system capable of capturing and displaying with specified precision and reliability data for the verification of compliance with a chemical weapons convention".

Defining the desired levels of data precision and system reliability is a prerequisite for implementing the projects appropriate to each specific case considered in the convention and for determining the type of sensors and degree of redundancy necessary for their implementation.

IV. Elaboration of methods for the protection and monitoring of the environment during the destruction of chemical weapons; planning of destruction

The contamination of the environment during the destruction of the stockpiles and arsenals of chemical weapons depends:

On the constituents to be destroyed;

On the method selected;

On the location of the destruction in space and time.

Whatever the method selected, it has its price and produces a polluting discharge. It would, therefore, be helpful to use a model to evaluate the alternatives, linking their selection to the various types of contamination existing and produced in the environment and the limits established as permissible maxima.

By reason of their nature, the emissions produced as a result of the various forms of human activity disperse in the atmosphere in a form mainly determined by meteorological factors. The resulting air composition or "air quality" is harmful above certain limits for the elements of the local ecosystem. Atmospheric pollution simulation models link the following three concepts:

The emissions existing in an area can be assessed by means of emission factors, which relate to the quantity of pollutant emitted to an index based on the type of activity in the area, amount of fuel burned, etc., like the indices prepared by the United States Environmental Protection Agency.

The typical meteorological situation in each basic time period and area is estimated by means of a statistical analysis of the recorded meteorological data and is shown as an n-dimensional probability matrix.

Air quality is expressed by two parameters per pollutant:

Maximum permissible concentration of the pollutant in the atmosphere,

Number of occasions ever a given period of time on which it is permissible to exceed this concentration (meximum permissible probability that the concentration in the area will exceed the absolute limit).

Using the classic method of diffusion models, it is possible to simulate short-period atmospheric pollutant concentrations by zones, situating the destruction alternative model on the various space-time co-ordinates. This shows whether some problem area will occur which exceeds the established limits.

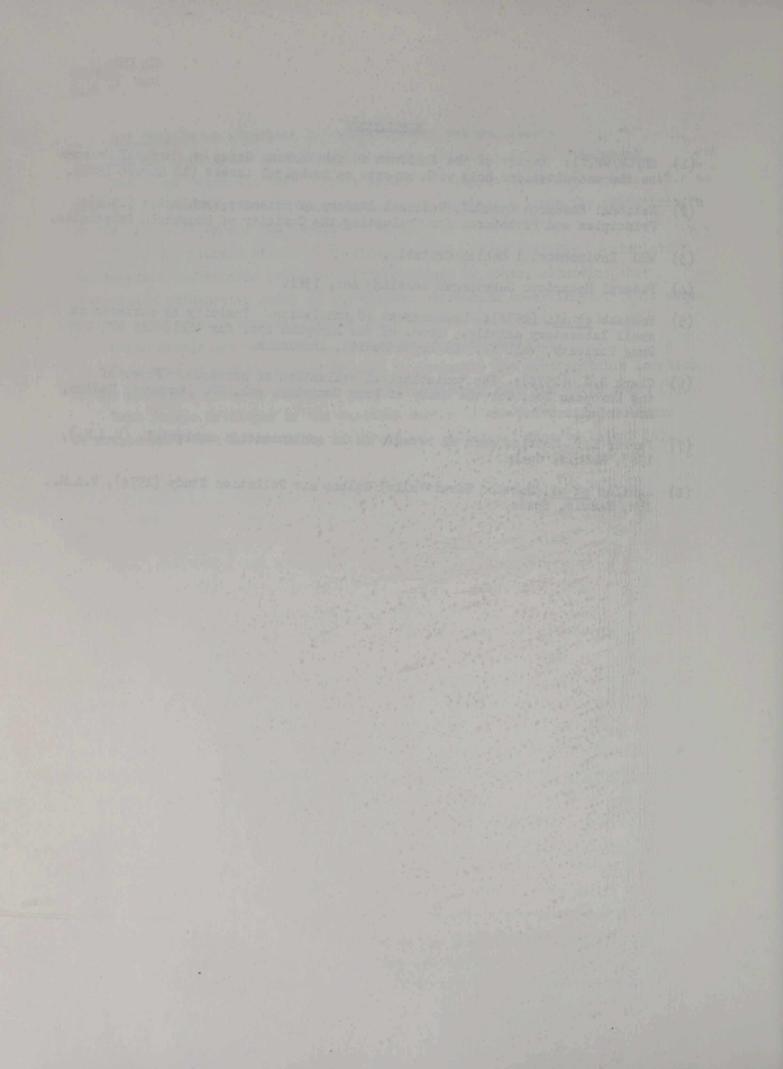
Other models are used for the treatment of solid residues.

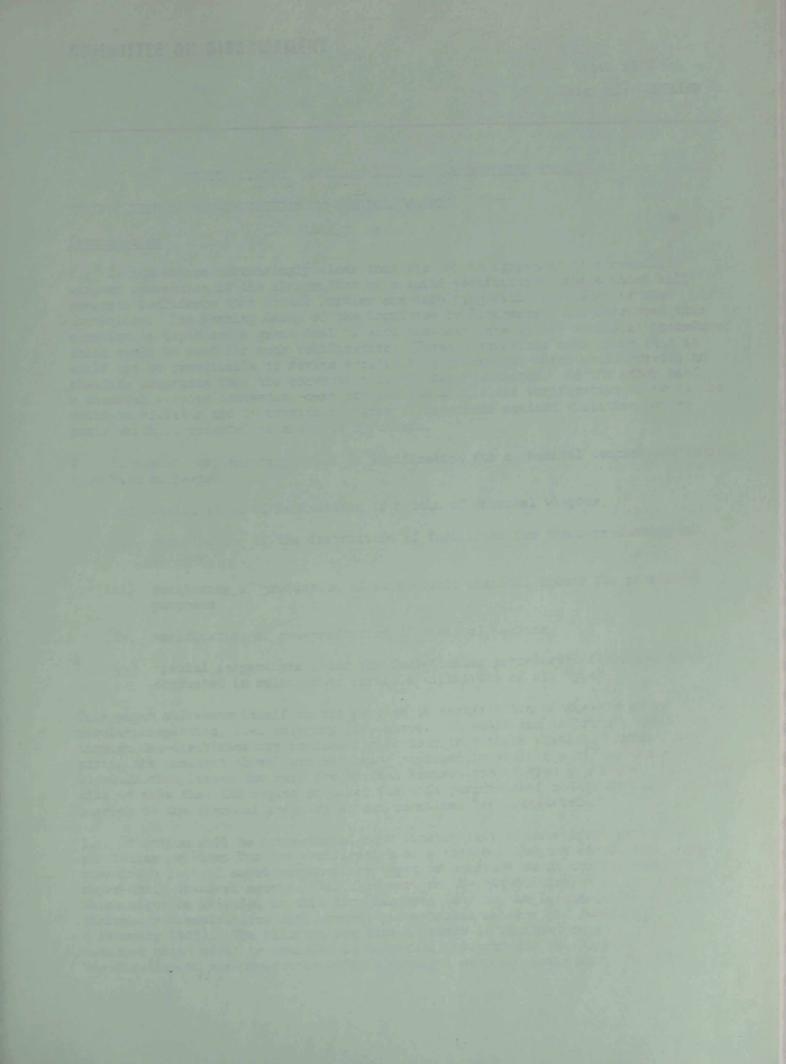
This type of model can also be used to determine the most probable location of the pollution focus by means of the data collected from the environment (7).

Some models developed by the research centre of the Universidad Autónoma de Madrid have been successfully tested in the industrial zone of Bilbao (8).

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VERIFICATION OF NON-PRODUCTION OF CHESICAL WARPOND

Introduction

- 1. It has become increasingly clear that the key to agreement on a chemical weapons convention is the elaboration of a sound verification regime which will generate confidence that States Parties are complying with provisions of the convention. The Working Group of the Committee on Disarmament has discussed this question in depth and a great deal of work has been done on the technical procedures which could be used for such verification. These discussions have shown that it would not be practicable to devise verification procedures which would provide an absolute assurance that the convention is not being violated. On the other hand, a chemical weapons convention must provide for sufficient verification to deter the would-be violator and to provide a degree of assurance against violation by one party which is accepted as adequate by others.
- 2. Five main complementary types of verification for a chemical weapons convention have been suggested:
 - (i) verification of destruction of stocks of chemical weapons,
 - (ii) verification of the destruction of facilities for their production and filling.
 - (iii) monitoring of production of super-toxic chemical agents for permitted purposes,
 - (iv) verification of non-production of chemical weapons;
 - (v) special inspections under the fact-finding procedures, including those conducted in relation to possible violations of all types.

This paper addresses itself to the problem of verification of non-production by regular inspection, i.e. category (iv) above. It would aim to provide confidence through non-discriminatory routine inspections that those chemical warfare agents posing the greatest threat are not being produced in violation of the convention. It would thus lessen the need for special inspections of type (v) above. This paper aims to show that the regime required for this purpose need not be anything like as onerous to the chemical industry as has sometimes been suggested.

3. Attention will be concentrated on a limited list of substances which poce particular problems for the verification of a chemical weapons convention. They comprise a list of named compounds or types of compound which are key precursors of super-toxic chemical agents. Valuable work on the identification of key precursors which might be included in this list has been done in the latest series of Chairman's consultations with experts on technical matters (17 January - 4 February 1983). The illustrative list at annex is designed to show types of compound which might be included in a special category for the purpose of verification of non-production under a chemical weapons convention. This list is

not definitive and is open to discussion. It comprises chemicals which are vital for the production of particularly potent, lethal and incapacitating chemical weapons. Fortunately many of these substances are manufactured in extremely small quantities if at all. Most of them are probably not produced at all in many countries. The table at annex shows, as far as those are known, civil purposes for which those substances are used and the number of factories known to be producing them in Britain. In order to demonstrate that the inspection of commercial facilities would not be too burdensome, it would be useful to know how many facilities worldwide produce the substances listed at annex. It would be helpful if members of this Committee would furnish corresponding data about their civil chemical industries.

Verification Regime for May Precursors for Super-Toxic Chemicals

- 4. To be sure that the substances in the list of key precursors are not being used for the production of chemical weapons, it would be necessary, in the view of the British delegation, to subject the declared facilities which produce these substances to inspection as well as retaining procedures for verifying undeclared facilities. A possible verification regime for a limited number of civil chemical facilities is set out below. In the view of the British delegation, the appropriate verification regime for declared facilities would comprise the following components:
- (a) declarations of facilities producing the chemicals listed at annex, and of facilities designed, constructed or used for such purposes in the past;
- (b) periodic random selection of a number of all such declared facilities for on-site inspections;
- (c) on-site inspection by a team of inspectors under the aegis of the Consultative Committee.

Declarations

5. A requirement should be included in the Declarations section of the Convention for all States Parties to declare any facilities on their territories which produce the substances listed at annex. Those countries failing to make such a declaration or those who submitted a nil return would of course still be subject to special inspections (category (v)). The first such declaration should be made within thirty days of the entry into force of the convention for the State Party concerned, and declarations should be made annually thereafter. The declaration should state the locations of the facilities, which substances are produced at a given facility and the current civil use to which the substances are put. Such information would be submitted to the appropriate body of the Consultative Committee.

Random Inspection

C. The facilities notified to the Consultative Committee in the way described in paragraph 5 above would become subject to random on-site inspection. These facilities would be subjected by the Secretariat of the Consultative Committee to a random selection procedure at intervals latermined approximately by the agreed number of inspections. In deciding on the frequency of inspections to be carried out, the Consultative Committee would take into account the number of facilities declared, statistical sampling requirements and chemical engineering data on how much time would be needed to carry out prohibited activities. It is important that the process of selection should be carried out on a random basis, and that each selection should be made from the complete list of racilities, in order to

maximize the deterrent effect of such a system. Thus the fact that on inspection had just been carried out at a perticular facility would not exclude another check on that particular facility in the near future if the let fell on it again. This would discourage States from beginning illegal activities at a facility impolistely after an inspection had been carries out as the assumption that they facility was temporarily safe from inspection. The precise timing of the celection of the sites to be inspected would be left to the inspection team, thus increasing the deterrent effect of the regime.

Inspection Procedures

- 7. Once a site had been selected for inspection, the imprection should be carried out at soon as possible, since additionable a facility could be made very quickly to cover up any suspicional circumstances. In period of our week is suggested, any delay should be satisfactorily explained and a pattern of burcaucratic delays, e.g. refusal to grant entry visas etc., in allowing a team of inspectors to visit a facility would be taken as a prime facin indication that a breach of the Convention had occurred.
- 6. Inspections carried out in the way described above would be part of an over-all system of routine inspections to ensure implementation of the convention. The organization of inspections and the system of appointment of inspectors would therefore depend on the detailed provisions agreed. In general torms, however, an international inspectorate is envisaged which would involve the appointment of a panel of independent technical increasors. The inspectors would need to be assisted by a permanent technical accretarial catallished at an appropriate place. Both the inspectorate and the fixed socretarial would be responsible to the Consultative Committee. The experience of the cafeguards regime of the International Energy Agency might be of value in the establishment of such machinery.
 - 9. The procedures which the inspectors would be permitted to the would need to be set out in general terms in the convention itself or in an annea to it. Within the limits thus laid down, however, it would be desirable for the inspectorable to have scope for the technical development of their own procedures and some latitude for their explication under the different conditions provailing at different facilities. In carrying out their duties the inspectorate would art under the authority of the Consultative Commistee, which could draw time to the issue guidelines within the authority given to them by the convention.
 - 10. The objectives of on-site inspections would be to ensure:
 - (1) that the quantities of a particular substance being produced of the facility under impection are computable with the declared use;
 - (ii) that any experipling is carried but in a samper and quantity compatible with the declared civil use,
 - (iii) that the production facilities have not been a diffied in such a way (hot enty could be used to produce chesical writing apents.
 - 11. Bearing in mind the purpose of an-site inspection as described above, it is proposed that procedures should be ilseased by the Morning Group (an particular curios consultations with technical experts) under the following headings:

- (a) examination of production for the facility concerned;
- (b) visual observation at the site, both inside and outside the production facility, to detect unnecessary stockpiling facilities, munition filling facilities, over-specialized safety equipment etc.;
- (c) engineering inspections to ensure that the production line is compatible with the production of the declared substance.

Dual Purpose Chemicals

- 12. The previous sections have been concerned with precursors for supertoxic chemicals. Most of these precursors are not usually produced in large quantities in civil industries and are typically produced at a small number of cites. There are other chemicals, however, which do have a large civilian use and which are also important in chemical warfare. Amongst these chemicals are those which are toxic, such as phosgene, hydrogen cyanide, cyanogen chloride, chlorine, etc., which could pose a serious threat to personnel without protection. There are also non-toxic chemicals, such as ethylene and ethylene oxide, which could be precursors for mustard.
- 13. Some of the suggestions made proviously for the control of precursors could be applied to these bulk chemicals. However perhaps all that is practically possible is that there would be a requirement for a declaration of all facilities producing these chemicals above a pre-arranged quantity together with their civil uses. This is an area where the collection of statistics on a national basis may play an important role. More and more countries are imposing rigorous health and fety regulations on such chemicals and in many countries there are already quirements that industrial companies provide information to their governments on their use. Additionally, for safety reasons, there is an increasing tendency not to store chemicals such as Hydrogen Cyanide but to make and use them immediately. Declaration of facilities producing or storing these chemicals should present no problem.

Effect of On-Site Inspections on Civil Chemical Industry

14. As has often been pointed but in the Conmittee on Disarmament, it will be important in the establishment of any verification regime for a CW convention to ensure that the civil chemical industry is affected as little as possible. Consultations will therefore be necessary by individual States with their national chemical industries to ensure that the convention does not place an unnecessary turden on them. The inspections proposed in this paper would affect few facilities and are designed to cause as little disruption as possible to the chemical industry. The British Government has been consulting representatives of the British civil chemical industry about the inspection procedures above and its preliminary conclusion is that satisfactory arrangements could be made if a convention were agreed.

Conclusion

15. The above verification regime for non-production of chemical weapons, together with routine inspection of activities such as the destruction of stockpiles and roduction facilities, should help to create confidence in the implementation of the avention without imposing undue strain on industry, and thus serve to decrease the

need for special inspections. The number of routine inspections would be kept to the minimum and the inspection procedures both simple and confidential; they would not involve intrusion into research activities or into the details of production while still deterring violations of the convention. The British Government will continue its consultations with the British chemical industry on this subject. We hope that other States will also carry out such consultations in the near future. Such action would build confidence by showing the determination to make the necessary effort to reach agreement on a convention.

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Table 1

British Production of Key Precursors for Civil Uses

Key Precursors for super toxic lethal chemicals	Number of Companies in United Kingdom producing these Precursors
Phosphorus trichloride (PCl ₃)	1
Phosphorus oxychloride (POC1 ₃)	1
Chemicals containing the P-methyl and/or P-ethyl'bond	0
Methyl and/or ethyl caters of phespharous soid	1
3.3 dimethyl butanol-2 (pinacolyl alcohol)	0
N.N disubstituted & - amino ethanol	2
N.N disubstituted P - amino ethanc thiol	0
N.N disubstituted > - amino ethyl halides (halide = Cl, Br or I)	1
Key Precursors for other super-toxic chemicals	Barrie To
Phenyl, alkyl or cylcoalkyl substituted glycolic acid 3- or 4-hydroxy piperidine and their derivatives	0*

^{* =} Some small-scale production for pharmaceutical purposes

Table 2

British Civil Uses of Key Precursors

Key Precursor		Purposc
Phosphorous trichloride (PCl ₃)		phosphorylating agent chlorinating agent to make acid and alkyl halides catalyst to make organic phosphates, germicides and medicinals
Phosphorous oxychloride (POCl ₃)		chlorinating agent catalyst for dye stuffs and pharmaceuticals petrol additives, plasticizers and organic phosphates
Methyl and/or ethyl esters of phosphorous acid	- (a)	flame retardant
N.N disubstituted β - amino ethanol	- (a)	water treatment chemical (corrosion control
N.N disubstituted β - amino ethyl halides	- (a)	cationic starch to make filter papers

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COMMITTEE ON DISARMAMENT

CD/378 21 April 1983

ENGLISH

Original: CHINESE

Ad Hoc Working Group on Chemical Weapons

CHINA

On the Prohibition Regime of the Future Convention Barning Chemical Weapons

I

The idea of including a prohibition of the use in the scope of a future convention on chemical weapons has now been accepted by a number of delegations. However, a new question is raised by some other delegations concerning the relationship between the two prohibition regimes respectively contained in the 1925 Geneva Protocol and the future convention should the prohibition of use be included in the scope of the future convention. It is obvious that a proper solution of the problem will contribute to an early agreement on the scope of prohibition in negotiations.

II

The Chinese delegation believes that the two regimes should be in line with each other. Should there be any difference between the two, problems would arise which would be similar to those we have already encountered during negotiations when such a prohibition of use was not supposedly to be included in the scope of the convention.

For instance, it would be necessary to differentiate areas which come under the prohibition regime of Protocol and which would come under the regime of the future convention. The next step would be to seek a remedy to the deficiency of the 1925 Geneva Protocol for the verification of compliance. As is shown by experience, these issues alone are too complicated to allow of an easy solution, let alone certain man-made difficulties which are likely to be encountered.

If, however, the two regimes could be brought in line with each other, all the difficulties mentioned above would be rid of, because any failure of compliance with one of the regimes would simultaneously be a failure with the other. And this failure of compliance could be dealt with according to the verification provisions or other relevant provisions possibly contained in the future convention.

III

There exists such a basis for bringing these two regimes in line with each other. That is, to prohibit the direct or indirect use of the toxic physiological effects of chemical substances for fighting purposes. It is not only the obligation provided for in the 1925 Geneva Protocol (the field of biological warfare is not referred to here, this being outside the range of our present discussion) but is

also in full accord with the "general purpose criteria" of the future convention. At the same time it can suitably resolve the differences of opinion on herbicides and irritants, that is, their use for fighting purposes should be prohibited while allowing their use for the purposes of peace and law-enforcement. And obviously, activities which are in conformity with these two purposes such as development and production, etc. are also legal.

IV

The best way of bringing the two prohibition regimes in line with each other is to use the concept of "chemical warfare agents" in the definition of chemical weapons to be included in the future convention, and to also include a definition of "chemical warfare agents" itself.

The concept of "chemical warfare agents" centers on the most fundamental characteristics of chemical weapons and also reflects the content of the "general purpose criteria". As such it can aptly serve as the basis for unifying the two prohibition regimes.

It can be said that it is precisely the term "chemical warfare agents" which sums up most precisely and appropriately the fundamental characteristics of the prohibition contained in the Geneva Protocol (here no reference is made to biological warfare either), and which embodies the kernel prohibition by the future convention, whether it refers to super-toxic, lethal, other harmful substances or any other types of chemicals so long as they are used for fighting purposes.

V

In document CD/CW/CRP 62, definitions of "chemical weapons" and "chemical warfare agents" are given as follows:

"The chemical weapons ... refer to those weapons the casualty capabilities of which are based on the toxicity of chemical substances. They include:

- (a) chemical warfare agents and their precursors which produce a direct toxic effect on the target.
- (b) munitions or devices specially designed for filling with chemical warfare agents or their precursors and dispersing them in a combat state;
- (c) equipment specially designed for the purpose of the direct use of such munitions or devices."

"Chemical warfare agents are all toxic chemical substances whose types and quantities accord with hostile and military purposes and whose toxic effects are used to interfere directly with the normal functions of men, animals and plants in such a way as to lead them to death, temporary incapacitation or permanent injury. In accordance with the toxicity criteria, chemical warfare agents can be divided into the following three categories: ..."

Many other delegations have also advanced their definitions of "chemical weapons" and "chemical warfare agents" which, in spite of different wordings, are all very much characteristic and audio-visual. As such it can aptly serve as the basis for unifying the prohibition regime of the 1925 Geneva Protocol and that of the future convention.

So here is the conclusion: the prohibition regime of the future convention and that of the 1925 Geneva Protocol should and can be unified, and the appropriate medium to substantiate such unification is "chemical warfare agent".

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CD/387 6 July 1983

Original: ENGLISH

UNITED STATES OF AMERICA

ILLUSTRATIVE ON-SITE INSPECTION PROCEDURES FOR VERIFICATION OF CHEMICAL WEAPONS STOCKPILE DESTRUCTION

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ILLUSTRATIVE ON-SITE INSPECTION PROCEDURES FOR VERIFICATION OF CHEMICAL WEAPONS STOCKPILE DESTRUCTION

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I. Introduction

Procedures for destruction of chemical weapons, and for verification of the destruction, have been discussed in general terms in a number of working papers. A recent United States paper (CD/CW/CTC 28; 11 January 1983) contains United States views on general verification procedures.

However, the course of the negotiations has shown that a common approach to verification of stockpile destruction cannot be achieved through a discussion of concepts and general principles alone. It is necessary to understand how the approaches proposed would actually be carried out in practice.

The purpose of this paper is to facilitate further negotiations by illustrating in concrete terms how the United States approach to verification of stockpile destruction would work. For the purposes of illustration, we have chosen a specific destruction facility already operating in the United States, the Chemical Agent Munitions Disposal System (CAMDS). The paper outlines possible verification measures for this facility.

The specific procedures outlined here are preliminary, illustrative and tailored to a specific facility. While the concepts and general principles would be applicable to any facility, the actual procedures must take into account both the characteristics of a facility and of the items being destroyed. Thus, the procedures employed at another facility could be somewhat different.

II. Over-all description of the Chemical Agent Munitions Disposal System (CAMDS)

The Chemical Agent Munitions Disposal System (CAMDS) is an industrial-size prototype facility for destruction of chemical weapons and storage containers filled with mustard agent or the nerve agents GB or VX. The facility is located on the grounds of Tooele Army Depot; the site is approximately 45 road miles south-west of Salt Lake City, Utah.

CAMDS, which began toxic operations in September 1979, is being used to develop and demonstrate technology for demilitarization of toxic chemical munitions and to obtain technical data from which other similar plants can be designed and built.

Current activities are devoted to completion of a Technical Data Package for use in the design and construction of the first full-scale United States disposal facility, to be located at Johnston Atoll in the Pacific. This planned facility, which might begin operations in the late 1980s, would have a destruction capacity two-to-five times greater than CAMDS.

CAMDS was designed to destroy mustard agent by incineration, GB by reaction with sodium hydroxide solution, and VX by treatment with chlorine. However, the experience obtained to date at CAMDS suggests that incineration is the method of choice for all three agents. Explosives and propellants are thermally destroyed. Inert components and metal parts are mechanically demilitarized and decontaminated by heat treatment. In view of the dangerous materials involved, the entire facility is highly automated and designed for remote handling of items being destroyed.

Figure 1 provides a diagram of the CAMDS facility.

III. Incineration of chemical weapons

Incineration has several advantages over other methods for destruction of mustard agent, GB, and VX. Use of a common destruction method can reduce costs considerably by eliminating the need for different sets of process equipment. Furthermore, incineration produces less salt waste products to be disposed of than the chemical treatment processes do. From an arms control standpoint, incineration is preferable since it destroys the characteristic carbon-phosphorus bond of the nerve agents, thereby ensuring that the salt product cannot be recycled.

Chemical agent can be incinerated without first draining it from a munition or bulk container. This approach, called <u>in situ</u> incineration, is used at CAMDS for destruction of mustard agent. In principle, GB and VX could also be destroyed by this method.

Alternatively, the chemical agent may be drained from a munition or container and then injected into an incinerator. The metal component would be passed through the incinerator or separate metal parts furnace. This approach allows greater control of the incineration process and is being investigated at CAMDS for destruction of GB and VX. A similar process was used for destruction of mustard agent at Rocky Mountain Arsenal (see document CCD/436).

Since the two incineration processes present somewhat different verification tasks, they are described in detail separately below. Illustrative verification procedures, based on United States experience at CAMDS, are outlined in Section IV.

A. <u>In-situ</u> incineration

Figure 2 provides a schematic diagram for destruction of chemical weapons by means of in situ incineration. As indicated, the sequence of steps varies somewhat depending on whether the items being processed are in bulk storage (such as "ton" containers — commercial chemical shipping containers which hold approximately one ton of material), in munitions containing explosives, or in munitions without explosive components.

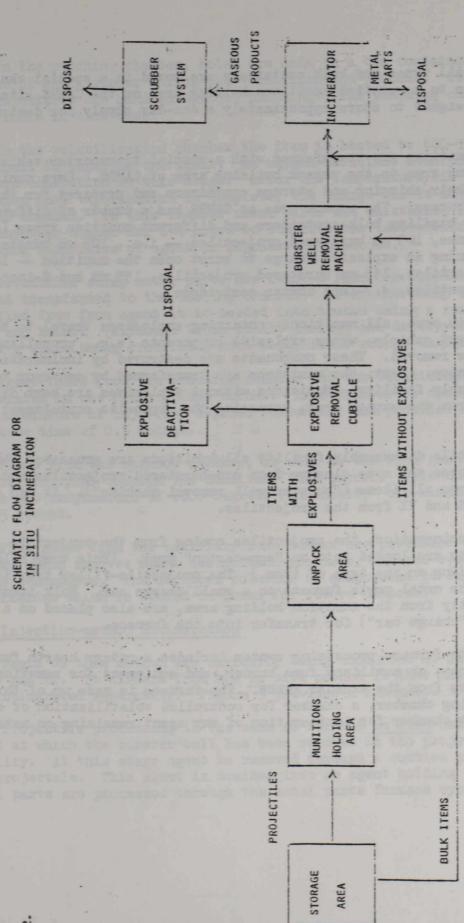


FIGURE 2.

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Munitions of all types and bulk containers are moved in a special van from a nearby storage area to a revetted munitions holding area on the CAMDS site. This holding area is designed to store approximately a one-day supply for destruction operations.

As needed, munitions are transferred with a special transporter vehicle from the munition holding area to the unpack building area of CAMDS. Here munitions are removed from their shipping and storage containers and prepared for the demilitarization process. The unpack area at CAMDS has a number of different configurations for handling bulk containers and different munition types (i.e., ll5 mm rockets, mines, l05 mm burstered projectiles — i.e., l05 mm burstered projectiles containing an explosive charge to burst open the munition — l05 mm non-burstered projectiles, l55 mm burstered projectiles, l55 mm and 8-inch non-burstered projectiles, 4.2-inch mortar cartridges).

From the unpack area, all munitions containing explosives travel to the explosive containment cubicle, where explosive components (e.g., propellant; fuse; burster) are removed. These components are destroyed by incineration in a deactivation furnace. Next, the munitions are transferred by conveyor to the projectile disassembly facility. Munitions without explosives are sent directly to this facility from the unpack area, bypassing the explosive containment cubicle.

In the projectile disassembly facility all munitions are processed through a device which removes the nose closure from non-burstered projectiles and pulls the burster well from all items ("burster well removal machine"). It can also be used to drain GB and VX from the projectiles.

For <u>in situ</u> incineration, the projectiles coming from the projectile disassembly facility are loaded into an "egg-carton" tray. (This tray holds 48-75 items, depending on the type of item.) The projectile-filled tray is transferred into the metal parts furnace on a small charge car. Bulk items, which arrive directly from the munition holding area, are also placed on a wheeled platform ("charge car") for transfer into the furnace.

The metal parts furnace processing system includes a rotary hearth furnace, a primary fume burner, an auxiliary fume burner, and equipment for removing destruction products from the exhaust gases. The furnace is made up of three chambers: a punching chamber, a chamber for controlled volatilization of agent, and a final burnout chamber for incineration of any agent remaining on metal parts.

In the punching chamber, holes are made in a ton container to permit release of agent vapour during the volatilization process. Other bulk items and projectiles are handled without punching. The punching chamber serves only a vestibule in this case.

In the volatilization chamber the item is heated to 600-900 degrees Fahrenheit to vaporize the agent. An oxygen-deficient atmosphere is maintained to avoid combustion at this stage. After the temperature/air flow profile indicates that vaporization is complete, the charge car is moved to the burnout chamber. In this chamber metal parts are maintained at 1000 degrees Fahrenheit or higher for 1-4 hours to complete the destruction of any small remaining quantities of agent or degradation products.

Detoxified scrap metal parts are removed from the furnace by the discharge car and transferred to the cooling chamber. After the scrap is cooled and certified free from agent it is loaded into trucks using a remotely operated crane and hoist. (Although 115mm rocket casings are destroyed by sawing or shearing while being processed, most metal items emerge basically intact.)

Agent fumes from the punching chamber and the volatilization chamber are incinerated in the primary fume burner. This chamber is operated with a flue gas temperature of 1450-1600 degrees Fahrenheit and provides a minimum residence time of 0.5 second.

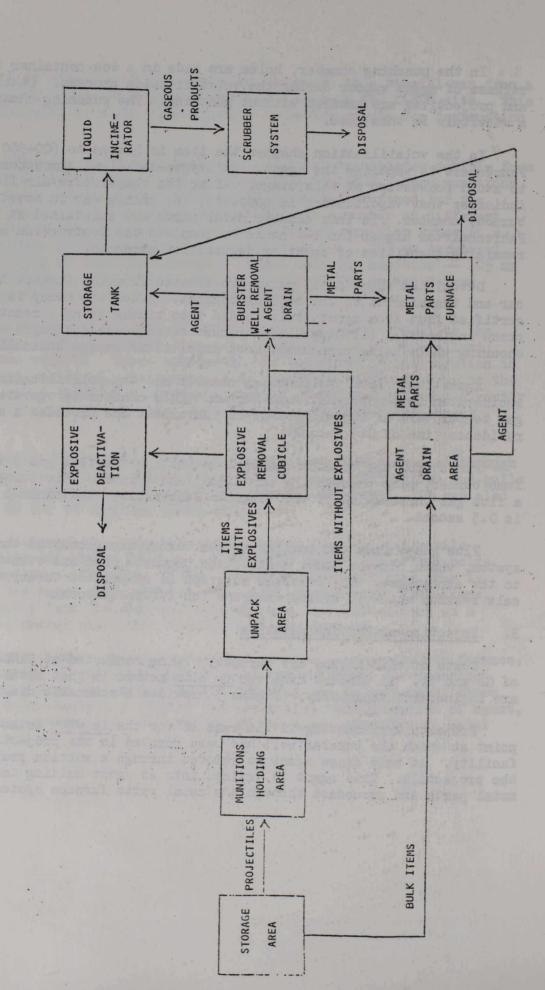
Fumes from the burnout chamber, as well as the flue gases from the primary fume burner, pass through the auxiliary fume burner. This burner operates with a flue gas temperature of 1600 degrees Fahrenheit; the minimum residence time is 0.5 second.

Flue gases from the auxiliary fume burner are processed through a scrubber system, which removes agent destruction products, and are eventually exhausted to the atmosphere. The scrubber solution is evaporated to dryness, leaving a salt residue which is stored in drums for future disposal.

B. Injection-method incineration

Tests of this method are currently being conducted at CAMDS for destruction of GB and VX. It differs from the in situ method in that metal parts and agent are incinerated separately. Figure 3 provides a schematic diagram.

Projectile processing is the same as for the in situ method until the point at which the burster well has been removed in the projectile disassembly facility. At this stage agent is removed through a suction probe lowered into the projectile. This agent is drained into an agent holding tank, while the metal parts are processed through the metal parts furnace system.



SCHEMATIC FLOW DIAGRAM FOR INJECTION METHOD INCINERATION

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Bulk items arriving from the munition holding area are drained in the bulk item facility area of the projectile disassembly facility. The metal parts are subsequently processed through the metal parts furnace system, while the agent is piped into an agent holding tank.

Agent from the holding tank is injected into a furnace, through a probe, onto a hot metal surface. The agent flash vaporizes and is processed through a fume burner and scrubbing system very similar in situ incineration. (For the CAMDS tests the metal parts furnace is being used. However, the Johnston Atoll destruction facility now being designed includes a separate liquid incinerator.)

IV. Illustrative on-site inspection procedures

Previous discussions have led to agreement that verification procedures for destruction of declared stocks should be designed:

- to confirm the identity and quantity of the materials destroyed; and,
- to confirm that the materials have actually been destroyed. In this respect, it would be important to confirm that the process destroyed the materials completely and that nothing was diverted in lieu of being processed.

Specific on-site monitoring and inspection procedures which might be used at the CAMDS facility to carry out these verification tasks are discussed below. While these procedures are designed for a specific facility, they incorporate several general principles which are applicable to any process for chemical agent destruction:

- a combination of human inspection and monitoring with sensors is necessary for effective verification;
- a detailed engineering review of the facility by international verification personnel, including on-site inspection, is necessary before destruction operations begin;
- inspection must be continuous during periods in which destruction operations are under way;
- inspectors must be qualified personnel and have a comprehensive, up-to-date knowledge of the design and operation of the destruction facility;
- inspectors must be permitted to confirm the validity of all data used for verification purposes;

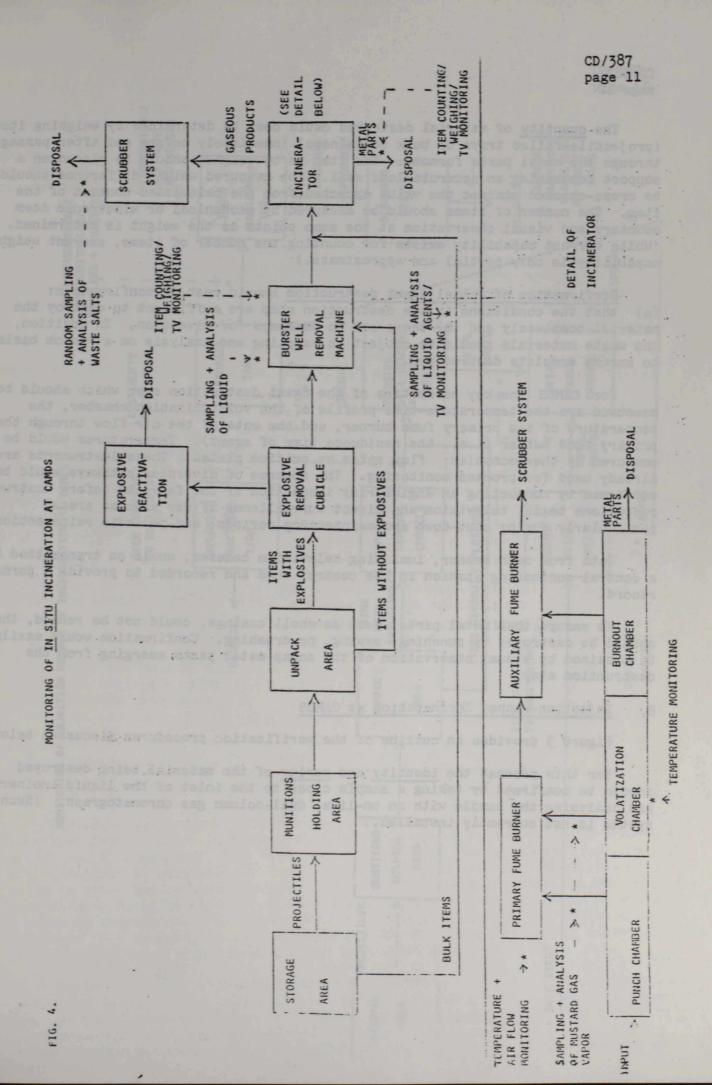
- to ensure confidence, data used for verification should be as closely linked as possible to the actual destruction step;
- monitoring and inspection procedures should be designed to minimize interference with the operation of the destruction facility, while providing effective verification;
- to the extent consistent with verification needs, monitoring and inspection procedures should make use of data generated during routine facility operations;
 - to the extent consistent with verification needs, common procedures should be used for different destruction processes within the same facility;
- close co-operation between international verification personnel and host state operating personnel is important for effective international verification.

A. In situ incineration at CAMDS

Figure 4 outlines the verification procedures discussed below.

For all liquid agents, including GB and VX the identity and purity of the material being destroyed could be confirmed by sampling it immediately before the item enters the metal parts furnace system and analysing the sample automatically with an on-line, dual-column gas chromatograph. At CAMDS samples could be taken from munitions with the automatic drain probe already built into the machine used to remove buster wells and drain projectiles. For bulk items, a slight modification of the operating sequence would be needed. Rather than transporting the item directly from the munition holding area to the metal parts furnace, the item would go first to the area equipped for draining bulk items. A sample could be obtained using the draining lines. The sample would be analysed automatically with an on-line, dual-column gas chromatograph. A different sampling procedure would be needed for mustard agent, since the pure agent is a solid up to about 15 degrees Celsius. One possibility would be to sample and analyse volatilized agent where it enters the primary fume burner. (This procedure would be unsuitable for the nerve agents since they already decompose at this stage.)

Since only one agent and one type of item would be processed during a given period, the same gas chromatograph could probably be used for all analyses, although it might have to be shifted from one part of the facility to another, depending on what was being destroyed. (Such an analytical system is not currently installed.)



The quantity of material destroyed could best be determined by weighing items (projectile-filled trays or bulk containers) immediately before and after passage through the metal parts furnace. The item to be weighed should be placed on a support containing an accurate load cell. The measured weight difference should be cross-checked against the value expected from the calculated content of the item. The number of items should be measured by mechanical or electronic item counters and visual observation at the same points as the weight is determined. (While current capability exists for counting the number of items, current weighing capability is only partial and approximate.)

Confirmation of actual agent destruction should rest on confirmation:

(a) that the conditions in the destruction step are sufficient to destroy the material completely and (b) there are no pathways for diversion. In addition, the waste materials should be subject to sampling and analysis on a random basis to ensure complete destruction.

For CAMDS the key parameters of the agent destruction step which should be measured are the temperature-time profile of the volatilization chamber, the temperature of the primary fume burner, and the rate of the air flow through the primary fume burner (i.e., the residence time of agent). Temperatures would be measured by thermocouples; flow rates by orifice plates. These instruments are already used for process monitoring. The absence of diversion pathways could be confirmed by conducting an engineering inspection of the facility before destruction operations begin, television and direct surveillance of key process areas, particularly during shut-down and maintenance periods, and periodic reinspection.

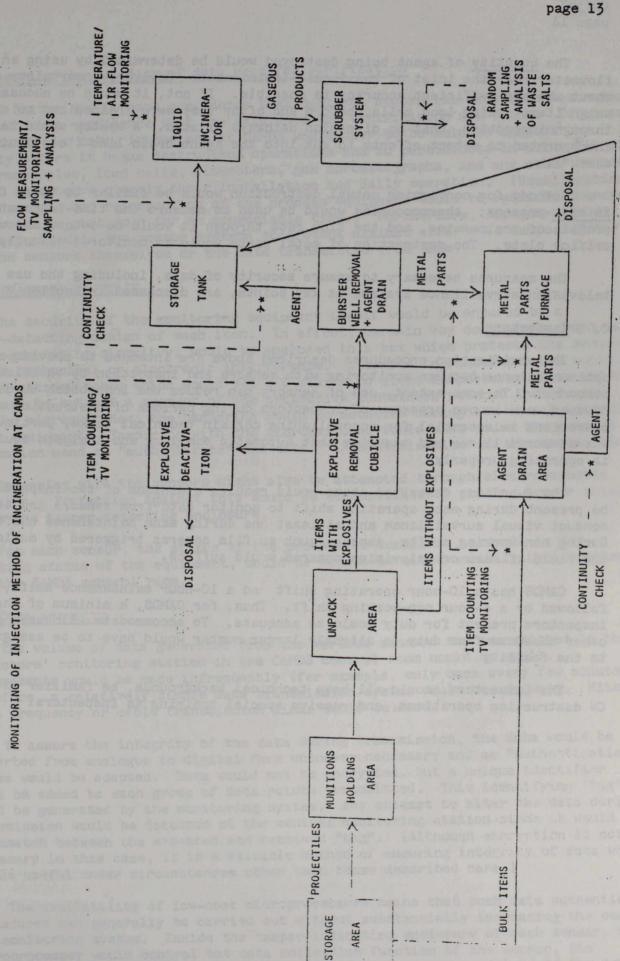
Data from each sensor, including television cameras, would be transmitted to a central monitoring station in the control room and recorded to provide a permanent record.

To ensure that metal parts, such as shell casings, could not be reused, they should be destroyed by punching, sawing, or crushing. Confirmation would easily be obtained by visual observation of the scrap metal parts emerging from the destruction step.

B. Injection-method Incineration at CAMDS

Figure 5 provides an outline of the verification procedures discussed below.

For this process the <u>identity</u> and <u>purity</u> of the material being destroyed should be confirmed by taking a sample close to the inlet of the liquid incinerator and analysing the sample with an on-line, dual-column gas chromatograph. (Such a system is not currently installed.)



The quantity of agent being destroyed would be determined by using an accurate flowmeter near the inlet of the liquid incinerator. However, uncertainty exists about whether sufficient accuracy is possible. If not, it would be necessary to weigh items, using load cells, before and after they were drained and to establish, through inspection, that no diversion pathways existed. A system would be incorporated to detect efforts to cut into the agent drain line ("continuity check").

Methods for confirming actual destruction would be similar to those for the in situ process; thermocouples would be used to measure the time-temperature profile of incinerator, and the flow rate through it would be determined with an orifice plate. The destruction of metal parts would be monitored visually.

The measures necessary to ensure security of data, including the use of television surveillance systems at key points, are discussed in Section V below.

C. Inspectors

The verification procedures described above are intended to provide an optimum balance between monitoring with sensors and inspection by verification personnel. To some extent, use of sensors can reduce the inspection burden. However, continuous presence of inspectors during periods of destruction operations is essential for accomplishing certain technical tasks, particularly visual surveillance and ensuring that automatic sampling and analysis equipment is operating properly.

The functions described above would require a minimum of two inspectors to be present during each operating shift to monitor data from sensors and to conduct visual surveillance and at least one during each maintenance shift. During non-working shifts, sensors such as film cameras triggered by motion in the field of view or television cameras would suffice.

CAMDS has a 10-hour operating shift and a 10-hour maintenance shift, followed by a 4-hour non-working shift. Thus, for CAMDS, a minimum of three inspectors present for duty would be adequate. To accommodate illnesses and other absences from duty, a slightly larger number would have to be assigned to the facility.

The inspectors should all have technical backgrounds, be familiar with CW destruction operations, and receive special training as inspectors.

V. Ensuring the validity of data used for verification

If States are to have confidence that declared stockpiles have been destroyed, they must have confidence that the data used for verification are valid. To ensure validity of the data, inspectors at CAMDS would have to be able to inspect the facility before it began destruction operations and to participate in all calibration of thermocouples, load cells, flowmeters, gas chromatographs, and any other sensors, as well as observe closely their installation and daily operation. (Recalibration of instruments and reinspection of the process equipment would be required whenever the process is shut down for an appreciable time.) Furthermore, safeguards must be incorporated in the sensor systems to protect against efforts to tamper either with the sensors themselves or the data transmitted from them.

A. Equipment security

The security of the monitoring equipment itself would be ensured by a tamper-detecting design of each item. In effect, certain key components, such as signal-generating circuitry, would be enclosed in a box which protects the sensor against mechanical or electronic interference. Attempts to remove the box would disturb microswitches which would set off alarms to alert inspectors; if an attempt were made to cut off a segment of the protective containers without interfering with the microswitches, the tampering would be detected during the visual inspection of the equipment. Tampering with the microswitches would also cause the erasure of information used to "authenticate" the data. ("Authentication" is discussed below.)

Tampering with the sensors might also be attempted through electromagnetic radiation. Protection against this would be accomplished by placing proper shielding inside the tamper-detecting enclosure.

For each sensor, the status of the protective container, as well as the operating status of the equipment, would be monitored electronically by inspectors from the CAMDS control room.

B. Data security

The volume of data generated from the various sensors and transmitted to the inspectors' monitoring station in the CAMDS control room would be small.

Measurements would be made infrequently (for example, only once every few minutes). Therefore, a relatively simple data transmission system would be adequate. Either radio frequency or cable transmission links could be used.

To assure the integrity of the data during transmission, the data would be converted from analogue to digital form whenever nacessary and an "authentication" scheme would be adopted. Data would not be encrypted, but a unique identifier would be added to each group of data points transmitted. This identifying "tag" would be generated by the monitoring system. Any attempt to alter the data during transmission would be detected at the central monitoring station since it would cause a mismatch between the expected and received "tag". (Although encryption is not necessary in this case, it is a valuable method of ensuring integrity of data which may be useful under circumstances other than those described here.)

The availability of low-cost microprocessors means that such data authentication procedures can generally be carried out without substantially increasing the cost of the monitoring system. Inside the tamper-indicating enclosure of each sensor, a microprocessor would control the data collection function of the sensor, the authentication procedure, and the communications between each sensor and the central monitoring station.

However, in the case of television cameras, the amount of data generated is very large compared to that produced by other sensors. The cost of authenticating television images would be substantial. A less expensive solution to ensuring data integrity would be to enclose the television camera in a tamper-detecting box. This would ensure that the camera itself and its field of view are not tampered with. Proper shielding of the coaxial cable between the camera enclosure and the video recorder in the central monitoring station, along with a simple sensing circuit to detect attempts to cut into the cable, would be sufficient to detect any effort to interfere with data transmission.

Security of the central monitoring station would be achieved by enclosing data read-out and recording devices in tamper-indicating containers when inspectors are not physically present.

C. Other data security considerations

The integrity of data from sensors cannot always be ensured simply by ensuring the integrity of each sensor and of the transmitted data. For example, load cells and item counters could be manipulated mechanically to produce false data. A weight determination could be made either too high or too low by exerting force mechanically on a load cell when an item was being weighed. For this reason, visual surveillance of the weighing and counting equipment, using closed circuit television, is necessary.

Protection against deceiving a single sensor at a given time would be achieved by co-ordinating the operation of more than one sensor. For example, a projectile on a conveyor belt would trigger an item counter; in turn, signals from the counter would cause the activation of the television surveillance system at key points while also alerting other process monitors along the path of the projectile. Since it would be known what activities and data values are to be expected during the destruction process of the projectile, the appropriate sensors for these activities should give readings within a known range and time period.

Any sensor not recording the appropriate information within the normal time period would cause an alert in the monitoring system. Reactions to such alerts are part of the operating procedures of the inspectors. Such reactions would be determined by categorizing the various possible alerts into levels of significance. In turn, the significance of each alert would be related to the impact it has on the verification system.

Effective monitoring might also be prevented if a key sensor fails to work properly. Therefore, the over-all data collection system for monitoring the destruction of chemical stockpiles must be designed either with redundancy of sensors or redundancy of coverage or both. Redundancy of coverage means that information about any process step can either be collected with the corresponding sensor or it can be deduced from information collected by sensors at other steps of the process; redundancy of sensors means that every sensor is duplicated. Sensor duplication is feasible for inexpensive items such as temperature sensors or flow meters; however, it becomes impractical for such large items as television systems and gas chromatographs. The preferable approach, which is the basis for the procedures described in this paper, is to have redundancy of coverage whenever feasible so that no single monitoring step becomes a critical one. The development, therefore, of the monitoring system involves two major components: secure and reliable sensors and an effective system design.

CD/392 1/ 13 July 1983

Original: ENGLISH

LETTER DATED 11 JULY 1983 FROM THE PERMANENT REPRESENTATIVE OF FINLAND ADDRESSED TO THE CHATRMAN OF THE COMMITTEE ON DISARMAMENT, TRANSMITTING A DOCUMENT ENTITLED "SYSTEMATIC IDENTIFICATION OF CHEMICAL WARFARE AGENTS: IDENTIFICATION OF PRECURSORS OF WARFARE AGENTS, DEGRADATION PRODUCTS OF NON-PHOSPHORUS AGENTS, AND SOME POTENTIAL AGENTS"

I have the honour to transmit to you a document entitled "Systematic Identification of Chemical Warfare Agents: Identification of Precursors of Warfare Agents, Degradation Products of Non-Phosphorus Agents, and some Potential Agents". This study represents a further contribution of the Government of Finland to the Work of the Committee on Disarmament on chemical weapons.

I would appreciate if the study would be circulated as an official CD document.

(Signed) Paavo Rantanen
Ambassador
Permanent Representative

of Finland

^{1/} A limited distribution of this document in English only has been made to the members of the Committee on Disarmament. Additional copies are available from the Ministry for Foreign Affairs in Helsinki.

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CD/393 CD/CW/MP.55 13 July 1983 Original: ENGLISH

YUGOSLAVIA
VORKING PAPER

Some technical aspects of the verification process in a chemical weapons convention

Introduction

In its Working Paper CD/293 of 26 July 1982 the Yugoslav delegation presented its general views on certain aspects of verification in a chemical weapons convention. Specifically, it presented its broad views on three fundamental categories of international verification as a working hypothesis for the consideration of different levels of international verification.

This paper will deal to a certain extent with some technical aspects of the process of verification having to do with the declaration of stockpiles of chemical weapons, including facilities for the production of chemical weapons agents and filling facilities for chemical weapons, the destruction of stockpiles of chemical weapons as well as the monitoring of production facilities of super-toxic chemical agents for permitted purposes.

General Comments

Each stage of the cited operations represents in itself a very complex process with many technological operations. It is important to note that these processes and operations are quite different, as the technological procedures taking place in every facility vary. Thus, for instance, production facilities for CWA can be diverted to the production of chemicals needed by the chemical industry for permitted purposes, in which case only some of the key elements can be destroyed completely while all other devices, apparatuses, measuring instruments can be utilized in a very useful manner. At the same time, the facilities for the destruction of CW are only used for the destruction of CW stockpiles and after that, they, too, should be destroyed.

The process of verification also becomes complex when CWAs are considered. The already existing division of CWA into three categories according to their toxicity makes it incumbent to consider and implement various categories or degrees of verification. Given the considerations so far, many States are of the opinion that control should be comprehensive when verifying the destruction of super-toxic

chemicals, while less rigorous measures may be implemented when destroying the stockpiles of toxic or other harmful agents. This means that on-site inspection should be applied in the former case, which can be systematic or random, while in the case of the destruction of lethal or other harmful agents national measures might be accepted with periodic on-site international verification.

In the considerations so far of the organization and forms of international and national verification measures, the relationship of the former toward the latter and vice versa has been insufficiently clarified. This is also the case with the obligations and competences of the States Parties to the future convention with respect to the implementation of national verification measures. While it is generally agreed that international verification must be implemented on the basis of an agreed procedure, there is still a lot of ambiguity concerning national verification procedure.

It is not completely clear, for example, whether the national inspection team is accountable only to its own Government or whether it should also have some direct obligations toward the Consultative Committee. In the event that this body is accorded the major responsibility for the comprehensive implementation of the convention, how would the co-operation between the national team and the Consultative Committee be carried out? Systematic on-site inspection, on the other hand, is not and should not always be the only solution, especially having in mind that this type of control is not always considered to be necessary by some States. However, regardless of the type of verification, it is essential that it be based on confidence and an agreement on verification measures.

It is understood and by now generally accepted that measures of international control should be applied particularly in the case of violation of the convention. If control is to be efficient, in such an event on-site inspection should be implemented as soon as possible. It is only then that it can be credible and provide all the necessary information for establishing the facts.

There is an underlying basic question in all the considered cases, namely: which organ has the principal role in the initiation of the verification process and in determining the means of verification? In our view, this should be the Consultative Committee, in co-operation with its group of experts. The Consultative Committee should be obliged to inform the State Party on whose territory the control is to take place of the verification measures. Once an agreement has been reached on all aspects of verification, preparatory operations should commence.

In this process it is also necessary to compile a list of laboratories and to standardize technical methods of verification. The above is the only way to obtain the necessary expertise and objective results. In the process of verification, the most up to date methods of control should be used. It is also necessary to carry out, as we have already pointed out on several occasions, co-operation among States Parties on the basis of standardized chemical, biological and toxicological methods. This would secure the timely control of results and the possibility of controlling the analysis of samples even when there is no on-site inspection. We think that this co-operation is possible in view of the existing consensus among many States concerning scientific and technical co-operation in the field of chemistry and toxicology. Possibilities for remote. control today facilitate comprehensive and varied monitoring of the process of destruction of CW stockpiles. These are all necessary elements which will enable the implementation of the convention. However, the results of the implementation of all these measures would be far more successful if there is confidence among the States Parties. By this we mean that it is necessary since the very beginning to openly declare chemical weapon stockpiles by the country which possesses them as well as all chemical weapons production facilities and key precursors production facilities. In this entire process it is very important that the Consultative Committee be given precise data on CW in order that it could determine and propose, in co-operation with the expert suborgan, the corresponding verification measures.

Declaration of CW Stocks

As has been stressed on numerous occasions, the declaration of existing stocks of CWA and CW should be done immediately or as soon as possible after the entry into force of the convention. It is specified that this should be done within 30 days, which we consider as realistic and indispensable for the declaration of:

- existence of stocks of CW or of CWA in containers
- location of these stocks
- location of stocks if they are on foreign territory and under whose jurisdiction
- type of CWA and type of CW (CWA, and, respectively, chemicals, should be declared by their chemical and common name, toxicity and quality)
- quantity of CWA (in tons) and quantity of CW (number of units of munition, mines, rockets and missile warheads, bombs and other); the weight of CWA in a single projectile should be given

- proposal regarding the manner in which these stocks should be destroyed
- proposal as to when the destruction of stocks is tentatively to begin
- proposal of manner of verification (international, national, method of monitoring the process of destruction)

At this stage, the States Parties must also declare stocks of precursors (key precursors and other chemicals) which can be used for production of both CWA and the filling and production of binary weapons. We understand this to mean that the State Party is obliged to declare all key precursor stocks of organic compounds of phosphorus with P-CH₃ and P-C₂H₅ bonds as well as all stocks of N,N-disubstituted-aminoethanols, N,N-disubstituted-amino ethane thiols, N,N-disubstituted-aminoethyl halides, as well as precursors for other harmful chemicals (See: CD/CW/CTC/40 of 3 February 1983; CD/CW/WP/46 of 12 April 1983; CD/353 of 8 March 1983).

This declaration should indicate:

- type of precursor (chemical name) and quantity in tons as well as quality
- location of stocks, and if they are not on national territory, where they are located and in which quantities
- proposal for the destruction of these precursors or the possibility of their diversion for permitted purposes.

If the State Party is unable to furnish immediately for technical reasons the required information on the quality of CWA or their precursors, it must provide this information as soon as possible after 30 days.

If the declaration contains precise information, the proposed verification measures will then be more objective and the Consultative Committee and the States Parties will accordingly be able to assess more realistically the importance of this control. In the process of declaring CW, it would be useful to indicate the methods of control, either chemical or toxicological, that should be applied in the process of verification and in which manner will sampling be carried out, how the processing of results will be done as well as where the results will be gathered.

Production Facilities for CWA and Filling Facilities for CW

When declaration takes place, all facilities for CWA production, for key precursors, for CW and other chemicals which are used directly for the production of CW should be declared and simultaneously closed. The declaration should specify:

- location of the facility and its owner
- complete documentation on technological procedures, the facility's capacity, raw material
 - technical literature (apparatus, measuring instruments, devices, ventilation system and other). It is particularly necessary to emphasize the floor plan's key elements.
- proposal for the destruction of part of the facility (of key elements) or for the complete destruction of the facility.

The declaration of production facilities for key precursor and chemicals (precursors) should also contain:

- the technological procedure, capacity and technical documentation for these production facilities as well as the proposal on how to proceed further
- whether such a facility should be destroyed or dismantled.

Filling facilities for CW should also be declared and simultaneously closed within 30 days of the entry into force of the convention. In view of the fact that these facilities differ from CWA production facilities, it is necessary to specify in this connection:

- location of such a facility
 - which CWA are used for filling, type and kind of CW
 - devices and measuring instruments
- capacity of the filling facility
 - proposal and plans for destruction.

Destruction of CW Stocks

As CWA can be found either in weapons (artillery munition, mines, rockets, missile warheads or bombs and other) or in containers, differences should also be made in the process of destruction of CW stocks and the destruction of CWA in containers.

Both of these processes are very important in the implementation of the convention and should thus be accorded considerable attention. It is, therefore, necessary to furnish precise information during the declaration of CWA according to their toxicity: super-toxic lethal chemicals, lethal chemicals, and harmful chemicals; furthermore, type of chemical weapons with or without explosives and the size and number of containers of CWA. The method of destruction is proposed on the basis of this information. In the consideration of this problem so far, it was concluded that the choice of

method of destruction will depend on the type of CWA. Thus, for CWA of the type iperite incineration is proposed, for organophosphorous compounds (sarin, soman, VX and others) incineration and neutralization, while in some cases combinations of these two procedures are suggested. It is fundamental that the applied procedure assure the complete decomposition of the structure of the organic molecule, so that the subsequent processing of chemical wastes aimed at separating raw materials for the production of CWA is not possible. For example, in the process of destroying sarin and other compounds with the P-C bond, it is necessary to conduct the process of destruction so that this bond is completely destroyed as well.

The principal question which poses itself in connection with the process of destruction is the manner in which to ensure full control of the process and thus be sure that all the declared quantities have been destroyed. The safest control is certainly the constant physical presence of an international team of experts. However, there is another question which imposes itself right away whether it is necessary for this team to be in the facility and exercise control all the time, when it is known that the process of destruction of stocks can take several years. This is why we think that the most acceptable solution in the case of destruction of super-toxic chemicals is random inspection and systematic international on-site inspection. It is understood that the technological destruction process is automatic while the control of the technical process and the recording of parameters (pressure, temperature and other) is analysed by Moreover, samples of CWA and decomposition products are taken periodically and sent for analysis to certain laboratories. During the process of destruction there is automatic monitoring of the surrounding air (through automatic detectors) and water wastes (by taking samples). This entire monitoring system is set up and established by the international team of experts before the destruction facility is put in operation.

The destruction of stocks of toxic lethal chemicals and other harmful chemicals can, in our opinion, be carried out under the control of a national inspection team which is obliged to periodically send the results of control to the Consultative Committee and periodically send samples to be analysed to specific laboratories. In such cases, international on-site inspection is done at random.

Control of Production Facilities for Super-Toxic Lethal Agents for Permitted Purposes

The control of these facilities should be done automatically and the obtained data should be stored at a data storage centre. This information is then periodically processed and sent to the international team for control. All inconsistency in the data imposes the need for on-site international inspection of facilities,

* * *

During the preparatory work it is necessary to elaborate in detail the technical methods of control, both the automatic monitoring of the process of stock destruction and the analysis of samples taken at the key points of the process. The analysis of these samples should be made in specific laboratories with the use of standard methods (chemical and biological). All results are automatically processed and sent to the centre where the team of experts of the Consultative Committee verifies the correctness of the data in the CW stocks destruction process, the destruction of facilities or their dismantling and the destruction of CW filling facilities as well as the diversion of facilities for the production of precursors, etc.

On the basis of this information the Consultative Committee should decide on further measures to be implemented in the process of verification.



CD/396 19 July 1983

Original: ENGLISH

NORJAY

Working Paper

Verification of a Chemical Weapons Convention

Sampling and Analysis of Chemical Warfare Agents under Winter Conditions

Introduction

In connection with Norway's participation in the Ad Hoc Working Group on Chemical Weapons and as a Norwegian contribution to the work of the Committee on Disarmament, the Norwegian Ministry of Foreign Affairs initiated in 1981 a research programme on the sampling and identification of chemical warfare agents under winter conditions.

A primary objective of the research programme was to focus on the verification problems which would have to be dealt with within the framework of a Chemical Weapons Convention. More specifically, the aim was to establish the possibility of using snow samples for verification of alleged use of chemical warfare agents under winter conditions. In particular, the possibility of positive verification some weeks after alleged use, with the purpose of finding a realistic timeframe for undertaking on-site inspection under winter conditions, have been investigated.

The first part of the research programme was carried out in 1981/1982. The results were presented in a report, which in August 1982 was submitted to the Ad Hoc Working Group on Chemical Weapons. A summary of the report was contained in a Norwegian Working Paper on Verification of a Chemical Weapons Convention (CD/311). The English version of the report was annexed to CD/311.

The second part of this research programme was carried out during the winter 1982/1983. The present Working Paper summarizes the results of the second part and the recommendations in regard to verification of alleged use of chemical weapons, which can be drawn on the basis of the results of the research programme.

Description and Results of the Norwegian research programme

The investigations, carried out during the winter 1981/1982 and the winter 1982/1983 were based on a scenario in which the chemical agents have been used at a low concentration $(0.25g/m^2)$ against unprotected troops or civilians.

Particular attention has been paid to carry out the experiments under field conditions, thus leaving the samples out-door to deteriorate by exposure to the prevailing weather condition such as wind, changing temperature and snowfall.

The first part of the Norwegian research programme covered an investigation of representatives of nerve agents and mustard gas.

In the second part of the Norwegian research programme a similar investigation was carried out, including incapacitating agents and precursors. The analytical methods and details of the results of the second part are explained in the research report which is annexed to the English version of this Working Paper.

To make the approach as realistic as possible the second part of the research programme included an investigation of the possibility of detecting CS in the snow samples after the release of a grenade containing the riot control agent CS. Even though CS is a riot control agent it may serve as an example of a thermally released solid chemical agent.

To ensure the maximum reliability of the results and to exclude the possibility of false positive results from other compounds either of natural or man made origin, control samples not containing agents, were taken in different environments including forest and urban areas. To simulate a battlefield, a large amount of TNT was exploded, and snow samples containing large amounts of decomposition products from the explosive were taken nearby.

The experiments carried out during the Norwegian research programme have shown that under winter conditions the stability of different chemical agents vary. This will markedly influence the possibility of verification of use of chemical agents by means of chemical analysis of snow samples taken some time after the alleged attacks. Of the agents investigated the following are relatively stable:

- The agents 2-chlorobenzalmalononitrile (CS), & -chloroacetophenon (CN), 10-chloro-5, 10-dihydrophenarsazine (DM or adamsite)
- The immediate decomposition product of a precursor mixture (mixture (1:1) of methylphosphonyl dichloride and methylphosphonyl difluoride)
- The nerve agent ethyl S-2-diisopropylaminoethyl methylphosphonothiolate (VX)

For these compounds except for VX, it is expected that at least 25 per cent of the original agents are still available for analysis in samples taken as long as one month after the attack. WX is slightly less stable, the values are here between 1 and 10 per cent. Very selective and sensitive analytical methods are available for all compounds and there would be no difficulties in verifying the presence of these agents several weeks after a chemical attack during winter conditions.

The nerve agents tabun, sarin and soman as well as the blister agent mustard gas were found to be markedly more unstable. After two weeks, generally less than 0.1 per cent of the original agents were still present in the samples. The analytical methods used are, however, very selective and sensitive, and verification of use by chemical analysis of snow samples would be highly possible. After one month, it was still possible to analyse these nerve agents but the content of mustand gas was below the sensitivity limit of the method. The amount of nerve agents still left in the samples were in the order of 1/100000 of the original amount. The verification of use of sarin and to an even larger extent mustand gas is uncertain and highly dependent upon the weather condition. This was demonstrated by the experiments in the first part of the research programme, where sarin was not detected after four weeks.

High temperature and strong wind is unfavourable to positive verification. As expected, a snowfall covering the samples reduce evaporation, and increase the possibility for verification. This was confirmed by the experiments and was specially important for the agents sarin, soman and mustard gas. Under this condition it was also possible to detect and analyse mustard gas after four weeks.

Concluding remarks

For the purpose of verification of alleged use of chemical weapons, the utmost reliability of the results is always of paramount importance.

Most chemical agents are not found in the natural environment, and verification of these agents in samples taken in a battlefield would be a clear indication of a violation of the Convention. Most chemicals in the natural environment evaporate and undergo decomposition, which is also true for the chemical warfare agents. A certain time after use, the amount still present will be less than the sensitivity limit of the presently available analytical methods. After this time the only alternative is to verify the presence of a decomposition product. As evidence this is not as compelling as verification of the agent itself; neither is the verification of impurities known to be present in chemical agents.

The research programme demonstrates the importance of the time factor.

The samples should therefore be taken as soon as possible after a report on 'lleged use has been received. Further decomposition of the chemical agents in the samples on the way to the analysing laboratory should be avoided by rapid transport and proper handling. To ensure the integrity of the samples, personnel

having the necessary knowledge should do the sampling and transportation and be selected by the Consultative Committee or a suborgan under the Consultative Committee (Fact-finding Panel/Executive Council). It is necessary that the personnel is selected and trained in advance, and may be called upon on the shortest notice possible.

The laboratory or laboratories where the analyses will be carried out, should be selected and supervised by the same suborgan. To ensure the utmost sensitivity and selectivity of the chemical analyses, sophisticated analytical methods will have to be applied, requiring highly trained scientific personnel and modern equipment, such as a combined gas chromatograph/mass spectrometer (GC/MS) and a high performance liquid chromatograph (HPLC). Such equipment is commercially available. It is used by a large number of civil chemical laboratories, and so are in principle the analytical procedures needed. However, there exist numerous possible chemical warfare agents, which represent various types of chemical compounds. Several different techniques will therefore be needed, all requiring skilled operators. In addition, to obtain the maximum reliability of the results, it may also be necessary to apply more than one independent analytical method for each chemical agent. The analytical results will also be reflected by the quality of the samples. This stresses the importance of a proper collection of samples.

To improve the analytical techniques it is highly recommended that the selected laboratories have small amounts of the potential chemical warfare agents for use in analytical training and for use as reference compounds.

In several countries, laboratories have already relevant experience in this field, and co-operation among these laboratories should be encouraged. This will promote flexible procedures and incorporation of any new scientific achievements in this field.

The regular updating of the procedures for sample taking and analytical methods should be the responsibility of the Consultative Committee.

VERIFICATION OF A CHEMICAL WEAPONS CONVENTION

SAMPLING AND ANALYSIS OF CHEMICAL
WARFARE AGENTS UNDER WINTER CONDITIONS

PART II

Royal Norwegian Ministry of Foreign Affairs

Inde paperts covers an extension of the 1984, 58.

Oslo, July 1983

VERIFICATION OF A CHEMICAL WEAPONS

SAMPLING AND ANALYSIS OF CHEMICAL WARFARE AGENTS UNDER WINTER

PART II

SUMMARY

Snow samples contaminated with chemical warfare agents such as nerve agents (Vx, sarin, soman), mustard gas, irritating agents (CS, CN, DM) and a mixture (1:1) of nerve gas precursors (methylphosphonyl dichloride and methylphosphonyl difluoride, didi precursor) have been analysed after outdoor exposure for 2 and 4 weeks under normal Norwegian winter condition. After 2 and 4 weeks all agents except mustard gas were still present in concentrations sufficiently high for positive verification. Mustard gas could be verified after 2 weeks, but after 4 weeks the concentration was below the detection limit of the method. It has further been demonstrated that snowfall covering the samples has a preserving effect, specially on the most unstable compounds, and in this case mustard gas was also verified after 4 weeks. For added realism, a CS grenade was discharged, and snow samples were collected and analysed. CS was verified in all samples, as far as 70 m downwind and as long as 4 weeks after dissemination.

1 INTRODUCTION

This reports covers an extension of the work on verification of chemical warfare agents under winter conditions carried out during the winter 1981/82 (1). The aim of the investigation is to establish the possibility of using snow samples for verification of alledged use under winter conditions. In particular the possibility of getting a positive verification several weeks after alledged use, a realistic timeframe for establishing an international group of experts, have been investigated.

The investigations, during winter 1981/82 and winter 1982/83 were based on a scenario in which the chemical agents, nerve-, mustard- and irritating agents and precursors, have been used at a low concentration (0.25 gm/m^2) against unprotected troops or civilians. Particular attention has been paid to carrying out the experiments under field conditions, thus leaving the samples outdoor to deteriorate by exposure to the prevailing weather conditions such as wind, changing temperature, sunshine and snowfall.

The result of the previous investigation (1) showed that for all the agents examined, snow samples still contained sufficient amounts of agents for positive verification. Some of the agents were, however, too volatile or unstable to be positively identified after 4 weeks.

This year the investigations were extended to include other agents and precursors, and also to investigate the possible preserving effect of a snowfall after the attack. To make the approach as realistic as possible we also investigated the possibility of detecting CS in snow samples after the release of a grenade containing the training and riot control agent CS. Samples were taken as long as 4 weeks after the release and at a distance of up to 70 m from the release site. Control samples, not containing agents, were taken from several different environments. To simulate a battlefield, a large amount of TNT was exploded, and snow samples were taken in the immediate surroundings. Other snow samples were taken from both forest and urban areas.

2 EXPERIMENTAL

After outdoor exposure the samples were brought to the laboratory for analysis. Meteorological conditions were recorded.

2.1 Field experiments

The field experiments were of two types. In the first type, samples (1 mg) were placed on top of a snow sample and left outdoors. The experimental conditions for these experiments were identical to those carried out last year (1,2). This year, the investigations included a number of new agents and precursors, and also the effect of snowfall immediately after an attack. The latter was simulated by covering the samples with a snow layer of 5 cm immediately after application. The compounds included in the investigation were:

- 1) Isopropyl methylphosphonofluoridate (GB or sarin)
- 2) 1,2,2-Trimethylpropyl methylphosphonofluoridate (GD or soman)
- 3) Bis(2-chloroethyl) sulphide (HD or mustard gas)
- 4) 2-Chlorobenzalmalononitrile (CS)
- 5) a-Chloroacetophenon (CN)
- 6) 10-chloro-5,10-dihydrophenarsazine (DM or adamsite)
- 7) Mixture (1:1) of methylphosphonyl dichloride and methylphosphonyl difluoride (didi, precursor).

The experiments carried out last year established that the agents did not particularly tend to migrate down into the snow, and the samples were therefore no longer divided into horizontal layers, but taken as a single large sample. The experiments were started on February the 2nd, and the samples were analysed after 14 and 28 days exposure. The weather conditions (temperature and relative humidity) was recorded continuously and is given in Figure 1.

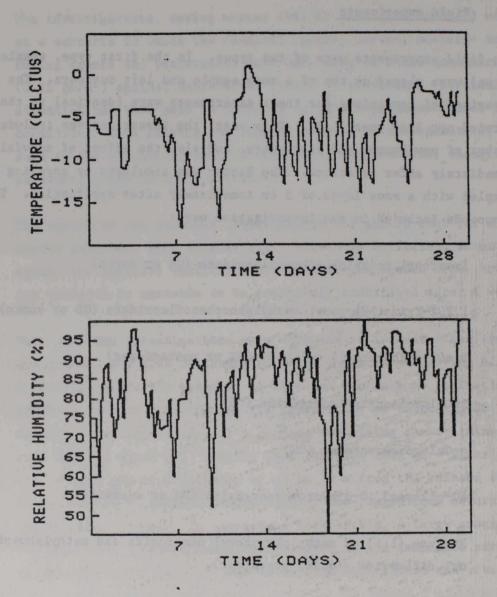


Figure 1 Plot of temperature (°C) and relative humidity (percent) against the time after the start of the experiment.

also carried out with a pyrotechnic tear gas grenade, according 250 g CS. A picture of the situation 30 seconds after ignitive and as a spreade is shown in picture 1. The experiment was stated as a behavior the 17th, and was carried out in an enclosed military transition. At the time of dissemination, the ground was covered with the layer having a thickness of about 10 cm. Snow samples were takened increasing downwind distances (1,2,3,5,7 and 10 m) 30 minutes after setting off the grenade. The samples consisted of same taken from the upper 2-3 cm of a 10 x 10 cm area using plastic spoons.



Picture 1 The cloud from a CS grenade 30 seconds after builtime.

Additional samples were taken also after 7, 14, 20 and 29 days. The results of the analysis of the first samples showed higher amounts of CS than originally expected, and additional samples were therefore collected as far as. 70 m downwind. During the whole experimental period, precipitation was marginal (about 2 cm snow), and the snow disappeared gradually by evaporation and melting. After 28 days, snow only remained in scattered patches, and it was therefore only possible to take a few samples.

The temperature was recorded, if possible 3 times during daytime, and the temperature scatter is shown in Figure 2.

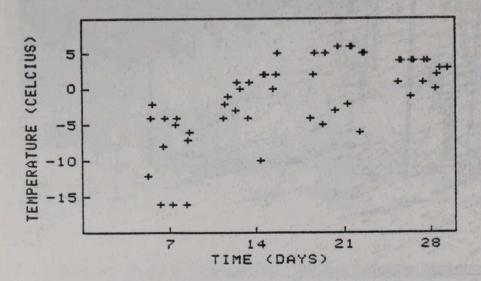


Figure 2 Temperature variations during the exposure period for the CS grenade experiment

2.2 Analytical methods

The general method of analysis is outlined in the block diagram given in Figure 3.

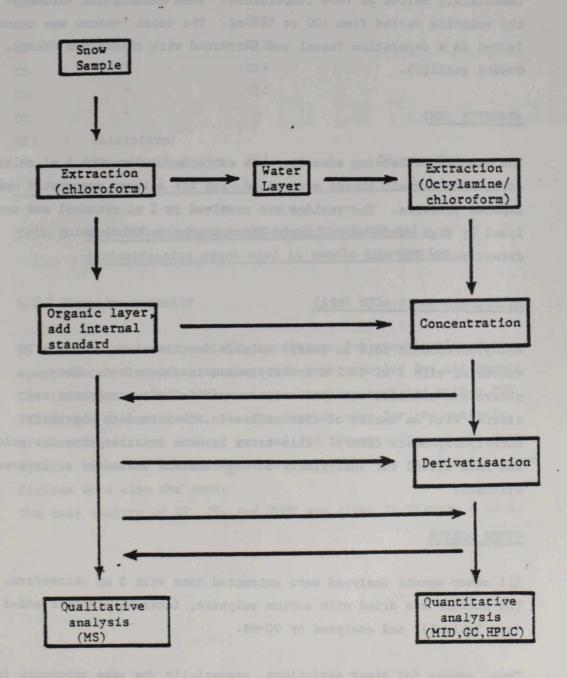


Figure 3 Block diagram of the procedure for sampling and analysis of chemical warfare agents

2.2.1 Sample preparation

The snow samples to be analysed were taken to the laboratory and immediately melted at room temperature. When melted, the volume of the solution varied from 100 to 150 ml. The total volume was transferred to a separation funnel and extracted with chloroform (Merck, Uvasol quality).

ADAMSITE (DM)

The samples containing adamsite were extracted twice with 5 ml chloroform. The organic phases were mixed, and the solvent evaporated under reduced pressure. The residue was resolved in 2 ml methanol and analysed by High Performance Liquid Chromatography (HPLC) using UV-detection at 254 nm.

METHYLPHOSPHONIC ACID (MPA)

Methylphosphonic acid is poorly soluble in chloroform, but may be extracted with 5 ml 0.02 M trioctylamine in chloroform. The chloroform solution was dried with anhydrous sodium sulphate and treated with an excess of diazomethan in ether to form dimethyl methylphosphonate (DMMP). This ester is more volatile than the acid, and more suited for analysis by GC. n-Undecane was added as internal standard.

OTHER AGENTS

All other agents analysed were extracted once with 5 ml chloroform. The extract was dried with sodium sulphate, internal standard added (see Table 1), and analysed by GC-MS.

Thus, except for minor variations, essentially the same procedure is used for all agents.

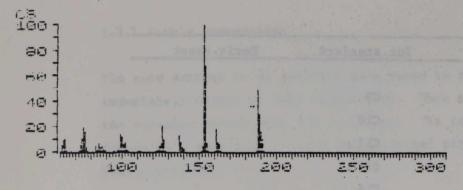
	Int.standard	Deriv.agent
Chloroform	C9	
Marian San San San San San San San San San S	C10	
A STATE OF THE PARTY OF THE PAR	C12	
	C14	
	C14	
E EXTE SAFE	10/2 0.00	
Chloroform/		
trioctylamine	C11	Diazomethan
	Chloroform/ trioctylamine	" C10 " C12 " C14 " C14 " Chloroform/

Table 1 Extraction solvents, internal standards and derivatization agent used in sample preparation

2.2.2 Mass spectrometry

To establish the most suitable conditions for quantitative mass spectrometric analysis, mass spectra were recorded for all agents. The instrument, a LKB 2091 mass spectrometer equipped with a PYE UNICAM gas chromatograph, was the same as used for the analysis of nerve agents and mustard gas and for the recording of the mass spectra of sarin, soman and mustard gas (1). The experimental conditions were also the same.

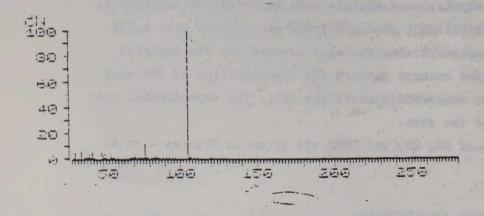
The mass spectra of CS, CN, and DMMP are given in Figures 4 to 6.



Mass: 153 154 188 189 126 75 161 190 76 99 Intensity: 100.0 68.1 48.6 30.5 21.5 19.6 17.9 16.2 15.7 13.7

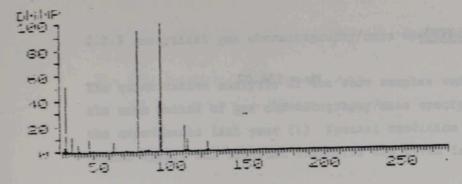
Mass	Int%	Mass	Int%	Mass	Int%	Mass	Int%	Mass	Int%	Mass	Int%
61:	5.8	62:	9.8	63:	10.7	73:	6.0	74:	11.1	75:	19.6
			5.4								
			7.1								
			100.0								8.5
			48.6								

Figure 4 Mass spectrum of CS



Mass: 105 77 36 32 43 49 51 41 55 50 Intensity: 100.0 11.6 5.7 4.7 4.7 4.7 4.5 3.7 3.4 3.2

Figure 5 Mass spectrum of CN



Mass: 94 79 32 93 109 36 111 47 124 63
Intensity: 100.0 94.7 52.1 39.9 20.6 12.3 10.4 9.9 8.2 7.7

Mass Int% Mass Int% Int% Mass Int% Mass Int% Int% Mass Mass 63: 7.7 9.9 6.1 47: 40: 36: 12.3 32: 52.1 3.6 31: 124: 8.2 20.6 111: 10.4 94: 100.0 109: 39.9 79:

Figure 6 Mass spectrum of DMMP

The most important mass spectrometric peaks of the compounds are given in Tables 2 to 4.

o-Chlorobenzal malononitrile (CS)

Formula: C₁₀H₅ClN₂; Mw = 188.01

Fragments:

m/e	Possible structure:
126	C9H4N
137/139	C7H4NC1+
153	C10H5N2+
161/163	C9H4NC1+
188/190	М ⁺

Table 2 Mass spectrometric peaks for CS

a-Chloroacetophenon (CN)

Formula: C₈H₇C10;

Mw = 154.02

HC
$$C - C$$
 $C - C(0) - CH_2 - C1$

Fragments:

m/e Possible structure:

51 $C_4H_3^+$ 77 $C_6H_5^+$ 105 $C_6H_5C=0^+$

Table 3 Mass spectrometric peaks for CN

Dimethyl methylphophonate (DMMP)

Formula: C3H9O3P;

Mw = 124.01

Fragments:

Table 4 Mass spectrometric peaks for DMMP

2.2.3 Analytical gas chromatography/mass spectrometry

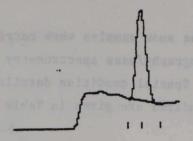
The quantitative analysis of the snow samples were carried out using the same method of gas chromatography/mass spectrometry as used for the experiments last year (1) Special condition details for the individual agents and internal standards are given in Table 5.

Agent	Column	Temp	Int.	Retent	Retent.time		Fragment	
		(°C)	std.	(seconds)				
carti	ed but unla	18 A SEC 18	apple to	Int.Std.	Samp.	Int.Std.	Samp.	
01.12:	y le chlere	Core. Eli						
GB	Sp-1200/	95	C9	128	163	57	99	
autri	H ₃ PO ₄							
GD	and state	130	C10	93	152	57	126	
HD	SE-30	90	C12	104	154	57	109	
cs	1	135	C14	82	126	57	153	
CN		115	C14	82	172	57	105	
DMMP	Sp-1200/	130	C11	177	80			
	H ₃ PO ₄			difficult	to par	riors by ch	a usa at	

Table 5 Condition details for quantitative mass fragmentographic and gas chromatographic analysis of chemical warfare agents and derivatives

For the agents CS and CN, sample mass fragmentograms are shown in Figures 7 and 8.

Internal standard



Sample

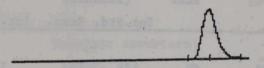
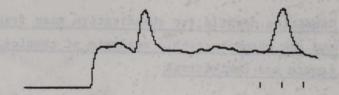


Figure 7 Mass fragmentogram of CS. Sample: CS grenade, 1 week, 1 m

Internal standard



Sample

2.2.4 Gas chromatographic analysis of dimethyl methylphosphonate

The didi precursor hydrolysed immediately after application on snow to the methylphosphonic, hydrochloric and hydrofluoric acid. Hydrochloric and hydrofluoric acid or their salts are abundant in nature, and are therefore not suited for use as a marker for this compound. The methylphosphonic acid, however, is very rare in the natural environment, and is therefore a good marker. It is very stable on snow, both to chemical decomposition and evaporation. It might have been analysed by combined GC/MS, but in this case, the extreme selectivity and sensitivity of this method was not necessary, and the analyses were carried out using a GC method. Because of low volatility and low solubility in chloroform, the methylphosphonic acid (MPA) was converted to the methyl ester (DMMP) by methylation with diazomethan and extracted and analysed as such. The gas chromatograph used was Hewlett-Packard model 5880A with FID detector. Further details about conditions are given in Table 5.

2.2.5 Analytical high performance liquid chromatography (HPLC) of DM

The analysis of adamsite (DM) is difficult to perform by the use of GC-MS because of its very low volatility (vapor pressure at 20°C is 0.002 Torr). The analyses were therefore carried out using a high performance liquid chromatograph (HPLC, Varian Model 5000, with UV detection at 254 mm). A reversed phase column (BioRad RO-18, ODS-5 µm) was employed. The mobile phase was methanol:water (9:1) with a flow rate of 1 ml/min and at ambient temperature. 10 µl DM, dissolved in methanol, were injected on the column. Since the injection volume is constant, the area of the adamsite peak is a measure for amount of adamsite in the sample. A calibration curve was established by analysing samples containing known amounts of adamsite. Sample chromatograms of a standard and a sample is given in Figure 9.

Standard Sample

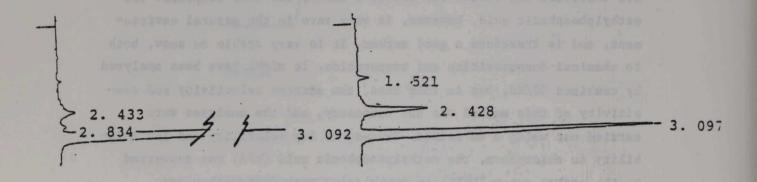


Figure 9 High performance liquid chromatography of adamsite (DM)

(standard and sample, 4 weeks). The retention times (min)

are shown in the figure

2.2.6 Recoveries

Since some of the agents are unstable in water, and because of possible loss of agent due to evaporation and incomplete extraction, recoveries were determined for all agents. This was done by analysing snow samples by the same procedure as described above. The analysis followed, however, immediately after application of the agent. The analyses were carried out in duplicate, and the mean results are given in Table 6.

Compound	Percent	recovery
Sarin	66	
Soman	73	HIPO CAPADLE ADALY SEE
Mustard gas	55	
CS	91	
CN	88	
DM	96	
Didi (as DMMP)	96	rectalos de chia la s
		The Street Street

Table 6 Mean recoveries for the analyses of the different chemical warfare agents

2.2.7 Detection limits

The agents CN, DM, and the hydrolysis products of the precursors (didi) were remarkably stable. The amounts found were far higher than even the practical detection limits for these agents. The detection limit of CS was found to be 150 ng when isolated from a sample containing 150 g snow.

For the other agents when utmost sensitivity was needed, the samples were concentrated by evaporating most of the organic solvent with dry nitrogen. The practical detection limits defined as signal/noise ratio equal to 5 for chemical warfare agents isolated from 40 cc snow are given in Table 7. The practical detection limit is a function of the sampling, chromatographic procedures and contaminants in the snow. The detection limits for pure agents were several folds lower. The sensitivity could be considerably improved by the mass fragmentography of several ions.

Compound	Amount	(picogram	= 10 ⁻¹² gram)
Sarin	100		
Soman	10		
Tabun	500		
V _x	500		
Mustard	50	2 80 21	

Table 7 Detection limits for chemical warfare agents from 40 cc snow

2.2.8 Influence of battlefield and environmental contaminants

Chemical detection may be influenced by the presence of known or unknown natural occurring contaminants. To investigate the contribution of such contaminants to the analytical procedure used in these experiments, snow samples were taken from different natural environments (forest and urban areas) and also in a simulated battlefield environment. Snow samples were taken in densely populated areas, near roads, and in a wood. To simulate a battlefield area, a block of 3 kg of TNT was exploded and samples were taken at and around the explosion site. All the samples were analysed by the same methods and under the same conditions as described above, but none of them showed any false positive responses to any of the agents.

3 RESULTS

The analytical results of the snow sample analyses are given in Table 8 and 9. Table 8 shows the experiments where controlled amounts of agent were applied to the surface of snow samples contained in glass beakers. When evaluating the results it must be considered that the experiments have not been designed for high quantitative analytical precision as this is essentially unnecessary. Application of the small solid samples of CS, CN and DM is difficult to do quantitatively, and this may be the reason for the variation in the results of these compounds.

	Time	Total amo	ount of agent	found in sa	mple (µg)
	(Days)	Uncovered	Snowcovered	Uncovered	Snowcovered
Agent:	-	GB		G	D
	14	0.005	7	7	26
	28	0.032	0.47	0.58	16
Agent:	10000	HD		D	MMP
	Wite Wite	es sussessi si	2.04	850	970
	14	0.005	0.04	760	940
Agent:	28	0	S 0.002		CN CN
	not and he		E SUSSE EN NO	BELLEY COURT	
	14	500	400	890	540
Line According	28	940	787	380	470 .
Agent:	S	D	M	Carlo de	
	14	660	480		
	28	570	750		

Table 8 Total amount of agent found 14 and 28 days after application of 1 mg agent to different snow samples. Half of the samples were covered with snow immediately after application.

Table 9 shows the analytical results of the experiment using a CS grenade. Analyses verified the presence of CS in all samples taken, the sensitivity limit of the method is, however, estimated to be close to the amounts found in the most diluted samples.

Distance	(m)	Total	amount of CS	found	in sample	(µg)
		1	7 ·	14	21	29 (days)
1		230	470	300	44	// grassis
2		100	110	160	19 .	0 - 0 To 0
3		30	13	33	4	4
5		6	9	7	3	J. 1984 7
7		4	2	3	2	11-11-
10		18	2	2	1	
13		-	0.7	1	0.15	0.4
20			0.8	0.6	3	0.15
35		-	2	2	0.4	0.2
50				0.3	- 4	M. Linns
70		-		-		0.3

Table 9 Total amount of CS found in snow samples taken at increasing distances downwind and at different time intervals after the discharge of a CS grenade. Entries marked (-) signifies that no sample was taken.

4 CONCLUSIONS AND RECOMMENDATIONS

The experiments carried out during the last two winters have shown that under winter conditions the stability of different chemical warfare agents vary. This will markedly influence the possibility of verification of use of chemical warfare agents by means of chemical analysis of snow samples taken some time after the alledged attacks. Of the agents investigated the following are relatively stable:

- The physical incapacitating agents CS, CN and DM.
- The immediate decomposition product of the didi precursor.
 - The nerve agent VX.

For these compounds, except for VX, it is expected that at least 25 per cent of the original agent is still available for analysis in samples taken as long as I month after the attack. VX is slightly less stable, the values are here between I and 10 per cent. Very selective and sensitive analytical methods are available for all compounds and there would be no difficulties in verifying the presence of these agents long after a chemical attack during winter conditions.

The nerve agents GA, GB, GD and the blister agent HD were found to be markedly more unstable. After 2 weeks, generally less than 0.1 percent of the original agents were still present in the samples. The analytical methods used are, however, very selective and sensitive, and verification of use by chemical analysis of snow samples would be most likely. After 1 month, it was still possible to analyse the nerve agents, but the content of mustard gas was below the sensitivity limit of the method. The amount of nerve agents still left in the samples were in the order of 1/100000 of the original amount. The verification of use of sarin and to an even larger extent mustard gas is uncertain and highly dependent upon the weather condition. This was demonstrated by the experiments last year, where sarin was not detected after 4 weeks (1). High temperature and strong wind is unfavourable to positive verification. As expected, a snowfall covering the samples reduce evaporation, and increase the possibility for verification. This was confirmed by the experiments and was specially important for the agents GB, GD and HD. Under such condition it was also possible to detect and analyse HD after 4 weeks.

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 Annex to CD/311, August 1982.
- (2) Norwegian Working Paper on verification of a Chemical Weapons Convention - sampling and analysis of chemical warfare agents under winter conditions. CD/311, August 1982.



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CD/397 19 July 1983

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NORWAY

Working Paper

Verification of non-production of chemical weapons

1. The verification of non-production of chemical weapons in a Chemical Weapons Convention should in principle be based on on-site inspections under the auspices of the Consultative Committee, according to a list of key precursors. This list as well as the criteria for making such a list should be kept under constant review. Such inspections should aim at ascertaining that key precursors of super-toxic chemical agents are not used to produce chemical weapons. These inspections might take place according to a random selection procedure.

The key precursors should be defined by chemical names.

The inspections should be limited to key precursors which are of significance in connection with verification of a Chemical Weapons Convention. Key precursors of both super toxic lethal chemicals and other super-toxic chemicals are relevant in this regard.

The key precursors of these two categories listed in the annex of the .

Working Paper CD/353 by the United Kingdom would be sufficient as a system for inspection of key precursors in order to verify that those substances which pose the greatest threat are not being produced in violation of the Convention.

2. In Working Paper CD/353 the United Kingdom presented a survey of the British production and civil use of key precursors. It was suggested that other States should furnish corresponding data of their civil chemical industries.

The Ministry of Foreign Affairs therefore decided to undertake a similar survey in Norway. This survey was carried out in May/June 1983 by the Association of Norwegian Chemical Industries, which is a subsidiary of the Federation of Norwegian Industries. This association contacted its members to establish possible Norwegian production and use of key precursors. The result is summarized below.

There is no production in Norway of the following:

Key precursors for super toxic lethal chemicals:

Phosphorus crychloride (PCl₃).

Phosphorus oxychloride (POCl₃)

Chemicals containing the P-methyl and/or P-ethyl bond

Methyl and/or ethyl esters of phosphorus acid

3.3 dimethyl butanol-2-(pinacolyl alcohol)

N.N disubstituted $\hat{\beta}$ - amino ethanol

N.N disubstituted | - amino ethane thiol

N.N disubstituted \$ - amino ethyl halides

(halide = Cl, Br og I)

Key precursors for other super toxic chemicals:

Phenyl, alkyl or cycloalkyl substituted glycolic acid 3- or 4-hydroxy piperidine and their derivatives.

There is only very limited <u>use</u> in Norway of the following key precursors, which are imported:

Phosphorus trichloride (PClz)

Phosphorus oxychloride (POCl₃)

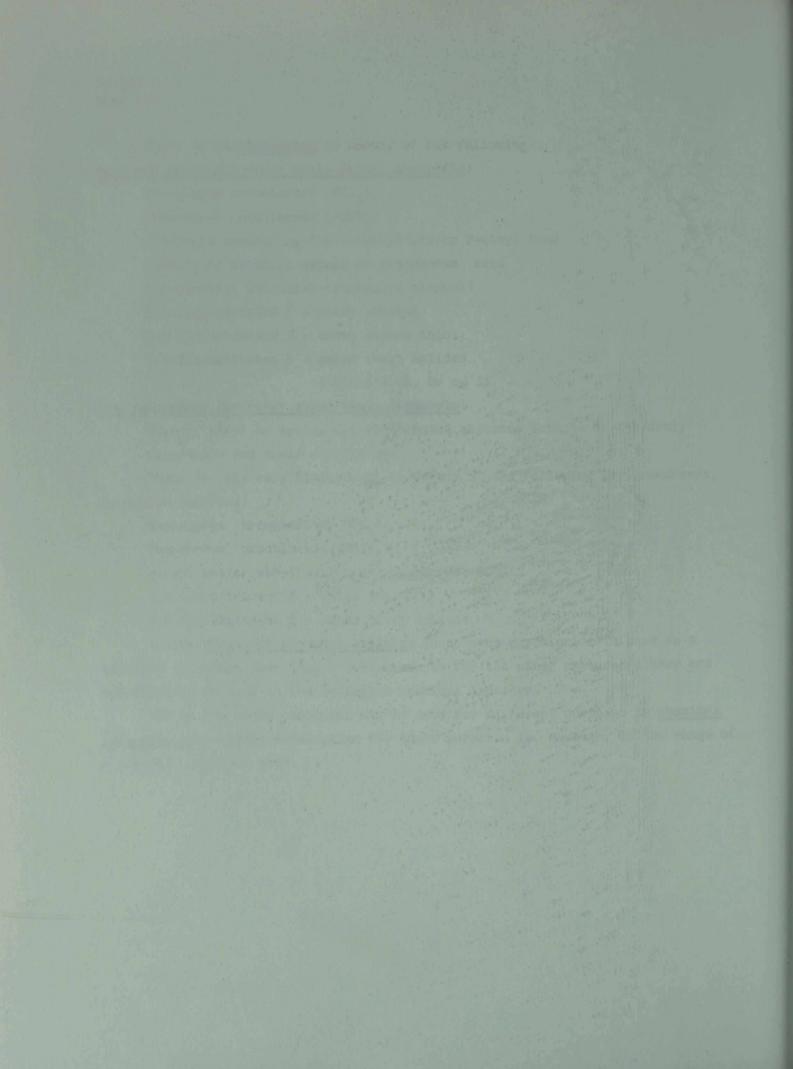
Methyl and/or ethyl esters of phosphorus acid

N.N disubstituted # - amino ethanol

N.N disubstituted β - amino ethyl halides

In the <u>Norwegian chemical industry</u> phosphorus oxychloride is used as a catalyst in amount less than 1 ton/year. As for the other precursors they are not known to be used in the Norwegian chemical industry.

All of the above compounds may be used for different purposes in chemical laboratories. Annual consumption for these purposes is, however, in the range of a few kilograms per year.



CD/401 29 July 1983

Original: ENGLISH

YUGOSLAVIA

PRECURSORS - "KEY" PRECURSORS

I. "Key" Precursors for CW

Bearing in mind the definition of "key" precursors (CD/CW/CRP.76 Yugoslavia CD/CW/CRP.76 Corr.1), the working papers on precursors (CD 334, CD/CW/CTC 40 Yugoslavia, CD/CW/CRP.81 Australia/Netherlands) and on the basis of discussions held in Contact Group D, we propose the following list of "key" precursors:

1. Alkyl-phosphonic halides

Alk-P(0)X2

where: Alk - methyl, ethyl

X - F, Cl, AlkO

2. Alkyl-phosphonous halides

Alk-PX2

where: Alk - methyl, ethyl

X - F, Cl, AlkO

3. Alkyl-thiophosphonic halides and esters

1. 7. ...

Alk-P(S)X2

where: Alk - methyl, ethyl

X - Cl. AlkO

4. Dialkylamido-phosphoryl halides

(Alk) N-P(0)X2

terration to the state of the state of the

where: Alk - methyl, ethyl

X - C1

5. Aryl (Cycloalkyl) disubstituted derivatives at glycolic acid

where: Ar - phenyl, thienyl

Alk - cyclohexyl, cyclopenthyl

The production of these compounds should be prohibited, as well as that of chemical weapons. However, if their application in civilian industry is proven, then their production should be under strict control.

IL Precursors for CW

Precursors for CW are chemicals used in the production of "key" precursors or which in reactions with "key" precursors give CWA. Otherwise, they are dual purpose and are widely used in many branches of the civilian chemical industry, the pharmaceutical industry, for plants protection and other.

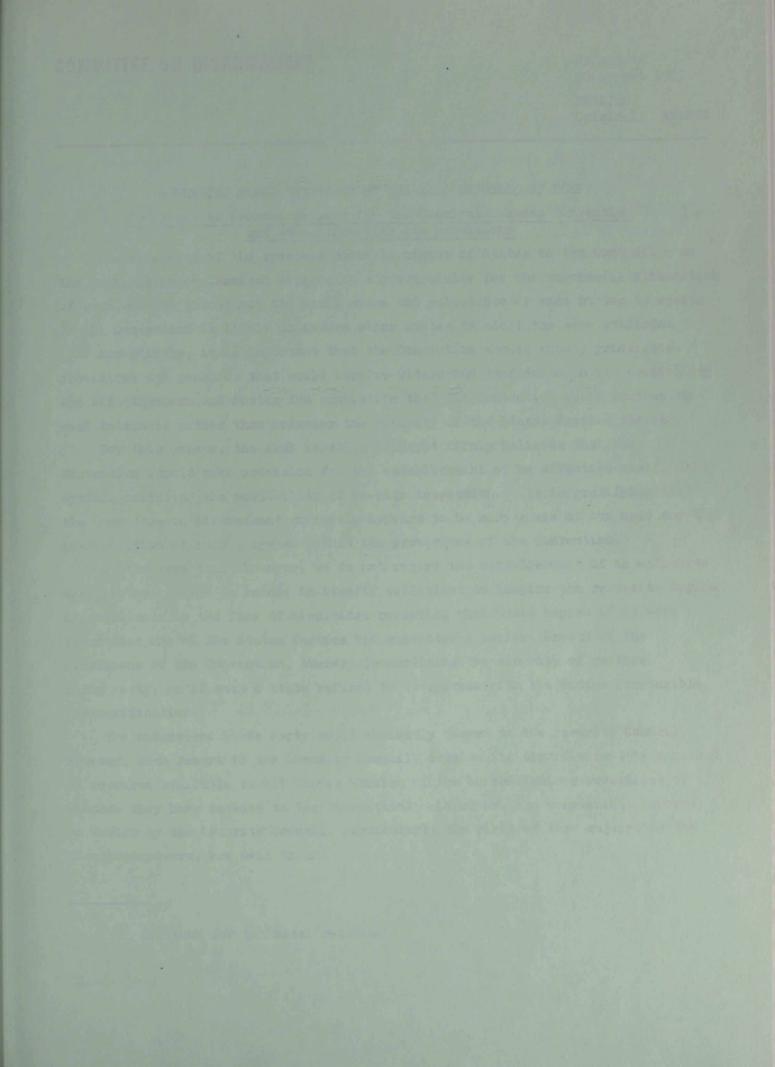
List of precursors:

- 1. Phosphorus trichloride, PCl3
- 2. Phosphorus oxychloride, POCL
- 3. Dialkylphosphites, (AlkO)2POH
- 4. Trialkylphosphites, (AlkO)₃P
- N, N-disubstituted-β-aminoethanols
 N, N-disubstituted-β-aminoethanethiols
 N, N-disubstituted-β-aminoethylhalides
- 6. Alcohols
 - pinacolyl alcohol
 - isopropyl alcohol
 - cyclohexyl alcohol
- 7. Heterocyclic alcohols
 - piperidinol -3 or -4
 - hinuclidinol -3

The production of these compounds is subject to control. The States Parties which produce them are obliged to submit an annual report to the Consultative Committee on the capacity of production and on their further processing.

Alk - methyl, ethyl

Alk - methyl, ethyl



ENGLISH Original: ARABIC

WORKING PAPER SUBMIFFED BY THE ARAB REPUBLIC OF EGYPT Proposals to promote respect for the Chemical Measons Convention and compliance with its provisions

The accession of the greatest possible number of States to the Convention on the Prohibition of Chemical Weapons is a prerequisite for the successful elimination of such weapons throughout the world since the reluctance of some States to accede to the Convention is likely to induce other States to adopt the same attitude.

Accordingly, it is important that the Convention should embody principles, provisions and measures that would inspire widespread confidence in its credibility and effectiveness and foster the conviction that the Convention would further the real interests rather than endanger the security of the States Parties thereto.

For this reason, the Arab Republic of Egypt firmly believes that the Convention should make provision for the establishment of an effective verification system, including the possibility of on-site inspection. It is gratifying that the Committee on Disarmament currently appears to be more aware of the need for the incorporation of such a system within the provisions of the Convention.

At the same time, however, we do not regard the establishment of an effective verification system as being, in itself, sufficient to inspire the requisite degree of confidence in the face of misgivings regarding what would happen if it were found that one of the States Parties had committed a serious breach of the provisions of the Convention, thereby jeopardizing the security of another State Party, or if such a State refused to co-operate with the bodies responsible for verification.

The endangered State Party could obviously resort to the Security Council.

However, such resort to the Security Council, despite its significance, is a method of recourse available to all States Members of the United Nations regardless of whether they have acceded to the Convention. Moreover, the constraints imposed on action by the Security Council, particularly the right of veto enjoyed by the five Superpowers, are well known.

^{*/} Reissued for technical reasons.

In our view, a reciprocal undertaking by the States Parties to relinquish the chemical weapons option would, in effect, create a joint obligation on the part of all States Parties to uphold the Convention and promote its objectives and would place each State Party under a special responsibility towards all other States Parties fulfilling their obligations in good faith. Such responsibility should be invoked in the event of any State Party being endangered as a result of violation of the provisions of the Convention by another State Party thereto. It is a two-fold responsibility involving, on the one hand, the need to support and assist the endangered State Party and, on the other hand, the duty of Member States to take the measures that they deem appropriate, with a view to upholding the objectives and ensuring the credibility of the Convention.

Furthermore, it is possible to envisage certain situations, which may not necessarily emerge from a violation by a State Party to the Convention, but which could endanger the Convention or the legal principles that it may create. This is a matter which may lead to convening the Security Council or any other body concerned, but it may also necessitate a special meeting of the Consultative Committee if, in this respect, a request was presented to the depositary by a number of States Parties to the Convention. Such a provision could be embodied in the Convention.

In the light of the above, we believe that the Convention should include provisions to the following effect:

- 1. All States Parties should undertake to respect the Convention, to promote its objectives, and to observe both the letter and the spirit of the Convention in their international relations.
- 2. An urgent meeting of the Consultative Committee should be convened in any of the following circumstances:
- (a) An established violation of the provision of the Convention by any of the States Parties thereto.
- (b) The refusal of any State to fulfil its obligations with regard to co-operation with the body responsible for verification and inspection.
- (c) The emergence of any situation which, in the opinion of a number of States Parties (five Members, for example), posed a threat to the Convention or impeded the achievement of its objectives.
- 3. When meeting in any of the above-mentioned circumstances, the Consultative Committee should consider the measures to be taken by Member States in order to ensure respect for the Convention and its objectives and the provision of assistance for any endangered Member State.

C. L. E. 1993 5."

Report of the Ad Hoc Working Group on Chemical Weapons to the Committee on Disarmament

- I. INTRODUCTION
- 1. In accordance with the decision taken by the Committee on Disarmament at its 207th meeting held on 29 March 1983, as contained in document CD/358, the Ad Hoc Working Group on Chemical Weapons was re-established for the duration of the 1983 session on the basis of its former mandate. The Committee further decided that the Ad Hoc Working Group would report to it on the progress of its work before the conclusion of its 1983 session.
- II. ORGANIZATION OF WORK AND DOCUMENTATION
- 2. At its 207th plenary meeting on 29 March 1983, the Committee on Disarmament appointed Ambassador D.S. McPhail of Canada as Chairman of the Ad Hoc Working Group. Mr. Abdelkader Bensmail, Senior Political Affairs Officer, United Nations Department for Disarmament Affairs continued to serve as Secretary of the Working Group.
- 3. The Ad Hoc Working Group held 23 meetings from 6 April to 22 August 1983. The Working Group benefited from the inclusion in delegations of national experts in the period 22 June to 22 July 1983. In addition, the Chairman held a number of informal consultations with delegations.
- 4. At the 216th plenary meeting of the Committee on Disarmament, the Chairman of the Ad Hoc Working Group reported on the progress of its work.
- 5. At their request, the representatives of the following States, not members of the Committee on Disarmament, participated in the work of the Working Group:
 Austria, Denmark, Finland, Greece, Ireland, Norway, Portugal, Spain, Switzerland and Viet Nam.
- 6. During the 1983 session, the following official documents dealing with chemical weapons were presented to the Committee on Disarmament:
 - Document CD/338, dated 1 February 1983, entitled "Letter dated 24 January 1983, from the Permanent Representative of the Socialist Republic of Czechoslovakia, transmitting the text of the Political Declaration of the Warsaw Treaty Member States adopted in Prague on 5 January 1983.".

- Document CD/342, dated 8 February 1983, entitled "Report of the Ad Hoc Working Group on Chemical Weapons on its work during the period 17-28 January 1983"
- Document CD/343, dated 10 February 1983, submitted by the United States of America, entitled "United States detailed views on the contents of a chemical weapons ban"
- Document CD/349, dated 21 February 1983, submitted by the Republic of Cuba, entitled "Letter dated 21 February 1983 from the Permanent Representative of the Republic of Cuba transmitting the final summary report of the International Symposium on Herbicides and Defoliants in War: The long-term effects on Man and Nature, held in H. Chi Minh City from 13 to 20 January 1983"
- Document CD/350, dated 28 February 1983, submitted by Spain entitled
 "Working Paper on technical aspects of a convention on chemical weapons"
- Document CD/353, dated 8 March 1983, submitted by the United Kingdom of Great Britain and Northern Ireland, entitled "Verification of non-production of chemical weapons"
- Document CD/378, dated 21 April 1983, submitted by China, entitled "On the prohibition regime of the future convention banning chemical weapons"
- Document CD/387, dated 6 July 1983, submitted by the United States of America, entitled "Illustrative on-site inspection procedures for verification of chemical weapons stockpile destruction"
- Document CD/392, dated 13 July 1983, submitted by Finland, entitled "Letter dated 11 July 1983 from the Permanent Representative of Finland addressed to the Chairman of the Committee on Disarmament, transmitting a document entitled 'Systematic Identification of Chemical Warfare Agents: Identification of Precursors of Warfare Agents, Degradation Products of Non-Phosphorus Agents, and some Potential Agents'"
- Document CD/393, dated 13 July 1983, submitted by Yugoslavia, entitled "Working Paper on some technical aspects of the verification process in a chemical weapons convention" (also issued as CD/CW/WP.55)
- Document CD/396, dated 19 July 1985, submitted by Norway, entitled "Working Paper on verification of a chemical weapons convention: sampling and analysis of chemical warfare agents under winter conditions"
- Document CD/397, dated 19 July 1983, submitted by Norway, entitled "Working Paper on verification of non-production of chemical weapons"

- Document CD/401, dated 29 July 1983, submitted by Yugoslavia, entitled "Precursors 'Key' Precursors" (also issued as CD/CW/CRP.82)
- Document CD/408, dated 9 August 1983, submitted by Egypt, entitled "Proposals to promote respect for the Chemical Weapons Convention and compliance with its provisions"
- 7. In addition, the following Working Papers were circulated to the Working Group:
 - CD/CW/WP.45 entitled "Report of the Ad Hoc Working Group on Chemical Weapons on its work during the period 17-28 January 1983"
 - CD/CW/WP.46 submitted by the Netherlands, entitled "Suggested list of key precursors including those usable in multicomponent chemical weapon systems"
 - CD/CW/WP.47 submitted by the United States of America, entitled "United States Delegation impressions of the CW technical consultations held in January 1983"
 - CD/CW/WP.48 submitted by the United States of America, entitled "Working hypothesis on systematic, international on-site inspection of the destruction of declared stocks"
 - CD/CW/WP.49 entitled "Statement by the Co-ordinator of Contact Group A"
 - CD/CW/WP.50 submitted by Poland, entitled "Views of the Polish Delegation on the results of the consultations with delegations on technical issues held in the framework of the Ad Hoc Working Group on Chemical Weapons during the period 17 January 4 February 1983"
 - CD/CW/WP.51 submitted by the United States of America, entitled "Preventing illegal production of key precursors of nerve gas"
 - CD/CW/WP.52 submitted by the United States of America, entitled "Verification of non-production of chemical weapons"
 - CD/CW/WP.53 submitted by Bulgaria, entitled "Working hypothesis on verification of destruction of declared stocks"
 - CD/CW/WP.54 submitted by France, entitled "Precursors Key Precursors"
 - CD/CW/WP.55 submitted by Yugoslavia, entitled "Working Paper on some technical aspects of the verification process in a chemical weapons convention" (also issued as CD/393)
 - CD/CW/WP.56, entitled "Draft Report of the Ad Hoc Working Group on Chemical Weapons to the Committee on Disarmament"
 - CD/CW/WP.57, submitted by the United Kingdom of Great Pritain and Northern Ireland, entitled "Verification of Non-Production of Chemical Weapons"

- 8. The following Conference Room Papers were also submitted to the Working Group:
 - CD/CW/CRP.65 entitled "Programme of work of the Ad Hoc Working Group on Chemical Weapons from 17-28 January 1983"
 - CD/CW/CRP.67 entitled "Timetable for the Chairman's consultations on technical issues as presented in the report of the Working Group, CD/334, para. 12 on 15 September 1982, to be held 17 January 4 February 1983"
 - CD/CW/CRP.68 entitled "Work Schedule April 1983"
 - CD/CW/CRP.69 submitted by Sweden, entitled "Statement made by Dr. J. Lundin of the Swedish delegation in the Ad Hoc Working Group on Chemical Weapons, Monday, 11 April 1983, on the question of 'no military preparation for use of chemical weapons'"
 - CD/CW/CRP.70* entitled "Contact Group C: Paper presented by the Co-ordinator"
 - CD/CW/CRP.71 entitled "Contact Group C: Paper presented by the Co-ordinator: Criteria for the objective and impartial verification of a prohibition of use of chemical weapons"
 - CD/CW/CRP.72 entitled "Chairman's summary of the discussions held in Contact Group A in April 1983"
 - CD/CW/CRP.73 entitled "Progress Report by the Co-ordinator"
 - CD/CW/CRP.74 + Rev. 1 and 2 entitled ... Proposals by the Co-ordinator:

 Procedure for declaring possession or non-possession of chemical weapons and their possible components"
 - CD/CW/CRP.75* entitled "Proposals by the Co-ordinator: The destruction or diversion of stocks of chemical weapons"
 - CD/CW/CRP.76 and Corr.l submitted by Yugoslavia, entitled "Definition of 'Key' Precursors"
 - CD/CW/CRP.77 submitted by Australia, entitled "Diversion of chemical weapons stocks"
 - CD/CW/CRP.78 submitted by Australia, entitled "Questions relating to the possible civilian use of chemicals containing the methyl-phosphorus bond"
 - CD/CW/CRP.79 entitled "Report by the Co-ordinator on the 'Criteria for the objective and impartial verification of a prohibition of use of chemical weapons!"

- CD/CW/CRP.80 + Rev.1, 2, 3, 4, entitled "Proposal by the Co-ordinator: Issues relevant to the incorporation of a use prohibition in the scope of the Convention"
- CD/CW/CRP.80/Rev.5 entitled "Report of the Co-ordinator on Issues relevant to the incorporation of a use prohibition in the scope of the Convention"
- CD/CM/CRP.81/Rev.l submitted by Australia/The Netherlands, entitled
 "List of precursors for super-toxic lethal chemicals and incapacitating
 chemicals"
- CD/CM/CRP.82 submitted by Yugoslavia, entitled "Precursors 'Key'
 Precursors" (also issued as CD/401)
- CD/CW/CRP.83 submitted by Czechoslovakia, entitled "Concept of precursors in the CW Convention"
- CD/CW/CRP.84 submitted by the Federal Republic of Germany, entitled "List of key precursors"
- CD/CW/CRP.85 entitled "Report of the Co-ordinator on the result of the work of Contact Group A"
- CD/CW/CRP.86 entitled "Report of the Co-ordinator on the work of Contact Group D"
- CD/CW/CRP.87 entitled "Report of the Co-ordinator on the Structure and functions of the Consultative Committee and its subsidiary organs"

 III. SUBSTANTIVE WORK DURING THE 1985 SESSION
- 9. During its 1983 session, the Working Group intensified its efforts aimed at elaborating a Convention on the basis of existing material and new proposals made by delegations. The main tasks of the Group were to attempt to resolve the remaining major items of substance on which there is still disagreement and to record the substance of agreement where this has already been reached. To this effect, it accepted the Chairman's proposal to set up four Contact Groups which dealt with specified aspects of the following spheres of the Convention as follows:
 - (a) Contact Group A: Existing stockpiles
 (Co-ordinator: Colonel J. Cialowicz, Poland)
 - (b) Contact Group B: Compliance provisions and verification issues (Co-ordinator: Mr. S. Duarte, Brazil)
 - (c) Contact Group C: Prohibition of use (Co-ordinator: Mr. R.J. Akkerman, The Netherlands)
 - (d) Contact Group D: Definitions (Co-ordinator: Dr. J. Lundin, Sweden)
- 10. Having considered and remitted these matters to Contact Groups, the remaining two major issues considered in 1983 destruction of existing means of production and non-production; and lesser issues requiring attention; were considered by the

Working Group itself. Areas of seeming consensus - much of the scope of prohibition, many definitions, certain co-operative and confidence-building measures, certain aspects of national implementation and international verification, and preambular and additional provisions relating to substance - were not discussed in detail, but of course were taken into account on the basis of earlier work in arriving at the Working Group's conclusions in 1983. Specifically, the Working Group considered:

(a) Existing means of production -

Differences in this area are among the most difficult to resolve; problems exist regarding the declaration of plants; the need to inspect, close and seal declared plants was explored, as well as approaches to their elimination; problems of timing of declarations, the specification of location, the method of elimination, possible special requirements for binary facilities were also considered; proposals for systematic international verification were advanced;

- (b) Non-production of chemical weapons in the chemical industry Basic differences remain in this area, particularly with respect to
 possible restrictions on chemicals for permitted purposes and the development
 of lists of e.g. key precursors, and the verification measures which might be
 applied. (Subsequently remitted to Contact Group D);
- (c) Prohibition of transfer -

Agreement was reached that transfers, except for elimination purposes, would be restricted but the allowable circumstances and amounts for such transfers require further consideration:

(d) Non-development -

While there is agreement that future development of chemical weapons should be prohibited, verification by any systematic means would appear difficult because of the need to preserve the right to undertake work on protection or other permitted purposes.

The Working Group did consider other items including certain definitions, small-scale production for permitted or protective purposes, stockpile elimination, military preparations for the use of chemical weapons and the preparatory commission, and the results in some cases were further remits to the existing Contact Groups, and in others, simply a reconfirmation of the state of play reported in earlier Contact Group reports.

- 11. The Working Group's agreed conclusions on substantive matters are recorded in the systematic and integrated manner set forth in annex 1 for the consideration of Governments. Both common and unagreed views on individual provisions of a convention appear. Annex 1 does not, however, necessarily take full account of certain instances which need further reflection on individual understandings or undertakings. In particular this applies to the definitions of a "precursor", "key precursor" and "production facilities", existing stocks of chemical weapons, and the range of possible applications of on-site inspection.
- IV. CONCLUSIONS ON THE SUBSTANCE OF A POSSIBLE CONVENTION
- 12. The Ad Hoc Working Group recommends to the Committee on Disarmament:
- (a) that the views set forth in annex 1 to this report, substantive provisions to be included in a chemical weapons convention, be used as the basis for the further work of the Working Group;
- (b) that the views contained in the 1983 reports of Contact Groups appended as annex II to this report, including the draft formulations for possible use in a future convention, together with other relevant previous reports and documents of the Committee and future ones, also be utilized in the further elaboration of a convention; and
- (c) that the Working Group resume negotiations immediately at the outset of the 1984 session of the CD with a view to intensive negotiation aimed at the final elaboration of a Convention at the earliest date.

Report of the Ad Hoc Working Group on Chemical Weapons to the Committee on Disarmament

ANNEX I

The Ad Hoc Working Group on Chemical Weapons considers the following substantive provisions should be included in a Chemical Weapons Convention.

(Portions not agreed to by all delegations are indented and introduced by:

- 1. and, where they are additional proposals;
- 2. or, where they are alternatives to other texts).

I. GENERAL PROVISIONS

A. Purpose and Commitments

- 1. General Purpose of the Convention.

 An undertaking to ban chemical weapons
- 2. Basic Undertakings
- (a) An undertaking not to develop, produce, otherwise acquire, stockpile, retain or transfer chemical weapons.
- (b) An undertaking:

To exclude through the implementation of the provisions of the Convention, which complement the prohibitions of the 1925 Geneva Protocol, the use of chemical weapons in any armed conflict.

- or not to use chemical weapons in any armed conflict
- or not to use chemical weapons in any circumstances
- or to observe, by States not parties to the Geneva Protocol on the prohibition of the use of chemical weapons the terms of its provisions, and to recall, by States parties to the Protocol, their commitments under it.
- (c) An undertaking to eliminate existing stockpiles of chemical weapons.
- (d) An undertaking to eliminate existing facilities for the production of chemical weapons.
- (e) An undertaking not to assist, encourage or induce anyone to engage in activities prohibited by the Convention.

 and An undertaking not to engage in any military preparations to use chemical weapons.

^{*/} As indicated on pages 9 and 12.

B. Definitions and Criteria

1. Definitions

An understanding that, in accordance with the general purpose criterion of the Convention

- (a) Chemical weapons means:
 - (i) super-toxic lethal, other lethal, or other harmful chemicals, and their precursors, regardless of the method of production, except for those intended for permitted purposes as long as the types and quantities involved are consistent with such purposes
 - or chemical warfare agents and their precursors;
 - (ii) munitions or devices specifically designed to cause death or other harm through the toxic properties or chemicals released as a result of the employment of such munitions or devices; or
 - (iii) any equipment
- and or chemical
 specifically designed for use directly in connection
 with the employment of such munitions or devices.
 - and (b) Chemical warfare agents means:

 e.g. toxic chemical substances whose types and quantities accord with hostile and military purposes and whose toxic effects are used to interfere directly with the normal functions of man, animals and plants in such a way as to lead them to death, temporary incapacitation, permanent injury, damage, and for the purposes of the Convention, chemical warfare agents can be divided into three categories, super-toxic lethal, other lethal, and other harmful chemicals.

- (c) Permitted purposes means:
- (i) non-hostile purposes, that is, industrial, agricultural, research, medical, law enforcement, or other peaceful purposes, or protective purposes; and
- (ii) military purposes which are not related to the use of chemical weapons.
 - and (d) Protective purposes means:

 purposes directly related to protection against
 chemical weapons.
 - (e) Production facility means:

any building or equipment which in any degree was

designed, constructed or used for the production of
any chemicals, including key precursors, primarily
useful for chemical weapons, or designed, constructed
or used for filling chemical weapons.

- or (to be determined)
- (f) Precursor means:

 a chemical that by any reaction takes part in the production of a toxic end product, which for the purposes of the Convention is defined as a chemical in accordance with the general purpose criterion.
 - (g) Key precursor means:

 a precursor which plays a most important role in the production of, or in determining the characteristics of the end product— and has little peaceful use—

 and and used at the last stage of the synthesis.

[&]quot;/ Or, possibly, chemical warfare agent (to be determined, see page 2).

^{1/} As determined in an annex to the Convention referred to below indicating the criteria for inclusion and measures for ensuring compliance with the Convention.

2. Toxicity Criteria

An understanding that for the purpose of classifying chemicals according to their toxicity the following criteria apply: $\frac{2}{}$

- (a) 'a "super-toxic lethal chemical" has a median lethal dose which is less than or equal to 0.5 mg/kg (subcutaneous administration) or 2,000 mg-min/m³ (by inhalation);
- (b) an "other lethal chemical" has a median lethal dose which is greater than 0.5 mg/kg (subcutaneous administration) or 2,000 mg-min/m³ (by inhalation) and less than or equal to 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m³ (by inhalation); and
 - (e) an "other harmful chemical" has a median lethal dose which is greater than 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m³ (by inhalation).

. C. Compliance

- 1. National Implementation Measures

 An undertaking to adopt measures in accordance with constitutional processes to implement the Convention, to monitor compliance with it, and to prohibit or prevent any activity under national jurisdiction or control in violation of it.
 - An understanding that technical procedures for collecting information on compliance that are under national control will be utilized in a manner consistent with generally recognized principles of international law.

²/ When measured by an agreed method set forth in an annex to the Convention.

- 3. Systematic International Procedures

 An undertaking to ensure systematic verification of compliance

 with the provisions of the Convention by:
 - (a) data reporting the provision of data on production and use and other information to the Consultative Committee on a periodic basis; and $\frac{3}{2}$
 - (b) on-site inspections
 on-site monitoring utilizing automatic instruments and/or
 mandatory inspections by an international inspectorate 4/
 - (i) "on an immediate basis", i.e. involving the presence of inspectors as soon as feasible,
 - (ii) "on a continuous basis", i.e. involving the presence of inspectors at all times during an operation,
 - (iii) "on a periodic basis", i.e. involving regular visits to an operation at fixed intervals as established by the Consultative Committee,
 - (iv) "on a quota basis", i.e. involving an agreed number of regular visits to be determined by the Consultative Committee on the basis of agreed criteria and data communicated by States,
 - (v) "on a random basis", i.e. involving an agreed number of visits which follow an irregular pattern with limited advanced warning,
 - (vi) on any other agreed basis arranged bilaterally or by the Consultative Committee.

 $[\]underline{3}/$ In accordance with declarations referred to below and lists of chemicals set forth in annexes to the Convention that will be subject to revision by the Consultative Committee.

^{4/} On the basis of agreed procedures set forth in an annex to the Convention.

4. Challenge Procedure

An undertaking to ensure non-routine verification of compliance with the provisions of the Convention by the application of fact-finding procedures including on-site inspection on a voluntary Easis

or on the basis of a stringent obligation to permit such inspection

arranged bilaterally or by a justified request to the Consultative Committee

II. SPECIFIC PROVISIONS FOR ELIMINATION

- A. Existing Stocks of Chemical Weapons
 - 1. Initial Declarations
 - (a) An undertaking to submit initial declarations to the Consultative Committee:
 - (i) not later than 30 days after entry into force or adherence to the Convention;
 - (ii) stating the possession or non-possession of any chemical weapons regardless of the quantity or location;
 - (iii) stating the presence of stocks of chemical weapons which are under the jurisdiction or central of someone else;
 - (iv) stating the composition of all stocks of chemical weapons; all chemicals, including precursors comprised in such stocks, should be declared by their chemical names, toxicities, where applicable, and weights in metric tons in bulk and filled into munitions; munitions should be declared by types, calibres, quantities and chemical fill; devices and "specifically designed" equipment should be declared.

^{5/} On the basis of the provisions of the Convention and in accordance with procedures established by the Consultative Committee (note that this footnote applies to all declarations and reports referred to in this record).

- and by type and quantity, and for devices, also by size and chemical fill,
- and declaration of locations of all stockpiles
 and composition of the stocks at each
 location;
- (v) cortifying that the acquisition or transfer of chemical weapons

along with any assistance

or including technological equipment for the production of chemical weapons and relevant technical documentation

has ceased.

- (b) An undertaking to submit the initial declarations of stocks of chemical weapons to verification by means of systematic international on-site inspection on an immediate basis
 - or on a quota basis for those stocks stored at specialized facilities for the destruction of stocks
- or challenge procedure
- 2. Interim and Other Measures
 - (a) An undertaking to submit declared stocks to verification between the initial declarations and commencement of elimination by

continuous monitoring with on-site instruments
and systematic international on-site inspection
on a periodic basis

- or on a quota basis for those stocks stored at specialized facilities for the destruction of stocks
- or challenge procedure
- (b) An undertaking not to move chemical weapons stocks from present locations after entry into force or adherence to the Convention except for purposes of elimination or for protective purposes and other permitted purposes.

(c) An undertaking to submit to the Consultative Committee
30 days

or 6 months
after entry into force or adherence to the Convention,
initial plans for the elimination of all stocks of
chemical weapons including type of operation, schedules
with respect to quantities and types of chemical
weapons to be destroyed, and products; and

simultaneously

or just before entry into operation locations of destruction plants to be used

(d) An undertaking to submit to the Consultative Committee

annual

or periodic reports of progress on implementation of plans for the elimination of stocks of chemical weapons.

(e) An undertaking to submit to the Consultative Committee

annually

or 3 months before the implementation of each stage

detailed plans for elimination of stocks of chemical weapons during the next

year

or stage.

- (f) An undertaking to notify the Consultative Committee of the elimination of chemical weapons within 30 days of the completion of their elimination.
 - and (g) An undertaking to submit notifications to the Consultative Committee concerning old stocks found after the initial declaration, as to

- (i) within 30 days, the estimated quantity and type, how, where and when they were found, why they were previously unknown, and where they are stored;
 - (ii) within 90 days, the exact quantity and type, including the chemical names, formulae and quantities of the chemicals found, and plans for their elimination, and
 - (iii) within 30 days after completion, certification of elimination.
 - and (h) An undertaking to accept international control of stocks until their final elimination;

3. Elimination of Stocks

(a) An undertaking to eliminate as rapidly as possible all stocks of chemical weapons,

and including old stocks found after the initial declaration,

by destruction

or by destruction or diversion to permitted purposes following non-reversible procedures which will allow systematic international on-site inspection and in accordance with a schedule— which will maintain a balance of security during the entire elimination stage, with commencement within

or 6 months and completion within 10 years

or 6 months in regard to binary and multicomponent
chemical weapons only and completion of the operation
within 2 years and commencement within 2 years in
regard to all other chemical weapons and completion
within 10 years after entry into force of the
Convention.

^{6/} To be agreed and set forth in an annex to the Convention.

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(b) An undertaking to submit the elimination of stocks
of chemical weapons to systematic international
verification by continuous on-site monitoring with
instruments, and by systematic international on-site
inspection

on a continuous basis or on a quota basis.

or on a quota base. B. Existing Means of Production

- 1. Initial Declaration
- (a) An undertaking to submit declarations to the Consultative

 Committee not later than 30 days after entry into force or

 adherence to the Convention
 - (i) stating the possession or non-possession of capacities for production of chemical weapons, the capacities themselves, and stating the presence or non-presence of production facilities and their capacities under the jurisdiction or control of someone else;
 - or stating whether or not any production facility is under its jurisdiction or control; stating the presence on its territory of any production facility, which is under the jurisdiction or control of anyone else and the location of any such facility; and stating the location, nature, capacity, types of products and chemical names of products for any production facility which has been under its jurisdiction or control at any time since
 - (ii) certifying that all production or filling in facilities possessed or present has ceased.
 - and (b) An undertaking to submit the initial declaration of production facilities to vertification by systematic international on-site inspection on an immediate basis or challenge procedure.

- 2. Interim and Other Measures
- (a) An undertaking at entry into force or adherence to the Convention to cease all activities at any production facility except those required for closure and elimination or conversion to the destruction of chemical weapons stocks, and to close each facility in a manner which will render it inoperative in a verifiable way.
 - (b) An undertaking at entry into force or adherence to the Convention not to undertake construction of any new production facilities or the conversion of any other existing facilities for purposes of producing chemical weapons.
 - (c) An undertaking to submit the inactive status of production facilities to verification between the declaration of their location and commencement of elimination by

continuous menitoring with on-site automatic instruments and systematic international on-site inspection on a periodic basis,

or challenge procedure.

(d) An undertaking to submit to the Consultative Committee plans for

the closing and destruction of all production facilities, 30 days after entry into force or adherence to the Convention

- or the elimination of each plant, one year before the commencement of its elimination, and its location.
- (e) An undertaking to submit to the Consultative

annual

or periodic reports of progress on implementation of plans for the elimination of production facilities.

- (f) An undertaking to submit to the Consultative Committee annually, detailed plans concerning elimination of production facilities for the next year
 - or 3 months before the implementation of each stage, notifications concerning elimination of production facilities, including their location, for the next stage.
- (g) An undertaking to certify to the Consultative Committee within 30 days that the elimination of production facilities has been completed.
- (h) An undertaking to submit to the Consultative Committee within 30 days of entry into force or adherence to the convention
 - or within the time period provided for in the plan for the destruction of stocks

 plans for the temporary conversion of any production facility for the destruction of stocks of chemical weapons, including its location.
- (i) An undertaking to notify the Consultative Committee within 30 days that the destruction of stocks of chemical weapons in a temporarily converted production facility has been completed.
- 3. Elimination of Production Facilities
 - (a) An undertaking to eliminate all production facilities, including any facilities temporarily converted for the destruction of stocks of chemical weapons, by razing them
 - or destroying or dismantling them employing procedures which permit verification and in accordance with a schedule which will maintain

To be agreed and set forth in an annex to the Convention.

a balance of security during the entire elimination stage, with commencement within

6 months and completion within 10 years

- or 6 months in regard to facilities producing binary weapons with completion of elimination within 2 years; and commencement within 3 years in regard to the facilities producing all other chemical weapons and completion within 10 years.
- (b) An undertaking to submit the elimination of each production facility to verification by systematic international on-site inspections, of each facility at an agreed level or challenge procedure.

III. OTHER SUBSTANTIVE PROVISIONS

- A. Future Chemical Weapons Non-Production Verification

 An undertaking to submit the non-production of chemicals for use in chemical weapons to systematic international verification in addition to the use of a challenge procedure, by:

 8
 - 1. Super-toxic Lethal Chemicals

or

(a) a limitation to an amount which is the lowest possible and in any case does not exceed one metric ton of the aggregate quantity of super-toxic lethal chemicals and their key precursors produced, diverted from stocks, or otherwise acquired annually or possessed at any one time for protective purposes

for all permitted purposes?

^{8/} In accordance with procedures set forth in an annex and on the basis of lists of chemicals, including those of particular risk, to be determined by the Consultative Committee following agreed criteria.

- (b) a limitation of the production of these chemicals to a single small scale facility having a capacity limit of
- (c) a notification to the Consultative Committee of the location and capacity of the small scale production facility within 30 days after entry into force or adherence to the Convention, or when constructed later, days before the date of commencement of operations;
- (d) monitoring of the small scale production facility by annual data reporting with justification, on-site instruments, and systematic international on-site inspection

on an agreed level

- or on a quota basis
- and 2. a prohibition of the production of compounds with methyl-phosphorus bond in commercial production facilities

 and to restrict such production to the single small-scale facility.
- 3. Other Lethal and Other Harmful Chemicals
 - (a) monitoring of production and use by annual data reporting;
 - and (b) a declaration to the Consultative Committee of the location of facilities for the production of certain other lethal and other harmful chemicals deemed to pose a particular risk.
- 4. Key precursors
 - (a) Monitoring by annual data reporting of production and use and and declaration to the Consultative Committee of the location of facilities for the production of key precursors;
 - and and systematic international on-site inspection on a random basis.

B. Verification of the Prohibition of Use

An understanding that provisions for international verification by means of a challenge procedure shall apply equally to complaints of the use of chemical weapons

C. Permitted Transfers

- 1. Transfer for Elimination Purposes
 - (a) An understanding that, by mutual agreement, chemical weapons may be transferred between parties for purposes of elimination.
 - (b) An understanding that all declaration and verification provisions normally applicable to the elimination of stocks of chemical weapons will also apply to stocks transferred for purposes of elimination with an additional notification to the Consultative Committee immediately before commencement of the transfer.

2. Transfer for other purposes

- (a) An undertaking not to transfer super-toxic lethal chemicals and their key precursors to non-parties;
- (b) An understanding to limit transfer to another party of super-toxic lethal chemicals

 and and of their key precursors

 for permitted purposes

 or for protective purposes
 to a maximum of

in any 12 month period

100 grams

(c) An undertaking by both parties to submit an advance report to the Consultative Committee for each transfer and an annual summary report of all transfers including in both the chemical names, weights and destination.

^{2/} On the basis of procedures to be agreed and set forth in an annex.

IV. OPERATIONAL PROVISIONS

A. National Means for Implementation

- 1. National Implementation Measures
 - (a) An undertaking to adopt measures necessary in accordance with constitutional processes to implement the Convention, and in particular to prohibit and prevent any activity in violation of the Convention anywhere under national jurisdiction or control.
 - (b) An undertaking to submit to the Consultative Committee information concerning the legislative and administrative measures taken.

2. Responsibilities

- (a) An undertaking to provide, through any national organization or authority assigned to implement the Convention, assistance to the Consultative Committee including data reporting, assistance for international on-site inspections and a prompt response to all requests for the provision of expertise, information and laboratory support.
 - and (b) An undertaking to co-operate fully with the Consultative Committee in the exercise of its verification activities and not to interfere in any manner with the conduct of legitimate verification activities.

B. National Technical Means

An understanding that national technical means may be utilized to collect information on compliance, that such means will not be interfered with, and that any State party that possesses national technical means of verification may place the information at the disposal of other parties.

or An understanding that where national technical means are utilized to collect information on compliance, and not interferred with, that all parties shall have access to such information.

or No provision

C. International Means for Implementation

1. Depository

To be determined.

- 2. Preparatory Commission

 An undertaking to establish a Preparatory Commission composed of representatives of all signatory States to convene after the Convention is open for signature for the purpose of carrying out the necessary preparations for the entry into force of the provisions of the Convention and to prepare for the establishment of the Consultative Committee. 10/
 - 3. Consultative Committee
 - (a) An undertaking to establish a Consultative Committee 11/
 composed of representatives of all States Parties, which
 shall convene not later than 30 days after entry into force
 of the Convention, to carry out broad international
 consultations and co-operation among States Parties, to
 oversee the implementation of the Convention and to promote
 the verification of continued compliance by performing
 scientific and technical review functions and by providing
 a forum for discussion of any problem related to the
 implementation of the Convention.

and to decide on practical measures to be taken by parties to the Convention in case of violation.

^{10/} In accordance with guidelines set forth in an annex to the Convention.

¹¹/ In accordance with specifications, organization and functions set forth in an annex to the Convention.

- (b) An undertaking to meet in regular sessions of the Consultative Committee every ... years, and to hold extraordinary sessions at the request of any State Party or the Executive Council.
 - (c) An undertaking to establish an Executive Council composed of representatives of ... States Parties appointed by the Consultative Committee as well as a Technical Secretariat and other subsidiary bodies as necessary.
 - (d) An understanding that the Executive Council will carry out the functions of the Consultative Committee when it is not in session and will also be responsible for receiving and disseminating data and information, receiving requests on challenge procedures and deciding on specific action to be taken, and overseeing systematic on-site inspections.
- (e) An understanding that the Technical Secretariat will provide administrative support to the Executive Council and the Consultative Committee and will render technical assistance to States Parties and the Executive Council.

V. CO-OPERATION AND CONFIDENCE-BUILDING PROVISIONS

A. Consultation and Co-operation

- 1. Bilateral Consultative Process
- (a) An undertaking to consult and co-operate, directly or through appropriate procedures, including the services of appropriate international organizations and of the Consultative Committee in any matter related to the implementation of the Convention, and to endeavour to clarify and resolve, through bilateral consultation, any situation which may give cause to doubts about compliance with the Convention, or which gives rise to concerns about a related situation which may be considered ambiguous.
 - (b) An undertaking to provide information to assure compliance with the provisions of the Convention.

- 2. International Consultative Procedures
 - (a) An undertaking to co-operate fully with the Consultative Committee and its subsidiary organs and/or international organizations, which may, as appropriate, give scientific, technical and administrative support to the Consultative Committee in order to facilitate fact-finding activities so as to ensure the speedy clarification of the situation which gave rise to the original request. 12/
 - (b) An understanding that at any time a request may be submitted to the Consultative Committee or its appropriate subsidiary body to carry out a challenge procedure to clarify and resolve any situation considered to be ambiguous or which gives rise to suspicion about actions in breach of obligations deriving from the provisions of the Convention. 13/
 - (c) An undertaking to treat favourably and in good faith a request for an on-site inspection by the Consultative Committee or its appropriate subsidiary body, and to submit a prompt and full explanation for the reasons for a refusal, which should be considered an exceptional response.
 - or An undertaking to treat favourably and in good faith a request for an on-site inspection by the Consultative Committee or its appropriate subsidiary organ. A refusal should be accompanied by the submission of a prompt and full explanation of its reasons. The Consultative Committee shall assess the explanation submitted and may send another request, taking into account all relevant elements, including possible new elements received by the Consultative Committee after the original request. If a second request is refused, recourse may be had to appropriate procedures under the Charter of the United Nations.

^{12/} In accordance with procedures set forth in an annex to the Convention.

¹³/ In accordance with detailed procedures to be agreed and set forth in an annex to the Convention.

3. Assistance

- (a) An undertaking to provide assistance and support the provision of assistance to a party to the Convention threatened or adversely affected as a result of the violation of the provisions of the Convention.
 - and (b) An undertaking to provide assistance or support being provided in accordance with the Charter of the United Nations to any party to the Convention which has requested such assistance and which the Security Council decides has been exposed or is possibly being exposed to danger as a result of a violation of obligations assumed under the Convention by another party to it.

4. United Nations

- (a) An understanding that parties will retain at all times their ability to take whatever action they deem necessary within the framework of the Convention or the Charter of the United Nations to resolve differences concerning the application of the Convention.
 - and (b) An undertaking to co-operate in carrying out any investigation which the Security Council may initiate, in accordance with the provisions of the Charter of the United Nations, on the basis of the complaint received by the Security Council which shall inform the parties to the Convention of the result of the investigation.

B. Protection of Population and Environment

An undertaking to protect the population and the environment in fulfilling the obligations connected with the elimination of stocks of chemical weapons and production facilities.

C. Promotion of Development Goals

An undertaking to facilitate the creation of favourable conditions for the economic and technical development and for international co-operation in the field of peaceful chemical activities while precluding interference with areas of activity unrelated to the purposes of the Convention.

or An undertaking to avoid hampering the economic or technological development of States Parties to the Convention or international co-operation in the field of peaceful and protective chemical activities, including the international exchange of chemicals and equipment for the production, processing or use of chemicals for peaceful and protective purposes.

VI. ADDITIONAL PROVISIONS

A. Preamble and Other Provisions

- 1. An understanding that the Convention will not limit or detract from obligations assumed under other Treaties including:
 - (a) the 1925 Protocol for the Prohibition of Use in War of
 Asphyxiating, Poisonous or Other Gases, and of Bacteriological
 Methods of Warfara;
 - (b) The Convention on the Prohibition of the Development, Production and stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction;
 - and (c) The Convention on the Prohibition of Military or Any
 Other Hostile Use of Environmental Modification
 Techniques.
 - and 2. An undertaking to declare, within 30 days of entry into force or adherence to the Convention, the location and nature of any facility under jurisdiction or control designed, constructed or used since for the development of chemical weapons.

B. Withdrawal

An understanding that withdrawal may be exercised if extraordinary events related to the subject matter of the Convention have jeopardized the supreme interests of a State. Notice of withdrawal will be given three months in advance including a statement of the extraordinary events.

ANNEX II

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AD HOC WORKING GROUP ON CHEMICAL WEAPONS

CONTACT GROUP A

In order to pursue its negotiations, the Ad Hoc Working Group needs to examine the issue of existing stockpiles in a comprehensive fashion. This involves consideration of, inter alia, the following areas:

- 1. Relative aspects in scope;
- 2. All declarations;
- Timing of declarations;
- 4. Monitoring of declarations;
- 5. Destruction plans;
- 6. Timing of destruction;
- 7. Destruction methods;
- 8. Monitoring of destruction;
- 9. Other compliance requirements and confidence building measures; and
- 10. Resulting work requirements for national and international implementation organizations.

To assist the Working Group in its consideration of these matters, a contact group will be established.

INSTRUCTIONS TO CONTACT GROUP A

To further the Working Group's objectives, the contact group will examine and report on specific questions relating to treatment of the issue of existing stockpiles as requested by the Working Group chairman. Specifically it will consider:

- the techniques suitable for monitoring the destruction of stockpiles;
- the basic content of declarations required.

In examining these questions, the contact group should proceed in a systematic fashion, drawing on material from all areas as necessary, and taking national positions into account as alternatives to be considered. The contact group reports from 1982 should provide a useful starting point. The contact group should not focus on "technical matters" as such, although it should identify areas where existing technical advice is insufficient. Essentially, the contact group's task is to identify the political and operational decisions needed to permit the Working Group to negotiate successfully provisions on these questions for inclusion in a convention.

The contact group chairman will report orally as necessary to the Working Group chairman and will submit a short written report prior to the last Working Group meeting in April. To assist the Working Group in its negotiations, the contact group in this report should note in particular the consensus reached and areas in respect of each question in which differences have not been resolved.

MEETINGS OF CONTACT GROUP

The contact group will meet at the discretion of its chairman and meeting times must be scheduled and announced through the Secretariat.

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Meetings will be informal, but interpretation services must be available.

Report of the Co-ordinator on the Results of the work of Contact Group A

The terms of reference approved by the Working Group directed the Contact Group to concentrate its attention on the consideration of the two subjects:

- the techniques suitable for monitoring the destruction of stockpiles, and
- the basic content of declarations required.

The Contact Group began to consider the actual steps of the destruction process for chemical weapons stocks in order to evaluate whether verification of destruction of stockpiles should be carried out by a quota system of inspections or by continuous inspections. In this connection the Contact Group took note of the United States document CD/367 of 6 July 1983, devoted to specific methods for on-site verification on a continuous basis. Other documents have been also discussed. Delegations continued to hold differing views, as reflected in CD/294, CD/343, and other documents.

With respect to the consideration of the basic content of declarations, delegations continued to hold differing views, in particular, on the content of initial declarations of stockpiles, as reflected in CD/334.

Some other questions related to the issue of existing stockpiles have also been discussed.

Common Views and Topics for Further Discussion

Based on consultations with delegations the co-ordinator presented, for consideration of the Contact Group, a paper outlining some points on stockpiles on which commonality of views appeared to exist and also outlining some points requiring further discussion. Consideration of the points confirmed that they could serve as a suitable basis for further work and future elaboration. These points are the following:

^{*/} CD/CW/CRP.85 has been distributed in English only.

- A. Possession or non-possession of chemical weapons, as defined, should be declared within 30 days.
- B. The presence on a State's territory of stocks of chemical weapons under the jurisdiction or control of anyone else should also be declared within 30 days. (Thus, the same stocks would be declared by the possessing State and by the State on whose territory the stock is.)
- C. States which possess chemical weapons should also provide specific information on their chemical weapons stockpiles at the same time. The information should cover not only toxic chemicals but also precursors in the stockpiles, munitions and devices, and specifically designed equipment.
- D. Chemical weapons stocks should be destroyed/eliminated* as rapidly as possible.
- E. To ensure that no party gains a unilateral advantage, destruction/ elimination should be carried out according to a general schedule agreed during the negotiation of the convention.
- F. The destruction/elimination process should begin not later than ... months/years and be completed not later than 10 years.
- G. General plans for destruction/elimination of stocks should be declared within ... days/months. The plans should describe:
 - (i) type of operation;
 - (ii) details of implementation of the agreed general schedule;
 - (iii) what is to be destroyed and at what location;
 - (iv) destruction products.
- H. The destruction/elimination process should be carried out employing agreed procedures which permit systematic international on-site verification. The process should not be easily reversible.
- I. An annual/periodic notification should be provided regarding implementation of plans for destruction/elimination of chemical weapons stocks. The notification should include:
 - (i) a progress report of stocks destroyed/eliminated during the last year/period including details of types, quantities, and destruction methods;

^{*/} An understanding has been reached that here and subsequently in the wording destruction/elimination the first word ("destruction") reflects the approach of the delegations which are in favour of the complete destruction of the stocks of chemical weapons, while the second word ("elimination") corresponds to the approach of other delegations which envisage the possibility of both destruction and diversion of the stocks of chemical weapons for non-hostile purposes.

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- (ii) plans for destruction/elimination during the next year/period including details of types, quantities, and destruction methods.
- J. A certification that all chemical weapons stocks have been destroyed/ eliminated should be provided within 30 days after the process has been completed.
- K. Destruction of stocks should be subject to systematic international on-site verification, including systematic international on-site inspection.
 - L. Provisions should be included regarding:
 - (i) transfer of declared stocks from one party to another for the purpose of destruction; and,
 - (ii) chemical weapons found after the initial declaration has been made.
- M. A chemical weapons production facility could be temporarily converted for destruction of chemical weapons. The converted facility would have to be destroyed as soon as it was no longer in use for destruction of stocks but not later than the deadline for completion of stockpile destruction.
- N. All necessary precautions should be taken for the protection of the population and the environment.
 - O. Specific principles for verification of destruction.

 (Separate section under preparation.)*/

For further discussion:

- Should the location of CW stocks be declared as part of the initial declaration?
- What information should be provided about the CW stocks in the initial declaration?
- Should the declared stocks be subject to prompt and systematic international on-site inspection? If so, on what basis? Should the declared stocks be subject to systematic international on-site monitoring until they are eliminated? If so, on what basis?
- As an alternative to destruction, could some stocks also be eliminated by allowing them to be used for non-hostile purposes? If so, which chemicals could be used? What quantities? Under what verification provisions?

^{*/} This section has not yet been prepared.

- Specific measures for systematic international on-site verification:

 (separate section under preparation)*
- What should be the deadline for beginning the actual elimination of stocks?
- In what terms should the agreed general schedule for stockpile destruction be defined?
- What should be the nature of the provisions regarding:
 - (a) transfer of declared stocks from one party to another for the purpose of destruction; and,
 - (b) chemical weapons found after the initial declaration has been made?

Co-ordinator's suggestions for more precise wording on certain points

In an attempt to reflect, in more precise wording, certain aspects of the common points set forth above, the Co-ordinator presented to the Contact Group his suggestions. In the course of their elaboration, the views of some delegations were taken into account. The Co-ordinator stated that his suggestions in no way committed delegations. The Co-ordinator's suggestions are as follows:

1. States Parties to the Convention shall be guided, in accordance with their resulting obligation, to declare possession and non-possession of chemical weapons and their possible components, by the following:

Each State depending on whether or not it possesses chemical weapons, as defined in totality of paragraphs ... of the article ... (definition of chemical weapons) or in any one of those paragraphs individually, regardless of the quantity, on its own territory or elsewhere, under its authority:

- (a) within 30 days after the entry into force of the Convention will send to the Consultative Committee a declaration, which confirms the fact that it possesses chemical weapons, or will give a negative answer;
- (b) a State in possession of chemical weapons, not later than 30 days after the entry into force of the Convention, will declare its stocks of chemical weapons (procedure for declaring such stocks is subject to negotiation).

Taking into account further consideration in Contact Group D of the questions connected with chemicals for permitted purposes, this formula could be supplemented by the provisions according to which each State Party, whether or not in possession

^{*/} This section has not yet been prepared.

of chemical weapons, will also be required to make declarations, if it possesses stocks of key precursors of supertoxic lethal chemicals, to be used for permitted purposes, and if it possesses stocks of other lethal and/or harmful chemicals, to be used for permitted purposes.

- (2) Each State Party, having on its territory chemical weapons stockpiles which are under the jurisdiction or control of another State, regardless if the latter is a Party to the Convention or not, undertakes, not later than 30 days after the entry into force of the Convention or its accession to it, to declare the known presence of such weapons on its territory.
- 3. The destruction/elimination of the stocks of chemical weapons shall be initiated by each State Party possessing such weapons not later than ... months/years and should be completed not later than 10 years after the Convention enters into force or accession of the State to it.
- 4. Each State Party to the Convention having chemical weapons stocks under its jurisdiction or control, undertakes not later than 30 days after destruction/ elimination of the stocks of chemical weapons to certify that all chemical weapons stocks have been destroyed/eliminated.
- 5. (1) Each State Party is entitled to transfer its stockpiles of chemical weapons to another State Party for the purpose of their destruction.
- (2) All such stockpiles would, notwithstanding their transfer to another State for the purpose of destruction, be subject to the provisions of the Convention and its related annexes which apply to stockpiles in general (e.g. declarations of stockpiles, timing of destruction, including the need to ensure a balanced schedule of destruction, agreed procedures for destruction, periodic notification of progress in destruction, etc.).

- (3) Such transfers will be on the basis of an agreement between the participants, the text of which is to be elaborated in accordance with the guidelines contained in the annex and is to be transmitted to the Consultative Committee.
- (4) Each State Party transferring its stockpiles for destruction to another State Party should also undertake to declare, before the commencement of the operations on transfer and transportation, the time-table of transfers and transportation including quantity and composition of stocks to be transferred at a given time and the location of the facility on the territory of another State Party at which the destruction of stockpiles will be carried out.
- (5) The State Party conducting the destruction of stockpiles of chemical weapons which belong to another State Party, should not later than 30 days after the completion of their destruction make an appropriate declaration about it.
- (6) The transfer of the stockpiles of chemical weapons for purposes of destruction by one Party to the Convention to another State Party, the transportation of the stockpiles and their destruction are subject to verification in full measure, as it is envisaged in Chapter ... of the Convention.
- 6. The destruction of stocks of chemical weapons shall be carried out by each such State Party at a specialized facility (facilities) or at facility (facilities) temporarily converted for such purposes, whose location and technical parameters shall be declared by this State Party in accordance with ... In case of temporarily converted facility (facilities) for the purposes of destruction, it (they) shall be destroyed in the agreed manner immediately after the termination of their use for the destruction of stocks and in any event not later than 10 years after the Convention enters into force or accession of the State to it.
- 7. Each State Party during the destruction/elimination of the stocks of chemical weapons, undertakes to take all necessary precautions for the protection of the population and the environment.

AD HOC WORKING GROUP ON CHEMICAL WEAPONS

CONTACT GROUP B

In order to pursue its negotiations, the Ad Hoc Working Group needs to examine in detail the procedures required for the resolution of compliance questions. This involves consideration of, inter alia, the following areas:

- 1. Information exchanges demonstrating compliance;
- 2. Sequence of events in resolution of compliance questions;
- 3. Evidence required to support challenges;
- 4. Fact-finding measures;
- 5. On-site inspections;
- 6. Obligations on nations;
- 7. Role of consultative committee;
- 8. Appeals to the United Nations;
- Other relevant compliance procedures and confidence building measures; and
- 10. Resulting work requirements for national and international implementation organizations.

To assist the Working Group in its consideration of these matters, a contact group will be established.

INSTRUCTIONS TO CONTACT GROUP B

To further the Working Group's objectives, the contact group will examine and report on specific questions relating to treatment of the issue of non-compliance as requested by the Working Group chairman. Specifically it will consider:

- the fact-finding measures which should be in place for dealing with challenges on compliance;
- the nature of the evidence which should be available to justify initiation of a challenge and an on-site inspection; and
- the obligation on nations to accept on-site inspections as a result of a challenge.

In examining these questions, the contact group should proceed in a systematic fashion, drawing on material from all areas as necessary, and taking national positions into account as alternatives to be considered. The contact group reports from 1932 should provide a useful starting point. The contact group should not focus on "technical matters" as such, although it should identify areas where existing technical advice is insufficient. Essentially, the contact group's task is to identify the political and operational decisions needed to permit the Working Group to negotiate successfully provisions on these questions for inclusion in a convention.

The contact group chairman will report crally as necessary to the Working Group chairman and will submit a short written report prior to the last Working Group meeting in April. To assist the Working Group in its negotiations, the contact group in this report should note in particular the consensus reached and areas in respect of each question in which differences have not been resolved.

MEETINGS OF CONTACT GROUP

The contact group will meet at the discretion of its chairman and meeting times must be scheduled and announced through the Secretariat.

Meetings will be informal, but interpretation services must be available.

Progress Report by the Co-ordinator

The Contact Group examined the ten points contained in the general directions given to it by the Working Group, and in particular the three specific questions it was requested to consider. The following texts sum up the discussions held by the Contact Group.

Text No. 1 On "the fact-finding measures which should be in place for dealing with challenges on compliance", the Contact Group reviewed the contents of Element XIII (Consultative Committee) as it appears in the Annex to CD/334. It was generally felt that the Consultative Committee, composed of all States Parties to the Convention, should have as its subordinate bodies a technical secretariat and a sub-organ of reduced membership to operate on a permanent basis. The possibility of establishing additional sub-organs was not discussed. The technical secretariat would have routine administrative functions such as receiving requests from States parties, providing technical information, handling communications to and from States parties, organizing expert teams for action decided by the competent organ, etc. The other sub-organ would have a smaller membership than the Consultative Committee and would be composed of a fixed number of representatives of States jarties chosen on a basis yet to be determined. Such a number should be small enough to ensure its speedy convening and practical functioning and at the same time representative enough to ensure its authority. The Contact Group considered alternatives for the name of such a body ("Fact-Finding Panel" and "Executive Council" were suggested). It was also generally agreed that such a body should be able to be convened on short notice, and to take decisions on behalf of the Consultative Committee with regard inter alia to the following matters: to be seized with requests from States parties; deciding on specific action to be taken regarding the request (information, fact-finding, on-site inspections); evaluation of reports submitted to it as a result of the action decided; reporting to the Consultative Committee; requesting the convening of the Consultative Committee. In this respect, the decision-making process should be further discussed.

Text No. 2

On "the nature of the evidence which should be available to justify initiation of a challenge and an on-site inspection" and "the obligation on nations to accept on-site inspections as a result of a challenge", the discussions in the Contact Group touched on a number of points recorded on CD/334 and CD/342, in particular the results of the work of the Contact Groups established during the 1982 Session of the Committee on Disarmament. The result of the discussion in the Contact Group is summed up below.

It was generally considered desirable that in seeking the resolution of questions concerning compliance with the Convention, States parties follow the sequence of steps described in the text below. States parties should nevertheless retain at all times their ability to take whatever action they deemed necessary in the framework of the Convention or the Charter of the United Nations to resolve differences concerning the application of the Convention.

It was also generally considered that a refusal by a State party to accept on-site inspections requested by the competent organ of the Convention should be exceptional and accompanied by a full explanation of the reasons for such a refusal.

- 1. States parties to this Convention undertake to consult and co-operate, directly among themselves or through appropriate procedures, including the services of appropriate international organizations and of the Consultative Committee in any matter related to the implementation of this Convention.
- 2. States parties to this Convention shall endeavour to clarify and resolve, through bilateral consultation, any situation which may give cause to doubts about compliance with this Convention, or which gives rise to concerns about a related situation which may be considered ambiguous. A State party seized with a request from another State party for clarification of a particular situation shall promptly provide the requesting State party with all relevant information in connection with the request with a view to the satisfactory conclusion of the issue.
- 3. In order to facilitate the satisfactory solution of situations referred to in Section 2 above, the States parties concerned may request the co-operation and good offices of the Consultative Committee, or its subsidiary organs for the solution of the issue.

- 4. Having regard to the procedures contained in Sections 2 and 3 above, any State party may request the Consultative Committee or its appropriate subsidiary organ to carry out, in the exercise of its functions, appropriate procedures with regard to itself or another State party to clarify and resolve any situation which may be considered ambiguous, or which gives rise to suspicion about actions by another State party in breach of obligations deriving from the provisions of this Convention. Such a request may include a request for an on-site inspection.
- 4.1 Requests sent to the Consultative Committee or its subsidiary organ under Section 4 above should contain objective and concrete elements supporting a suspicion of non-compliance with the Convention and should be directly relevant to the complaint.
- 4.2 All States parties undertake to co-operate fully with the Consultative Committee and its subsidiary organs and/or international organizations, which may, as appropriate, give scientific, technical and administrative support to the Consultative Committee in order to facilitate their fact-finding activities so as to ensure the speedy clarification of the situation which gave rise to the original request.
- 4.3 A request for an on-site inspection by the Consultative Committee or its appropriate subsidiary organ shall be treated favourably and in good faith by the State party which receives it. A refusal should be accompanied by the submission of a prompt and full explanation of its reasons. The Consultative Committee shall assess the explanation submitted and may send another request, taking into account all relevant elements, including possible new elements received by the Consultative Committee after the original request. If a second request is refused, the State party which originated the request may have recourse to appropriate procedures under the Charter of the United Nations.

 4.4 The Consultative Committee shall notify all States parties of the initiation of any of the procedures referred to in Section 4 above and shall provide all available information related thereto to any State party upon request.

Report of the Co-ordinator

on the

Structure and Functions of the Consultative Committee and its Subsidiary Organs

- 1. A consultative Committee, composed of representatives of all States Parties to the Convention and presided over by, shall be established within 30 days after entry into force of the Convention.
- 2. The Consultative Committee shall convene in (venue) not later than (time) after the Convention enters into force.
- 3. The Consultative Committee shall subsequently meet in regular sessions every (time). Extraordinary sessions may be convened at the request of any State Party or of the Executive Council.
- 4. (time) after the Convention is open for signature, */ a Preparatory Commission, composed of representatives of all signatory States, shall be convened for the purpose of carrying out necessary preparations for the coming into force of the Convention's provisions, including preparing the first session of the Consultative Committee. The guidelines for the activities of the Preparatory Commission are contained in Annex (suggestions: CD/343, page 10).
- 5. The Consultative Committee shall carry out broad international consultations and co-operation among States Parties to the Convention, oversee the implementation of the Convention, and promote the verification of the continued compliance with the Convention, and for those purposes it shall:
- (a) review new scientific and technical developments which could affect the operation of the Convention;
- (b) provide a forum for discussion of any questions relating to the implementation of the Convention.

^{*/} Suggestions were made to the effect that a minimum number of signatures should be required for the convening of the Preparatory Commission.

^{**/} Suggestions were made to the effect that the Consultative Committee should carry out the functions of a Review Conference of the Convention.

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- 6. In order to assist it in carrying out its functions, the Consultative Committee shall establish an Executive Council composed of representatives of ... (number) States Parties appointed by the Consultative Committee, as well as a Technical Secretariat (and other subsidiary bodies to be agreed upon).
- 7. The Executive Council shall be responsible for carrying out the functions of the Consultative Committee specified in (a) and (b) of Section 5 above during the period when the latter is not in section. It shall also be responsible for the following functions:
- (a) co-operate with States Parties to ensure the implementation of, and compliance with the Convention;
- (b) obtain, keep and disseminate information submitted by States Parties regarding matters pertaining to the Convention;
 - (c) render services to States Parties, facilitating consultations among them;
 - (a) be seized with requests from States Parties;
 - (e) decide on specific action to be taken regarding such requests;
 - (f) receive the reports submitted to it as a result of the action undertaken;
 - (g) report to the Consultative Committee;
- (h) request, when it deems necessary, the convening of the Consultative Committee:
 - (i) oversee the carrying out of systematic on-site inspections to ensure:
 - destruction of chemical weapons stockpiles
 - monitoring of small-scale production of super-toxic lethal chemicals for [permitted purposes] [non-hostile military purposes]*
 - as may be agreed upon, compliance with other obligations (e.g. non-production of chemical weapons, non-use, climination of production facilities, etc.).
- 8. In addition to providing the necessary administrative support to the Consultative Committee and the Executive Council, the Technical Secretariat (and/or other subsidiary bodies to be further agreed upon) shall:
- (a) render technical assistance to States Parties and to the Executive Council in implementing the provisions of the Convention;
- (b) receive from States Parties and distribute to them data relevant to the implementation of the Convention;

^{*/} Subject to further elaboration of relevant definitions.

^{**/} See last sentence of Section 6 above.

(c) elaborate technical questions relevant to the implementation of the Convention, such as drawing up for recommendation to the Consultative Committee (or the Executive Council) of lists of key precursors, technical procedures, etc.;

(d) assist the Executive Council as further agreed upon in tasks related to information, fact-finding, systematic on-site inspection and challenge inspection.
9. The detailed specifications of the functions and organization of the Consultative Committee and its subsidiary organs shall be spelt out in an Annex

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AD HOC WORKING GROUP ON CHEMICAL WEAPONS

CONTACT GROUP C

In order to pursue its negotiations, the Ad Hoc Working Group needs to examine in depth the question of including a prohibition of use in the chemical weapons convention and its implications. This involves consideration of, inter alia, the following areas:

- 1. Alternative ways for including prohibition of use;
- 2. Relation to other items in scope;
- 3. Relation to similar provisions in other conventions;
- 4. Legal aspects relating to international law;
- 5. Application of general challenge and fact-finding procedures;
- 6. Requirements for special compliance and verification procedures;
- 7. Obligations on nations;
- 8. Role of consultative committee:
- 9. Other relevant aspects; and
- 10. Resulting work requirements for national and international implementation organizations.

To assist the Working Group in its consideration of these matters, a contact group will be established.

INSTRUCTIONS TO CONTACT GROUP C

To further the Working Group's objectives, the contact group will examine and report on specific questions relating to treatment of the issue of prohibition of use as requested by the Working Group chairman. Specifically it will consider:

- legal and other restrictions on including a measure for prohibition of use in a chemical weapons treaty; and
- special requirements, if any, in addition to the normal challenge and fact-finding procedures necessary to investigate suspected use.

In examining these questions, the contact group should proceed in a systematic fashion, drawing on material from all areas as necessary, and taking national positions into account as alternatives to be considered. The contact group reports from 1982 should provide a useful starting point. The contact group should not focus on "technical matters" as such, although it should identify areas where existing technical advice is insufficient. Essentially, the contact group's task is to identify the political and operational decisions needed to permit the Working Group to negotiate successfully provisions on these questions for inclusion in a convention.

The contact group chairman will report orally as necessary to the Working Group chairman and will submit a short written report prior to the last Working Group meeting in April. To assist the Working Group in its negotiations, the contact group in this report should note in particular the consensus reached and areas in respect of each question in which differences have not been resolved.

MEETINGS OF CONTACT GROUP

The contact group will meet at the discretion of its chairman and meeting times must be scheduled and announced through the Secretariat.

Meetings will be informal, but interpretation services must be available.

Report by The Co-ordinator on the "Criteria for the objective and impartial verification of a prohibition of use of chemical weapons"

- I.1 The procedure assuring the verification of a prohibition of use of chemical weapons should allow for rapid action. This applies both to the administrative treatment of a request for verification, by the organ responsible under the Convention, and to access to site (if considered necessary). Access to site should at any rate take place within a time period after the reported event that would facilitate examination of any material including identification of symptoms in the human body of possible victims. Urgency would moreover be imperative in view of the seriousness of an allegation of use, the prohibition of which is after all the ultimate goal of the convention.
- I.2 If the Convention should specifically state a time limit, this should in any case be an indicative one. The procedures established within WHO for rapid dispatch of WHO epidemical teams might serve as an example. Possible co-operation with WHO could be explored. It was argued with respect to a time-limit, albeit indicative in nature, that generally speaking the longer the time allowed to lapse after a reported event before an investigation is undertaken, the less likely it will be that the team produce decisive evidence. The likelihood of finding decisive evidence would decrease with time. Chimatological and other environmental factors could influence the time factor both ways. Suggestions for the commencement of investigations varied from as early as 24 hours after the reported event, to up to four weeks thereafter. It was suggested that the question of the speed with which an investigation should be initiated might be usefully worked out in guidelines under the responsibility of the Consultative Committee.
- II.1 The speed with which an investigation could proceed would depend to an important degree on the measure of preparation. A list of laboratories, equipment and qualified "inspectors" could be composed for the responsible treaty organ to draw from at short notice. A standardized methodology could be elaborated in the form of a guideline for the collection and analysis of information and samples, which would include an assured indisputable "chain of custody" with respect to a sample from the moment it was taken to the moment of its scientific analysis and identification.

- II.2 Preparation could also focus on the availability of technical equipment to be used by an investigation team in an on-site inspection, including protective equipment for such a team.
- II.3 Special arrangements should be concluded, preferably agreed beforehand, to ensure access to a zone of presumed use and to ensure safety if combat is imminent in the zone. A possible role for the International Committee of the Red Cross, as an organization with experience of working in conditions of armed conflict, was suggested. Danger could never be totally excluded and would have to be accepted.
- II.4 In the case of an intended on-site inspection under combat conditions the responsible organ under the Convention should launch a strong appeal for cessation of hostilities. It was believed that in certain types of conflict access to the zone of combat was not feasible without cessation of hostile action.
- II.5 The armed forces involved in the conflict could be asked to co-operate. National authorities of the State on whose territory use might have occurred should to the best of their ability assist the investigating team.
- II.6 The investigation would be of an international nature. The authorities representing the armed forces allegedly involved in use of chemical weapons as well as the national authorities mentioned in paragraph 5 above could be conferred the right to be represented on the investigating team on an ad hoc basis.
- II.7 It was suggested that wherever preparation was required as referred to above, a technical preparatory committee could be charged with the elaboration of the necessary details.
- III.1 The investigation should comprise a "forensic" procedure; in this context it could focus on defining the confines of the reported site; date and time of the reported event; weather conditions at the time of the reported event; methods and means of delivery of the reported agents; impact on plant, animal and human life. A series of events might have to be contemplated simultaneously. It was observed that such a chain of elements of evidence was as weak as its weakest element. Attention should therefore be focused on all elements alike, individually, as well as in their interrelations.
- III.2 For a final conclusion to be reached the availability of information on the presence of the chemicals under consideration in the region under consideration for reasons of a non-hostile nature could be essential. The same could be true for pathological phenomena related to contamination with or intoxication by chemicals of a non-hostile origin. The authorities in whose territory the phenomena occurred could extend useful assistance in providing such information.

Report of the Co-ordinator on

Issues relevant to the incorporation of a use prohibition in the scope of the Convention

Discussions have centred on the desired coverage of a use prohibition in the Convention. Commonality of views has been observed to take shape on the following aspects:

- the prohibition should apply with respect to use against all States, not only States Parties to the Convention;
- the prohibition should apply in any armed conflict (to be further defined, for example in an agreed understanding);
- the Convention should provide for verification of alleged use of chemical weapons;
 - the Convention should provide for a clause of non-interference with the relevant international treaties;
 - the Convention should contain the "traditional" withdrawal clause;
 - the Convention should in its preambular part contain a reference to the obligations set forth in the Geneva Protocol of 1925.

Other aspects as yet eluded consensus:

- whether the use prohibition should apply to riot control agents;
- whether the use prohibition should apply to herbicides;

Comment: a solution to these questions could be found in the framework of the definitions in the Convention.

- how to uphold in law the deterrence value of remaining stocks in the period preceding their destruction;

Comment: the right of any State to resort to reprisals seems not to be affected by any of the proposed draft texts. Rather the question seems to be how the States concerned could preserve, if they would choose to do so, a much broader right to retaliate during this period. The remaining question would then be in which form this concern could be met.

- the extent to which the 1925 Geneva Protocol has been subsumed in customary international law and how this should be reflected in the (preambular part of the) Convention;

Comment: though there was general recognition of the existence of a rule of customary international law regarding non-use of chemical weapons, positions varied as to the scope of such rule and, accordingly, as to the desirability and way to reflect such rule in the Convention.

The Co-ordinator, in an attempt to take account of the commonality of views referred to above, suggested formulations that are contained in Appendix I.

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Appendix I

Preambular paragraph

"Taking cognizance of the obligations enshrined 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."

Operative paragraphs

- I. [See Appendix II]
- II. The States Parties to this Convention, having accepted to be bound by the obligation not to use chemical weapons in any armed conflict, in accordance with Article ..., hereby accept that the procedure laid down in Article ... shall apply to the verification of compliance with the said obligation.

 III. 1. Nothing in the Convention should be interpreted as in any way limiting or detracting from the obligations assumed by any State under the Protocol for the Prohibition of Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June, 1925.
- 2. Nothing in the Convention should be interpreted as in any way limiting or detracting from the obligations assumed under the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction.
- 3. Nothing in the Convention should be interpreted as in any way limiting or detracting from the obligations assumed under the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques.

 IV. Each State 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 the 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.

Appendix II

With regard to a first operative paragraph relating to non-use of chemical weapons, a suggestion was made for a formula in which an unequivocal undertaking to exclude the use of chemical weapons is placed in the framework of the recognition that such undertaking would complement the prohibitions in the 1925 Geneva Protocol. This formula, as drafted by the co-ordinator, reads as follows:

"I. States Parties to the Convention undertake, through the implementation of the provisions of this Convention which complement the prohibitions of the 1925 Geneva Protocol, to exclude the use of chemical weapons in any armed conflict."

The possibility of making this formula the basis for further work has been considered; however no agreement could be reached thereupon and delegations felt that the matter had to be further studied.

Meanwhile, a number of delegations maintain preference for solution to the incorporation of a use prohibition in the scope of the Convention through direct inclusion of such a prohibition in Element I (of CD/CW/WP.33), while other delegations continue to prefer a solution whereby commitment of Parties as well as non-Parties to the 1925 Geneva Protocol is reflected to observe the Protocol's provisions regarding prohibition of the use of chemical weapons in all armed conflicts.

The matter should be resolved in further intensive consultations.

AD HOC WORKING GROUP ON CHEMICAL WEAPONS

CONTACT GROUP D

In order to pursue its negotiations, the Ad Hoc Working Group needs to examine some definitions further and to develop the criteria necessary to identify and list chemicals whose production must be prohibited for chemical weapons purposes and for which compliance with the ban must be verified. This involves consideration of, inter alia, the following areas:

- 1. Scope of the prohibition;
- 2. The basic prohibitions/general purpose criterion;
- 3. All terms requiring definition for purposes of the convention;
- 4. Terms where adequate definition is still lacking;
- 5. Categories, if necessary, within which chemicals may be identified for control and verification of production;
- 6. Criteria for assigning chemicals to categories including toxicity criteria and chemical criteria;
- 7. The preparation of lists;
- 8. The use of categories, criteria and lists in verification;
- 9. Verification procedures; and
- 10. The effects of verification procedures in industry.

To assist the Working Group in its consideration of these matters, a contact group will be established.

INSTRUCTIONS TO CONTACT GROUP D

To further the Working Group's objectives, the contact group will examine and report on specific questions relating to definitions, criteria and precursors as requested by the Working Group chairman. Specifically, it will consider:

- reaching common agreement on the definition of the terms chemical weapons, precursors and key precursors;
- providing agreed criteria and one or more lists of precursors suitable for use in establishing controls and verification procedures to guarantee the non-production of chemicals for chemical weapons purposes; and
- verification methods and limitations that might be devised on the basis of the agreed definitions and criteria.

In examining these questions, the contact group should proceed in a systematic fashion, drawing on material from all areas as necessary, and taking national positions into account as alternatives to be considered. Previous contact group reports from 1982, the results from discussions in January 1983 and material already obtained in consultations and in the Working Group in 1983 should provide a useful starting point. The contact group should consider related technical information as necessary and identify the political and operational decisions needed to permit the Working Group to negotiate successfully provisions on these questions for inclusion in a convention.

The contact group co-ordinator will report orally as necessary to the Working Group chairman and will submit a first report by 13 July 1983. To assist the Working Group in its negotiations the contact group in its reports should note in particular the consensus reached and areas in respect of each question in which differences have not been resolved.

MEETINGS OF CONTACT GROUP

The contact group will meet at the discretion of its chairman and meeting times will be scheduled and announced as agreed with the Secretariat.

Report of the Co-ordinator on the work of Contact Group D

- 1. The discussions of the Contact Group concerned the mandate given to the Group by the Chairman of the Working Group on Chemical Weapons, specifically: definitions of chemical weapons; precursors and key precursors; criteria for, and one or more lists of, precursors, as well as procedures for verification of production of such precursors. The Group was later given the task of discussing also small-scale facilities for production of super-toxic lethal chemicals for agreed purposes.
- 2. The discussions were based on previously presented material as well as material presented during the discussions as given in the list of references attached to this report.
- 3. The report is set out in two parts. The first part contains views which the Co-ordinator feels have not met with objections from delegations participating in the discussions in the Contact Group although no delegation is bound by the specific formulations used. In the second part views, which have not met with full agreement are recorded, including alternatives and objections which have been presented during the discussions.

PART 1

Structure

4. The convention should contain definitions of chemical weapon, precursor and key precursor, criteria for selecting key precursors as well as a list or, if agreed, lists of agreed key precursors.

Definitions

- 5. The following concepts regarding the definition of chemical weapon appearing in CD/334 seem to continue to obtain general support:
- (a) The definition should comprise only such concepts as are necessary for the purpose of the convention.

- (b) The definition should express the typical effects of chemical weapons, i.e. that their effects are due to the utilization of the toxic properties of chemicals to cause death or other harm.
- (c) The term "chemical weapon" should be applied to three different categories of items:
 - (i) Toxic chemicals which meet certain criteria, and their precursors.
 - (ii) Munitions and devices which meet certain criteria. This category includes binary and other multi-component munitions or devices.
 - (iii) Equipment specifically designed for use directly in connection with the employment of such munitions or devices.

The toxicity criteria given in CD/334 were not discussed further in the Contact Group, since they seem to be generally agreed.

- 6. For the purpose of the convention precursor should be defined.
- 7. The definition of a key precursor should express the following concepts:
 - It should be a substance which plays a most important role for the production of/toxic chemicals for chemical weapons purposes/chemical warfare agents/.*
 - For this reason production of a key precursor for permitted purposes might create conditions for the violation of the convention and should be subject to particular provisions under the convention.
 - A key precursor should normally meet all agreed criteria in order to be selected for listing.

Criteria

- 8. Criteria, and provisions derived from them regarding key precursors could be the following:
 - One criterion should be that it would be particularly important in determining the characteristics of the end product.
 - Another criterion is that it has relatively little use for non-hostile purposes.

Criteria could be revised when scientific or other development so required.

The purpose of the criteria would be to select key precursors which should be placed in a list or, if agreed lists.

^{*/} Pending final definition of chemical weapons.

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List of key precursors

9. There should be a list or, if agreed, lists containing chemical substances which meet all the agreed criteria of key precursors. In addition, a chemical substance, notwithstanding that it does not meet all the criteria, could be, as an exception, included in the list of key precursors on the basis of decision taken by the States Parties to the Convention. Such decision should take into consideration the potential role of a chemical substance for chemical weapons and its role in the commercial chemical industry. The list should be reviewed periodically and revised, if necessary, with the aim of adding chemical substances or deleting those which no longer meet all the agreed criteria, or no longer need to be included as exceptions.

Permitted purposes

10. There was a common view that "permitted purposes" had been expressed in an equal way in CD/294, CD/334 and CD/343. Differences in formulations did not detract from the common understanding of this issue in the three documents. Accordingly the concept of "permitted purposes", as well as "protection purposes" which form a sub-category of "permitted purposes", could be used as a common basis for the discussion of the problems connected with a "small-scale production facility". A preliminary formulation might be the following:

Permitted purposes means:

- Non-hostile purposes, that is: industrial, agricultural, research, medical or other peaceful purposes, law-enforcement purposes, or protective purposes;
- Military purposes which are not related to the use of chemical weapons.

Small-scale production facility

ll. With respect to provisions for a small-scale facility for protective/permitted purposes- the following views below were expressed:

^{*/} The expression "protective/permitted purposes" reflects the common understanding that the production of a declared single small-scale production facility should relate to "protective purposes" which are part of "permitted purposes", irrespective of whether delegations held that such production should relate to all permitted purposes or only to protective purposes.

- (a) Production of super-toxic lethal chemicals for protective/permitted purposes should be limited to a single declared small-scale facility for each party;
 - (b) The capacity of the facility should not exceed an agreed limit;
- (c) The aggragate quantity of super-toxic lethal chemicals/and key precursors/ for protective/permitted purposes should be as low as possible and not exceed an agreed limit;
- (d) The single, small-scale facility should be subject to systematic international on-site inspection.

Verification procedures for non-production of key precursors for chemical weapons purposes

12. In order to verify the declared production for permitted purposes of listed key precursors, it was considered generally agreed that such production would, like all aspects of the Convention, be subject to verification by challenge under the provisions of the Convention. It was also agreed that regular exchange of information regarding such production should be provided for in the Convention.

The above-mentioned measures, or other measures to be agreed, should be set out alongside each chemical or class of chemicals on the list.

PART 2 - ALTERNATIVE VIEWS

Definition of chemical weapons

- 13. Some delegations held that the definitions of chemical weapons should include the concept "chemical warfare agent" as was suggested as an alternative also in CD/334. Different suggestions were put forward for this purpose in written and oral proposals submitted to the Committee on Disarmament, the Working Group and the Contact Group or were contained in earlier documents (see list of references). Definition of "chemical warfare agent"
- 14. It was suggested that a definition of chemical warfare agent should be included in the Convention.

Definition of precursor

15. A suggestion for the definition of "precursor" was the following: for the purpose of the convention a precursor is a chemical which, by isomerization, or reaction with another chemical, or both, lead to the formation of/chemical weapons/.

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A view was put forward that the definition of precursor should be based on the concept of chemical warfare agent.

Definitions of key precursors

16. Some delegations felt that a definition of key precursors contained in chemical weapons or military stockpiles would not be necessary since the key precursors falling under such a definition automatically would have to be declared and eliminated under the Convention. Only key precursors to be produced under supervision for permitted purposes need to be defined.

The definition shall contain the concept that the key precursor shall be listed together with:

- (a) The criteria or other grounds which constitute the reasons for putting it on the list:
- (b) The measures for ensuring compliance with the Convention, agreed individually for each key precursor.

Others felt that the definition of key precursors should be related to all the chemicals which meet all the demands of criteria of key precursors, irrespective of for which purposes they are produced and where they are stored.

Such a definition must serve for the purposes of composing a list of key precursors, declarations, destruction or diversion of stockpiles, and verification of limitation of production in the peaceful chemical industry.

The definition of key precursor should serve as a guide for the evaluation of criteria in the future.

A view was put forward that the definition of key-precursors should be based on the concept of chemical warfare agent.

Criteria

17. Some delegations considered that a third criterion for selecting key precursors should be that the precursor takes part in the final stage of the production of the toxic chemicals used for chemical weapons.

Other delegations thought that this criterion, to be acceptable, should specify the "final stages". For alternative suggestions see the list of references.

Some delegations did not find it necessary to include this criterion at all.

Criteria would also guide in a general way the measures of verification

(e.g. exchange of information) which should accompany the selected key precursors on the list.

List of key precursors

18. With regard to the content of the list of key precursors several suggestions and variations of earlier suggestions were put forward. Although all delegations seemed able to accept the inclusion of certain chemicals in a list (or lists), views differed with respect to other chemicals and, to the reasons why they should be put on a list of key precursors.

A list, or, if agreed, lists of key precursors to be produced for permitted purposes under supervision could contain all or some of the chemicals or types of chemicals which had been suggested earlier (see list of references), together with agreed verification measures to be applied for each substance or class of chemicals listed.

Small-scale production facility

- 19. In addition to the common views expressed on provisions for a small-scale production facility for protective/permitted purposes, it was considered that the following issues need further discussion:
- (a) Should production of key precursors for protective purposes be limited to a single small-scale facility for each Party?
- (b) Should production of super-toxic lethal chemicals for permitted purposes other than protective purposes be restricted to a small-scale facility?
- (c) Should production of key precursors for permitted purposes other than protective purposes be restricted to a small-scale facility?
- (d) Should production for protective purposes of all compounds containing methyl-phosphorus bonds be restricted to a small-scale facility?
- (e) Should production for permitted purposes of all compounds containing methyl-phosphorus bonds be restricted to a small-scale facility?
- (f) What should be the agreed amount of super-toxic lethal chemicals and key precursors which a Party might have on hand for protective purposes?
- (g) ·Should there be a limit on the amount of super-toxic lethal chemicals and key precursors which a Party might have on hand for all permitted purposes, including protective purposes? If so, what should be the agreed amount?
- (h) What should be the agreed production/capacity limit for a small-scale production facility for protective purposes?
- (i) What should be the agreed production/capacity/limit for production of super-toxic lethal chemicals at a small-scale production facility for permitted purposes?

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- (j) If production for permitted purposes of super-toxic lethal chemicals and key precursors were allowed in commercial industry, should there be a production/capacity/limit?
- (k) What should the verification objectives and guidelines be for each of the possible production restrictions above?

 Verification procedures for non-production of key-precursors for chemical weapons purposes

It was proposed by the Co-ordinator that the following topics should be further discussed:

- Details on the kind of information to be exchanged, e.g. concerning declarations of production facility location and capacity, production level, civil use, etc.
- On-site inspection on a random or periodic basis.

The discussions did not deal with how the non-production of the chemicals or undeclared facilities could be verified.

List of References

CD/294	Basic provisions of a convention on the prohibition of the development, production and stockpiling of chemical weapons and on their destruction.	USSR
ന്D/326	Proposals on "Declaration", "Verification" and the "Consultative Committee".	Federal Republic of Germany
© /334 ··································	Report of the Ad Hoc Working Group on Chemical Weapons to the Committee on Disarmament.	is obtained to
CD/343	United States detailed views on the contents of a chemical weapons ban.	USA
CD/353	Verification of non-production of chemical weapons	United Kingdom
CD/401	Precursors - key precursors	Yugoslavia
CD/CW/WP.46	Suggested list of key precursors, including those usable in multicomponent chemical weapon systems.	The Netherlands
CD/CW/WP.51	Preventing illegal production of key precursors of nerve gas.	USA
CD/CW/WP.52	Verification of non-production of chemical weapons.	USA
CD/CW/WP.54	Precursors - key precursors.	France
CD/CW/CRP.62*	Suggested alternative wording for Element II and Annex I. Element II = General definition of chemical weapons.	China
CD/CW/CRP.76	Definition of "key precursors".	Yugoslavia
CD/CW/CRP.78	Questions relating to the possible civilian use of chemicals containing the methyl-phosphorus bond.	Australia
CD/CW/CRP.31/Rev.1	List of precursors for super-toxic chemicals and incapacitating chemicals.	Australia/ The Netherlands
CD/CW/CRP.83	Concept of precursors in the CW Convention.	Czechoslovakia

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List of References (continued)

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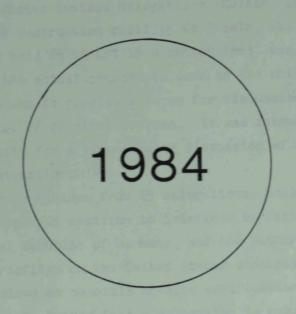
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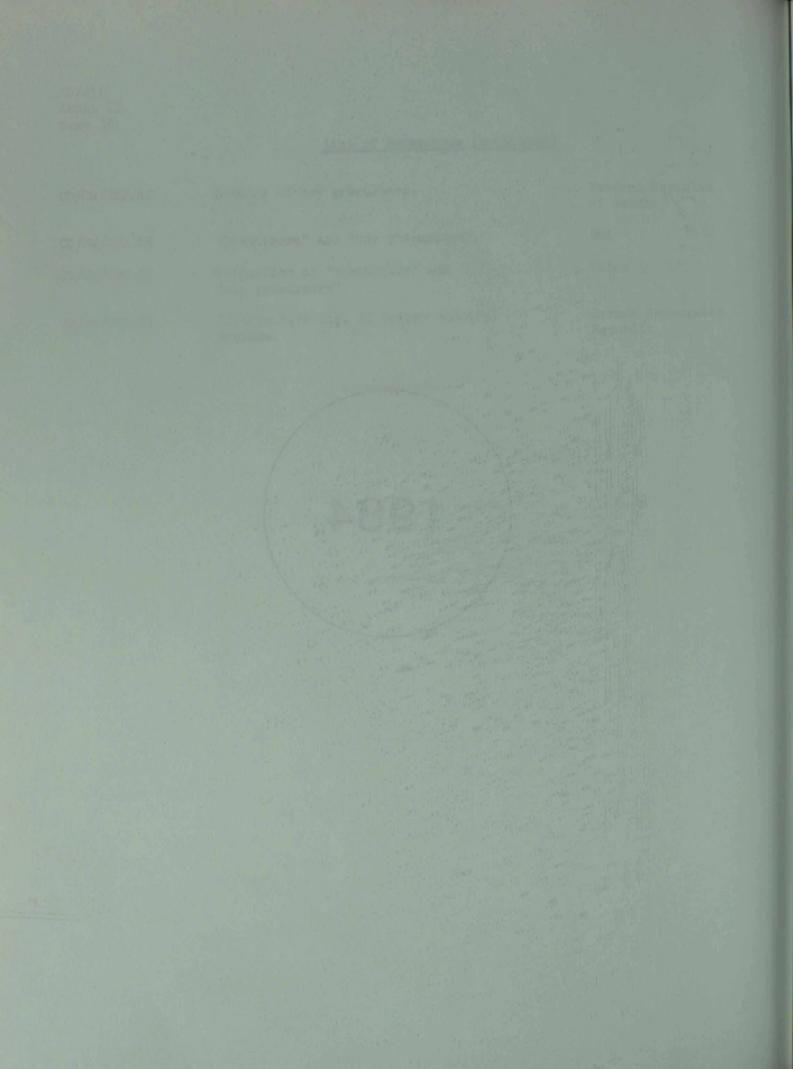
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CD/CW/CRP.84	Listing of key precursors.	Federal Republic of Germany
CD/CW/CTC.29	"Precursors" and "key precursors".	USA
CD/CW/CTC.34	Definition of "precursors" and "key precursors".	China
CD/CW/CTC.41	Illustrative list of binary chemical systems.	German Democratic Republic





CD/424 CD/CW/WP.61 20 January 1984 Original: ENGLISH

UNITED STATES OF AMERICA
VERIFICATION OF CHEMICAL WEAPONS STOCKPILE DESTRUCTION

The United States delegation continues to attach great importance to efforts to find a common approach to verification of destruction of chemical weapons stockpiles. To help accelerate this work the United States put forward, in July 1983, illustrative on-site inspection procedures in document CD/387.

To facilitate successful completion of the Committee's work on this issue in 1984 the United States invited delegations (CD/419, 23 August 1983) to visit its chemical weapons destruction facility at Tooele, Utah. The purpose of the workshop, which was held on 15 and 16 November 1983, was to give delegations a first-hand look at the actual procedures used by the United States for destruction of chemical weapons and to provide a forum for discussion of various means of verifying destruction of chemical weapons. It was intended that the workshop should provide an opportunity for a wide-ranging discussion of <u>all</u> points of view regarding verification of destruction.

Forty-one representatives from 25 delegations, including eight Ambassadors, attended the workshop. In addition to briefings by United States experts, from Finland, the Federal Republic of Germany, and the Netherlands made presentations.

So that the briefings on the United States stockpile destruction programme and United States views on possible on-site verification procedures will be available to all delegations, the United States delegation is submitting them as an attachment $\frac{1}{}$ to this document.

^{1/} A limited distribution of the attachment to this document has been made to the members of the Committee on Disarmament. Additional copies can be obtained from the delegation of the United States of America.



CD/425 CD/CW/WP.60 18 January 1984

Original: ENGLISH

Ad Hoc Working Group on Chemical Weapons

SWEDEN

Verification of the destruction of stockpiles of chemical weapons

Introduction

This Working Paper aims to analyse the need for continuous on-site inspection of the destruction of chemical weapons at a destruction facility.

Views are given in the Appendix on actual and possible methods, including on-site inspection, to verify the destruction of chemical weapons at the present CAMDS (Chemical Agent Munitions Disposal System) facility in Utah, United States of America, as it was presented in the Working Paper CD/387 and during the recent visit to the site (15 and 16 November 1983) by representatives of Delegations to the Committee on Disarmament. The comments thereafter concern the possibilities of improving the present arrangements from the verification point of view, given the same facility. Last, some suggestions are presented for the design of a more efficient verification system in the future based on the same destruction methods as those now used in CANDS.

No attempts are made to analyse the verification needs for a destruction process on a smaller scale like the one now operating in the Federal Republic of Germany (CD/CW/CTC.18) or the one which operated in Indonesia in 1979 (CD/270).

The conclusions drawn from the analysis given in the Appendix, are presented below in the working paper proper.

Finally, on the basis of these conclusions some proposals for the future approach to the problem are presented.

Conclusions drawn from the analysis in the Appendix

With respect to the need for on-site inspections for verification purposes during the destruction of chemical weapons, some tentative conclusions can be drawn on the basis of the study of the CAMDS facility.

- 1. As already pointed out in a previous Swedish analysis, CD/325, on-site inspections would be necessary during the construction of a destruction facility as well as after the termination of the destruction activities.
- 2. If a destruction facility has been designed without taking into account special requirements for enabling verification, the continuous on-site presence of an international inspection team would be necessary.
- 3. Such a facility can be modified to allow verification by means of a combination of monitoring equipment and occasional on-site inspections. However, there might be a certain, although small, risk that impermissible activities at the facilities would remain undetected by the verification procedure.
- 4. If the need for verification is taken into consideration when the facility is being designed, more reliable arrangements can be made. The risk for undetected impermissible activities might then be reduced to a very low level.
- 5. If a very high degree of confidence in the verification methods is considered necessary further technical work is needed in order to improve the reliability of the process monitoring equipment in order to eliminate the need for continuous on-site presence of inspectors.
- 6. Even if extensive remote monitoring is available, on-site visits are necessary during the destruction period in order to verify the functioning of the monitoring, data acquisition and data transmission equipment. Furthermore, the presence of inspectors during certain types of maintenance or repair work seems to be desirable.

General remarks and suggestions

The technical analysis made in the Appendix is undertaken because of the different views on the question on the necessity of having international continuous on-site inspection of the destruction of chemical weapons in order to ensure that the convention is complied with in this respect, or, if a combination of continuously monitoring technical remote-sensing methods and on-site inspections at the international level might be sufficient. There is no question that the national authorities undertaking the destruction will have full knowledge of the actual state of affairs at the destruction site. The analysis also assumes that corresponding national information will be delivered to the international verification authority (the Consultative Committee or its suborgans), so that it can be matched against the data obtained independently from international inspectors and monitoring equipment.

The analysis does not consider the problem of whether attempts to evade the verification system of a convention is more successfully tried within the destruction process rather than e.g. with respect to the possibility of concealing stockpiles. On a preliminary basis it would seem to be more rational to conceal stockpiles than to try to fake a complicated destruction process at a high risk of being exposed, the more so if some stockpiles were already well concealed from the beginning. If such an intuitive feeling is confirmed in a more stringent analysis, this condition should be taken into account, when the balance between continuous on-site inspection and technical monitoring, is to be decided.

There does not seem to be much point in making an analysis of which methods of verification would be most effective at the least cost. It may also very well be that the difference between keeping international inspectors continuously on-site, on the one hand, and the investment and operation of remote sensing equipment on the other, would not be very large. It might be worthwhile, however, to consider whether a combination of the two methods would incur lower costs than the sum of the costs for the two methods separately, or perhaps even be less than for one of them, provided that the costs for one of them is considerably higher than for the other.

As can be seen from the Conclusions it seems technically possible to bring about a combination of international continuous technical monitoring and occasional on-site inspection creating a high degree of confidence in the proper execution of the destruction process. This would not of course give 100 per cent certainty. As a matter of fact, this would not be the case even if continuous on-site inspection was carried out. The human factor can never be disregarded.

This technical basis could be utilized in order to achieve a compromise on the design of the international verification system for the destruction of chemical weapons. Thus, it contains two important political elements: it would guarantee a continuous monitoring of the destruction process with the least possible on-site presence of international observers.

With the above consideration in mind the following structure for an international verification regime for the destruction of chemical weapons could be outlined:

1. International on-site inspection is carried out before starting the destruction facility in order to check that the facility is built according to declared and submitted plans and drawings, and that the monitoring equipment is functioning properly.

- 2. International on-site inspection is undertaken at the start of the destruction process in order to check the monitoring process and compare the results with those obtained and submitted to the Consultative Committee by the national operating team.
- 3. International inspectors should have the right to visit the facility when larger and longer operational stops have to be made, in order to follow repair or maintenance processes. In addition a number of agreed but unscheduled visits should be made by the inspectors each year.
- 4. Data produced by the remote-sensing equipment should be transmitted to the Consultative Committee over tamperproof communication networks, as well as be stored on chips at the site, where they could be checked by visiting inspectors. Also data from the national operational team should be transmitted to the Consultative Committee in the same way. The log-books should be made available to the international inspectors at their visits.
- 5. When work at the facility is finished, international inspectors should follow the desturction of the facility, or its conversion for other destruction purposes during an initial phase, ensuring that no unauthorized changes have appeared in its construction during the destruction period.

Appendix

THE PRESENT CAMDS FACILITY

Generation of measurement data which can be used for verification purposes

Data are generated by a continuous control of the material flow and the incineration process. Thus, it is possible to verify the quantity, identity and purity of the material that is to be destroyed. Data from each sensor are transmitted to a data collection centre in the control room, where compilation, registration and storage on magnetic tape is carried out.

In situ incineration

In this method, storage containers and munition (after removal of fuses and explosive charges) are heated in a volatilization chamber. The toxic chemical is vaporized and transferred, by means of an inert gas flow, into the incineration furnace, which operated in two steps, including a primary fume burner and an after burner. Metal parts from munition and containers are decontaminated by heating to high temperatures. Key parameters in the incineration process which should be monitored and registered are temperature, pressure and gas flow.

Quantity

The establishment of a material balance, i.e. monitoring the quantities of material entering and leaving the process, will assist in verifying that all material is actually destroyed.

The quantity of material destroyed can be ascertained by a count of the number of munition pieces and containers and by weighing them before and after the vaporization of the toxic chemical. Data thus obtained can be compared with estimates based upon initial declarations. All weighing operations are subject to TV surveillance.

The exhaust gases from the incineration furnace are passed through a.wet packed-bed scrubber. To establish the end products, samples are drawn from the scrubber solution and analysed.

Identity and purity

Before material is introduced into the volatilization chamber, samples of the agent are drawn for chemical analysis by gas chromatography and infra-red spectrophotometry. The sampling process is monitored by television. Samples are also taken from the salt residue remaining after evaporation of the scrutber solution. The actual analytical results are compared with data calculated on the basis of the quantities of toxic chemicals estimated to be present in the munition subjected to destruction.

Injection incineration

Compared to the in situ method, the injection incineration method offers better opportunities for verification. The contents of the chemical munition are

CD/425 CD/CW/WP.60 Appendix page 2

transferred to a storage tank, from which the liquid CW agent can be pumped into the incineration furnace, in which it is vaporized and incinerated. During the incineration process, the same parameters are monitored as in the in situ process. The empty munition pieces or storage containers are decontaminated by heating. The exhaust gases are subjected to the same purification steps as in the in situ process, and similar methods are used for establishing quantity, identity and purity.

Quantity

By monitoring the mass flow at a point close to the inlet to the incineration furnace, the quantity of toxic chemical to be destroyed can be established. If a reliable mass flow determination is impossible, munition pieces and storage containers must be weighed before and after withdrawal of the toxic chemical.

After evaporation of the scrubber solution, the remaining salt residue is weighed. Identity and purity

Samples drawn from the material to be destroyed are analysed by gas chromatography and infra-red spectrometry. The scrubber solution salt residue is analysed for the presence of relevant elements.

Need for on-site inspection

The monitoring operations described above provide data which can assist in verifying the destruction of toxic chemicals. However, today's sensor systems are not reliable enough to make inspections at regular, pre-determined intervals alone sufficient. Furthermore, there is a certain risk that the data generated can be manipulated. Consequently, the continuous presence of some form of inspection team is necessary for monitoring maintenance, repair and calibration activities. The high frequency of process interruptions at CAMDS emphasizes this need for continuous on-site inspection.

POSSIBLE IMPROVEMENTS OF THE CHEMICAL AGENT MUNITIONS DISPOSAL SYSTEM (CAMDS) REGARDING VERIFICATION NEEDS

In situ incineration

Quantity

Today the quantity of the materials destroyed is confirmed by counting and weighing the items before and after destruction. It is fairly easy to manipulat weighing and there is no redundancy in the system. By incorporating a continuous measurement after the scrubber of the quantity and identity of the destruction end products it should be possible to verify that the amount of waste material corresponds to the amount of agent which has been introduced into the incinerator.

Identity and purity

At present, sampling is done by pumping the agent in a loop from the munition via the instruments (IR, GC) and then back to the munition. The instrument readings do not confirm that a new sample actually has been analysed, i.e. if the pump is out of order, or if the same sample has been recirculated.

To verify that there really is a flow of sample, a flow meter should be inserted in the sample line. To prevent recirculation of the same sample the sample line could be drained directly into the furnace.

sufficient to verify identity and quantity, but a simultaneous analysis with both instruments would raise the level of reliability. To minimize disturbances from instrument malfunctions, change of columns, calibrations etc. there should be two gas chromatographs and it should also be possible to change between different infra-red cells.

Injection method incineration

Quantity

In the present facility the number of projectiles is counted before and after the furnace and the amount of agent which is fed into the furnace is monitored with a flow meter before the furnace. This is hardly enough for verification. By continuous analysis of the destruction products, in the same way as mentioned above, it would be possible to achieve improved reliability.

Still better redundancy could be achieved by two holding tanks. Thus, the filling and draining of one tank at the same time would not be necessary. It would then be possible to measure the flow to, and the level in, the tank both when the tank is filled and when it is empty.

Identity and purity

The instruments have the same drawbacks as in the in situ method and it is therefore desirable to have two gas chromatographs and the ability to change between infra-red cells. The sampling as well as the flow measurements should be done as close to the injection point as possible and could in principle be done continuously. If there are two holding tanks the demand for continuous analysis before the injection point is less, since it will be possible to make an analysis of the entire contents of the tank before draining.

Temperature, flow and other sensors that are used for process control and regulation can also be duplicated and the output be used for verification purposes.

CD/425 CD/CW/WP.60 Appendix page 4

It should also be possible to make all the sensors tamper-proof.

With the proposed modifications and with a reliable data transfer to a central inspectorate the need for continuous on-site inspection would be reduced considerably. However, when the measurement system is subjected to, for example, a change of sensors, GC-columns and to certain calibrations, there will still be a need for some kind of visual on-site inspection.

In our opinion, it is impossible to construct a completely reliable control system which does not require any presence of inspectors. What could possibly be achieved is a system in which any attempted manipulation is likely to be discovered.

A HYPOTHETICAL DESTRUCTION FACILITY

It is assumed that verification procedures are to be applied to an incineration method based on the same general principles as the injection-method incineration described above. The agent would be processed through a two-step fume burner - primary burner - and the destruction products through a scrubbing system.

To be able to solve the verification task properly procedures have to be developed by which the mass flow can be quantified: munition of all types, bulk containers and agents entering the furnace system, and destruction products removed from the furnace system. To minimize the need for inspection and the possibility of manipulation, the sensors should be placed as near as possible to the incineration furnace.

Process design

In order to get a highly reliable control of the quantity of chemical weapons and storage containers processed through the incineration furnace, munition and containers must be counted, inspected and the agent removed. Thus, the agent should be drained into at least two agent-holding tanks. The tanks must be separate from each other. The homogeneous liquid, with known identity and purity, is pumped from each holding tank to the incinerator furnace. It is important that the filling and emptying of the holding tanks can be done independently. When one tank is being filled, liquid is pumped to the furnace from the other tank and vice versa.

With two or more holding tanks, it is easier to establish mass balances for the incineration step. The amount per hour of active substance and possible impurities fed to the incinerator can be measured very accurately and with a high level of reliability.

Because some of the destruction products (containing P, F, Cl and S) in the flue gases are absorbed almost quantitatively in the scrubber liquid, it is possible to set up mass balances for some of these key elements. This method for confirming the complete destruction would be very effective.

Sampling methods for qualitative and quantitative analysis of agent

The selection of method is a vital step in the solution of this analytical problem. For the qualitative analysis IR (possibly GC, GC-MS or NMR) and for the quantitative analysis GC (possibly IR) have been considered to be the best choice. The methods chosen are unfortunately not without their problems. Both liquid and solid pollutants add greatly to the difficulties and will interfere with the analysis.

- 1. Random samples are collected from munition and storage containers before removal of the agent. The qualitative and quantitative analyses will confirm the identity and also give information on possible impurities.
- 2. When liquid is pumped from one of the holding tanks to the furnace, samples are taken continuously from the pumping line for qualitative and quantitative analysis.
- 3. Samples are collected continuously from the bled scrubber solution for qualitative and quantitative enalysis of certain key elements, e.g. P, F and S. Measurement of weight and flow

A combination of caparate methods for measuring agent weight and flow to the incinerator furnace could ensure more reliable data.

- 1. The tared transporter trays are loaded with items and the total weight is determined. After the agent has been removed, the quantity of substance could be determined by renewed weighings before and after passage through the metal parts furnace.
- 2. The amount of liquid transferred from munitions, etc., to the holding tanks should be measured continuously using at least two independent methods, e.g. load cells on the holding tank logs and level indicators inside the holding tanks.
- 5. When the liquid has been transferred from a holding tank to the furnace, the amount could be measured using the same equipment as in 2. The quantity of agent could also be determined by means of a flowmeter positioned near the inlet to the incinerator furnace.

Plant instrument system and process control

It is presumed that the plant instrument system and process control will be based on sophisticated microprocessor/computer systems. These systems would be vital for the functioning of the facility. However, appropriate verification procedures require that the plant instruments system must be supplemented with further instruments and control system.

For instance a tamper-proof computer is needed for collecting and analysing data, for the storage of data and for handling the information flow on-site and via the international communication system.

Today's improved performance and reliability of microprocessor/computerwased systems have in fact greatly increased the reliability of the monitoring equipment itself.

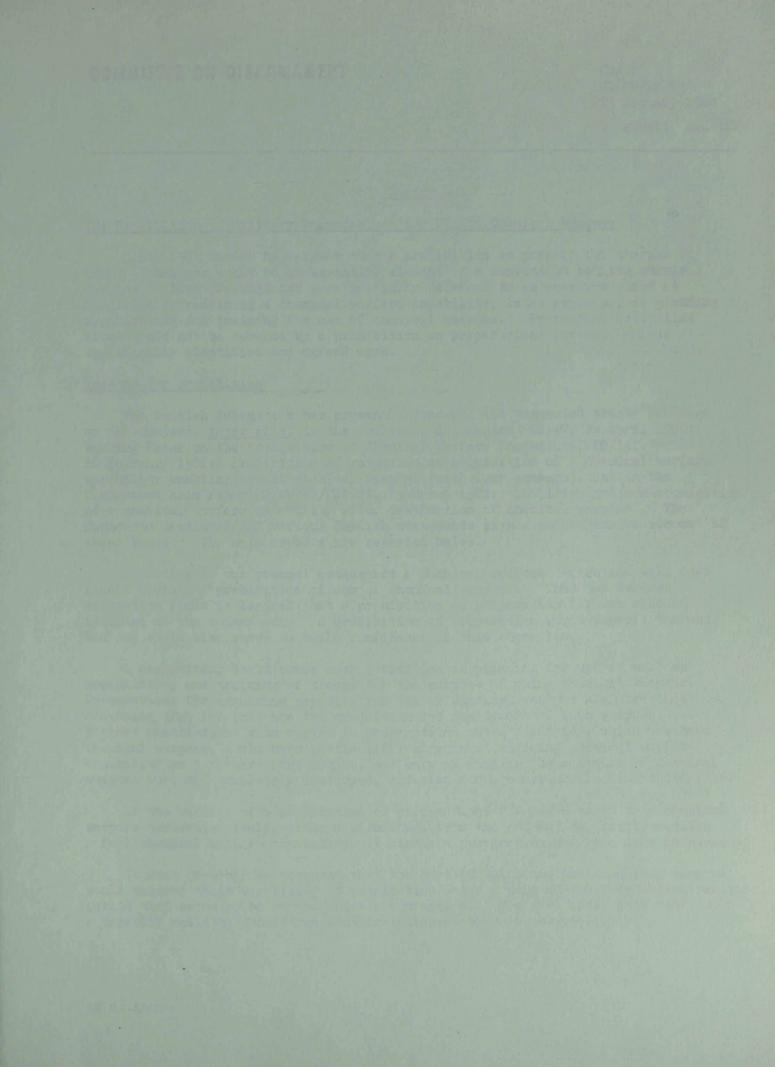
CD/425 CD/CW/WP.60 Appendix page 7

If a circuit card failure should occur, it must be possible for the microprocessor/computer to connect up immediately with a second (duplicated) card without disturbing the instrument or the process. Recently, a microprocessor-based device for measuring and transmitting differential, gauge or absolute pressure has been presented. Using such an instrument it is possible to remotely control parameters, diagnose transmitter performance and display the pressure digitally. The development of other new instruments can be expected in the future.

Comments

Provided that the development of new microprocessor-based actuators continues, it should be possible to construct tamper-proof sensors without moving parts for measurement of pressure, temperature, weight etc. that require no calibration. It might also be possible to monitor the status of the sensors by means of special control loops. A control signal could be initated irregularly from a remote location. It should thus be possible to develop a high performance system with built-in redundancy.

However, actuators and instruments with moving parts will probably be more susceptible to disturbances and will therefore require more frequent maintenance. Such instruments are e.g. infra-red spectrophotometers, gas chromatographs, MNR spectrometers, etc. The need for on-site inspection will greatly depend upon the performance of the instruments used for quantitative and qualitative analysis of the agents to be destroyed.





CD/426 CD/CW/WP.62 23 January 1984

Original: ENGLISH

Sweden

The Prohibition of Military Preparations for Use of Chemical Weapons

Since 1971 Sweden has argued that a prohibition to prepare for the use of chemical weapons would be an essential element of a convention banning chemical weapons. Such preparations were initially referred to as measures aimed at acquiring or retaining a chemical warfare capability, later expressed as planning organization and training for use of chemical weapons. Protective activities alone would not be covered by a prohibition on preparations for use, unless specifically identified and agreed upon.

Reasons for prohibition

The Swedish delegation has presented concepts and suggested treaty language on the subject, <u>inter alia</u>, in the following documents: CD/97, 24 April 1980: Working Paper on the Prohibition of Chemical Warfare Capability, CD/142, 10 February 1981: Prohibition of retention or acquisition of a chemical warfare capability enabling use of chemical weapons (with four annexes), and in the Conference Room Paper CD/CW/WP/CRP.29, 15 March 1982: Abolition and non-acquisition of a chemical warfare capability after destruction of chemical weapons. The documents mentioned and various Swedish statements give a comprehensive account of these ideas. The main aspects are repeated below.

According to our present assessment a chemical weapons convention will most likely contain a prohibition of use of chemical weapons. Thus the Swedish delegation finds it logical that a prohibition of preparation for use also be included in the convention. A prohibition of preparation would support the use ban and could also serve to build confidence in this connection.

A prohibition would cover such activities as planning for use as well as organization and training of troops for the purpose of using chemical weapons. Preparations for acquiring capacity for use of chemical weapons are more time consuming than for instance the production and deployment of such weapons. Without restrictions with regard to preparations those countries, which now have chemical weapons, would have little difficulty in maintaining chemical warfare capability on a rather short notice, not only as long as their stocks of chemical weapons were not completely destroyed, but also for a considerable time thereafter.

In the absence of a prohibition of preparations for use a party to a chemical weapons convention could, after a withdrawal from the convention, fastly acquire a full chemical warfare capability, if adequate preparation had been done in advance.

It must probably be accepted that the parties which now have chemical weapons would reserve their capability of retaliation under a part of the 10-year destruction period that seems to be needed under a convention. However, after some time, such a capacity could be considered neither indispensable nor acceptable.

CD/426 CD/CW/WF.62 page 2

If a prohibition of preparations for use were not included in a convention, it would be difficult to raise legal objections against a party making such preparations. The compliance procedure of the convention could probably not be called upon for the purpose of clarifying matters in this respect. The convention would be strengthened if an explicit ban on preparations for use of chemical weapons were included, not least due to the confidence building character of such a measure.

The Swedish delegation has noted with appreciation that its views have won increased understanding and support during the years. On the other hand, our suggestions have also been met with objections even if nobody has actually denied the importance of our suggestions.

Objections against the prohibition

One objection is that the suggested prohibition would not be needed once the weapons had been destroyed. However, such a prohibition would nevertheless be important because of the fact that the main bottleneck in obtaining a chemical warfare capability depends on the difficulty in the preparation and training of the armed forces in the use of chemical weapons rather than in the acquisition of the chemical weapons themselves.

It has also been said that a prohibition on preparations to use chemical weapons would not be possible to verify, and accordingly could not be included in the scope. However, it is not the question of verification in its more limited sense which is of primary importance, but the possibility to invoke the whole clarification and complaints procedure under the convention. This would not be possible, if the issue was not covered in the scope. With regard to the confidence building character of the suggested prohibition the early links of the complaints procedure would be the most important. Verification by challenge should occur only as a last resort, when reasons therefor occur to any party.

Other arguments against the proposal have dwelt upon the difficulties to decide more precisely which preparations should be prohibited. This is true to some extent. When the Swedish delegation made its suggestions in CRP.29 it seemed probable that a ban on use of chemical weapons would not be included in the convention. If this should be the case there would perhaps be a need of specifying which preparations should be prohibited. Today however the delegation finds it highly probable that a ban on use will be included. As mentioned above, it would be logical to include also a ban on preparations which, if observed, would strengthen the regime of the convention and generally serve as a confidence building measure. The actual prohibition could be easily expressed in the scope, e.g. by "prohibiting preparations to use chemical weapons".

Proposal

In order to have our views, as presented above, on the prohibition of preparations for use adequately covered, the Swedish delegation proposes that the formulations presented in the annex to this Working Paper be added to CD/416 or the appropriate ensuing report on the work of the Working Group on Chemical Weapons.

Annex

Additions to CD/416, Annex I, suggested by the delegation of Sweden

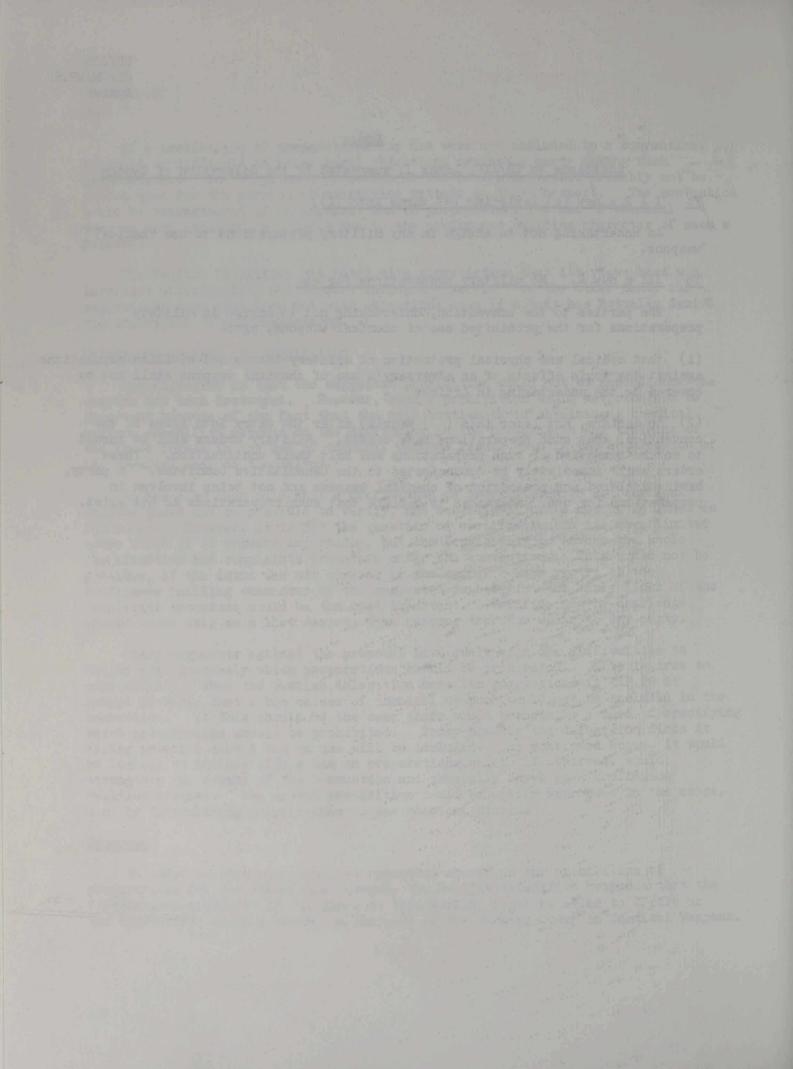
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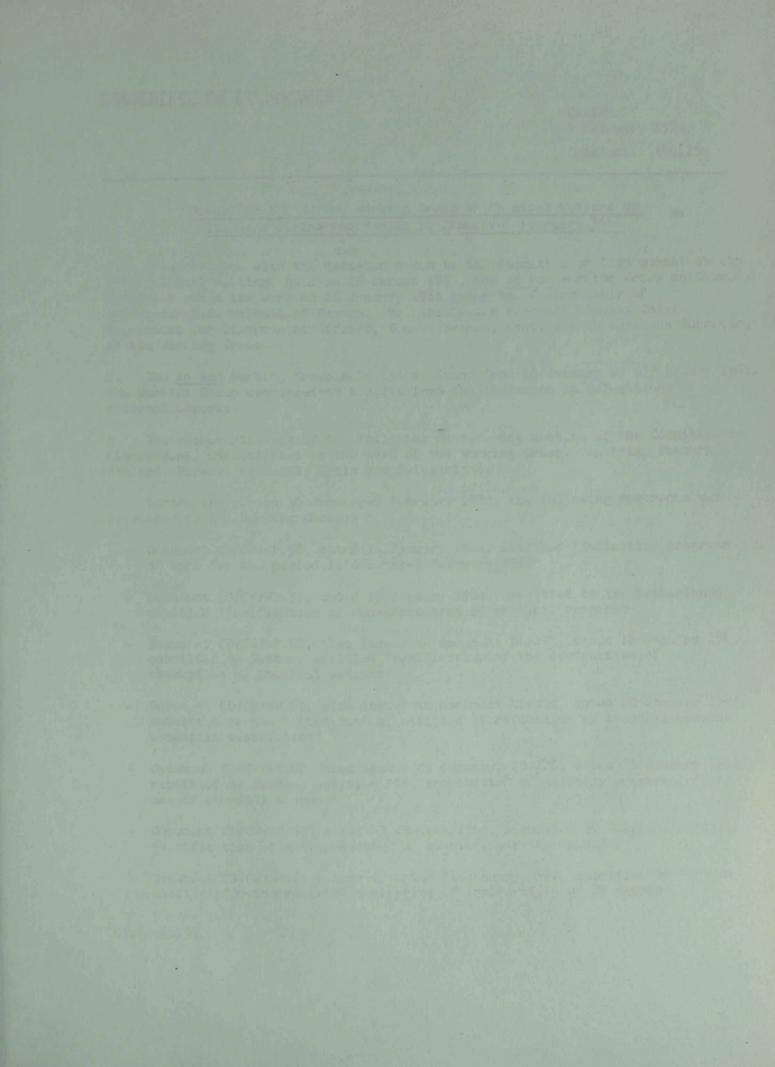
An undertaking not to engage in any military preparations to use chemical weapons.

To III a new A. No military preparations for use

The parties to the convention, undertaking not to engage in military preparations for the prohibited use of chemical weapons, agree

- (1) that medical and physical protection of military forces and civilian populations against the toxic effects of an adversary's use of chemical weapons shall not be covered by the undertaking in Article .
- (2) to declare, not later than () year(s) after the entry into force of the convention, that such preparations have ceased. Military orders ahll be issued to ensure cessation of such preparations and halt their continuation. These orders shall immediately be communicated to the Consultative Committee. A party, having declared non-possession of chemical weapons and not being involved in preparations for use, undertakes to declare that such preparations do not exist.







CD/429 7 Fübruary 1984 Original: ENGLISH

Report of the Ad Hoe Working Group on Chemical Weapons on its work during the period 16 January-6 February 1984

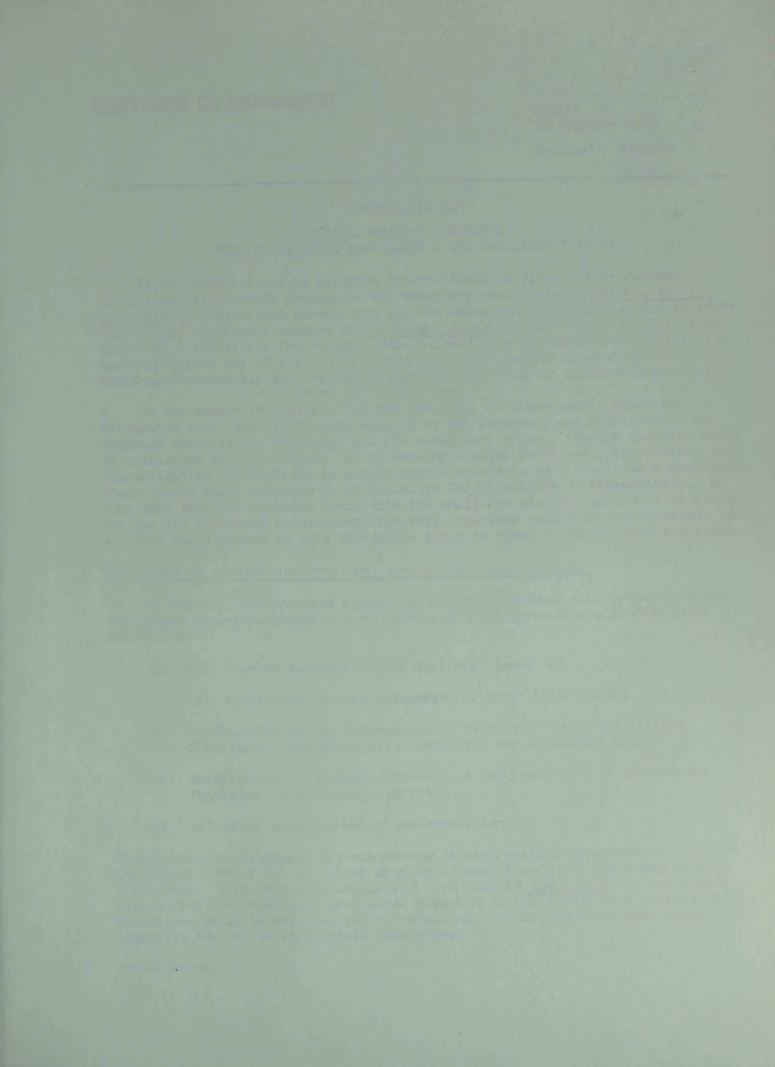
- 1. In accordance with the decision taken by the Committee on Disarmament at its 237th plenary meeting, held on 26 August 1983, the Ad Roc Working Group on Chemical Weapons resumed its work on 16 January 1984 under the Chairmanship of Ambassador D.S. McPhail of Canada. Mr. Abdelkader Bensmail, Deputy Chief, Department for Disarmament Affairs, Geneva Branch, continued to serve as Secretary of the Working Group.
 - 2. The Ad Hoc Working Group held its meetings from 16 January to 6 February 1984. The Working Group continued to benefit from the inclusion in delegations of national experts.
 - The representatives of the following States, not members of the Committee on Disarmament, participated in the work of the Working Group: Austria, Denmark, Finland, Norway, Portugal, Spain and Switzerland.
 - 4. During the period 16 January-6 Pebruary: 1984, the following documents were presented to the Working Group: (6.)
 - Document CD/CW/WP.58, dated 18 January 1984, entitled "Indicative programme of work for the period 16 January-3 February 1984"
 - Document CD/CW/WP.59, dated 18 January 1984, submitted by The Netherlands, entitled "Verification of non-production of chemical weapons"
 - Document CD/CW/NP.60, "ilso issued as document CD/425, dated 18 January 1984, submitted by Sweden, entitled "Verification of the destruction of stockpiles of chemical weapons"
 - Document CD/CW/WP.61, also issued as document CD/424, dated 20 January 1984, submitted by the United States, entitled "Verification of chemical weapons stockpile destruction"
- Document CD/CW/WP.62, also issued as document: CD/426, dated 23 January 1984, submitted by Sweden, entitled "The prohibition of military preparations for use of chemical weapons"
 - Document CD/CM/WP.63, dated 27 January 1984, submitted by Balgium, entitled "Verification of non-production of chemical warfare agents"
 - Document CD/CW/WP.64 + Corr.1, dated 31 January 1984, submitted by Finland, entitled "On instrumental monitoring of incineration of CW agents"

- Document CD/CW/WP.65, dated 31 January 1984, submitted by France, entitled "Verification of non-production of chemical weapons"
- Document CD/CW/CRP.88, dated 25 January 1984, submitted by Canada, entitled "Precursor and key-precursor"
- Document CD/CW/CRP.89, */dated 27 January 1984, submitted by Canada, entitled "Small-scale production facility - for protective purposes or for all permitted purposes"
- Document CD/CW/CRP.90, dated 26 January 1984, submitted by the Federal Republic of Germany, entitled "Concerning chemicals containing the methyl-phosphorus bond"
- 5. The main task of the Working Group during this period was to seek progress on outstanding issues. To this effect, the four Contact Groups set up in 1983 continued their work as follows:
 - Contact Group A (Existing stockpiles of chemical weapons)
 Co-ordinator: Col. J. Cialowicz, Poland
 - Contact Group B (Compliance and verification issues)
 Co-ordinator: Mr. S. Duarte, Brazil
 - Contact Group C (Prohibition of use of chemical weapons)
 Co-ordinator: Mr. R.J. Akkerman, The Netherlands
 - Contact Group D (Definitions)
 Co-ordinator: Dr. J. Lundin, Sweden
- 6. Some clarification of issues was achieved in Groups A and D; and the positions of delegations remained essentially unchanged from those recorded in CD/416.
- 7. On the basis of the results of its meetings and informal consultations conducted during this period, the Ad Hoc Working Group recommends to the Conference on Disarmament:
- (a) that negotiation of a Convention proceed with a view to its final elaboration at the earliest possible date, in accordance with UNGA resolution 38/187/B;
- (b) that the Ad Hoc Working Group */ on Chemical Weapons be re-established */ as soon as possible and with every intent, not later than the end of the second week of the Conference;

^{*/} The Working Group recommends that the Conference consider altering the name of the subsidiary body, in accordance with rule 23 of the rules of procedure, without prejudice to subparagraph 7 (b) of this report.

- (c) that in discharging its responsibility to conduct as a priority task the negotiations on a multilateral convention on the complete and effective prohibition of the development, production and stockylling of chemical weapons and on their destruction, and to ensure the preparation of the convention, the Conference on Disarmament adopt the decision to re-establish, */ in accordance with rules of procedure of the Conference on Disarmament, for the duration of its 1984 session, the Ad Hoc Working Group */ of the Conference to start the full and complete process of negotiations, developing and working out the convention, except for its final drafting, taking into account all existing proposals and drafts as well as future initiatives with a view to give the Conference a possibility to achieve an agreement as soon as possible. This agreement, if possible, or a Report on the progress of the negotiations, should be recorded in the report which the Ad Hoc Working Group */ will submit to the Conference at the end of the second part of its 1984 session;
- (d) that the Conference while re-establishing the $\underline{\text{Ad Hoc}}$ Working Group $\underline{*}/$ on Chemical Weapons appoint its tairman.

^{*/} Ibid.





CD/431 10 February 1984 Original: ENGLISH

UNITED KINGDOM

CHEMICAL WEAPONS CONVENTION: VERIFICATION AND COMPLIANCE - THE CHALLENGE ELEMENT

- 1. To be effective and to maintain international confidence the proposed Convention will include procedures for mandatory routine international on-site inspection. However, to ensure that the Convention is properly observed in every respect, an additional element of challenge inspection is essential. The latter cannot be a substitute for routine international on-site inspection. But it can be an effective way of dealing with instances of suspected non-compliance which would not necessarily be revealed by regular inspection of declared facilities.
 - 2. At the summer 1983 session of the Committee on Disarmament, valuable discussion took place in Contact Group B on the structure and functions of the proposed Consultative Committee and its subsidiary organs; on the specific issue of initiation of a challenge; on an ensuing request for on-site inspection; and the obligation of countries to accept such inspections as a result of a challenge. These issues were addressed in CD Documents CRP/87 and CRP/73 respectively. We hope that this paper, which deals with the challenge element, will help to clarify further the essential requirements for this important aspect of verification, thus enabling negotiations on this particular issue to reach a satisfactory conclusion.

The mandatory routine international on-site inspection regime

- 3. In summary, the proposed regime for mandatory routine international on-site inspection to ensure adequate verification of a CW Convention will fall into four parts:
 - (i) (a) regular verification of declared stocks and
 - (b) continuous on-site inspection of their destruction;
 - (ii) verification of the destruction of CW manufacturing and filling facilities, through on-site inspection and monitoring means;
 - (iii) verification of permitted facilities for production of super-toxic chemicals for protective purposes;
 - (iv) effective verification of non-production.

These requirements should be accomplished through routine international on-site inspection carried out by a team of regular inspecting teams following agreed procedures. This procedure should take into account internalia the experience gained from the inspection procedures conducted by the IAEA. Such inspection procedures would be supplemented by continuous and comprehensive monitoring involving the use of appropriate instruments.

The purpose of challenge inspection

- 4. Without generating political controversy, "routine" inspection of the sort just discussed should give a high degree of confidence that the Convention is being observed. However, because this category of inspection would be confined to declared sites and facilities, suspicions about possible or potential non-compliance with the Convention could still arise. To remove the grounds for any such suspicions would be the primary task of the challenge inspection regime. Separate and different from all the routine inspection procedures, and applying to all aspects of the Convention and irrespective of whether or not a site was declared, this regime would therefore:
 - (i) deter evasion of obligations under the Convention by providing a means of uncovering and drawing attention to breaches of the Convention;
 - (ii) provide a means of clarifying ambiguous situations, settling disputes and, on the assumption that allegations of evasion proved unfounded, restoring confidence;
 - (iii) provide advance notice of possible breaches of the Convention, thus enabling States parties to take necessary action to ascertain the facts.
- Given the role of the routine inspection regime, and provision in the Convention for States Parties to consult and co-operate amongst themselves, challenge inspection would only be requested in the event of a suspicion of a breach of the Convention, either at a declared facility or location which "routine" inspection had not revealed or at a non-declared facility or location for which the challenged country had not accounted in the course of co-operation and consultation.
- 6. The detailed arrangements for challenge inspection would fall under five main headings:
 - (i) the machinery for carrying out challenge inspection;
 - (ii) the criteria for ensuring that the inspections are objective and impartial;
 - (iii) the basis for requesting challenge inspection;
 - (iv) the rights and obligations of a challenged State;
 - (v) the action to be taken in the case of refusal.

Machinery

- 7. It has emerged from Group B discussions that there should be a Consultative Committee of States Parties, assisted in the discharge of its functions, including routine inspection and challenge inspection, by an Executive Council responsible for fact finding. To ensure the handling of cases of suspected non-compliance with the speed that will be necessary, it might be appropriate to provide in the Convention the means for the establishment of a separate fact-finding panel.
- 8. A State party which had reason to believe that another State party might not be in compliance with the provisions of the Convention or that an ambiguous situation had arisen, neither of which could be resolved through normal inspection in the case

of a declared facility, might seek clarification of the position through the appropriate organ of the Consultative Committee, by requesting the authorization of an on-site inspection and by submitting pertinent information. The Consultative Committee should seek within seven days, or such shorter period as it may decide, of receipt of such a request the necessary clarification from the State party in question. If no acceptable clarification is received within seven days, or such shorter period as the Consultative Committee may decide, of the request, then the Executive Council or fact-finding panel (if one is established) on behalf of the Consultative Committee should within a further seven days, or such shorter period as the Consultative Committee may decide, set in train an investigation involving prompt ad hoc on-site inspection, in order to clarify the position. A report on its work, whether interim or final, should be transmitted to the Consultative Committee within three months of the date of the start of the investigation. There should be provision for rapid decisions by voting in the Consultative Committee and its subsidiary organs.

9. If the State party's concerns about compliance have not been resolved within the three months referred to above it may request the Chairman of the Committee to convene a special meeting of the Consultative Committee to consider the outstanding issues of compliance.

Criteria for effective verification

- 10. As the Chairman of the Contact Group C has said in the context of discussions about a ban on the use of chemical weapons, reference to criteria for effective verification should be included in the Convention. He has put forward the following criteria for the verification of non-use of chemical weapons, some of which are generally applicable:
 - necessary) within such time-lapse from the reported event as would theoretically permit the identification of a sample taken;
 - (ii) objectiveness; undisputed scientific quality of inspectors possibly assisted by experts from specialized international organizations such as WHO:
 - (iii) availability of information on occurrence of the chemicals under consideration in the region under consideration that can be explained to be of a non-hostile nature; co-operation with the national authorities of the parties to the conflict:
 - (iv) establishment of an indisputably impartial "chain of custody" with respect to a sample from the moment it is being taken to the moment of its scientific analysis;
 - (v) introduction of the result of the investigation in the relevant permanent body established by the Treaty for consultation.
- 11. These proposals raise a number of questions when applied to challenge inspection for all aspects of the Convention. There is a need for adequate urgency in carrying out an inspection. Time limits should be as short as possible, if international

confidence in the Convention is to be maintained. Hence the detailed proposals made in paragraph 8 above. They should provide an acceptable basis for this aspect of the Convention, although further details will still need to be resolved by further work (e.g. any necessary arrangements for objection to a particular inspector; difficulties about ensuring the safety of inspectors in zones of combat; and definition of the area of the site to be investigated).

Basis for Inspection Requests

12. Because of the wide range of different incidents which may concern the Consultative Committee and its subsidiary organs in the event of a challenge, it would be premature to specify in advance precise guidelines for determining whether a request for a challenge inspection was supported by adequate information. Each request for a challenge inspection would obviously need to be judged against the particular circumstances at the time. However, it is important that the relevant provisions of the Convention should reflect clearly that any request for challenge inspection should be considered where reasonable grounds for concern appear to exist. If an application for challenge on-site inspection were considered to be admissible, it would be necessary to follow up such a decision in whatever ways were most appropriate including the conduct of on-site inspection.

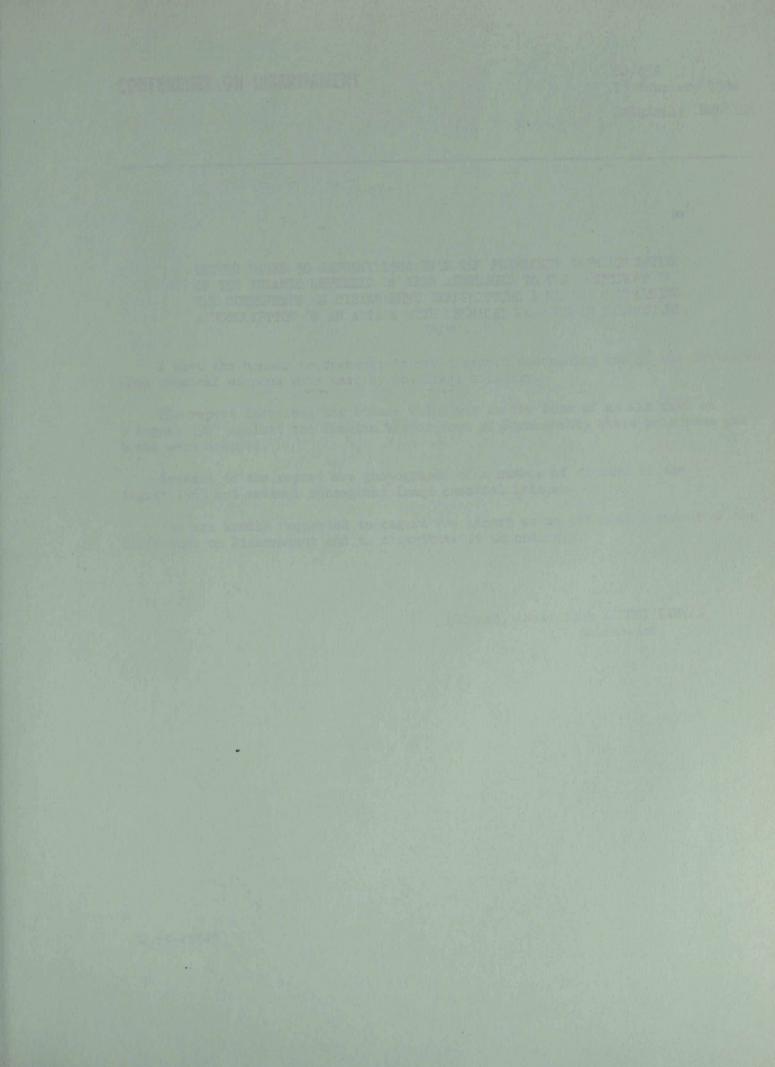
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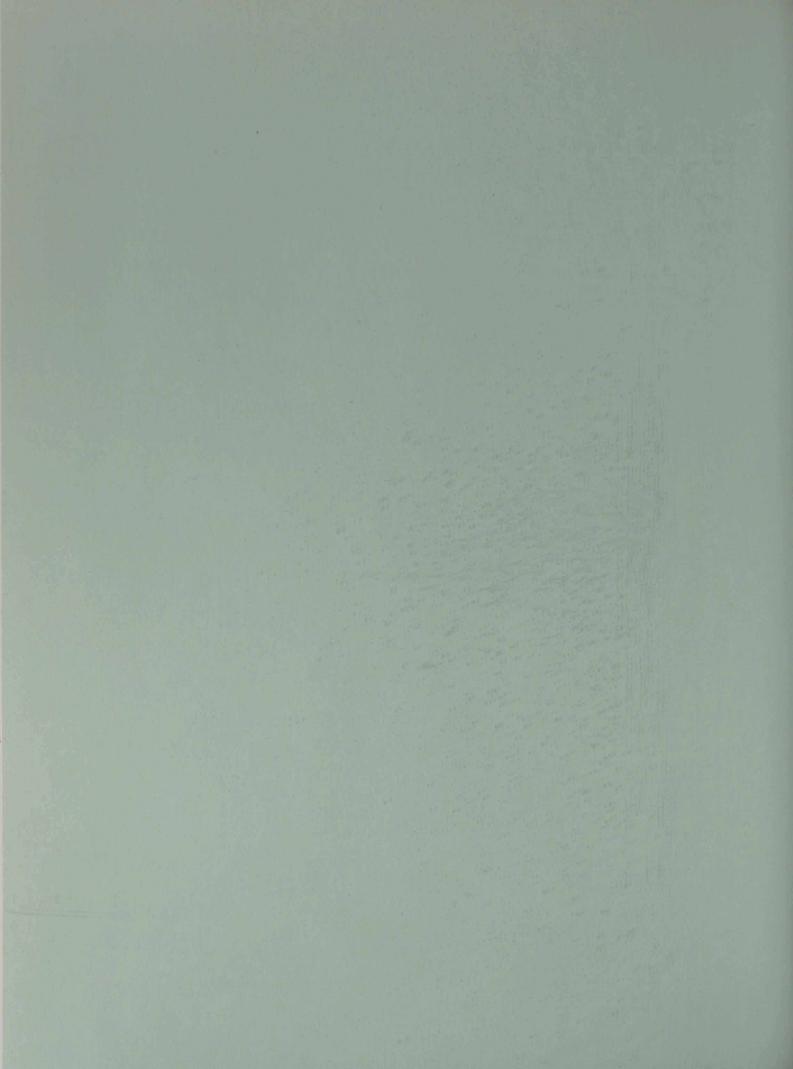
13. Every State party should be under a stringent obligation to accept challenge on-site inspection. However, a State party may be reluctant to undertake the obligation to accept the principle of challenge inspection without any means of refusing it in exceptional circumstances. It is therefore vital to ensure that the scope for refusing an inspection is as small as possible and that any refusal will be a most unusual event. Refusal of a challenge inspection, for which reasonable evidence has been presented, and by extension repeated refusals, would be a serious action and call into doubt the purposes of the Convention. It would lead to follow up action as set out in paragraph 14 below and in certain circumstances would amount to prima facie evidence of a breach of the Convention.

Follow-up to refusals

- 14. The purpose of follow-up action would be to deter States parties from refusing a challenge inspection. A refusal to accept a challenge on-site inspection would, as a first step, automatically require the challenged party to propose within seven days of such a refusal, some alternative on-site inspection measures which could establish beyond reasonable doubt whether or not a case of non-compliance had occurred. If a State party were seen to be in breach of the Convention by refusing to propose alternative and acceptable measures, then the following actions could be taken:
 - (i) such a refusal could lead to a more detailed presentation of information by the country making the request for a challenge inspection to the subsidiary organs conducting the investigation, and justify a renewed request for an inspection on that basis;
 - (ii) in the case of a further refusal, there would then be immediate reference to the full Consultative Committee;

- (iii) if agreement still could not be reached within the Consultative Committee, the matter could be referred to the United Nations Security Council (notwithstanding the right of any State to refer to the Security Council at any time);
 - (iv) in the last resort, withdrawal from the Convention, for which provision would be needed in its text.
- 15. This paper has dealt with the modalities for initiating a challenge on-site inspection. States parties to the Convention will also need to reach agreement on the arrangements for handling the outcome of any such inspection.





CD/432 13 February 1984 Original: ENGLISH

IETTER DATED 30 JANUARY 1984 FROM THE PERMANENT REPRESENTATIVE OF THE ISLAMIC REPUBLIC OF IRAN ADDRESSED TO THE PRESIDENT OF THE CONFERENCE ON DISARMAMENT TRANSMITTING A REPORT CONTAINING A DESCRIPTION OF AN ATTACK WITH CHEMICAL WEAPONS IN PIRANSHAHR, IRAN

I have the honour to transmit to you a report describing one of the instances when chemical weapons were used by the Iraqi military.

The report describes the attack which was in the form of an air raid on 9 August 1983 against the Iranian border town of Piranshahr, where poisonous gas bombs were dropped.

Annexed to the report are photographs of a number of victims of the August 1963 and several subsequent Iraqi chemical attacks.

You are kindly requested to regard the report as an official document of the Conference on Disarmament and to distribute it accordingly.

(Signed) Nasrollah KAZEMI KAMYAB Ambassador LETHAL EFFECTS OF CHEMICAL WEAPONS DEPLOYED BY THE INHUMAN REGIME OF IRAQ IN PIRANSHAHR

The war is entering the fourth year since its inception and the propaganda machinery of the world oppressors blares forth tall tales of Saddam's dedication to peace, yet the Baathist regime of Iraq is resorting to more heinous war crimes all over the fronts.

SMORE SWITTERS

Responsibility for crimes perpetrated against the Muslim people of Iran as well as Iraq, in flagrant violation of all humanitarian and international principles, undoubtedly rests upon the same international human rights organizations which have come out so brazenly in support of the Iraqi crimes by having recourse to a conspiracy of silence.

The deployment of chemical poison gases by the Iraqi regime in air raids against the border area of Piranshahr on 9 August 1983, exemplified the brutality of that regime. By this attack Iraq violated the 1925 Geneva Protocol, which prohibits the use in war of asphyxiating poisonous or other gases.

By delivering toxic chemical agents, the Iraqi regime unleashed the lethal effects of the chemicals upon the area, seriously injuring over 50 military personnel as well as civilian people in Piranshahr.

This atrocity, like so many other calamities inflicted upon the Iran Muslims by the Iraqi invaders, evoked no response from the international human rights organizations other than absolute silence.

Details of the Attack

According to the victims who escaped alive and are now being treated for their injuries, the attack came at 7 a.m., 9 August 1983, six kilometres to the west of Piranchahr-Revanduz Highway.

According to eye witnesses an Iraqi plane flying very low and noiselessly over the positions of the Islamic combatants, targeted the infantry troops on the road and left the area after producing a terrible blast.

The Effects of the Blast

The troops in the area heard an explosion like that of an artillery shell, along with the explosion of the dropped bomb. They also saw a dark pillar of rising smoke. Several small groups of soldiers hit by the shock waves, dropped. The rest of the troops, unmindful of the likely dangers of a second strike by the Iraqi plane, ran to the rescue of their wounded fellow-combatants.

·A pungent and nauseous stench of gas enveloped a large area around the explosion and a layer of dark powdery dust settled on all equipment in the area.

While the casualties were being carried to the hospital all the combatants who were around when the explosion occurred felt a stinging pain on their legs, backs, testicles and eyes. The pain obviously signalled the initial symptoms of contact with a noxious compound released by the explosion. The eyes of those affected became glazed, irritated and then gradually lost vision.

The injured were transferred first to hospitals in Piranshahr and Ogumieh; and after receiving primary medical care they were dispatched to Teheran to be given specialized treatment.

DAMAGING PROPERTIES OF THE TOXIC AGENTS DELIVERED BY THE IRAQI CHEMICAL WEAPONS

A specialist in dermatology in Teheran provided the following data in connection with the cases of victims of the Iraqi chemical bombs.

The victims, he said, had been poisoned by the toxic agents which the bomb had diffused over the area in various forms of gas, liquid and dust.

The analysis conducted in the chemical and pharmaceutical laboratories of the Teheran University School of Pharmacy revealed that the bomb delivered by the Iraqis had released nitrogenous compounds usually known as "mustard gas".

The noxious effects, the specialist explained, appear foremost on such sensitive tissues and organs as mouth, thighs, testicles and genitals. Among the first symptoms of contamination, he said, are irritation in the eyes and blurred vision. Also being heavier than air the compounds tend to spread low on the ground.

On the degree of toxicity of the chemicals, it was noted that in medicine controlled administration of nitrogenous compounds were employed to destroy cancerous cells. Whereas on direct contact with the chemicals, the mucous tissues of the mouth, nose and respiratory tract receive serious damage.

Eye Witness Accounts by some Victims

Mr. A. Asadi, one of the victims, complaining of sores on his thighs and testis and anxious to return to the battlefront after the completion of his treatment, said hat unlike other bombs no shrapnel or fragments flew out of this particular bomb. Another victim Mr. H. Mohammad Zadah, a member of the army personnel, suffering from inflamed eyes, said that direct light severely irritated his eyes.

Ali Ja'fari, a member of the mobilization forces (BASIJ), who had suffered most intense injuries, was in severe pain, and his physicians believed that though his treatment would be completed in a month's time most probably he would experience relapses, and the injuries of his eyes and body would re-emerge.

FOREIGN AND DOMESTIC REPORTS OF VISITS TO THE INJURED

A group of foreign and domestic reporters, photographers and film makers visited, on 24 August 1983, the victims of the chemical attack who are under treatment in a Teheran hospital. The reporters and photographers having interviewed the patients and their physicians recorded their impressions of a fraction of human pain and anguish inflicted upon innocent victims through savage assaults of the Iraqi regime.

During this visit, the reporters of the foreign media and representatives of the news agencies observed the physical damage and bodily impairments of the victims caused by the poisonous agents released by the Iraqi chemical bomb.

The reporters were shocked and grieved to find that after 15 days of treatment the victims were still in pain from still-festering wounds.



CONFERENCE ON DISARMAMENT

CD/435 20 February 1984 ENGLISH Original: RUSSIAN

IMPROVED EFFECTIVENESS OF THE WORK OF THE CONFERENCE ON DISARMAMENT IN THE FIELD OF THE PROHIBITION OF CHEMICAL WEAPONS

(Working paper submitted by a group of socialist countries)

The socialist countries regard the prohibition of chemical weapons as one of the most important tasks in the field of the limitation of the arms race and disarmament. For many years they have perservered in making consistent efforts towards the elaboration of an international convention which would fully and completely prohibit this type of weapons of mass destruction and have submitted specific proposals designed to ensure the earliest attainment of that goal.

The recent proposal by the Warsaw Treaty Member States to the States Members of NATO to the effect that Europe should be free of chemical weapons is fresh evidence of the socialist countries' interest in the prohibition of chemical weapons.

The elimination of the chemical threat to the States and peoples of Europe would substantially reduce the risk of chemical warfare on the continent and, consequently, throughout the world and would make a start on the reduction of arsenals of chemical weapons. At the same time, the implementation of such partial measures of a regional nature in connection with the limitation, reduction and elimination of chemical means would assist efforts being undertaken at a global level - the speedy conclusion of a convention on the prohibition of chemical weapons, which remains the ultimate aim of the Warsaw Treaty Member States.

The efforts of the socialist countries aimed at activating the work of United Nations in the field of the prohibition of chemical weapons are well known. It was on their initiative that the thirty-eighth session of the General Assembly approved, in particular, resolution 38/187 A, urging the Conference on Disarmament to intensify negotiations so as to achieve accord on a chemical weapons convention at the earliest possible date and, for this purpose, to proceed immediately to drafting such a convention for submission to the General Assembly at its thirty-ninth session.

Guided by the position of principle described on matters relating to the prohibition of chemical weapons, the socialist countries express the hope that the 1984 session of the Conference on Disarmament will be used from the outset by all participating States for the purpose of the earliest completion of work on the preparation of an appropriate convention on the prohibition of the development, production and stockpiling of chemical weapons and their destruction.

The socialist countries consider that efficient progress along that path would be assisted by the following:

- 1. Bearing in mind that considerable preparatory work has been done over the years within the Committee on Disarmament and that, in the course of that work, the considerations of a large number of States on the whole set of issues relating to a future convention have been stated and considered in detail, it is necessary to embark without delay upon drafting the text of the convention in accordance with the newly adopted mandate of the subsidiary body of the Conference, providing, in particular, for starting the full and complete process of negotiations and developing and working out a convention.
- 2. The full and complete process of negotiations on the prohibition of chemical weapons should cover all matters pertaining to the future convention and should be organized in such a way that the elaboration of the convention should proceed along two parallel paths: the drafting of provisions on which agreement has been reached and the continuing search for mutually acceptable formulations of those provisions in respect of which divergencies remain between the positions of the negotiating parties.
- The object of negotiations on the prohibition of chemical weapons at the Conference on Disarmament during the current year should be to submit to the thirty-ninth session of the General Assembly, if possible, either an agreed draft convention or of a draft which, side by side with agreed and formulated provisions, would also reflect formulations proposed by the negotiating parties for provisions of the convention on which agreement has not been reached.
- 4. Negotiations on the prohibition of chemical weapons within the <u>ad hoc</u> subsidiary body should start as early as possible and should proceed without being limited by the time frame of the work of the Conference, i.e. the possibility should be envisaged of continuing them, if necessary, after the spring and summer parts of the Conference's session.

- on disarmament matters, the advanced stage of negotiations on the prohibition of chemical weapons and the importance and great attention attached by the world community to the prohibition of this type of weapons, the appropriate subsidiary body of the Conference should be designated the Ad Hoc Committee on the Prohibition of Chemical Weapons. Within the framework of this Committee, it is advisable to set up separate working groups which would cover the full range of provisions of the future convention. Temporary subgroups, groups of "friends of the Chairman", etc., could, of course, be set up for the purpose of more detailed elaboration of specific provisions or formulations. The principle of balanced representation of various groups should be observed in the allocation of posts of chairmen of all subsidiary bodies of the Committee.
- 6. The establishment of the following working groups of the Committee could be envisaged:

On questions of the purposes and scope of the convention (definitions and criteria; basic undertakings formula; non-production, permitted activities, non-use of chemical weapons, relevant monitoring measures; preamble and final provisions, etc.);

On questions of the destruction of stockpiles of chemical weapons and the destruction of production facilities (first declaration, intermediate measures, destruction and monitoring);

On questions of compliance with the convention (international verification on request, national implementation measures, activities of consultative and preparatory committees, consultations and co-operation, consideration of complaints, etc.):

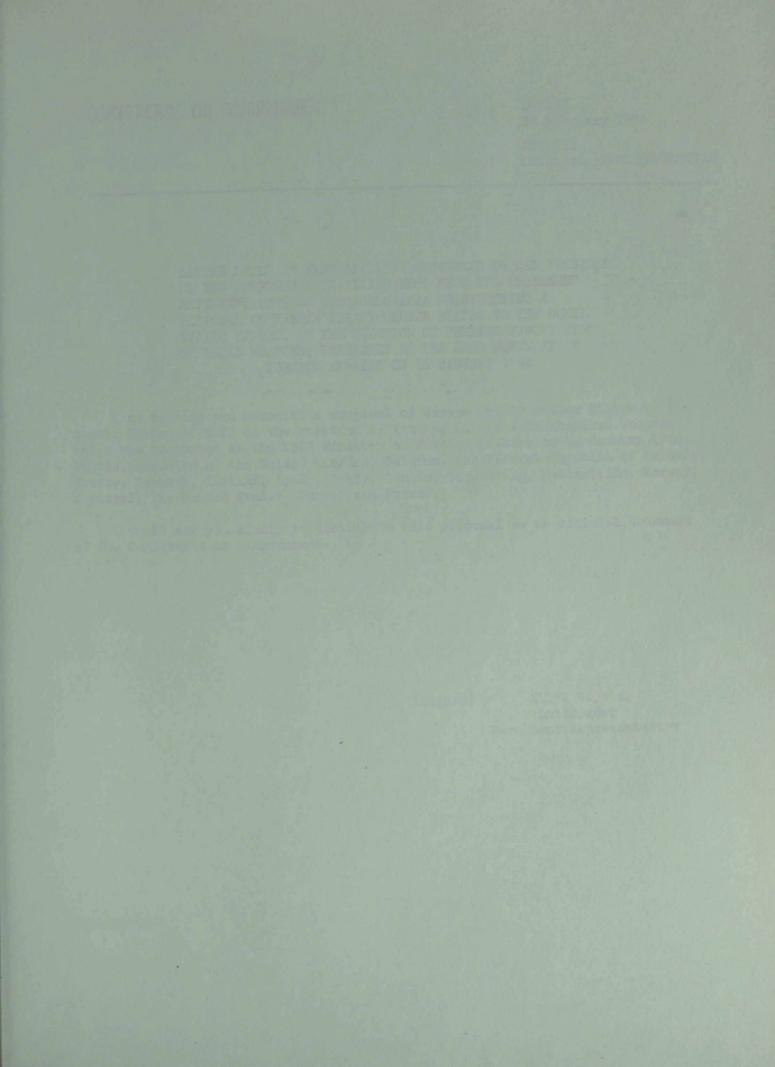
On questions of the structure of the convention (position of articles, their sequence, annexes, agreed interpretations, etc.).

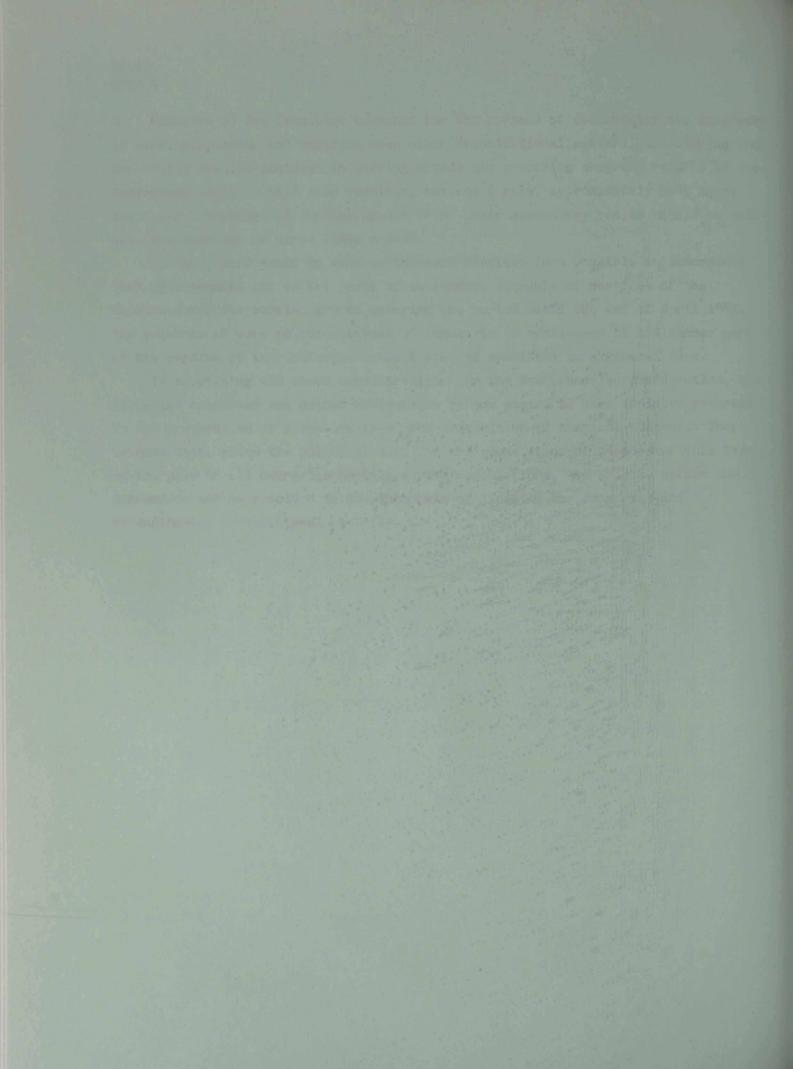
7. The order in which separate provisions of the future convention are elaborated in the working group should take account of their importance and interrelationship and of the logical consistency and structure of the convention. It should be laid down at the very start of the Committee's work. In that connection, attention should be given, of course, to the practical possibilities of participation in that process by delegations of States members of the Conference on Disarmament.

8. Meetings of the Committee convened for the purpose of determining the programme of work, discussing and deciding upon other organizational matters, considering and evaluating results achieved in working groups and preparing progress reports to the Conference could be held when required, but, as a rule, approximately once every two weeks. Meetings of working groups or of their subsidiary bodies should be held not less than two or three times a week.

All this work could be done in the most flexible form possible in accordance with requirements and on the basis of an advance schedule of meetings of the Committee and its working groups covering the period until the end of April 1984. The sequence of work on formulations of issues to be considered at the summer part of the session of the Conference should also be specified in a general form.

In submitting the above considerations for the Conference's consideration, the socialist countries are guided exclusively by the desire to make decisive progress in the preparation of a convention on the prohibition of chemical weapons. They believe that, given the political will for the prohibition of weapons of this type on the part of all countries parties to the negotiations, the problem before the Conference can be resolved in the interests of limiting the arms race and strengthening international security.





CONFERENCE ON DISARMAMENT

CD/437
23 February 1984
ENGLISH
Original: ENGLISH/RUSSIAN

LETTER DATED 23 FEBRUARY 1984 ADDRESSED TO THE PRESIDENT OF THE CONFERENCE ON DISARMAMENT FROM THE PERMANENT REPRESENTATIVE OF CZECHOSLOVAKIA TRANSMITTING A PROPOSAL OF WARSAW TREATY MEMBER STATES TO THE MEMBER STATES OF NATO ON THE QUESTION OF FREEING EUROPE FROM CHEMICAL WEAPONS, PRESENTED AT THE USSR MINISTRY OF FOREIGN AFFAIRS ON 10 JANUARY 1984

I am sending you herewith a proposal of Warsaw Treaty member States to the member States of NATO on the question of freeing Europe from chemical weapons which was presented at the USSR Ministry of Foreign Affairs on 10 January 1984, to the embassies of the United Kingdom, Belgium, the Federal Republic of Germany, Greece, Denmark, Iceland, Spain, Italy, Canada, Luxembourg, Netherlands, Norway, Portugal, the United States, Turkey and France.

I would ask you kindly to distribute this proposal as an official document of the Conference on Disarmament.

(Signed)

Milos Vejvoda Ambassador Permanent Representative

THE QUESTION OF FREEING EUROPE EROM CHEMICAL WEAPONS

By agreement among the Warsaw Treaty Member States, a memorandum containing a "Proposal of Warsaw Treaty Member States to the member States of NATO on the question of freeing Europe from nuclear weapons" was presented on 10 January 1984 at the USSR Ministry of Foreign Affairs to the embassies of the United Kingdom, Belgium, the Federal Republic of Germany, Greece, Denmark, Iceland, Spain, Italy, Canada, Luxembourg, Netherlands, Norway, Portugal, the United States of America, Turkey and France.

The Warsaw Treaty Member States proposed to the NATO member States the convening in 1984 of a meeting of plenipotentiary representatives for a preliminary exchange of views on the question of freeing Europe from chemical weapons.

Elimination of the chemical threat to the States and peoples of Europe would make possible a substantial reduction in the risk of chemical war on the Continent and, consequently, throughout the world and the start of a reduction of arsenals of chemical weapons, and would help to lessen the threat of war and strengthen mutual trust.

The implementation of such partial measures of a regional character would further the efforts being made on a world scale to accelerate the conclusion of a convention on the prohibition of chemical weapons, which remains the ultimate aim of the Warsaw Treaty Member States.

They expect the Governments of the NATO countries to treat the proposal with all due attention and seriousness.

Proposal of the Warsaw Treaty Member States to the Member States of NATO on the Question of Freeing Europe from Chemica Weapons

The Warsaw Treaty Member States consider that the presence of chemical weapons on the densely populated territory of Europe constitutes a great danger to all European States and peoples. The use of toxic substances under European conditions would lead to especially serious consequences for praceful inhabitants and the contamination of large areas. According to some estimates, in the event of a conflict involving the use of chemical weapons the ratio of fatalities among military personnel and civilians might be one in twenty.

The present aggravation of the international situation increases the danger of the use of chemical weapons, particularly in Europe.

The radical elimination of the chemical threat to the States and peoples of Europe and to other regions of the world, can be secured by banning chemical weapons and destroying their stockpiles on a world scale. The achievement of that main goal of the socialist countries is the aim of the concrete, realistic proposals they submit in the Disarmament Committee in Geneva in the course of their persevering and consistent efforts to elaborate an appropriate international convention.

At the same time, prior to the solution of this global task and with a view to facilitating its fulfilment, certain parallel steps can and must be undertaken within the confines of the European continent. That would make possible a substantial reduction of the risk of chemical war in Europe and, consequently, throughout the world and the start of a reduction of arsenals of chemical weapons. Such steps are also urgently necessary in terms of forestalling the possibility of a chemical weapons build-up in Europe and preventing the dangerous cycle of a chemical arms race.

Partial measures of a regional character to limit, reduce and eliminate chemical weapons would concern fewer States than measures of global scope and it would be easier to agree on them and put them into effect. At the same time, such regional measures, by leading to the elimination of an entire type of weapon of mass destruction, would undoubtedly consolidate European security and help to weaken the threat of war, strengthen mutual trust and improve the over-all political climate. Moreover, the implementation of such partial measures would facilitate the efforts being made on a world scale towards the acceleration of the conclusion of a convention on the prohibition of chemical weapons, which remains the ultimate aim of the Warsaw Treaty Member States. It would serve as a stimulus to the adoption of similar measures in other continents as well. The implementation of the idea of freeing Europe from chemical weapons, which would affect the territories of all the Warsaw Treaty Member States, must also provide in full measure for the extension of future measures to the relevant parts of the territory of the NATO member countries.

Taking account of all factors and circumstances, practical measures for the implementation of the initiative of the Warsaw Treaty Member States on the freeing of Europe from chemical weapons should be implemented consecutively, step by step.

The obligations of States with regard to the chemical-weapon-free territory in Europe defined in the agreement might include, for example, the declaration of the presence or absence of chemical weapons in that territory, the prohibition of the deployment of chemical weapons where there are none at present, the freezing of such weapons, the withdrawal or destruction of existing stocks of chemical weapons, and renunciation of their production, acquisition, import or transfer to States within that territory. The obligations assumed must effectively ensure that there are no chemical weapons in the territory defined in the agreement.

The experience acquired in the course of the talks on a comprehensive ban on chemical weapons being conducted in the Committee on Disarmament in Geneva could be of use in the consideration of practical matters connected with the freeing of Europe from chemical weapons. It would, however, seem undesirable to bring in the complex technical questions which are the subject of those talks.

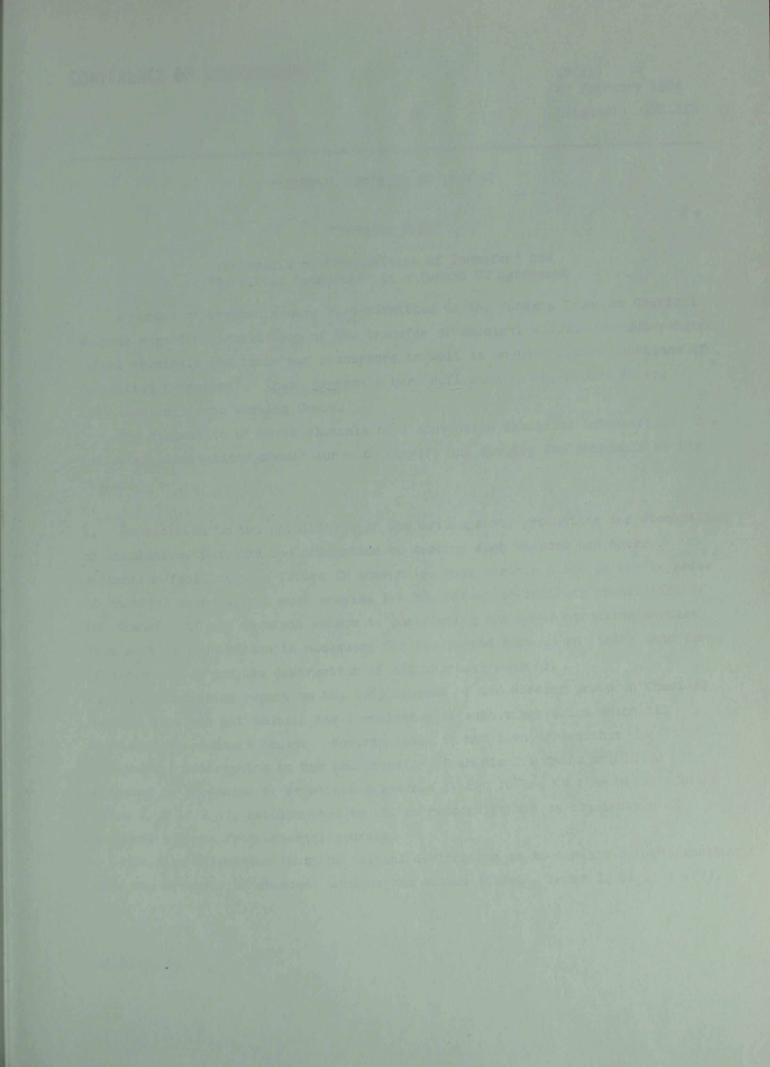
In elaborating an accord on the freeing of Europe from chemical weapons, the States concerned may, as necessary, reach agreement on mutually acceptable, adequate forms of verification which would ensure effective fulfilment of their undertakings by all the parties to the zone-establishing accord.

The status of a chemical-weapons-free zone must be duly respected. Provision should be made for the extension to the States whose territory is covered by such an agreement of appropriate guarantees in accordance with the 1925 Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases and of Bacteriological Methods of Warfare, as well as with other international legal instruments which will be accepted.

The accord in question might take the form either of a document having binding legal force, e.g. an agreement, a treaty or a convention, of an appropriate multilateral declaration or of a number of unilateral declarations. The content of the accord would, of course, be of significance in determining its form. A political declaration would make it possible to avoid some complicated questions of a technical nature.

The Warsaw Treaty Member States consider it advisable to convene in 1984 a meeting of plenipotentiary representatives for the purposes of a preliminary exchange of views with the NATO member countries and other interested European States on the question of freeing Europe from chemical weapons.

At that meeting agreement might be reached on various practical issues, including that of the appropriate forum for future talks on the problem in question.





CD/439 24 February 1984 Original: ENGLISH

FEDERAL REPUBLIC OF GERMANY

Working Paper

Proposals on "Prohibition of Transfer" and "Permitted Transfers" in a future CW agreement

A number of proposals have been submitted to the Working Group on Chemical Weapons regarding prohibition of the transfer of chemical weapons and super-toxic lethal chemicals and their key precursors as well as on the related questions of "permitted transfers". These proposals were reflected in the report on the 1983 session of the Working Group.

The discussion of these elements of a convention should be intensified. The following observations should serve to clarify and develop the proposals so far tabled.

I

- 1. In addition to the prohibition of the development, production and stockpiling of chemical weapons and the obligation to destroy such weapons and their production facilities, a future CW convention must contain a ban on the transfer of chemical weapons. It must provide for the direct or indirect prohibition of the transfer of any chemical weapon to contracting and non-contracting parties. That sort of prohibition is necessary for the period between the entry into force of a convention and the destruction of all chemical weapons.
- 2. The concluding report on the 1983 session of the Working Group on Chemical Weapons does not yet contain any formulation of such a provision which all Working Group members accept. Nevertheless, it has been agreed that the fundamental undertaking to ban the transfer of chemical weapons should be included in the scope of prohibition imposed by the future CW convention (CD/416 Annex I, I A, 2 a), supplemented by the corresponding ban on acquisition of chemical weapons from external sources.

It also stipulated that the initial declaration is to contain a certification that the transfer of chemical weapons has ceased (CD/416, Annex I, II A, 1 a V).

3. The concluding report envisages an exception to the transfer ban permitting the transfer of chemical weapons between States parties by mutual agreement for purposes of elimination (CD/416, Annex I, III C, 1 a).

Such an exception is useful since it allows a State party to have its chemical weapons destroyed in the destruction facility of another party, thereby avoiding the costly construction if its own facility.

II

1. The Working Group on Chemical Weapons has not yet been able to reach a final decision on how to approach the question of the transfer of super-toxic lethal chemicals and their key precursors.

The concluding report envisages the total prohibition of the transfer of such chemicals and their key precursors to non-parties (CD/416, Annex I, III C, 2 a) and a limitation of transfers between parties (CD/416, Annex I, III C, 2 b). This element of a future convention is important and needs to be regulated.

Proposals have been submitted to the Working Group on the basis and scope of the limitations to be undertaken by States parties. These proposals differ both on the question of which chemicals are to be covered by a transfer ban and with regard to the assigned purpose and the quantitative limitation of transfers of such chemicals.

- 2. Any provision prohibiting the transfer of super-toxic lethal chemicals and their key precursors must take account of the following two principles:
 - it must not circumvent the fundamental prohibition of the development, production and stockpiling of chemical weapons, and
 - it must not impose undue restrictions on international trade in chemical products.

These principles have not been adequately respected in all of the proposals for transfer limitations submitted to the Working Group on Chemical Weapons.

3. In its concluding report, the Working Group assumed from the start that only super-toxic lethal chemicals and their key precursors can be subject to a transfer ban and may hence be the object of an exempting provision (CD/416, Annex I, III C, 2 a).

Proposals that prohibition of transfer be extended to other chemicals especially to those which are categorized under the headings "other lethal chemicals" or "other harmful chemicals", should not therefore be pursued. The extension of a transfer ban beyond super-toxic lethal chemicals and their key precursors would inevitably draw in chemical products which play an important role in the civilian sector, thereby leading to the imposition of an undue restriction on international trade in chemical products.

4. Fundamental to the formulation in a CW convention of a transfer ban and a provision on permitted transfers is the question which chemical products should be regarded as key precursors of super-toxic lethal chemicals.

In the view of the Federal Republic of Germany, chemicals should be defined as key precursors only if

- they have a particular significance to the relevant provisions in a CW convention.
- they constitute characteristic chemical compounds at the final technological reaction stage for the production of super-toxic lethal chemicals, and
- they are not used, or are used in minimal quantities, for permitted purposes.

 This definition strictly limits the range of chemicals which might be covered by a transfer ban and a provision on permitted transfers. The chemicals concerned, and those which do not entirely match the definition but whose inclusion as key precursors is unanimously considered to be absolutely essential, should be set forth in a list. To avoid inflexible specifications and to enable subsequent developments to be taken into account, the list would have to be revised periodically.
- 5. A transfer ban should cover only key precursors of super-toxic lethal chemicals which match the above definition. Permitted transfers between States parties should relate to the same key precursors. International trade in chemical products, though, would only remain unaffected if this definition were strictly applied.

So that the range of chemicals subject to the transfer ban can be more precisely defined and limited, it is advisable that a further differentiation be made between protective-purpose transfers of super-toxic lethal chemicals and their key precursors and permitted-purpose transfers, an option envisaged in the concluding report (CD/416, Annex I, III C, 2 b).

In this way super-toxic lethal chemicals and their key precursors which are transferred for protective purposes would be covered by the prohibition of transfers. Since they are not commercially available, such chemicals would in any case only be produced in the military sector and thus under government jurisdiction and on government responsibility. It was proposed in the Working Group that special smallscale facilities be built for the production of these chemicals (CD/416, Annex I, III A. 1b).

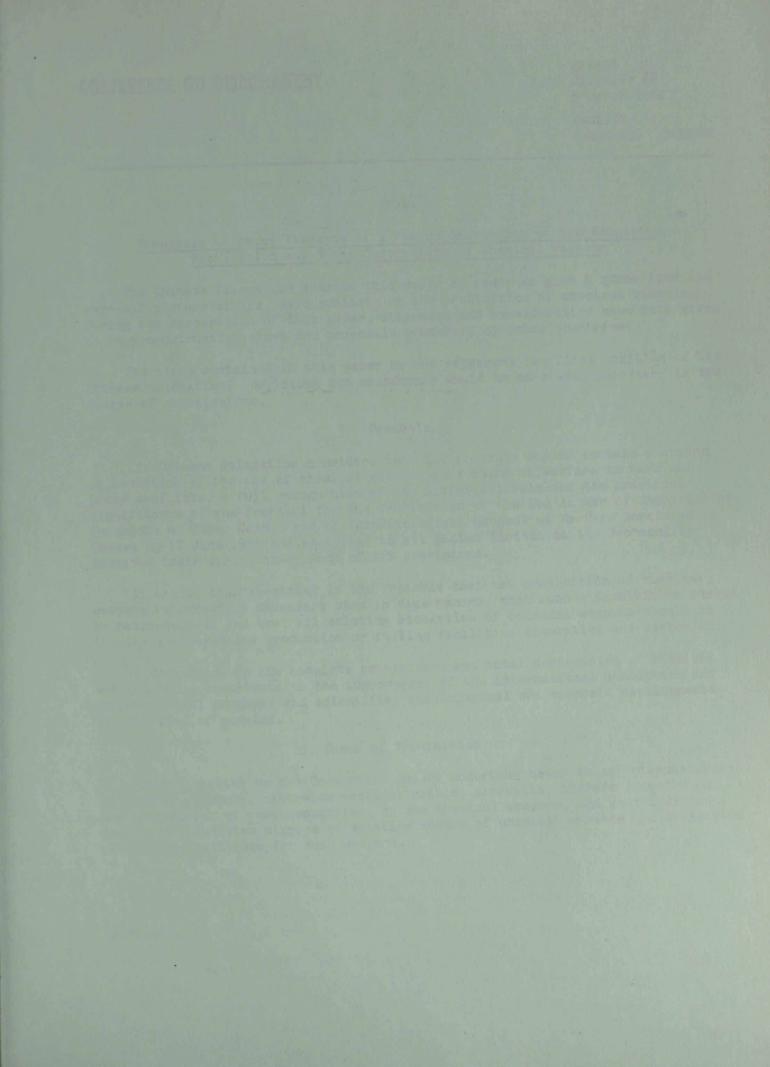
- 6. Permitted transfers of super-toxic lethal chemicals and their key precursors for protective purposes will not be possible in unlimited quantities. A limit is constituted by the view of the Working Group that the production of such chemicals must not exceed one metric ton. It is therefore appropriate to limit transfers to the same quantity. A quantitative transfer limit should not be lower than the permitted production level; since this would be tantamount to discrimination against those States parties which do not themselves produce super-toxic lethal chemicals and their key precursors or which wish to renounce such production.
- Control of permitted transfers of super-toxic lethal chemicals and their key precursors is necessary. Such a transfer to another State party should be communicated to the Consultative Committee or its executive organ, if appropriate in an annual summary report of all transfers, including chemical names, quantities and destinations of the transferred products (CD/416, Annex I, III C, 2 c).

Proposal:

- 1. The CW convention should provide for the comprehensive prohibition of transfers of all chemical weapons as well as all super-toxic lethal chemicals and their key precursors. A list of these key precursors should be included in the convention as an annex. It should contain only chemicals which are not used or have only minimal application in the civilian sector.
- For States parties permitted transfers of chemical weapons should be envisaged for the sole purpose of destroying such weapons.

With regard to the transfer of super-toxic lethal chemicals and their key precursors for protective purposes, permitted transfers between States parties should be limited to the allowed production level. Transfers must be notified to the Consultative Committee or its executive organ.

- 3. The CW convention should therefore contain the following provisions:
 - the transfer to anyone, directly or indirectly, of any chemical weapons shall be prohibited. By mutual agreement chemical weapons may be transferred between parties for the sole purpose of the destruction of such weapons.
 - The transfer to anyone, directly or indirectly, other than another party, of any super-toxic lethal chemical or its key precursor (listed in an annex) produced or otherwise acquired for permitted purposes shall be prohibited. Allowed transfer of substances for protective purposes between parties to the convention shall be limited to the aggregate quantity of one metric ton.
 - Notification to the Consultative Committee of any transfer of such super-toxic lethal chemicals or their key precursors shall be required.





CD/443 CD/CW/WP 68 5 March 1984

ENGLISH

Original: CHINESE

CHINA

Proposals on Major Elements of a Future Convention on the Complete Prohibition and Total Destruction of Chemical Weapons

The Chinese Delegation submits this paper in order to give a summarized and over-all picture of its basic position on the prohibition of chemical weapons. During the preparation of this paper, attention and consideration have been given to many constructive views and proposals presented by other countries.

The views contained in this paper do not represent the final position of the Chinese Delegation. Revisions and amendments would be made when necessary in the course of negotiations.

The Preamble

The Chinese Delegation considers that the Preamble should contain a strong condemnation of the use of chemical weapons as a means of warfare in wars and armed conflicts, a full recognition of the historical role and the practical armed conflicts, a full recognition of the historical role and the practical significance of the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare concluded in Geneva on 17 June 1925 and an appeal to all States Parties to the Protocol to continue their strict observance of its provisions.

It should also be stated in the Preamble that the prohibition of chemical weapons represents a necessary step in disarmament, that such a prohibition should be comprehensive and that all existing stockpiles of chemical weapons should be totally destroyed and production or filling facilities dismantled and destroyed.

A Convention on the complete prohibition and total destruction of chemical weapons would contribute to the improvement of the international atmosphere and promote social progress and scientific, technological and economic developments for the good of mankind.

II. Scope of Prohibition

States Parties to the Convention should undertake never in any circumstances to develop, produce, otherwise acquire, retain, stockpile, transfer, deploy on the territories of other countries, or use chemical weapons, and undertake to destroy or otherwise dispose of existing stocks of chemical weapons and production or filling facilities for such weapons.

III. Some Definitions

1. The Convention should define "chemical weapons" on the basis of "general-purpose criteria". We propose the following definition:

For the purpose of the Convention, chemical weapons are the type of weapons the casualty capabilities of which are based on the toxic physiological effects of chemical substances. They include:

- chemical warfare agents and their key precursors which produce a direct toxic effect on living organisms;
- (2) munitions and devices specially designed to be filled with chemical warfare agents or their precursors and to disperse such agents or the reaction products of their precursors in combat state;
- (3) equipment specially designed for the purpose of direct use of such munitions and devices.
- 2. The Convention should include the concept of "chemical warfare agents" and define it on the basis of "general-purpose criteria". We propose the following definition:

Chemical warfare agents are those toxic chemical substances the types and quantities of which accord with hostile purposes of causing injuries of different kinds or death through direct interference with or damage to the normal physiological functions of living organisms resulting from the toxic effects of such substances. Chemical warfare agents can be divided into the following three categories according to toxicity criteria:

- (1) Supertoxic lethal agents: having a median lethal does which is less than or equal to 0.5 mg/kg (subcutaneous administration) or 2,000 mg-min/m (by inhalation);
- (2) Other lethal agents: having a median lethal does which is greater than 0.5 mg/kg (subcutaneous administration) or 2,000 mg-min/m² (by inhalation) and less than or equal to 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m² (by inhalation).
 - (3) Other harmful agents: having a median lethal does which is greater than 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m² (by inhalation) and a median effective dose which is less than or equal to 0.5 mg/kg (subcutaneous administration) or 2,000 mg-min/m² (by inhalation) but adequate enough to produce other harmful effects of military significance.

In accordance with the above definition, chemical warfare agents should include all known chemical warfare agents, dual-purpose chemical agents designed for use in chemical warfare and all potential chemical warfare agents.

3. Precursors for chemical warfare agents are chemical substances which can be used as reactants in the process of synthesis of chemical warfare agents.

Key precursors for chemical warfare agents are chemical substances which can be used as reactants in the course of synthesis of chemical warfare agents (whether in production facilities or in binary munitions) and have a decisive effect on the properties of the end products and have little peaceful use.

4. Other necessary definitions.

IV. Declaration

- 1. Detailed declarations should be made within three months after the entry into force of the Convention or accession to it by a State. Declarations may also be made by stages according to agreed principles.
- 2. Declarations should be directly related to the Convention, including in the main the following three areas:
 - (1) items directly related to chemical warfare capabilities and subject to prohibition:
 - the possession or non-possession of chemical-weapon stocks (including key precursors for chemical warfare agents) and their sources of origin, either within a country or outside it;
 - the possession or non-possession of chemical-weapon production or filling facilities (including the production facilities for key precursors for chemical warfare agents) either within a country or outside it, either under the control of administrative authorities or military authorities or transpational corporations, and in chemical complexes either for military purposes or civilian purposes;
 - the names, quantities, qualities and locations of stocked chemical munitions and chemical warfare agents;
 - the types, capacities and locations of production or filling facilities for chemical weapons (including production facilities for key precursors);
 - any transfer to or acquisition from other countries of chemical weapons since 1 May 1945, and if any, the names, quantities and the dates of transfer or acquisition;
 - (2) activities relating to dismantlement and destruction:
 - any destruction or diversion of chemical-weapon stocks since 1 May 1945;
 - the names, quantities, qualities of the destroyed stocks and the dates and methods of destruction;
 - the names, quantities and qualities of the diverted stocks, and the methods, purposes and dates of diversion;
 - any conversion or dismantlement of the production or filling facilities for chemical weapons since 1 May 1945;
 - the names, types, capacities and locations of the dismantled facilities and the dates of dismantlement;
 - the names, types, capacities, locations and uses of the converted facilities, and the dates of conversion;
 - plans for destruction or diversion of the existing stocks;
 - plans for dismantlement of the existing production or filling facilities;

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- (3) Items permitted under the Convention but subject to control:
 - the names, types, capacities and locations of facilities for producing dual-purpose chemicals;
 - the names, types, capacities and locations of small-scale production facilities for supertoxic lethal agents for protective purposes.

V. Dismantlement and Destruction

- 1. Dismantlement and destruction should be conducted under international on-site inspection in accordance with agreed principles. The host country should provide active co-ordination and assistance.
- 2. All chemical-weapon stocks should be totally destroyed except for dual-purpose chemical agents which, as agreed upon, may be diverted for peaceful uses. Destruction should commence at the earliest possible date after entry into force of the Convention and should be completed within 10 years at the latest.
- 7. In order to eliminate as early as possible the threat to mankind of chemical warfare, States in possession of chemical weapons should in the first place destroy stocks of the most toxic and dangerous types of chemical weapons, e.g. supertoxic lethal agents such as VX, Soman, Sarin, tabun, mustard gas, etc.
- 4. All production/filling facilities for chemical weapons should be dismantled and destroyed. Dismantlement and destruction should commence as early as possible and should be completed within 10 years. Pending dismantlement, the facilities should be mothballed and subject to the necessary verification to ensure that they are not reused for the purpose of production or filling of chemical weapons.
- 5. Production or filling facilities for chemical weapons are allowed to be converted into facilities for the destruction of chemical weapons. But once destruction is completed, dismantlement and destruction of such facilities should immediately commence and be completed within one year.

VI. General Provisions for Verification

- 1. A Convention on the prohibition of chemical weapons should include the necessary provisions for verification. The verification measures should be strict and effective to ensure compliance with the Convention and, at the same time, reasonable and appropriate to avoid unnecessary interference with civilian industries.
 - 2. International verification should be the main form of verification and necessary on-site inspection should also be provided in the Convention. On-site inspection should cover destruction of chemical-weapon stocks, dismantlement and destruction of chemical-weapon production or filling facilities, production of supertoxic lethal agents in small quantities for protective purposes, and alleged use of chemical weapons, etc.
 - 3. Different ways, means and procedures should be adopted for different purposes of verification on an agreed basis, such as continuous on-site inspection, routine periodical or random on-site inspection and on-site inspection by challenge.
 - 4. States Parties should give co-operation to international on-site inspection so as to facilitate the implementation of the Convention and help build confidence.
 - 5. Information on the implementation of the Convention acquired by any State Party through national technical means of verification should be made available to the Consultative Committee and other States Parties.

VII. "Confidence-building Measures and International Co-operation

- 1. An important pre-condition for confidence-building lies in the strict compliance by States Parties with the provisions of the Convention.
- 2. Necessary international verification, including on-site inspection, constitutes an important guarantee for confidence-building. States Parties should not only subject themselves to routine inspection, but also respond in a positive manner to requests for challenge inspection authorized by the Consultative Committee.
- 3. International co-operation is an important means of confidence-building. States Parties should be encouraged, through bilateral or multilateral channels, or through the Consultative Committee, to:
 - exchange information on the peaceful use of chemical knowledge;
 - exchange information and knowledge on chemical protection;
- exchange data on newly-discovered toxic chemical compounds and advances made in the field of toxicology research and register them with the Consultative Committee:
 - promote the exchange of visits of personnel working in the field of chemical protection.
 - 4. The Convention should encourage States Parties to take unilateral, bilateral or multilateral actions that may contribute to the strengthening of confidence.
 - VIII. Relationship between the Convention and other Treaties

All States Parties to the Convention should at the same time undertake to observe the provisions regarding the prohibition of the use of chemical weapons laid down in the Geneva Protocol.

None of the provisions of the Convention shall in any way be interpreted as limiting or diminishing the authority of the 1925 Geneva Protocol, or as lessening the obligations assumed by any State under the Protocol, or as limiting or diminishing the legal effect of any other international treaties or instruments governing armed conflicts.

IX. The Consultative Committee

Immediately upon entry into force of the Convention, a Consultative Committee should be set up in accordance with agreed procedures. The principles of universality and equality of all States, big or small, should be taken into consideration in the composition of the Consultative Committee. For the convenience of its daily work, the Consultative Committee may establish a Standing Committee or Executive Council composed of 15 to 20 members. The Consultative Committee should have the following functions:

- To decide in accordance with agreed procedures on routine inspection and oversee its implementation;
- To decide, in accordance with agreed procedures on challenge inspection and oversee its implementation;

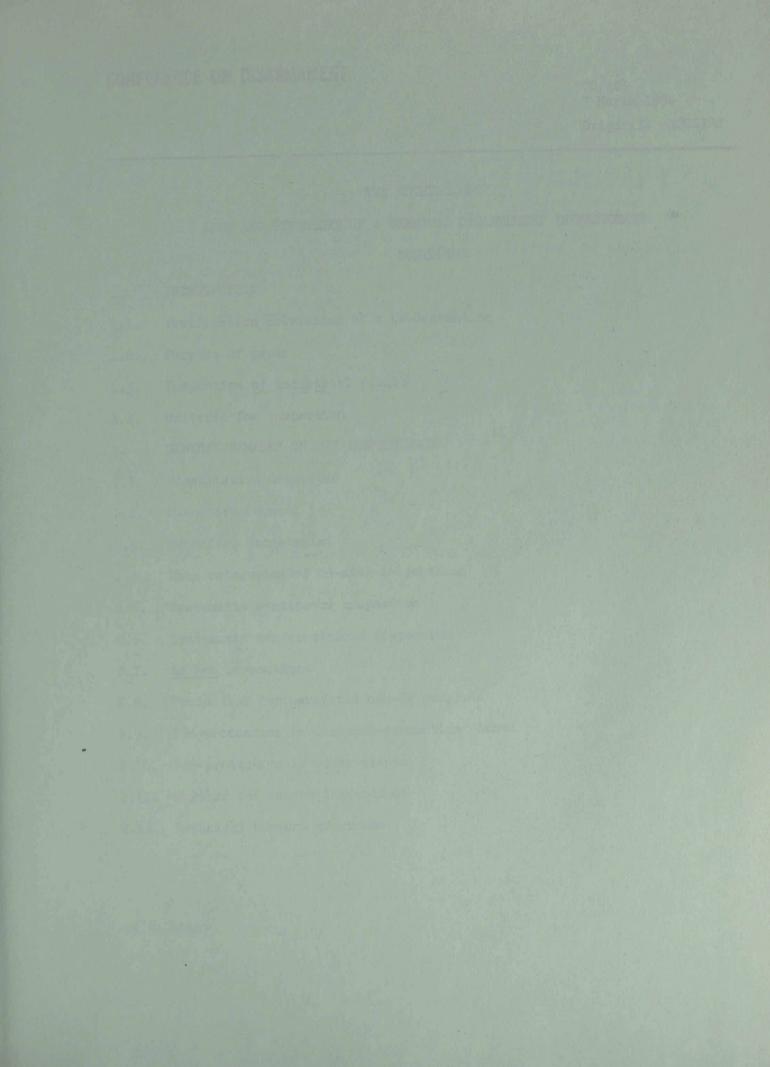
- To review, revise or amend, when new developments in science and technology make this necessary, the technical provisions of the Convention, such as toxicity criteria, methods of measuring toxicity, list of precursors, etc.;
- 4. To examine and consider complaints of non-compliance with the Convention;
- 5. To promote the flow of information on implementation of the Convention;
- 6. To report on its work to States Parties and to the Depository of the Convention:
- 7. To assume all other functions unanimously agreed upon among the States Parties.

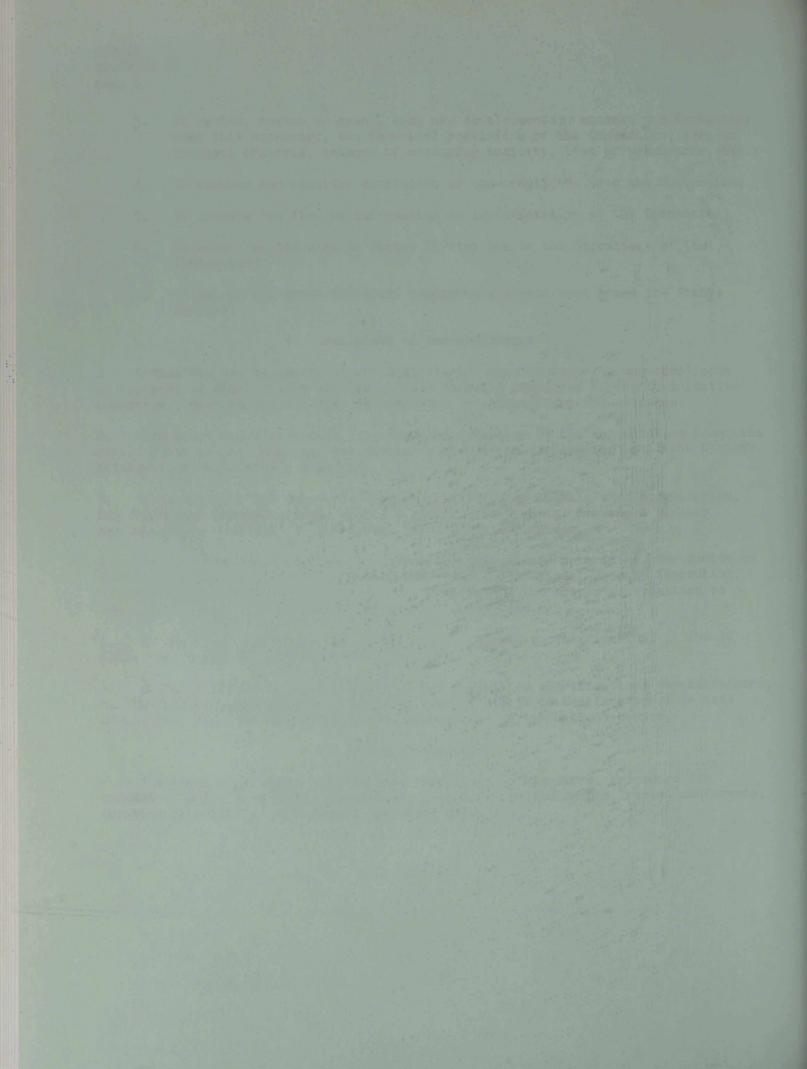
X. Complaints of Non-compliance

- 1. Complaints may be lodged by any State Party, upon discovering non-compliance on the part of other States Parties, to the Standing Committee of the Consultative Committee. Such complaints must be supported by explanations and evidence.
- 2. Upon receiving a complaint, the Standing Committee of the Consultative Committee should first of all encourage the parties concerned to resolve the complaint through bilateral or multilateral channels.
- 3. If no solution can be reached through bilateral or multilateral consultation, the Standing Committee should, within a period of one month, convene a plenary meeting of the Consultative Committee, to consider the matter.
- 4. The Consultative Committee, in accordance with agreed principles, may decide on the verification measures to be taken, including international on-site inspection, to ascertain the facts. The outcome of the investigation should be submitted to the States Parties and the Depository of the Convention.
- 5. If the Party challenged refuses to subject itself to verification, it should state its reasons and clarify the situations.
- 6. If the Consultative Committee finds the reasons or clarifications unsatisfacotry, the Party challenged shall be obliged to subject itself to verification. In case of dispute, recourse may be had to the appropriate United Nations bodies.

XI. Other Provisions

The Convention should also include provisions on signature, procedure for accession, entry into force, depository, procedure for amendments, review conference, duration of validity, withdrawal, languages used, etc.





CD/445 7 March 1984

Original: EMGLISH

THE NETHERLANDS

SIZE AND STRUCTURE OF A CHEMICAL DISARMAMENT INSPECTORATE

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- 5. CONCLUSIONS

INTRODUCTION

- 1.1. Verification of the compliance with a Convention banning chemical weapons has been at the heart of the debate on that subject in the Committee on Disarmament and its subsidiary bodies. Little attention however has been paid thus far to the structure and size of the inspectorate which will have to perform the different vertification functions. The purpose of this document is to address that particular issue in some more detail. Of course we realize that the ultimate structure and size of a chemical disarmament inspectorate cannot be defined as long as there is uncertainty about the precise nature of the verification provisions of a CW Convention. This uncertainty has implications for questions such as inspection schemes for individual plants, the number of plants to be inspected, the number of international inspectors needed for an inspection and the amount of time an inspection will take.
- 1.2. Nevertheless, we deem it timely and useful to devote somewhat more attention to the kind of chemical disarmament inspectorate that would be required to verify effectively the compliance with a CW Convention. The Netherlands believes that by discussing the structure and size of such an organization a clearer picture may emerge of the organizational and financial implications of certain verification provisions.

Because of the present uncertainty on the contents of the verification provisions a number of assumptions had to be made. Discussion of these assumptions in itself can perhaps enable us to conclude whether they are reasonable and can permit us in its turn to judge to what extent they substantially influence the size of the inspectorate. On the basis of these assumptions finally, in section 4 some rough calculations will be made in relation to the size of the future inspectorate.

- 1.3. In order to ensure the faithful compliance with a CW-Convention some inspection of the chemical industry will be necessary. The purpose of these inspections is not a profound and detailed investigation nor a scrutiny of the entire production process of chemical plants. The sole purpose is to make sure that no undeclared production of super-toxic chemicals or their key precursors is taking place in quantities that are relevant in the context of a CW Convention. These inspections should not hamper industrial production in any way, nor should they endanger industrial secrets. The Netherlands is convinced that if the purpose of the inspections is made sufficiently clear to all parties concerned, including the managements of the plants that will have to be visited, it should not be too difficult to organize inspections in such a way as to avoid hampering industrial production and compromising industrial secrets while at the same time fully attaining the purposes of the inspection.
- 1.4. Which industrial plants should be inspected? It seems natural to inspect all chemical plants that are able to produce super-toxic lethal chemicals or their key precursors in relevant quantities. Parties to a CW Convention should therefore undertake to declare not only all plants that are producing super-toxic lethal chemicals and their key precursors, but also all plants that could produce these in relevant quantities.

The criteria for the declaration of such plants of course need to be developed and defined.

- 2. GENERAL REMARKS ON THE INSPECTORATE
- 2.1. It is assumed that a CW Convention would contain provisions for the creation of a "Consultative Committee" (CC) composed of representatives of all the States parties. This Committee would inter alia give general guidance to a Technical Secretariat, established for the implementation of the Convention.
- 2.2. It seems natural to assume furthermore that the Consultative Committee would elect an "Executive Council", consisting of a smaller number of States parties. This Council would, among other things, give short-term guidance to the Technical Secretariat, in particular its inspectorate, approve inspection schemes, designate inspectors, handle financing, etc.
- 2.3. The <u>Technical Secretariat</u>, consisting mainly of inspectors and supporting staff, could be set up by drawing as much as possible upon the experience of existing international organizations employing independent inspectors under strict rules of operation and with a certain degree of diplomatic immunity. This includes questions as to how inspectors are to be designated for inspections in particular countries, their inspection rights, as well as the right of countries to refuse certain inspectors.
 - 2.4. There are three main categories of on-site inspections:
 - A. Systematic continuous
 - B. Systematic non-continuous
 - (i) Regular
 - (ii) Random
 - C. Ad hoc ("challenge")

This classification into categories of on-site inspections has a direct bearing on the kind of inspector needed, as well as on his modus operandi, as will be illustrated hereafter.

- A. Systematic continuous inspections would take place at CW destruction facilities.
- B. (i) Systematic, but non-continuous regular inspections would take place:
 - (a) At closed-down declared CW-plants and during their destruction;
 - (b) At CW-stockpiles storage depots until the destruction of the stockpiles;
 - (c) At facilities producing small quantities of CW-agents for protective purposes.
 - (ii) Systematic, non-continuous random inspections would take place at certain chemical plants, namely:

- (a) At plants that have been declared for producing certain super-toxic lethal chemicals and their key precursors for permitted non-CW purposes. 1/ Verification will have to ascertain two aspects:
 - that the quantity of the declared production is in accordance with declared permitted purposes (i.e. a quantitative check);
 - that no non-declared production of other super-toxic lethal chemicals and their key precursors is taking place (i.e. a qualitative check);
- (b) At plants that have been declared for their capability of synthesizing organic chemicals in relevant quantities. At those plants the non-production of super-toxic lethal chemicals and their key precursors will have to be verified.
- C. Ad hoc inspections under a challenge system could be held anywhere from civilian plants to the battlefield.
- 2.5. For continuous inspections, a permanent group of inspectors will be required on the spot, i.e. resident inspectors. Recruitment procedures should take into account that working and living conditions will not be easy because of occupational hazards and likelihood that destruction plants will be located in remote areas. Thus, a high degree of motivation will be needed. There should be a rotation of these inspectors so that hardships are evenly shared.
- 2.6. The continuous inspection of the destruction process will be largely a matter of routine, once the destruction process is under way. The systematic non-continuous inspections, particularly in the chemical industry, will be less routine—like and may therefore require a broader expertise than will be needed for the inspection of the destruction of stockpiles. Inventiveness and a broad experience in the civilian chemical industry will be needed to be able to find during short periods of inspection at different types of plants clues of possible non-compliance. Intensive travelling will be involved for these inspectors.
- Ad hoc or "challenge" inspections are of a somewhat different nature. They might be requested on the basis of various kinds of information, such as indications of the use of CW, the finding of traces of a banned agent in a river downstream of a chemical plant, indications of a hidden CW stockpile, evidence of the existence of a large versatile chemical complex that has not been declared etc. Such questions would first have to be discussed in the appropriate organ of the Consultative Committee which could then decide to initiate an ad hoc investigation. Depending on the subject, use could be made of inspectors already employed in the secretariat or of other experts, to be designated by States Parties. A standing list of experts established on a wide geographical basis could be compiled and kept up to date permitting the quick choice of appropriate experts as need may be. It may be pointed out in this connection that the number of challenge inspections is likely to be relatively low. Hence, no permanent inspectors need to be designated for

^{1/} The British paper CD/353 concentrates on this category of plants.

this taks alone. The appropriate organ of the Consultative Committee must be organized in such a manner that it can handle requests for challenge inspections swiftly and smoothly, using expertise from outside (such as the WHO and UNEP) when necessary.

- 2.8. The inspection to ensure that no militarily relevant quantities of super-toxic lethal chemicals or their key precursors can be or are produced above the level necessary for the declared permitted non-CW purposes (B (ii) (a)) will be of a quantitative nature. The reactions to the British list in CD/353 that have been made public up to now, demonstrate that the number of these plants will be limited.
- 2.9. The task of inspecting non-production of other super-toxic lethal chemicals of their key precursors in the chemical plants mentioned above (2.8.) can probably be accomplished easily by the same inspection team that inspects the quantity of declared production. This inspection will be of a qualitative nature: every trace of a non-declared and forbidden agent is a sign of violation of the Convention.
- 2.10. The verification of non-production in plants that are declared for their capability but not for their permitted production (B (ii) (b)) is identical to the verification of non-production in plants that are declared for their permitted production (B (ii) (a)). Of course not all chemical industries have to be declared: most of them can be left on one side, either because they are clearly not capable of producing the relevant agents (e.g. paint factories) or because they are too small to produce these in militarily relevant quantities (laboratories, small pharmaceutical plants). The alternative to a systematic inspection of the relevant plants on a random basis would be challenge inspections. But a request for a challenge inspection requires the submission of reasonably convincing information that something is amiss; such information will often be difficult to obtain and/or to present.
- 2.11. Systematic inspections can be held regularly or at random. Inspections of the chemical industry could probably most effectively be realized on a random basis. A certain number of random inspections is much more effective than the same number of regular inspections as random inspections inject the notion of chance. If, for instance, a declared plant would be inspected on a random basis on an average of once every three years, the chance of being visited within a month is about 3 per cent (1/36), even if it had been inspected just that day before. If inspections were to be held on a regular basis a party can be sure, in this example, that a plant that has been inspected the day before will not be inspected again for another three years.
- 2.12. The Technical Secretariat will need the assistance of States parties to obtain sufficient knowledge of the complex subjects to be handled. One possibility is a "technical support programme" similar to that in other fields, in the context of which new verification methodology and equipment would be developed by parties and transferred to the Technical Secretariat when applicable.
- 3. GENERAL ASSUMPTIONS UNDERLYING THE ROUGH CALCULATION OF THE SIZE OF A CW INSPECTORATE
- 3.1. In analogous existing situations one notes that the number of support personnel at headquarters is about twice as large as the number of inspectors in the field. The former include, besides general services staff (personnel division, translation, secretarial work etc.) those employed in sections dealing with the (computer) handling of data, assessing inspections, possibly analysing chemical

samples and/or organizing such analyses elsewhere, 2/ the training of inspectors etc. Computer handling of data with cross referencing can eventually become very useful for verification. However, less data handling will be involved than for instance in the IAEA, as the latter assesses all nuclear material flows from one safeguarded "material balance area" to another, whereas a chemical inspectorate will be mainly involved with qualitative assessments. Probably, the ratio support-personnel, inspectors working from headquarters will have to be between 1 to 1.5 and 1 to 2. In the calculations to follow, the factor of 1.8. has been used. With respect to the resident inspectors permanently present at destruction facilities less support staff seems necessary. The factor of 1.0 has been used in the latter case.

- 3.2. In existing international organizations one inspector can achieve 40 man days/year inspection. This seems to be a reasonable assumption for a chemical inspector also, although a higher number of man days may be feasible.
- 3.3. To limit travel, the possibility of establishing a few regional inspection offices could be considered in particular near large concentrations of chemical activities subject to inspection. However, in view of the small inspectorate envisaged, this in all likelihood would not be sufficiently cost-effective.
- Presumably, each State party to the CW Convention will need some sort of a "focal point" enabling contacts between the inspectorate and the facilities to be inspected. It could be left to the parties themselves to decide whether to assign the functions of focal point to an existing organization or to create a special body for this purpose. Such a national organization would also systematically collect and collate data. These data would constitute the basis for international inspections. Representatives of the national body could accompany the inspectors during their visits and assist them where necessary.
- 4. ROUGH CALCULATION OF THE SIZE OF A CW INSPECTORATE

The various categories of inspections would give rise to the following rough calculation of the size of a CW inspectorate:

A. Systematic continuous inspections. Verification of the destruction of declared CW stockpiles

Assumptions:

- During the first 10 years after the entry into force of the CW Convention six large and nine smaller destruction plants will be working simultaneously.
- For a continuous inspection of large destruction plants to be effective two inspectors will have to be on duty at all times. For the continuous inspection of smaller plants one inspector on duty at all times will be sufficient.

^{2/} It is to be expected that most chemical analyses will be done on the spot.

- Taking into account work shifts, holidays, illness etc. three to five inspectors will be needed in order to be able to have one person on duty continuously.
 - The present state of the art with respect to technical means to monitor destruction does not allow to dispense with the continuous presence of one or more (according to the size of the destruction plant) international inspectors.

Conclusion:

- Approximately 60 to 100 inspectors are needed for the verification of the destruction of CW stockpiles during 10 years.

B. (i) Systematic non-continuous regular inspections

(a) Verification of the closure and destruction of declared CW production and munition filling facilities

Assumptions:

- Verification of non-operation of CW facilities can to a large extent be verified by technical means (tamper-indicating seals and/or cameras, possibly capable of interrogation e.g. by telephone etc.). Occasional visits by inspectors are necessary for the placement and maintenance of equipment, inspection of seals etc.
- Verification of the destruction of CW facilities can be done by a combination of remote sensing and regular on-site inspections.

Conclusion:

- In so far as destruction of stockpiles takes place at the site of former CW production facilities, non-operation and destruction of these facilities can be verified by the resident inspectors at this CW destruction plant.
- For the (estimated) remaining 15 CW production and munition filling facilities, 15 additional inspectors working from headquarters during 10 years seem to be more than sufficient.
 - (b) Monitoring of CW stockpiles until their destruction

Assumptions:

- CW stockpiles can to a large extent be monitored and safeguarded by technical means. Most of the CW stockpiles are initially situated near CW production facilities, which will be submitted to systematic non-continuous regular inspection (compare B (i) (a) above), and all stockpiles will at a given, preferably early, moment, in accordance with a declared plan, be transported to the destruction facilities, which are under systematic continuous international inspection (see 3. A), so that storage monitoring can be largely carried out by inspectors charged with scrutiny of the elimination of production facilities and stockpiles.

Conclusion:

- The number of <u>separate</u> inspections required for monitoring stockpiles will be relatively small and these will at any rate only be needed until all the stockpiles are located at the sites of their destruction
 - (c) <u>Verification of production of super-toxic chemical agents for protective purposes</u>

Assumptions:

- There will be a number for instance 20 of small scale facilities worldwide.
- These plants are inspected on an average of once every one and a half years. Smaller facilities producing a few grams per annum will require less frequent inspection than facilities producing one ton a year. For each inspection two inspectors will be visiting the plant during one working day. This form of inspection would consume about 25 man days/year.

Conclusion:

- About two inspectors will have to spend about a third of their time for the verification of the production of super-toxic agents for protective purposes.

B. (ii) Systematic non-continuous random inspections

(a) Inspection of plants producing for permitted non-CN purposes

Assumptions:

- Worldwide, about 50 plants produce super-toxic lethal chemicals or their key precursors for permitted non-TW purposes. 3/
- These plants are inspected through selection by drawing lots.
 Inspection of each of these plants takes place on an average of once every one and a half years. For each inspection three inspectors will be visiting the plant during an average of five working days.
 Inspection of these plants would thus entail 500 man days/year.

Conclusion:

- Approximately 10-15 inspectors will be needed permanently for the inspection of declared plants producing for permitted non-CW purposes.

^{3/} See the suggested list of key precursors in @ /353.

(b) Verification of non-production in other plants

Assumptions:

- Worldwide, about 500 other plants are capable of synthesizing organic chemicals in relevant quantities.

2000

- These plants, to be declared in accordance with criteria to be defined, will equally be inspected on the basis of drawing lots, using a weighing factor in order to ensure that large and versatile chemical complexes have a greater chance to be inspected than smaller and more specialized plants.

These plants will be inspected on an average of once every three years. For each inspection three inspectors will be visiting the plant during an average of three working days. Inspection of these plants would thus cost 1,500 man days/year.

Conclusion:

- About 30-40 inspectors are needed permanently for the verification of non-production in plants that have been declared not to produce super-toxic lethal chemicals or their key precursors but to be capable of synthesizing organic chemicals in relevant quantities.

C. Ad hoc "challenge" inspections under the fact-finding procedures

Assumptions:

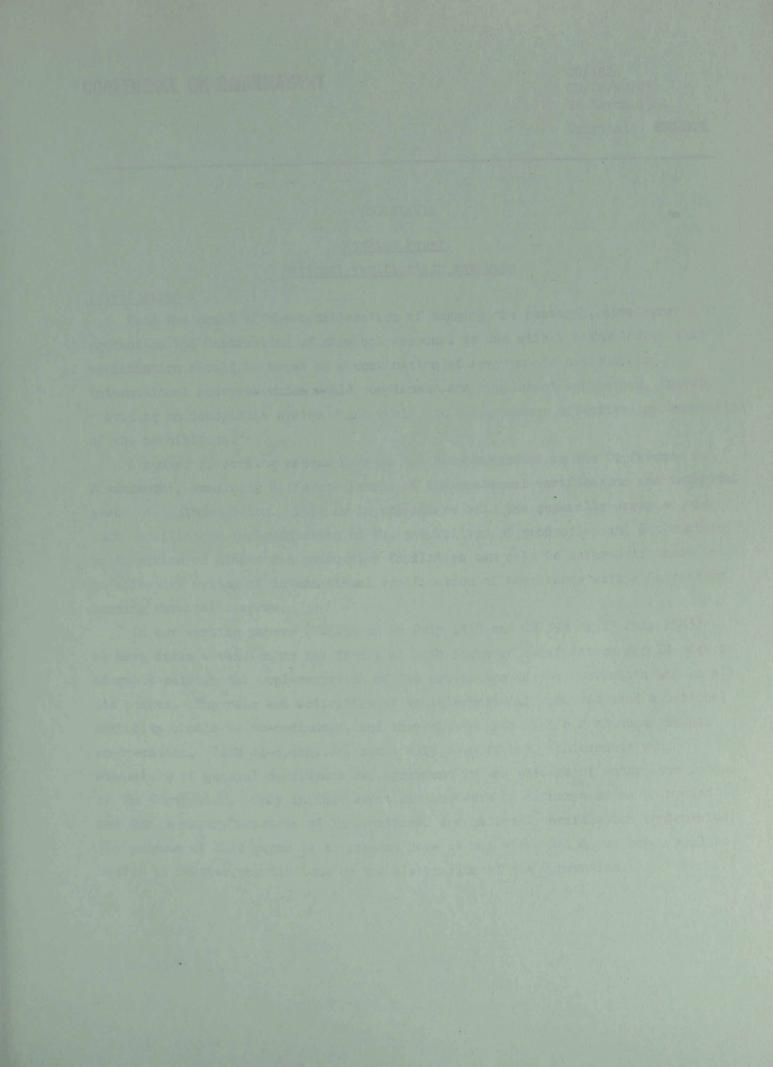
- There are likely to be relatively few challenge inspections (which would include investigation of allegations of chemical warfare), particularly after the Convention has been in force for some time.
- These can be performed by the existing staff at the inspectorate and/or by specialists from member States or international organizations.

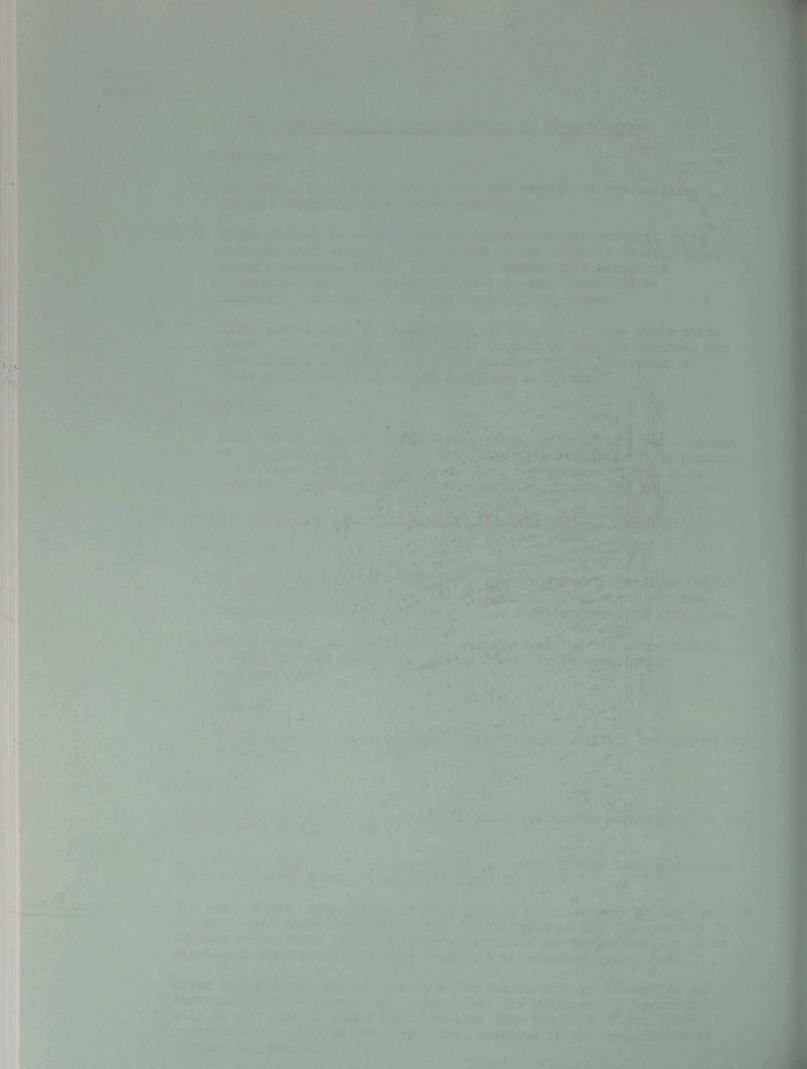
Conclusion:

- The possibility of "challenge" inspections has little bearing on the size of the inspectorate.

5. CONCLUSIONS

- About 50 inspectors and 90 supporting staff are needed permanently in the context of a CW-Convention.
- In addition about 75 to 115 inspectors and about 100 or less supporting staff are needed during roughly the first 10 years.
- The size of the organization depends greatly on the answer to the question on what scale inspection is planned for plants that are declared not to produce super-toxic lethal chemicals and their key precursors but to be capable of synthesizing organic chemicals in relevant quantities.
- After the 10-year period, during which destruction of stockpiles and destruction of CW plants has taken place, the envisaged CW secretariat will in any case be considerably smaller than the part of the IAEA-secretariat, including the inspectors, involved in the application of nuclear safeguards.





CD/482 CD/CW/WP:73 26 March 1984

Original: ENGLISH

YUGOSLAVIA

Working Paper National verification measures

Introduction

From the onset of the consideration of banning the research, development, production and destruction of chemical weapons, it was widely acknowledged that verification should be based on a combination of appropriate national and international measures which would complement and supplement each other, thereby reoviding an acceptable system which would, in turn, sensure effective implementation of the prohibition.

A number of working papers have so far been submitted to the Conference on Disarmament, examining different levels of international verification and technical means of implementation. This is in accordance with the generally accepted view that an effective implementation of the prohibition of production and destruction or diversion of stocks and production facilities can only be assured if there is an effective system of international verification of compliance with a Convention banning chemical weapons.

In our working papers (CD/298 of 26 July 1982 and CD/393 of 13 July 1983) we have drawn attention to the fact that both forms of verification should have an adequate role in the implementation of the provisions of the Convention and in all its phases. The role and activities of an international authority and a national authority should be co-ordinated, and they should establish a continuous mutual co-operation. Such co-operation, admittedly, can be best achieved in an atmosphere of general confidence and agreement in the process of entry into force of the Convention. Only in that event can the work of either team be unimpeded and the necessary measures of international and national verification implemented. The purpose of this paper is to present some of our views which, we hope, will be useful in further negotiations on the elaboration of the Convention.

General remarks

Some of the submitted papers express the view that each State party to the Convention should have a national authority whose methods of work would be adjusted to the national legislation of each participating State, and that such an authority should carry out a number of functions related to the Convention. On the other hand, some delegations are of the opinion that the role of the national authority should be limited to assistance to the international authority. Since the views on the role and scope of the activities of the national authority differ so much, we feel that we should, at the outset, establish a basis for them. Such a basis is, in our view, the existing classification of toxic chemicals into the following three categories, which should also be used in determining the level of verification:

- super-toxic lethal chemicals;
- other lethal chemicals;
- other harmful chemicals.

We consider that in the case of the verification of super-toxic lethal chemicals, especially chemical warfare agents belonging to the group of nerve gases, verification should be comprehensive and organized in such a way as to ensure the greatest possible degree of confidence and balance, at each stage of destruction of CW, of potentials at a lower level. The verification of such CW should be carried out under the supervision of an international team in the way determined by the Convention.

As far as lethal chemicals the type of yperite are concerned, however, we believe that depending on the quantity of stocks of such chemical weapons and the capacity of production facilities verification should be international by character, but it can also be carried out in close co-operation with the national authority. Huge stocks of chemical weapons filled with yperite and great capacities of production facilities of this CWA make it necessary to establish international verification. Nevertheless, smaller quantities of these CWAs up to several hundred tons, with the permission of the Consultative Committee, can be destroyed under the supervision of the national authority which is obliged to inform the Consultative Committee within 30 days of the completion of the destruction.

Further, the verification of less toxic chemicals: other lethal chemicals and other harmful chemicals, as well as CWA precursors (See CD/401) can be carried out in almost all stages under control of the national authority. This form of verification of less toxic chemicals is suggested because the majority of these chemicals today are referred to as dual-purpose chemicals and are widely used for peaceful purposes. This is the case, for instance, with phosgene, hydrogen cyanide and other lethal chemicals.

The stocks of chemical weapons filled with these chemicals, however, can be subject to international verification if very large quantities (a few tens of thousands of tons) are involved, and if the chemical industry of the country concerned is unable to convert them into other products during the period of verification.

Table 1 gives a survey of chemicals whose production should be subject to national verification measures.

Table 1. Chemicals to be subject to measures of national verification

Super-toxic lethal chemicals*/

yperite, lewisite and other similar derivates

Other lethal and harmful chemicals

phosgene and its derivations

hydrogen cyanide and its derivates

adamsite

diphenylcyanoarsine and other arsene compound with similar properties

Precursors:

phosphorus

phosphorus trichloride

phosphorus chloride

dialkylphosphites

trialkylphosphites

N, N-disubstitutes- & -aminoethanols

N, N-disubstitutes- / -aminoethanethiols

N, N-disubstitutes- ? -aminoethylhalides

pinacolyl alcohol

isopropyl alcohol

cyclohexyl alcohol, etc.

piperidinol-3 or -4

hinuclidinol-3

ethylene oxide

arsene trichloride, etc.

*/ Verification of the destruction of stocks of these CWs and production facilities shall be for the most part subject to international verification.

Scope of the national system of verification

Due to an enormous task facing the Consultative Committee and an international team of experts during verification, co-operation with the national authority becomes indispensable, in view of the fact that it can render assistance both in technical staff and equipment and laboratories. Within the framework of its responsibilities, the national authority should assist the international team in the process of verification of super lethal chemicals and their key precursors.

Such co-operation should develop in the process of destruction of the stocks of these CWAs, destruction of the production and filling facilities as well as in the process of on-site inspection in the event of violation of the Convention.

On the other hand, the national authority's main task, should, to our mind, be the implementation of the verification of production and transfer of dual-purpose chemicals and precursors. The national authority should, by the assistance of its own team of experts, organize a system of verification, and should be obligated to inform the Consultative Committee in its annual reports about the results of the inspection. In other words, the national authority should monitor in the process of verification:

- production of other lethal and other harmful chemicals which are being used for peaceful purposes;
- production of dual-purpose chemicals and precursors and their diversion into final product; and
- transfer of these chemicals.

Therefore, we can say that the national authority is facing very complex tasks in the process of verification. Having this in mind, it should elaborate in great detail its tasks and the technical measures which it will be using. In order to attain an effective system of verification and to maintain confidence among the States parties, it will be necessary to agree on co-operation among future States parties already during the elaboration of the Convention, on the basis of exchange of expert information, standardization of methods and introduction of similar or identical instruments, as well as on the basis of introducing a compatible computer system.

The list of chemicals given in table I suggests that the methods of their verification should be diverse because we are dealing here with chemicals having different chemical structures. If various technological procedures for their production and the capacities of individual facilities are also taken into account, then the task of the national team becomes even more complex.

Furthermore, most of these chemicals are widely used and converted into other products in different branches of chemical industry for peaceful use, and at a given time they can be important also for the production of chemical weapons, whether as the main component or intermediary, or a basic component of binary weapons.

Role, tasks and structure of the national committee

Each State party to the Chemical Weapons Convention is obliged to establish a national authority for verification. The role and tasks of that authority are essentially determined by the law of that particular country. Such a national

committee shall have the task to co-operate, in the application of the Convention, with the international authority - the Consultative Committee; to lend it appropriate support in the implementation of verification measures, and to submit to it relevant reports. Regardless of the fact that the administrative and economic systems of many States parties to the Convention are very disparate, we believe that the structure, composition and functioning of the national authority should be such as to ensure efficiency, competence, objectiveness and the necessary confidence, in close co-operation with all international institutions in the implementation of the Convention.

In order that the national committee may meet its obligations resulting from national legislation and co-operation with the Consultative Committee, it should be composed of the following representatives:

- Government representative;
- representatives of science in the field of chemistry;
- representatives of chemical industry;
- military representatives;
- media representatives;
- . representatives of one of the States parties designated by the Consultative

The members of the national committee shall be bound to safeguard the secret, and should not communicate to third persons, either orally or in writing, any information concerning verification and implementation of the Convention.

Depending on the complexity and scope of its activities, the national committee may set up a team of expert consultants in different fields of science (chemistry, chemical analysis, toxicology, economics, technical and chemical information, etc.), as well as to provide adequate laboratories for chemical, physical and toxicological analyses.

These laboratories shall be obliged, on request from the Consultative Committee, to assist the international authority in every possible way in the implementation of verification measures.

The Consultative Committee shall, for the purpose of this Convention, make a list of laboratories for chemical and biological analyses, proposed by the States parties.

Upon its establishment the national committee should take over, in its country, control over production facilities for dual-purpose chemicals, precursors and those chemical agents which today have mass application for peaceful purposes.

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Also, the national committee should, in co-operation with the international authority, exercise control over the stocks and closure of production facilities of chemical weapons with CWA the type of yperite, and propose measures for their destruction.

With the assistance of its bodies, the technical secretariat and an expert team, the national committee shall work out a programme of its work.

Within its competence the national committee shall exercise control over the production of other lethal and other harmful chemicals. As these are the chemicals which are now massively used in chemical industry, it will be necessary to carry out an in-depth inspection of production facilities as technological units, and to elaborate, on the basis of that inspection, a programme of control of the production. The annual material balance of the production facility utilizing all its capacities shall serve as a basis for determining further procedure relative to the diversion of, and transfer for permitted purposes of these chemicals. All data received shall be stored in the computer centre which should be connected with an international computer centre. Periodic or annual reports of the national committee on the activities of the facilities in which these chemicals are diverted for permitted purposes shall be examined by the Consultative Committee, and control of transfer exercised on the basis of such reports.

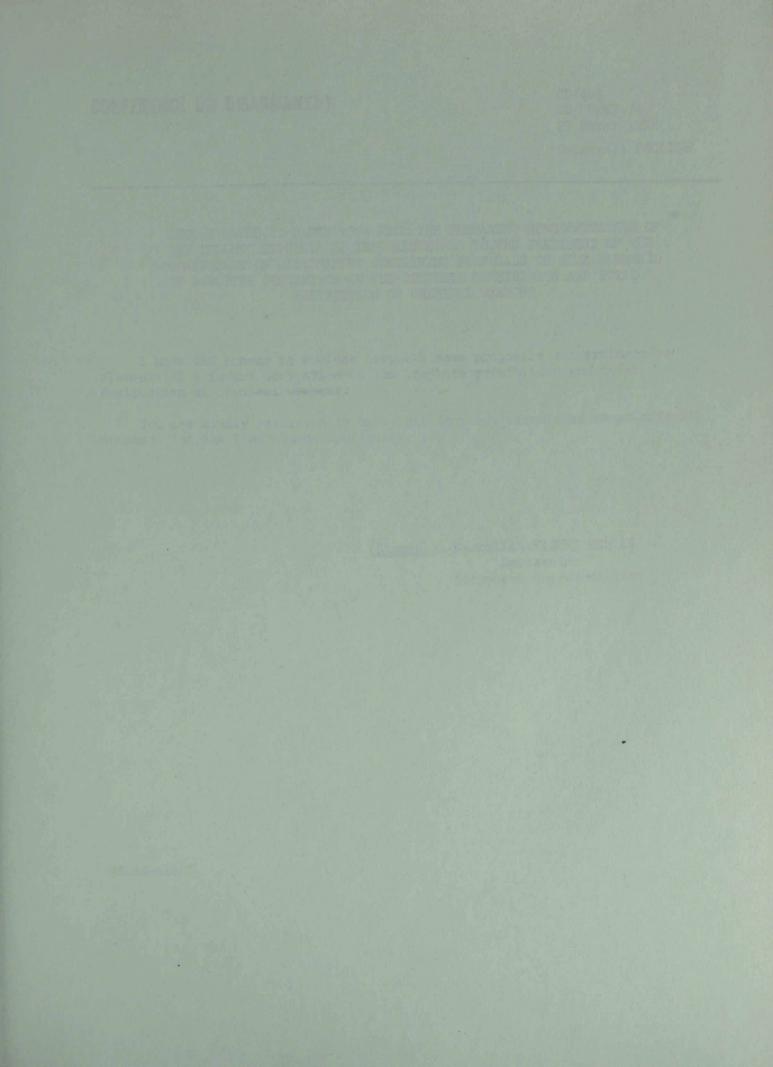
In view of the fact that the production facilities of dual-purpose chemicals and precursors also produce chemicals which are massively used in chemical industry for the production of pesticides, pharmaceuticals, polymers, etc., but which basically can be used either as a component or intermediary for the production of chemical weapons, the control of their production should be exercised continuously in order to know exactly for which purposes they are used.

Having in mind that such complex control is exercised for a large number of these chemicals, a detailed material balance of production and diversion for permitted purposes shall be elaborated to that end. All data shall be stored in appropriated national computer centres, while periodic reports shall be submitted to the Consultative Committee on the production and transfer of these chemicals.

Having in mind a whole variety of chemicals and precursors (table 1) which should be monitored by the national committee, it should work out a detailed programme of work and scope of activities in collaboration with the Consultative Committee. In order to be able to carry out this rather extensive work, the national committee shall, in co-operation with other national committees and the Consultative Committee or a technical team of experts, standardize chemical and physical methods for the control of production. The instruments and equipment

(monitoring system) installed in such facilities should be compatible and ensure an exchange of information. All data should be stored in the computer centre where they will be processed on the basis of a uniform information technical system and reported to the Consultative Committee.

On the basis of the received reports on the material balance of production and the transfer of these chemicals, if there is doubt that the data are ambiguous, the Consultative Committee shall decide on the control of each facility individually, in accordance with the procedure envisaged by the Convention.





CONFERENCE ON DISARMAMENT

CD/483 CD/CW/WP.74 27 March 1984

Original: ENGLISH

LETTER DATED 20 MARCH 1984 FROM THE PERMANENT REPRESENTATIVE OF THE ISLAMIC REPUBLIC OF IRAN ADDRESSED TO THE PRESIDENT OF THE CONFERENCE ON DISARMAMENT CONTAINING PROPOSALS ON SOME ELEMENTS OF A FUTURE CONVENTION ON THE COMPLETE PROHIBITION AND TOTAL DESTRUCTION OF CHEMICAL WEAPONS

I have the honour to enclose herewith some proposals concerning some elements of a future convention on the complete prohibition and total destruction of chemical weapons.

You are kindly requested to have this document circulated as an official document of the Disarmament Conference.

(Signed) Nasrollah KAZEMI KAMYAB
Ambassador
Permanent Representative

CD/483 CD/CW/WP.74 page 2

PROPOSALS ON SOME ELEMENTS OF A FUTURE CONVENTION ON THE COMPLETE PROHIBITION AND TOTAL DESTRUCTION OF CHEMICAL WEAPONS

AND THE BUTTON TO STATE .

PREAMBLE

The delegation of the Islamic Republic of Iran, being a victim of a crime against peace and security of mankind, namely the systematic and indiscriminate use of chemical weapons by a criminal regime, presents some preliminary ideas in respect of the prohibition of the use of chemical weapons, international co-operation on protective purposes and some general provisions and hopes that every delegation, conscious of its responsibility in suppressing this kind of crime in the future Convention, will take a positive view in considering these proposals. The indignation raised by the use of chemical arms will never be equal to the horror of these methods which are particularly odious and insidious and which have always been both morally and judicially condemned.

The delegation from the Islamic Republic of Iran considers that the preamble should contain a strong condemnation of the use of chemical weapons as a means of warfare in any circumstances and use of chemical weapons must be recognized as a war-crime. There must be a reaffirmation of the obligations of States under the Protocol for the prohibition of the use in war of asphyxiating, poisonous or other cases and of bacteriological methods of warfare and renunciation of the reservation to the Protocol by all States.

GENERAL PROVISIONS

- I. States parties shall undertake to respect and to ensure respect for the present Convention in all circumstances.
- II. No reservation or exception may be made to this Convention unless expressly permitted by other articles of this Convention.
- III. (1-10) years after entry into force of the Convention it shall prevail, as between States parties to the Geneva Protocol for the prohibition of the use in war of asphyxiating, poisonous or other gases and of bacteriological methods of warfare.
- IV. States parties to the Convention agree that the use of chemical weapons in any circumstances constitute a war-crime and shall undertake never in any circumstances to use or threaten to use chemical weapons.
- V. States parties to the Convention agree that there can be no amendments to the basic principle relating to prohibition of use of chemical weapons set forth in Article and they shall not be a party to any agreement in derogation thereof.
- VI. States parties undertake to inform the consultative committee on all direct or indirect commercial transfer of dual purposes chemical agents without undue delay.
- VII. States parties, in a spirit of international co-operation, shall guarantee an exchange of information and access to the protective devices and medical treatment developments with the aim of enabling States parties to improve their capabilities and skills in these areas.

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CD/494 CD/CW/WP.79 3 April 1984

ENGLISH
Original: FRENCH

FRANCE

ELIMINATION OF STOCKS AND OF PRODUCTION FACILITIES

INTRODUCTION

The elimination of chemical weapons stocks and of facilities for the production of such weapons would, by its scope, constitute the destruction of a considerable military potential and probably the greatest movement forward in the disarmament process ever yet registered.

The problem is of very great importance to the French delegation, which would like through this paper to express its views at the current stage of the negotiations. The positions taken in this document are not immutable; they may be reviewed in the light of the progress of the negotiations.

ELIMINATION OF STOCKS AND OF EXISTING PRODUCTION FACILITIES

Within as brief a period as possible after the entry into force of the Convention, each State party should undertake to provide, pursuant to a detailed plan contained in the annexes to the Convention, substantial information on its chemical weapons capability whether it be in the form of stockpiles or of production facilities.

I. STOCKS

Within a period not exceeding 30 days after the entry into force of the Convention, each State party should make a declaration of possession or non-possession of stocks and propose a destruction plan encompassing international means of on-site verification.

(a) Initial declarations

The declarations should indicate clearly that the State making the declaration possesses or does not possess chemical weapons, irrespective of the quantity and condition of the stocks, and whether or not there are on its territory stockpiles of chemical weapons which do not come under its jurisdiction.

Bulk products, whether toxic substances or products, should be declared by their chemical name. The weight in metric tons of each product should be indicated.

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THE REPORT OF THE PERSON

Ammunition should be declared by type, calibre, quantity and chemical content. The weight of each toxic substance should be estimated in metric tons. Devices and equipment designed specially and exclusively to use chemical weapons should also be declared by type, quantity and size. If appropriate, the chemical content of such munitions and its weight should also be declared.

The French delegation is not in favour of the declaration of the location of the stocks; it is, on the other hand, in favour of grouping stocks on the destruction sites.

(b) Destruction of stocks

The initial declaration should be supplemented by a second document: the master plan for the destruction of stocks, accompanied by an estimated time-table.

The principle should be that all stocks, whatever the toxic substance, should be destroyed. However, the following might be permitted by express waiver:

The removal from stockpiles, in the quantities authorized by the Convention, of products, including superlethal toxic agents, to be used for the purposes of protection;

The removal from stockpiles, following a procedure contained in the Convention, of certain precursors or toxic substances utilizable for industrial purposes.

Reconversion to peaceful uses should in no case be authorized for single-purpose precursors or supertoxic agents.

The destruction of stocks should begin as soon as possible after the entry into force of the Convention: a period of six months seems reasonable. It should be completed at the latest 10 years after that date. The procedures to be followed for destruction should be the subject of an agreement between the parties to be annexed to the Convention.

The objective being the simultaneous disappearance of chemical warfare capability by the end of the ten-year period, it would be appropriate to preserve during the process a security balance between the countries possessing stocks.

The stocks should be eliminated in the following order.

- 1. Neurotoxic substances and precursors contained in munitions or in bulk;
- Other lethal supertoxic substances contained in munitions or in bulk;
- Other supertoxic substances contained in munitions or in bulk;
- 4. Lethal toxic substances;
- 5. Other harmful products.

The geographical location of each of the destruction sites should be precisely declared at the same time as the destruction plan. Each year, the countries possessing chemical weapons should provide the Consultative Committee with a detailed destruction programme for the following year.

The Consultative Committee should be informed at the end of each year of the state of progress of the destruction operations in relation to the estimatory plan. At the end of the operations, at the latest 30 days after the completion of the elimination process, it should furnish to the depositary a certificate stating that its stocks have been destroyed.

(c) Verification

The declaration should include an undertaking authorizing international inspections before and during the destruction of stocks.

Within a period not exceeding three months after the declaration of stocks and of the places where they have been grouped at the destruction sites, the country possessing the stocks should accept an on-site international inspection. The essential purpose of the inspection should be to put the stocks under international surveillance by for example, installing among them sensing instruments to be read periodically. Each operation for the removal of munitions or products for destruction should be effected under the supervision of the inspectors already present at the destruction site.

A destruction unit should, before every round of destruction, be inspected by international monitors in order to verify conformity and to install a number of sensors provided for in the procedures to be followed under the terms of the Convention.

The destruction process should be the subject of continuous on-site monitoring in close collaboration with the national "safety" teams. The inspectors should not interfere in the destruction process unless it conflicts with the procedures provided for by the Convention.

(d) Special cases

Non-declared stocks may be discovered after the initial declaration. They should be the subject of a special declaration in two stages.

In the first stage, information should be provided within 30 days concerning the place, circumstances and date of the discovery of the stockpile, the estimated quantity, the type of product and, lastly, the reasons for the omission from the initial declaration.

In the second stage, a detailed declaration of the composition of the discovered stockpile should be provided within three months.

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The stocks in question should be transferred to a destruction site and eliminated either within the framework of the destruction included in the estimated time-table or, if they come within the categories already processed, by a priority destruction operation. Their destruction should be the subject of a special destruction report within a period of 30 days after the completion of the destruction process. Should the stockpile be discovered after the elimination of the stocks declared initially has been completed, i.e. after the ten-year period, a special agreed procedure should be followed under the authority of the Consultative Committee.

II. PRODUCTION FACILITIES

The facilities meant are those that have been specifically designed and set up for the manufacture of chemical weapons. They may be divided into two categories:

Factories for producing toxic substances and/or precursors; Filling shops.

(a) Initial declaration

The States parties to the Convention should be obliged to declare, at the same time as the possession or non-possession of stocks, the existence or non-existence within their territory of the production facilities defined above, whether or not those facilities are under their jurisdiction.

The declaration should comprise the following essential information:

The location, nature and manufacturing capacity of any production plant and any filling shop, whether active or dormant, on the date of entry into force of the Convention;

The measures taken with a view to the internationally-supervised conversion of the facilities to "out of service" status pursuant to the procedures described in the annexes to the Convention;

The plans for the destruction of the facilities under its jurisdiction with an estimated time-table.

(b) International supervision

Within the shortest possible period of time (to be defined), after the entry into force of the Convention, the States parties possessing chemical weapons production facilities should place each of their installations in "out of service" status. Such "closure" should be effected under the supervision of international inspectors, who should be authorized to install sensing equipment to ensure that the facilities are effectively put out of service.

The States parties possessing installations intended for the production of chemical weapons should destroy each facility according to an agreed initial time-table and in accordance with the procedures described in the Convention. It would be desirable for the destruction of installations to be undertaken at the same time as the elimination of stockpiles, i.e. at the latest six months after the entry into force of the Convention, and for the process to be completed within a substantially shorter period (five years, for example), so as to increase confidence in the desire for disarmament.

Provision might be made for the temporary conversion of a production facility or a filling shop into a destruction unit.

Such a unit would have to be destroyed at the end of the destruction operations and in any event 10 years at the latest after the entry into force of the Convention.

In general, no opportunity should be provided for converting production facilities to non-hostile purposes.

Production facilities should be destroyed in the following order:

- 1. Filling shops;
- Toxic substance production units;
- 3. Precursor production units.

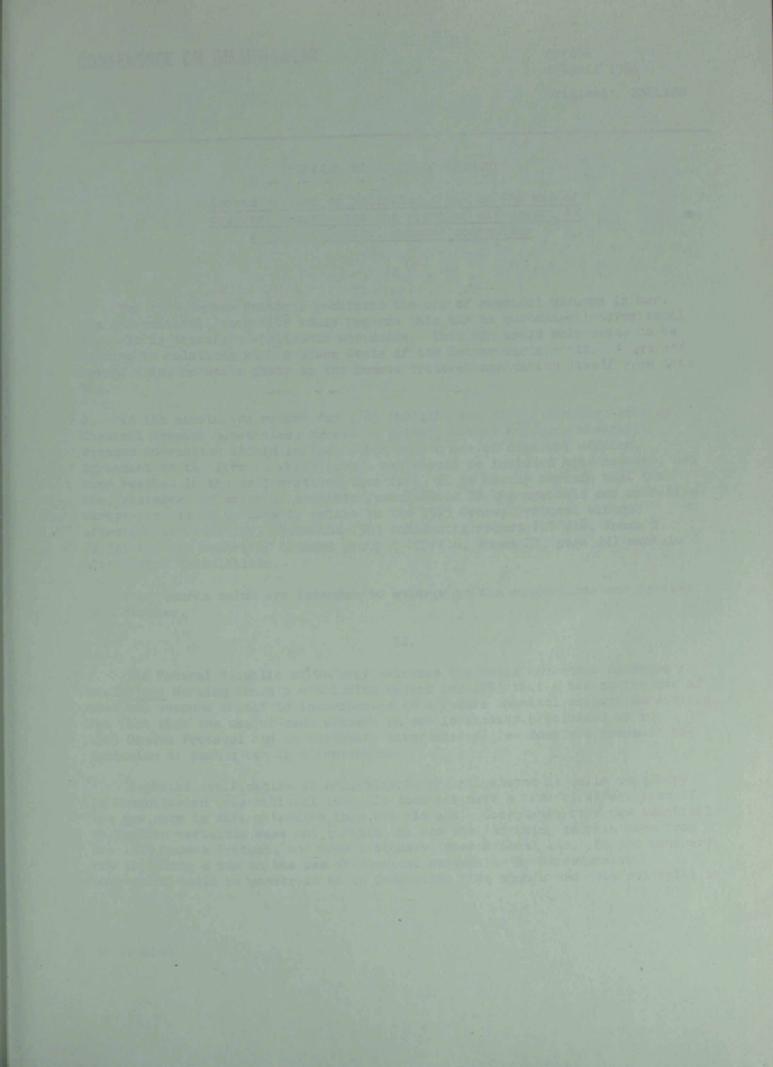
The States parties should also undertake to provide the Consultative Committee every year with a report on the progress of the destruction activities in the light of the initial plan and an estimated time-table for the following year. They should certify 30 days at the latest after the last destruction that all their installations have been destroyed.

(c) Verification

Each State party possessing production facilities should undertake to authorize on-site inspections after the initial declaration during the interim period and after each destruction operation.

Within a period not exceeding three months after the entry into force of the Convention, international verifications should be carried out at each production facility. Their purpose should be to confirm that each unit has in fact been "closed" and to place the production facilities under international supervision by installing sensing instruments to be read periodically.

Provision should be made for further on-site systematic international checking at the end of each destruction operation and at regular intervals to verify the validity of the closure(by reading of the sensing instruments).





CD/496 4 April 1984

Original: ENGLISH

FEDERAL REPUBLIC OF GERMANY

Considerations on including a ban on the use of chemical weapons and the right of withdrawal in a future chemical weapons convention

I.

- 1. The 1925 Geneva Protocol prohibits the use of chemical weapons in war. The international community today regards this ban as customary international law. It is therefore applicable worldwide. This ban could only cease to be binding in relations with another State if the latter violated it. Above and beyond this, no State party to the Geneva Protocol can detach itself from this ban.
- 2. In its concluding report for 1983 (CD/416) the Ad hoc Working Group on Chemical Weapons nonetheless agreed in principle that a future chemical weapons convention should include a ban on the use of chemical weapons. Agreement on the form in which such a ban should be included has, however, not been reached in the deliberations thus far. It is merely certain that the ban, expressed by means of suitable formulations in the preamble and operative paragraphs, is to be made to relate to the 1925 Geneva Protocol without affecting its validity. Both the 1983 concluding report (CD/416, Annex I, IA 2b) and the report of contact group C (CD/416, Annex II, page 22) contain alternative formulations.

The remarks below are intended to enlarge on the suggestions and develop them further.

II.

1. The Federal Republic of Germany welcomes the basic consensus recorded in the Ad hoc Working Group's concluding report for 1983 that a ban on the use of chemical weapons should be incorporated in a future chemical weapons convention. The fact that the use of such weapons in war is already prohibited by the 1925 Geneva Protocol and by customary international law does not preclude the inclusion of such a ban in a convention.

Repeated codification of prohibitions or obligations is quite customary in humanitarian international law. It does not have a harmful effect even if the new norm is more extensive than the old one. Acceptance of a new identical obligation certainly does not curtail the old one, deriving in this case from the 1925 Geneva Protocol and from customary international law. On the contrary, not including a ban on the use of chemical weapons in a comprehensive convention could be construed as an indication that such a ban does not exist in

customary international law. There are also other general reasons for not drafting a chemical weapons convention in such a manner that the main practical case, namely the use of chemical weapons, is excluded.

2. It is evidently desirable to include a ban on the use of chemical weapons in a future convention. It must be ensured, however, that both the 1925 Geneva Protocol and the relevant rules of customary international law are merely reaffirmed when incorporating a ban on the use of chemical weapons in a convention and that a verification mechanism is provided for ensuring compliance with the ban.

The first formulation proposed by the Ad hoc Working Group in CD/416, Annex I, IA 2b, takes account of these considerations. However, a reference to the relevant rules of customary international law would be desirable in conformity with paragraph 4 of the United Nations General Assembly resolution 37/98 d.

The three additional alternatives provided in CD/416, Annex I, IA 2b, should not be taken into account since the first two of them ignore other legal bases for a prohibition, whilst the third detracts from the ban on use under customary international law. There are no objections to the proposals by contact group C for the wording of the preamble and operative paragraphs I to III, as contained in CD/416, Annex II, Appendix I, page 24. However, in the preamble, reference should also be made to the ban existing under customary international law.

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- 1. As regards the legal content of prohibitions in a chemical weapons convention and their effects in terms of disarmament, considerable importance attaches to the manner in which the right of withdrawal is formulated in such a convention. In particular, it must be ensured that the binding effect of the convention is no less durable than that of the 1925 Geneva Protocol, which cannot be denounced. In its 1983 concluding report the Ad hoc Working Group suggested a formulation for the inclusion of the right of withdrawal in a convention (CD/416, Annex I, VI B). This formulation needs to be improved.
- 2. The legal implications of incorporating in a convention a ban on the use of chemical weapons and a right of withdrawal should be examined in more detail. The existing formulation proposed by the Ad hoc Working Group in CD/416, Annex I, VI B, gives cause for misgivings because it is very extensive and does not include any criteria admitting of objective assessment in case of withdrawal. Admittedly, it corresponds to similar provisions contained in numerous existing international agreements. It is acknowledged that this formulation is intended to enable countries to accede to the convention without reservations.
- The formulation of the withdrawal clause proposed by the Ad hoc Working Group has, however, consequences going much further than any reservations with regard to the 1925 Geneva Protocol. The scope of the ban on the use of chemical weapons contained in the Protocol is limited by the fact that numerous states declared, when assuming the obligations under the Protocol, that these would cease to be binding towards any adversary whose armed forces violated the ban. However, the formulation suggested by the Ad hoc Working Group permits withdrawal not only if the ban is violated by an adversary, but also generally speaking whenever a country believes that unspecified extraordinary events related to the subject matter of the convention have jeopardized its supreme interests.

This virtually means that the binding effect of the convention is subject to the discretion of the contracting States. The exercise of such discretion can apart from the continuing binding effect of the 1925 Geneva Protocol and of the relevant rules of customary international law - in the final analysis only be countered with the argument that it should not be abused, but here it is hard to draw the dividing line.

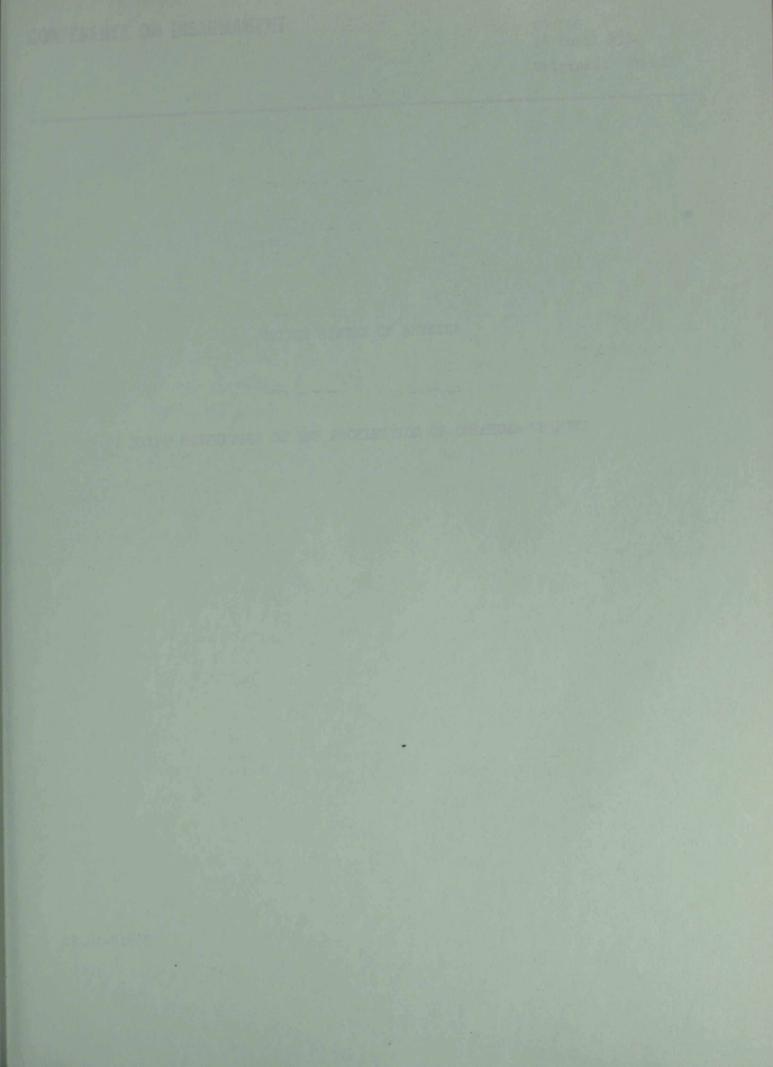
With the formulation proposed by the Ad hoc Working Group there is thus the danger of countries claiming that, by withdrawing from the chemical weapons convention, they are also released from their obligations under the 1925 Geneva Protocol and customary international law. This is legally incorrect, but could nonetheless result in practice in the validity of the relevant norms that prohibit the use of chemical weapons being impaired.

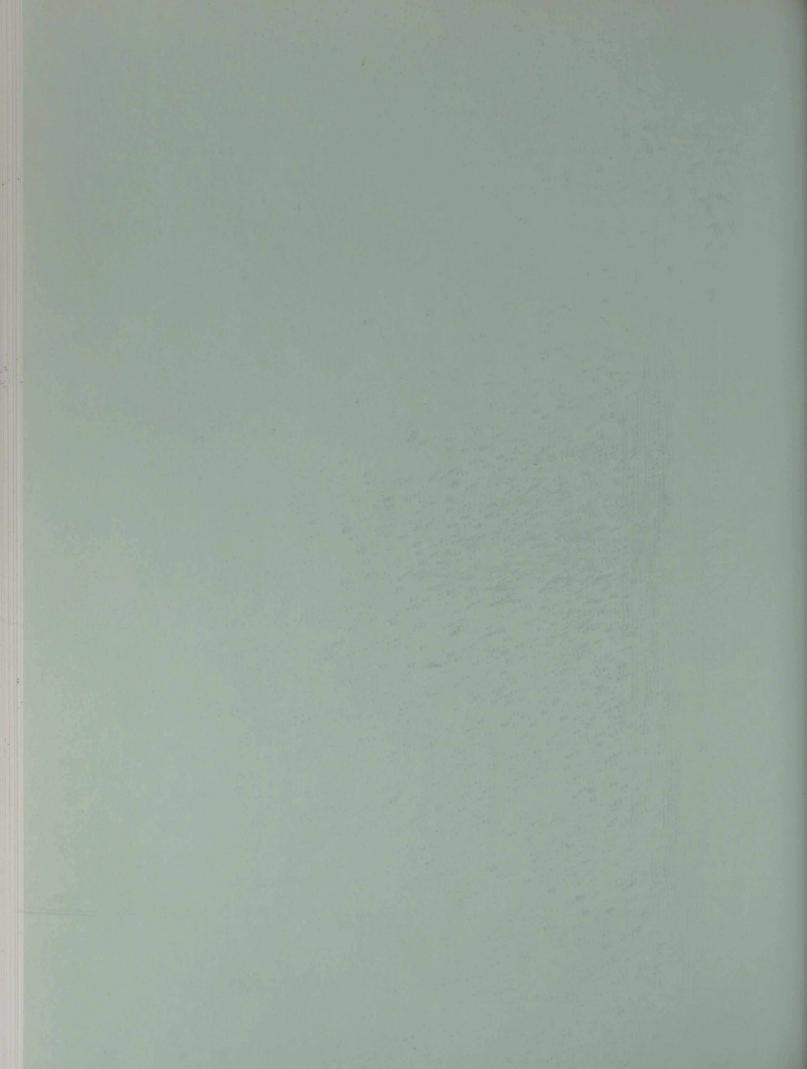
On the basis of the provisions of the Geneva Protocol, it would only be possible for a contracting party to withdraw from its obligations if an adversary violated the ban on the use of chemical weapons.

As far as such a ban is concerned, a future convention should therefore not provide for the possibility of withdrawal in this respect, but should merely refer to the existing legal situation. Formulations to this effect require further consideration by the Ad hoc Working Group.

- 4. Apart from a ban on the use of chemical weapons, a comprehensive convention will include numerous other prohibitions and obligations of key importance as well as obligations of less significance and scope. The possibility of withdrawal in the event of their being violated should therefore be differentiated accordingly:
 - Violations of the ban on the use, production or transfer of chemical weapons or of the obligations stipulating the destruction of existing chemical weapons stockpiles or chemical weapons production facilities should be regarded as grave violations permitting withdrawal from the prohibitions on production and transfer as well as from the aforementioned obligations.
 - Violations of other prohibitions of obligations of the convention should, on the other hand, only permit withdrawal on a reciprocal basis from the prohibition or rule violated. In such cases, the contracting party would therefore, cease to be bound by the prohibition or obligation involved, whilst remaining bound by the other prohibitions and rules of the convention.

Furthermore, in the event of suspected violation, the right of withdrawal should not be available forthright. The means of verification and complaint afforded by the convention should first be exhausted. Only if they do not dispel the suspicion and if a contracting State regards its supreme interests jeopardized should withdrawal be possible. Withdrawal should be the final legal means that can be resorted to in the event of a violation of the convention.





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UNITED STATES OF AMERICA

DRAFT CONVENTION ON THE PROHIBITION OF CHEMICAL WEAPONS

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CONVENTION ON THE PROHIBITION OF CHEMICAL WEAPONS

The States Parties to this Convention,

Reaffirming their adherence to the objective of general and complete disarmament under strict and effective international control, including the prohibition and elimination of all types of weapons of mass destruction,

Desiring to contribute to the realization of the purposes and principles of the United Nations, as set forth in its Charter,

Recalling the significance 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 also of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Wespons and on Their Destruction, signed at Washington, London and Moscow on 10 April 1972, and calling upon all States to comply strictly with the said agreements,

Determined, for the sake of all mankind, to exclude completely the possibility of toxic chemicals being used as weapons,

Convinced that such use would be repugnant to the conscience of mankind and that no effort should be spared to minimize this risk,

Considering that achievements in the field of chemistry should be used exclusively for the benefit of mankind,

Convinced that the complete and effective prohibition of the development, production and stockpiling of chemical weapons, and their destruction, represents a necessary step towards the achievement of these common objectives,

Fulfilling the commitment under Article IX of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Wespons and on Their Destruction with regard to the effective prohibition of chemical weapons,

Have agreed as follows:

Article I

Basic Prohibition

Each Party undertakes not to:

- (a) develop, produce, otherwise acquire, stockpile, or retain chemical weapons, or transfer chemical weapons to anyone;
 - (b) conduct other activities in preparation for use of chemical weapons;
 - (c) use chemical weapons in any armed conflict; or
- (d) assist, encourage, or induce, directly or indirectly, anyone to engage in activities prohibited to Parties under this Convention.

Article II

Definitions

For the purposes of this Convention:

- 1. "Chemical weapons" means,
- (a) super-toxic lethal, other lethal, and other harmful chemicals, and their precursors, except for those chemicals intended solely for permitted purposes as long as the types and quantities involved are consistent with such purposes and except for those chemicals which are not super-toxic lethal, or other lethal; chemicals and which are used by a Party for domestic law-enforcement and riot control purposes or used as a herbicide; or
- (b) munitions or devices specifically designed to cause death or other harm through the toxic properties of any chemical which is defined as a chemical weapon under subparagraph (a) of this paragraph and which would be released as a result of the employment of such munitions and devices; or
- (c) any equipment or chemical specifically designed for use directly in connection with the employment of such munitions or devices.
- 2. "Super-toxic lethal chemical" means any toxic chemical with a median lethal dose which is less than or equal to (0.5) mg/kg (subcutaneous administration) or (2,000) mg-min/m³ (by inhalation), when measured by the standard methods specified in Schedule D.
- 3. "Other lethal chemical" means any toxic chemical with a median lethal dose which is greater than (0.5) mg/kg (subcutaneous administration) or (2,000) mg-min/m³ (by inhalation) and which is less than or equal to 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m³ (by inhalation), when measured by the standard methods specified in Schedule D.
- 4. "Other harmful chemical" means any toxic chemical not covered under the terms "super-toxic lethal chemical" or "other lethal chemical", including chemicals which normally cause incapacitation rather than death.
- 5. "Toxic chemical" means any chemical substance, regardless of its origin or method of production, which through its chemical action can interfere directly with normal functioning of man or animals so as to cause death, temporary incapacitation or permanent damage.
- 6. "Precursor" means any chemical which may be used in production of a supertoxic lethal chemical, other lethal chemical, or other harmful chemical.
- 7. "Key precursor" means any procursor that is listed in Schedule C.
- 8. "Permitted purposes" means industrial, agricultural, research, medical or other peaceful purposes: protective purposes; and military purposes that do not make use of the chemical action of a toxic chemical to interfere directly with normal functioning of man and enimals so as to cause death, temporary incapacitation or permanent damage.

- 9. "Protective purposes" means purposes directly related to protection against chemical weapons, but does not mean purposes directly related to the development, production, other acquisition, stockpiling, retention or transfer of chemical weapons.
- 10. "Chemical weapons production facility" means any building or any equipment which in any degree was designed, constructed or used since 1 January 1946, for:
- (a) the production for chemical weapons of any toxic chemical, except for those listed in Schedule B, or the production for chemical weapons of any key precursor; or
 - (b) the filling of chemical weapons.
- 11. "Other activities in preparation for use of chemical weapons" means (to be elaborated), but does not mean activities directly related to protective purposes.

Article III

Permitted Activities

- 1. Subject to the limitations contained in this Convention, each Party may retain, produce, acquire, transfer or use toxic chemicals, and their precursors, for permitted purposes, of types and in quantities consistent with such purposes.
- 2. The following measures shall apply to toxic chemicals for protective purposes:
- (a) The retention, production, acquisition, and use of super-toxic lethal chemicals and key precursors for protective purposes shall be strictly limited to those amounts which can be justified for such purposes. At no time shall the aggregate amount possessed by a Party exceed one metric ton, nor shall the aggregate amount acquired by a Party in any calendar year through production, withdrawal from chemical weapons stocks, and transfer exceed one metric ton. Once a Party has reached the aggregate one metric ton permitted per year, it must not acquire any further such super-toxic lethal chemicals until the next year, at which time it may then acquire only those amounts of such chemicals to replace amounts used or transferred to another Party for protective purposes.
- (b) Each Party which produces super-toxic lethal chemicals or key precursors for protective purposes shall carry out the production at a single specialized facility, the capacity of which shall not exceed (an agreed limit). Information on the facility and its operations shall be provided in accordance with Annex II. The facility shall be subject to systematic international on-site verification, through on-site inspection and continuous monitoring with on-site instruments in accordance with Annex II.
- (c) Each Party shall, in accordance with Annex II, make an annual declaration regarding all key precursors devoted to protective purposes and all toxic chemicals that can be used as chemical weapons but are devoted to protective purposes, as well as provide other specified information on its protective activities.

- (d) The provisions of the Convention do not preclude transfer for protective purposes of super-toxic lethal chemicals or key precursors produced or otherwise acquired for such purposes. Such transfers may be made only to another Party. The maximum quantity transferred to any Party shall not exceed (quantity) in any 12-month period, nor shall it cause the receiving Party to exceed the aggregate limit specified in subparagraph 2 (a) of this Article. Prior to any transfer of such a super-toxic lethal chemical or key precursor, the transferring Party shall provide the information specified in Annex II. Items transferred may not be retransferred to another State.
- 3. In view of the particular risk they pose to achieving the objectives, of the Convention, the chemicals listed in Schedules A, B and C shall be subject to the special measures specified in Annex III.
- (a) In respect of chemicals in Schedule A, each Party shall prohibit all production and use except for production and use of laboratory quantities for research, medical, or protective purposes at establishments approved by the Party; and
- (b) Facilities producing chemicals listed in Schedule C for permitted purposes shall be subject to systematic international on-site varification, through on-site inspection and monitoring with on-site instruments, as specified in Annex II.
- 4. A Party in a position to do so may assist another Party in destruction of chemical weapons, including shipment of chemical weapons to its territory for the purpose of destroying them, or in destruction of chemical weapons production facilities.
- 5. This Convention shall be implemented in a manner designed in so far as possible to avoid hampering the economic or technological activities of Parties to the Convention or international co-operation in the field of peaceful chemical activities including the international exchange of toxic chemicals and equipment for the production, processing, or use of toxic chemicals for peaceful purposes in accordance with the provisions of the Convention.

Article IV

Declaration of Chemical Weapons, Chemical Weapons Production Facilities and Past Transfers

- 1. Each Party shall file a declaration, within 30 days after the Convention enters into force for it, stating whether it has under its control anywhere, any chemical weapons, any chemical weapons production facility, any super-toxic lethal chemicals or key precursors for protective purposes, or any production facility for super-toxic lethal chemicals and key precursors for protective purposes. The declaration shall also state whether the Party has on its territory, under the control of others, including a State not party to this Convention, any of the foregoing and their locations.
- 2. The declaration filed by each Party shell comply with the requirements of Annex II and shall state:
- (a) the precise location of any chemical weapons under its control and the detailed inventory of the chemical weapons at each location;

- (b) its general plans for destruction of any chemical weapons under its control;
- (c) the precise location, nature, and capacity of any chemical weapons production facility under its control at any time since 1 January 1946;
- (d) its plans for closing and eventually destroying any chemical weapons production facilities under its control;
- (e) the precise location and capacity of the single specialized production facility, if any, for super-toxic lethal chemicals and key precursors permitted by subparagraph 2 (b) of Article III;
- (f) the precise location and nature of any other facility under its control designed, constructed or used, since (date) for the production of chemicals listed in Schedules B and C;
- (g) the precise location and nature of any facility under its control designed, constructed, or used since (date), for development of chemical weapons, including test and evaluation sites; and
- (h) whether the Party has transferred control of chemical weapons or equipment for their production since (date) or has received such weapons or equipment since that date. If so, specific information shall be provided in accordance with Annex II.

Article V

Chemical Weapons

- 1. Each Party shall, in accordance with Annex II:
- (a) provide information on the location and composition of any chemical weapons, pursuant to Article IV;
- (b) provide a general plan for destroying its chemical weapons, pursuant to Article IV and, subsequently, provide more detailed plans;
- (c) ensure access to its chemical weapons immediately after the declaration is filed, for the purpose of systematic international on-site verification of the declaration, through on-site inspection;
- (d) ensure, through access to its chemical weapons for the purpose of systematic international on-site verification, and through on-site inspection and continuous monitoring with on-site instruments, that the chemical weapons are not removed except to a destruction facility;
- (e) destroy its chemical weapons, pursuant to the time-table specified in Annex II, beginning not later than 12 months, and finishing not later than 10 years, after the Convention enters into force for it;
- (f) provide access to the destruction process for the purpose of systematic international on-site verification of destruction, through the continuous presence of inspectors and continuous monitoring with on-site instruments;

- (g) provide information annually during the destruction process regarding implementation of its plan for destruction of chemical weapons; and
- (h) certify, not later than 30 days after the destruction process has been completed, that its chemical weapons have been destroyed.
- 2. All locations where chemical weapons are stored or destroyed shall be subject to systematic international on-site verification, through on-site inspection and monitoring with on-site instruments in accordance with Annex II.
- 3. Old chemical weapons found after the declarations required by Article IV and this Article have been filed shall be subject to the provisions of Annex II regarding notification, interim storage, and destruction, as well as systematic international on-site verification of these actions. These provisions shall also apply to chemical weapons which were inadequately disposed of in the past and are subsequently retrieved. A detailed explanation shall be given as to why these chemical weapons were not declared in the declarations filed pursuant to Article IV and this Article.
- 4. Any Party which has on its territory chemical weapons which are under the control of a State which is not a Party to this Convention shall ensure that such weapons are removed from its territory not later than (____) months after the date on which the Convention entered into force for it.

Article VI

Chemical Warpons Production Facilities

- 1. Each Party shall, in accordance with Annex II,
- (a) cease immediately all activity at each of its chemical weapons production facilities, except that required for closure;
- (b) close each of its chemical weapons production facilities within three months after the Convention enters into force for it in a manner that will render those facilities inoperable;
- (c) provide information on the location, nature and capacity of any chemical weapons production facility, pursuant to Article IV;
- (d) provide a general plan for destroying its chemical wespons production facilities, pursuant to Article IV and, subsequently, provide more detailed plans;
- (e) provide access to each chemical weapons production facility immediately after the declaration is filed, for the purpose of systematic international on-site verification of the declaration through on-site inspection;
- (f) provide access to each chemical weapons production facility for the purpose of systematic international on-site verification to ensure that the facility remains closed and is eventually destroyed, through periodic on-site inspection and continuous menitoring by on-site instruments;

- (g) destroy its chemical weapons production facilities, pursuant to the time-table specified in Annex II, beginning not later than 12 months, and finishing not later than 10 years, after the Convention enters into force for it;
- (h) provide information annually during the destruction period regarding the implementation of its plan for destruction of chemical weapons production facilities; and
- (i) certify, not later than 30 days after the destruction process has been completed, that its chemical weapons production facilities have been destroyed.
- 2. All chemical weapons production facilities shall be subject to systematic international on-site verification, through on-site inspection and monitoring with on-site instruments in accordance with Annex II.
- 3. No Party shall construct any new chemical weapons production facilities, or modify any existing facilities, for purposes prohibited by the Convention.
- 4. A chemical weapons production facility may be temporarily converted for destruction of chemical weapons. Such a converted facility must be destroyed as soon as it is no longer in use for destruction of chemical weapons and, in any case, not later than the deadline for destruction of chemical weapons production facilities set forth in subparagraph 1 (g) of this Article.

Article VII

Consultative Committee

- 1. A Consultative Committee shall be established upon entry into force of this Convention. Each Party shall be entitled to designate a representative to the Consultative Committee.
- 2. The Consultative Committee shall oversee the implementation of the Convention, promote the verification of compliance with the Convention, and carry out international consultations and co-operation among Parties to the Convention. For these purposes it shall:
- (a) carry out systematic international on-site verification, through on-site inspection and monitoring with on-site instruments, of:
 - (i) chemical weapons,
 - (ii) destruction of chemical weapons,
 - (iii) closure and destruction of chemical weapons production facilities,
 - (iv) permitted single specialized facilities for production of supertoxic lethal chemicals and key precursors for protective purposes, and
 - (v) production for permitted purposes of the chemicals specified in Schedule C;

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- (b) provide a forum for discussion of any questions raised relating to the objectives, or the implementation, of the Convention;
- (c) conduct special on-site inspections under Article X and ad hoc on-site inspections under Article XI;
- (d) participate in any inspections agreed among two or more Parties as referred to in paragraph 2 of Article IX, if requested to do so by one of the Parties involved;
- (e) develop, and revise as necessary, detailed procedures for exchange of information, for declarations and for technical matters related to the implementation of the Convention;
- (f) review scientific and technical developments which could affect the operation of the Convention;
 - (g) meet in regular session annually; and
- (h) review the operation of the Convention at five-year intervals unless otherwise agreed by a majority of the Parties.
- 3. The Consultative Committee shall establish an Executive Council which shall have delegated authority to discharge the functions of the Committee set out in subparagraphs 2 (a), 2 (c), 2 (d) and 2 (e) of this Article, and any other functions which the Committee may from time to time delegate to it. The Council shall report to the Committee at its regular sessions on its exercise of these functions.
- 4. Each Party shall co-operate fully with the Consultative Committee in the exercise of its verification responsibilities.
- 5. Further functions and the organization of the Consultative Committee, the Executive Council, the Fact-Finding Panel, the Technical Secretariat and other subsidiary organs are specified in Annex I.

Article VIII

Non-Interference with Verification

A Party shall not interfere with the conduct of verification activities. This shall apply to verification activities conducted in accordance with the Convention by the designated representatives of the Consultative Committee or by Parties, and shall include verification activities conducted by national technical means in a manner consistent with generally recognized principles of international law.

Article IX

Consultation and Co-operation; Resolving Compliance Issues

1. Parties shall consult and co-operate, directly among themselves, or through the Consultative Committee or other appropriate international procedures, including procedures within the framework of the United Nations and in accordance with its Charter, on any matter which may be raised relating to the objectives or the implementation of the provisions of this Convention.

- 2. Parties shall make every possible effort to clarify and resolve, through bilateral consultation, any matter which may cause doubts about compliance with this Convention or which gives rise to concerns about a related matter which may be considered ambiguous. A Party which receives a request from another Party for clarification of any matter which the requesting Party believes causes such doubts or concerns shall provide the requesting Party, within seven days of the request, with information sufficient to answer the doubts or concerns raised along with an explanation of how the information provided resolves the matter. Nothing in this Convention affects the right of any two or more Parties to arrange by mutual consent for inspections among themselves to clarify and resolve any matter which may cause doubts about compliance or gives rise to concerns about a related matter which may be considered ambiguous. Such arrangements shall not affect the rights and obligations of any Party under other provisions of this Convention.
- 3. In order to facilitate satisfactory resolution of matters raised, the Parties concerned may request the assistance of the Consultative Committee or its subsidiary organs. Any Party may request the Executive Council to conduct fact-finding procedures with regard to the Party's own activities or the activities of another Party in order to clarify and resolve any matter which may cause doubts about compliance with the Convention or gives rise to concerns about a related matter which may be considered ambiguous.
- (a) Requests sent to the Executive Council under this Article shall state the doubts or concerns, the specific reasons for the doubts or concerns, and the action that the Council is being requested to undertake.
- (b) Within two days of receipt of such a request, the Technical Secretariat shall, on behalf of the Council, request the Party whose activities create the doubts or concerns to clarify the state of affairs.
- (c) If the doubts or concerns which gave rise to the request have not been resolved within 10 days of the receipt of the request by the Council, its Fact-Finding Panel shall immediately initiate a fact-finding inquiry, and transmit to the Chairman of the Council a report on its work, whether interim or final, within two months of the date of the request. Reports of the Panel shall include all views and information presented during its proceedings.
- (d) All requests for special on-site inspections shall be governed by Article X and all requests for ad hoc on-site inspections by Article XI.
- 4. Any Party whose doubts or concerns about compliance have not been resolved within two months or any Party which has doubts or concerns it believes warrant urgent consideration by all Parties regarding compliance or regarding other matters directly related to the objectives of the Convention may request the Chairman of the Consultative Committee to convene a special meeting of the Committee. The Chairman of the Committee shall convene such a meeting as soon as possible and in any case within one month of the receipt of the request. Each Party may participate in such a meeting, whose functions and rules of procedures are established in Annex I.
- 5. All Parties shall co-operate fully with the Consultative Committee and its subsidiary organs, as well as with international organizations, which may, as appropriate, give scientific, technical and administrative support in order to facilitate fact-finding activities and thereby help to ensure the speedy resolution of the matter which gave rise to the original request.

- 6. The Executive Council shall promptly notify all Parties of the initiation of any fact-finding procedures and shall provide all available information related thereto to any Party upon request. All factions shall also be promptly activited of the refusal by a Party of any request made by the Committee or its subsidiary organs as part of a fact-finding inquiry. All reports regarding the fact-finding activities conducted under this article, as well as on-site inspections under Articles X and XI shall be distributed promptly to all Parties.
- 7. The provisions of this Article shall not be interpreted as offeeting the rights and duties of Parties under Articles X and XI or under the Charter of the United Nations.

Article X

Special On-Site Inspection

- 1. In accordance with the provisions of this Article and Annex II, each member of the Fact-Finding Penel shall have the right to request at any time a special on-site inspection of any other Party, through the Technical Secretariat, to clarify and resolve any matter which may cause doubts about compliance or gives rise to concerns about a related matter which may be considered ambiguous, of:
- (a) any location or facility subject to systematic international on-site inspection pursuant to Articles III, V and VI; or
- (b) any military location or facility, any other location or facility owned by the Government of a Party, and as set forth in Annex II, locations or facilities controlled by the Government of a Party.
- 2. A request shall be handled in the following manner:
- (a) Within 24 hours of the request, the Technical Secretarist shell notify the Party to be inspected and designate an inspection team in accordance with paragraph 4 of this Article; and
- (b) Within 24 hours ofter the receipt of such notification, the Party to be inspected shall provide the inspection team unimpeded access to the location or facility.
- 3. Each Party may solicit from any member of the Fact-Finding Panel a request for an inspection of any other Party under this Article.
- 4. Any special on-site inspection requested through the Technical Secretariat shall be carried out by inspectors designated from among the full-time inspectors of the Secretariat. Each inspection team shall consist of one inspector from each member State of the Fact-Finding Panel, except that if the Party to be inspected is a member State of the Panel, the team shall not include any inspector from that State. The team shall promptly provide a written report to the requesting Party, the inspected Party, and the Fact-Finding Panel. Each inspector shall have the right to have his individual views included in the report.

Article XI

Ad Hoc On-Site Inspection

- 1. In accordance with the provisions of this Article and Annex II, each Porty shall have the right to request, at any time, the Consultative Committee to conduct an ad hoc on-site inspection, to clarify and resolve any matter which may cause doubts about compliance or gives rise to concerns about a related matter which may be considered ambiguous, of any location or facility not subject to Article X.
- 2. A request shell be handled in the following manner:
- (a) The Fact-Finding Panel shall meet within 24 hours to determine whether to request such an <u>ad hoo</u> on-site inspection using the guidelines in Section H of Annex II.
- (b) If the Fact-Finding Penel decides to request an <u>ed hoc</u> inspection, the Party to be inspected shall, except for the most exceptional reasons, provide access within 24 hours of the Panel's request.
- (c) If the Party to be inspected refuses such a request it shall provide a full explanation of the reasons for the refusal and a detailed, concrete proposal for an alternative means of resolving the concerns which gave rise to the request. The Fact-Finding Panel shall assess the explanation and alternative submitted, and may send another request, taking into account all relevant elements, including possible new elements received by the Panel after the original request.
- (d) If the request is again rejected, the Chairman shall immediately inform the Security Council of the United Nations.

Article XII

Domestic Implementation Measures

Each Party shall:

- (a) take any measures necessary in accordance with its constitutional processes to implement this Convention and, in particular, to prohibit and prevent any activity that a Party is prohibited from conducting by this Convention anywhere under its jurisdiction or control, and
- (b) inform the Consultative Committee of the measures it has taken to implement the Convention.

Article XIII

Assistance to Parties Endangered by Chemical Wespons

Each Party undertakes, to the extent it does appropriate, to render assistance to any Party to this Convention that the Security Council of the United Nations decides has been exposed to danger as a result of a violation of the Convention.

Article XIV

Non-Interference with Other Agreements

- 1. Nothing in this Convention shell be interpreted as in any way limiting or detracting from the 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, or under the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, signed at Washington, London and Moscow on 10 April 1972.
- 2. Each Party to this Convention that is also a Party 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, affirms that the obligation set forth in subparagraph (c) of Article I supplements its obligations under the Protocol.

Article XV

Amendments

Any Party may propose amendments to this Convention. Amendments shall enter into force for Parties ratifying or acceding to them on the thirtieth day following the deposit of instruments of ratification or accession by a majority of the Parties to the Convention and thereafter for each remaining Party on the thirtieth day following the deposit of its instrument of ratification or accession.

Article XVI

Duration; Withdrawal

- 1. This Convention shall be of unlimited duration.
- 2. Every Party to this Convention 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 the Convention, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Convention, to the Depositary and to the Security Council of the United Nations three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.

Article XVII

Signature; Ratification; Entry into Force

- 1. This Convention shall be open to all States for signature.
- 2. Any State which does not sign the Convention before its entry into force in accordance with paragraph 4 of this Article may accede to it at any time.

- 3. This Convention and its Annexes, which form an integral part thereof, shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Secretary-General of the United Nations, hereby designated as the Depositary.
- 4. This Convention shall enter into force 30 days after the date of deposit of the (fortieth) instrument of ratification.
- 5. For each State ratifying or acceding after the deposit of the (fortieth) instrument of ratification or accession, the Convention shall enter into force on the thirtieth day following the deposit of the instrument of ratification or accession.
- 6. The Depository shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or of accession and the date of the entry into force of this Convention, and of the receipt of other notices. The Depository shall immediately upon receipt transmit any notices required by this Convention to every Party.
- 7. This Convention shall be registered by the Depositary pursuant to Article 102 of the Charter of the United Nations.

Manual antipular in Exception Count Article XVIII

Languages

This Convention, the English, Arabic, Chinese, French, Russian and Spanish texts of which are equally authentic, shall be deposited with the Secretary—General of the United Nations.

1. In carrying out its pasporalbilities, the Executive Council should, in

DETAILED UNITED STATES VIEWS ON THE CONTENTS OF THE ANNEXES TO THE CONVENTION */

Annex I

CONSULTATIVE COMMITTEE

Provisions should be included along the following lines:

Section A. General Provisions

- 1. The Consultative Committee established purauant to Article VII should convene in (venue) not later than 30 days after the Convention enters into force.
- 2. The Consultative Committee should subsequently meet in regular sessions annually for the first 10 years after the Convention enters into force, and annually thereafter unless a majority of Parties agrees that a meeting is unnecessary. A special meeting may be convened at the request of any Party or of the Executive Council.
- 3. In order to assist it in carrying out its functions, the Consultative Committee should establish an Executive Council, as provided in Section B of this Annex, as well as a Fact-Finding Panel, a Technical Secretariat and such other subsidiary bodies as may be necessary for its work.
- 4. The Executive Council should be responsible for carrying out the functions of the Consultative Committee specified in paragraph 2 of Article VII during the period when the latter is not in session. In particular, it shall be responsible for the activities in paragraph 1 of Section B of this Annex.
- 5. Except as specified elsewhere, the Committee and its subordinate bodies should take decisions where possible by consensus. If consensus cannot be reached within 24 hours, a decision may be taken by a majority of those present and voting. The report on a fact-finding inquiry should not be put to a vote, nor should any decision be taken as to whether a Party is complying with the provisions of the Convention.
- 6. The chairman of the Committee should be chosen by the Committee itself.
- 7. The Committee should present an annual report on its activities to the Parties.
- 8. The expenses of the Committee should be met by (_____).
- 9. The question of international legal personality of the Committee and its subsidiary organs should be addressed.

Section B. Executive Council

1. In carrying out its responsibilities, the Executive Council should, in particular, be responsible for:

^{*/} This paper presents current United States views on the contents of the annexes of a chemical weapons convention. It is subject to further modification, elaboration and refinement.

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- carrying out systematic international on-site verification;
- (b) ensuring the implementation of , and compliance with, the Convention;
- (c) obtaining, keeping and disseminating information submitted by Parties regarding matters pertaining to the Convention;
 - (d) rendering services to Parties and facilitating consultations among them;

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- (e) receiving requests from Parties, including requests for fact-finding; restricted to the state of the
- (f) deciding and overseeing specific action to be taken regarding such requests; શુક્તારુપાણિક માના વેલ્લામાં છે. આ અનુમુખ્યાલા દિવસાયા કેમ્પ્રામાં ઉપાયમ છે. ત્યારા છે કે કિમ્પુ સિંહ કરી
- (g) overseeing the activities of the other subordinate bodies of the Consultative Committee, including ensuring the proper execution of the functions of the Technical Secretariat; including the carrying out of systematic international on-site verification pursuant to Articles III, V, VI: the carrying out of special on-site inspections pursuant to Article X; and the carrying out of ad hoc on-site inspections pursuant to Article XI;
 - (h) reporting to the Consultative Committee; and
- (i) requesting, when it deems necessary, a special meeting of the Consultative Committeeville

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- 2. (a) The Executive Council should be established within 45 days after entry into force of the Convention and should be composed of one representative from each of not more than 15 Parties, plus a non-voting chairman. projection of the control of the con
- (b) Ten members should be elected by the Consultative Committee after nominations by the chairman based on consultation with the Parties. In selecting these members, due regard should be given to ensuring an appropriate geographic balance. These members should serve for a two-year period, with five of these members replaced each year. rated for a locke, que action in fact all their languages in the decision
- (c) In addition, those permanent members of the Security Council of the United Nations who are Parties to the Convention should be represented.
- (d) Each member may be assisted at meetings by one or more technical or other advisers. ati ban - ---- ban ban ban bankan kan bankan bankan
- (e) The chairman of the Consultative Committee should serve as chairman of the Executive Council.

Section C. Fact-Finding Panel Top with period to congress and two Actions all

- Within 45 days after entry into force of the Convention, the Consultative 1011 Committee should establish a Fact-Finding Panel subordinate to the Executive Council, which should be responsible for conducting fact-finding inquiries pursuant to Article IX, considering reports on special on-site inspections pursuant to Article X; and overseeing at hoc inspections pursuant to Article ZI.
- (a) The fact Finding Panel should consist of diglomatic representatives of five Parties, plus a non-voting chairman.

- four-fifths vote after nominations by the chairman based on consultations with Parties. These member States should serve for a six-year period, with one Party being replaced every other year. Of these three Parties, one should represent the (Western group), one the (Eastern group), and one the (neutral/non-aligned group).
- (c) In addition there should be one diplomatic representative each from the United States and the Soviet Union.
- (d) The chairman of the Executive Council should serve as chairman of the Fact-Finding Panel.
- 3. (a) The Panel should convene within 10 days after receipt of a request from a Party for a fact-finding inquiry, within 24 hours after a request for an ad hoc on-site inspection pursuant to Article XI, or immediately on completion of a special on-site inspection by inspectors from the Technical Secretariat pursuant to Article X, to review the information available, conduct necessary inquiries, and make appropriate findings of fact.
- (b) The work of the Fact-Finding Panel should be organized in such a way as to permit it to perform its functions.
- (c) The Panel should transmit to the chairman of the Executive Council its findings of fact, whether in orim or final, within two months of the date of the convening of the Panel. Reports of the Panel's findings should include all views and information presented during the Panel's proceedings.
- (d) Each member should have the right, through the chairman, to request from Parties and from international organizations such information and assistance as the member considers desirable for the accomplishment of the work of the Panel.
- (e) The first meeting of the Panel should be held not later than 60 days after entry into force of the Convention to agree on its organization and rules of procedure. At this meeting the chairman should submit recommendations, based on consultations with Parties and signatories.

Section D. Technical Secretariat

- 1. The Technical Secretariat should:
 - (a) conduct on-site inspections pursuant to Articles III, V, VI, X, and XI;
- (b) provide the necessary administrative support to the Consultative Committee, the Executive Council, the Fact-Finding Panel and such other subsidiary bodies as may be established;
- (c) render appropriate technical assistance to Parties and to the Executive Council in implementing the provisions of the Convention, such as reviewing Schedules A, B, C, and D, developing technical procedures, and improving the effectiveness of verification methods;
- (d) receive from Parties and distribute to them data relevant to the implementation of the Convention;

- (e) negotiate the subsidiary arrangements for systematic international on-site inspections provided for in Annex II, section B, subsection A, paragraph 3; and the
- (f) assist the Executive Council on such other tasks as may be agreed.
- 2. The composition of the Technical Secretariat should be elaborated by the Preparatory Commission.
- 3. All inspectors should be technically qualified and acceptable to their governments.

Section E. Special Meeting of the Consultative Committee

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- 1. DoThe special meeting of the Consultative Committee provided for in Article IX should undertake to solve any problem which may be raised by the Party requesting the meeting. For this purpose, the assembled Parties should be entitled to request and receive any information which a Party is in a position to communicate.
- 2. The work of the special meeting should be organized in such a way as to permit it to perform its functions.
- 3. Any Party should be able to participate in the meeting. The meeting should be chaired by the chairman of the Committee.
- 4. Each Party should have the right, through the chairman, to request from States and from international organizations such information and assistance as the Party considers desirable for the accomplishment of the work of the meeting.
- 5. A summary of the meeting, incorporating all views and information presented during the meeting, should be prepared promptly and distributed to all Parties.

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Annex II

VERIFICATION

Provisions along the following lines should be included:

Section A. Declarations

A. General Provisions

- 1. Unless otherwise stipulated, information required to be provided should be submitted to the Depositary until the Consultative Committee is established and thereafter to the Committee. The information should be provided according to a standard format, which should be specified by the Depositary, after consultation with signatories, for information submitted before establishment of the Committee, or specified by the Committee for information submitted after its establishment. The information should be made available to Parties.
- 2. Locations should be specified with sufficient precision to permit unambiguous identification of sites and facilities. For this reason all locations should be specified by geographical place name and co-ordinates, as well as by any other official or commonly used designation, and should be clearly marked on maps of a suitable scale. For facilities within complexes, the exact position within the complex should be specified.
- 3. The accuracy and completeness of all declarations should be subject to the procedures specified in Articles IX, X and XI. As specified in subsections B and C, declarations should also be subject to systematic international on-site verification.

B. Contents of the declarations required by Articles IV, V and VI

- 1. Chemicals should be declared by scientific chemical name, chemical structural formula, toxicity and weight. The fraction in munitions and devices should be given. Munitions and devices should be declared by type and quantity. "Specifically-designed" equipment and chemicals, referred to in Article II, subparagraph 1(c), should be declared by type and quantity.
- 2. The exact location of chemical weapons within a site and form of storage (bulk, cylinder, etc.) should be declared, and storage standards should be provided.
- 3. The general plan for destruction of chemical weapons should include the type of operation, schedules of quantities and types of chemical weapons to be destroyed, and products.
- 4. Chemical weapons production facilities should be declared even if they have been destroyed; are now being used for other purposes; or were or are dual-purpose facilities designed or used in any degree for civilian production. The declaration should specify the chemical name of any chemicals, including civilian products, if any, ever produced at the facility, whether the facility still exists; and, if not, its disposition.
- 5. The information regarding existing chemical weapons production facilities should include information about the chemical process used, precisely what equipment and structures are at the facility, including any old or replacement equipment not in use, as well as equipment and spare parts stored at the facility; the methods that

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will be used to close and eventually to destroy the equipment and structures; the general methods that will be used to dispose of the debris left from the destruction process; and the time periods (i.e., the months or years) when specific production facilities will be destroyed, respectively.

- 6. The declaration regarding a single specialized production facility for supertoxic lethal chemicals and key precursors for protective purposes should include a detailed description of the equipment at the facility.
- 7. The capacity of a chemical weapons production facility, or of a single specialized facility for production of super-toxic lethal chemicals or key precursors for protective purposes, should be expressed in terms of the quantity of end product that can be produced in (period), assuming that the facility operates (schedule). The capacity of a chemical weapons production facility used for filling chemical weapons should be expressed as the quantity of chemical that can be filled into munitions or other chemical weapons in (period), assuming that the facility operates (schedule).
- 8. With respect to past transfers, Parties should be required to make a declaration covering activities since (date). The declaration should specify the supplier and recipient countries, the timing and nature of the transfer and the current location of the transferred items, if known. The following should be declared:
- (a) transfer of any militarily significant quantities (e.g., one ton) of toxic chemicals, munitions, devices or equipment for chemical weapons purposes; and
- (b) transfers of equipment specifically designed or constructed for production of chemicals, munitions, devices or equipment for chemical weapons purposes.

C. Contents of Other Declarations

- 1. A declaration should be made annually regarding activities for protective purposes. It should cover activities actually conducted in the past year and those planned for the coming year. Information should be provided on:
- (a) operations of any single specialized facility for production of super-toxic lethal chemicals and key precursors, including the schedule and names and quantities of chemicals involved;
- (b) the scientific chemical name, chemical structural formula, quantity and use of each key precursor devoted to protective purposes and each toxic chemical that can be used as a chemical weapon but is devoted to protective purposes;
 - (c) (other protective activites to be agreed).
- 2. As specified in Article III and Annex III, a declaration should be made annually regarding the chemicals listed in Schedules A, B, and C.
- 3. Thirty days prior to the transfer to another Party of any super-toxic lethal chemical or key precursor for protective purposes, information should be provided on the recipient, and on the scientific chemical name, chemical structural formula, quantity, and end use, of the chemical transferred.
- 4. The detailed plan for destruction of chemical weapons, to be provided pursuant to Article V should be submitted six months before destruction operations are to begin and should contain agreed information necessary for the planning and carrying out of systematic international on-site verification.

- 5. The detailed plan for destruction of any chemical weapons production facility; to be provided pursuant to Article VI, should be submitted six months before destruction operations are to begin and should contain agreed information necessary for the planning and carrying out of systematic international on-site verification.
- 6. As specified in Articles V and VI, notifications should be provided annually regarding the implementation of plans for destruction of chemical weapons and chemical weapons production facilities, respectively. These notifications should contain agreed information on activities actually conducted in the past year and contain agreed for the coming year. Information should also be provided on any changes in the detailed plans for destruction.
- 7. Should any Party discover or retrieve any old chemical weapons (e.g., weapons found on World War I battlefields or dumped at séa after World War II) anywhere under its jurisdiction or control after the declarations required by Articles IV and V have been filed it should:
- (a) notify the Consultative Committee promptly of the approximate quantity and type of the chemical weapons found. The notification should also specify how, where, and when the chemical weapons were found, why they were previously undeclared, and where they are located. The notification should be filed within 45 days of the vehere they are located. The notification should be filed within 45 days of the discovery. In the case of multiple and frequent discoveries of small quantities, a notification may cover a one-month period; such a notification should be made within 30 days of the end of the reporting month; and
- (b) notify the Consultative Committee, within five months of the first notification, regarding the exact quantity and type of chemical weapon found, including the scientific chemical name and chemical structural formula of any toxic chemical found and its quantity. The notification should specify plans for the destruction of the chemical weapons.
 - (c) In the event that some of the information stipulated under subparagraphs (a) and (b) of this paragraph cannot be provided within the periods specified, submit as much information as possible, specify the reasons the remainder is unavailable, and give an estimate of when such information might be provided.

Section B. On-Site Verification

A. General Provisions

- 1. All on-site verification, whether systematic international verification, special on-site inspection or ad hoc on-site inspection, under the auspices of the Consultative Committee should be carried out according to procedures which are agreed in advance and based on this Annex.
 - 2. On-site verification should make use of both on-site inspectors and on-site instruments.
 - 3. The Executive Council and the host Party should promptly agree upon subsidiary arrangements which specify in detail, to the extent necessary to permit the Committee to fulfill its verification responsibilities in an effective and efficient manner, how the on-site verification provisions will be implemented at each of the locations subject to systematic international on-site verification.

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- 4. The privileges and immunities which should be granted to inspectors to ensure that they can discharge their functions effectively should be specified. The steps that a Party should take to ensure that inspectors can effectively discharge their functions in its territory should also be specified.
 - 5. Certain rights of a Party with respect to the conduct of verification in its territory should be specified. For example, although it should not be required, host Party representatives should be allowed to accompany international inspectors during on-site inspections.
 - 6. Pursuant to the obligation in Article VIII not to interfere in any manner with the conduct of verification activities:
 - (a) entry visas for inspectors should be issued promptly;
 - (b) host Party representatives should be ready to accompany the inspectors immediately. No delays in carrying out the inspections should be allowed to occur under the guise of the unavailability of appropriate host Party representation;
 - (c) no bureaucratic constraints (e.g., governmental travel approval) should be imposed which would interfere with the inspection or provide the host Party with sufficient advance notification of the site to be inspected that the host Party could cover up possible prohibited activities prior to the inspection.
 - 7. The Consultative Committee and the Party concerned should be required to co-operate to facilitate the implementation of the verification measures specified by the Convention.
 - 8. of Verification measures should be implemented in a manner designed:
 - (a) to avoid hampering the economic and technological activities of Parties; and
 - (b) to be consistent with management practices required for the safe conduct of the activities subject to verification.
 - 9. On-site instruments should incorporate a capability for remote monitoring. They should also incorporate data protection and tamper-detecting devices and be serviced only by international inspectors.
 - 10. Full account should be taken of technological developments in order to ensure optimum effectiveness of verification.
 - ll. An agreed timetable for destruction activities should be included to facilitate verification and to ensure that no Party gains military advantage during the destruction period.

B. Inspection and Interim Monitoring of Stocks

- 1. After a Party has filed its declarations pursuant to Articles IV and V, chemical weapons should be subject to inspection immediately, under agreed procedures, to confirm the accuracy of the declarations. These inspections should be completed within (number) days after the filing of the declarations.
- 2. To ensure that a Party does not move chemical weapons to a deployment site or to a clandestine site prior to destruction, the storage facilities should be equipped with monitoring instruments by international inspectors immediately following the confirmatory inspection.

Journing confirmatory inspection of chemical weapons, an on-site survey of each location should be made to determine what preagreed types of instruments would be emplaced to monitor the chemical weapons there prior to removal for destruction. The instruments should be installed and tested by the inspecting team, in the presence of host Party personnel, before the site and facility are declared secure. After emplacement of instruments is complete, on-site inspection should be repeated to confirm that no chemical weapons had been removed from that location since the initial confirmatory inspection. An additional set of agreed procedures should be developed for the removal of chemical weapons from each storage site for transfer to a destruction facility. Until all chemical weapons have been removed for destruction, the storage site should be visited periodically by an international inspection team for routine monitoring and maintenance purposes, e.g., testing the system of instruments.

C. Verification of the Destruction of Chemical Weapons

- 1. The verification procedures should be designed to confirm that chemical weapons are not diverted during transport or any phase of the destruction process and to confirm that the type and quantity of materials destroyed correspond to the declarations and that all materials are actually destroyed.
- 2. Transport of chemical weapons from storage sites and their destruction should be verified by systematic, international on-site procedures. International inspectors should be present at the storage facility when chemical weapons are removed for shipment to declared destruction facilities. The inspectors should verify the chemical weapons being moved and resecure the storage facility once they have been loaded on transports. (However, inspectors would not need to accompany the shipments.) Inspectors should verify that the chemical weapons are received at the destruction facility and placed in interim storage there. On-site instruments, as well as inspectors, should be utilized for verification of destruction. Inspectors should be present in the destruction facility continuously when the facility is operating.
- The destruction procedures should permit systematic international on-site verification. The following procedures should not be used for the destruction of chemical weapons: dumping in any body of water, land burial, or open-air burning. The destruction process should, for practical purposes, be irreversible.

D. Closure, Inspection, and Interin Monitoring of Chemical Weapons

- chemical weapons production facilities should be immediately subject to inspection to confirm the accuracy of the declaration, and to confirm the implementation of agreed procedures for closure. These inspections should be completed within (number) days after the filing of the declaration. Subsequent verification procedures should be implemented to confirm that Parties have not resumed production or filling at the facility and to confirm that equipment has not been removed.
- 2. An inventory of key equipment should be prepared, and its accuracy verified by international inspectors during confirmatory inspection. At the same time, the inspector should survey the facility to determine which of the pre-agreed types of final functions should be emplaced to monitor the facility until it is destroyed. The instruments should be installed and tested by the inspecting team, in the presence of host Party personnel, before the facility is declared secure. During the interim between securing the facility and actually destroying it, the facility should be visited periodically by an international inspection team for routine monitoring and maintenance purposes, e.g., testing the system of instruments.

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E. Verification of the Destruction of Chemical Weapons Production Facilities

- 1. The verification procedures should be designed to confirm that chemical weapons production facilities have been destroyed.
- 2. International inspectors should be present at the facility to be destroyed prior to beginning destruction to verify that the inventory of structures, equipment, parts, etc., at the facility is consistent with the inventory prepared when the facility was secured. During destruction, inspectors need not be present continuously, provided agreed procedures, including the use of on-site instruments, are implemented to ensure that the facility remains inoperative during the destruction phases. On-site inspections would be conducted periodically throughout the destruction process.
- 3. Equipment specifically designed for chemical weapons production should be destroyed. All items to be destroyed should be destroyed according to agreed procedures which permit systematic international on-site verification. No equipment may be removed from the site prior to check-off from the original inventory by the inspectors. Structures should be destroyed completely, by razing, and a final international inspection performed.

F. Inspection and Monitoring of the Permitted Single Specialized Production Facility

- 1. The verification procedures should be designed to confirm that the production of super-toxic lethal chemicals and key precursors in quantities significantly in excess of one ton does not occur at the single specialized production facility.
- 2. The precise location of the facility should be declared and the facility should be inspected by international inspectors before it is used to ensure that its capacity will not permit the production, on an annual basis, of quantities significantly in excess of one ton. On-site instruments should be installed which will signal whether the facility is active or inactive. An annual declaration should be made about planned production activities. International inspectors should have the right to visit the facility periodically to enable them to monitor production activities, as well as inactive periods, through on-site inspection.

G. Verification Measures Applicable to Production for Permitted Purposes of Chemicals Listed in Schedule C

- 1. The verification procedures should be designed to confirm that these facilities are not used to produce chemical weapons.
- 2. Inspections should occur periodically on a random basis. Such inspections should be conducted under agreed procedures which provide protection for proprietary information.
- During an inspection, international inspectors should have the right to review certain agreed plant records and interview personnel under agreed procedures. Inspectors should be allowed to view agreed areas; take samples from agreed points, such as finished product storage containers and waste treatment areas; and analyse them using agreed methods. Inspectors would not have the right to interfere with plant operations more than necessary to carry out their agreed functions.
- 4. Use of special instruments (e.g., end product samplers) between inspections should be permitted when deemed necessary by the inspectors.

5. Plans to change the end product of the facility or substantially change its capacity should be reported in advance to international authorities. Details of process modification need not be disclosed; however, final products and estimated process modification need not be disclosed; however, final products and estimated process modification inspectors should be permitted to view agreed areas soon after completion of the modifications. At that time, new or altered instruments should be installed, as required.

Harton-site Inspections under Articles X and XI

- Agreed procedures for conducting on-site inspections under Articles X and XI should be specified in this Annex, including:
 - (a) a requirement for definition of the area to be inspected;
 - (b) time limits for providing access to the area to be inspected;
 - (c) the maximum number of personnel on an inspection team;
 - (d) length of service requirements for designation of inspectors;
 - (e) routes of access and means of transportation;
 - (f) types of experimental and support equipment which may be employed and who shall furnish specific types of equipment;
 - (g) procedures for making observations and measurements, including collecting samples and taking photographs;
 - (h) protection of proprietary and confidential information including liability for unauthorized disclosure of such information;
 - (i) services to be furnished by the host Party;
 - (j) rights of inspection personnel, including privileges and immunities;
 - (k) certain rights of the host Party;
 - (1) allocation of expenses;
 - (m) preparation of reports;
 - (n) dissemination of findings;
 - (o) additional rights to be exercised in specific situations; and
 - (p) duration of an inspection.
 - 2. With regard to "locations or facilities controlled by the Government of a Party," referred to in Article X, subparagraph 1(b), this Annex should provide the means of specifying those categories of locations or facilities which shall be subject to special on-site inspections, including the relevant facilities used for the provision of goods and services to the Government of a Party. It is intended that this provision reach any location or facility that in the future might be suspected of being used for activities in violation of this Convention. The specification of such locations and facilities should be a reasonable one.

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- 3. The Committee should use the following guidelines in determining whether to request a Party to permit an ad hoc inspection pursuant to Article XI:
- (a) whether the information available to it causes any doubts about compliance with the Convention or gives rise to any concerns about a related matter which may be considered ambiguous;
 - (b) whether the proposed inspection would assist in determining the facts;
 - (c) whether the locations to be inspected are clearly defined and limited to places relevant to determination of the facts; and
 - (d) whether the proposed arrangements will limit intrusion to the level necessary to determine the facts.

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4. The Technical Secretariat should ensure that sufficient inspectors will always be readily available to carry out special con-site inspections pursuant to Article X and ad hoc on-site inspections pursuant to Article XI.

Annex III

SCHEDULES: CHEMICALS SUBJECT TO SPECIAL MEASURES; METHODS FOR MEASURING TOXICITY

Provisions along the following lines should be included:

- 1. Schedule A should contain super-toxic lethal chemicals, key precursors, and other particularly dangerous chemicals, which have been stockpiled as chemical weapons or which pose particular risk of such stockpiling. Information on the persons authorized to possess such chemicals, the quantity produced and used at each location and the end uses should be reported annually.
- 2. Schedule B should contain chemicals which are produced in large quantities for permitted purposes but which pose a particular risk of diversion to chemical weapons purposes. In respect of each chemical in Schedule B, every Party should report annually the location of each production facility and statistical data on the aggregate quantities produced, imported, and exported, and on the end uses of the chemical.
- 3. Schedule C should contain chemicals whose production for permitted purposes should be subject to systematic international on-site verification, including key precursors. In respect of each chemical listed in Schedule C, every Party should report annually, for each chemical which is produced, imported or exported in an aggregate amount greater than (quantity), the location of each production facility and statistical data on the aggregate quantities produced, imported, and exported, and on the end uses of the chemical. Plans to establish a new production facility or to change substantially the capacity of an existing production facility should be reported ninety days in advance. Production facilities should be subject to systematic international on-site inspection, pursuant to Article III.
- 4. Schedule D should contain agreed methods for measuring lethal toxicity.
- 5. If a Party has information which in its opinion may require a revision of Schedules A, B, C, or D, it should provide the information to the Chairman of the Consultative Committee who should transmit the information to all Parties. The Technical Secretariat should also submit any such information to the Committee.
- 6. The Executive Council should promptly examine, in the light of all information available to it, whether the Schedule in question should be revised. The Council may recommend that the Schedule be revised or it may recommend that no revision be made. Any recommendation should be communicated promptly to all Parties.
- 7. Any recommendation by the Executive Council should be reviewed by the Consultative Committee at its next regularly scheduled meeting. The Committee may decide to accept the recommendation as stated, or in revised form, or it may decide to reject the recommendation. If requested by five or more Parties, a special meeting of the Committee should be held to review the recommendation. A two-thirds vote of the Committee should be required to revise a Schedule.

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SCHEDULE A

- 1. Ethyl S-2-diisopropylaminoethyl methylphosphonothioate (VX)
- 2. Ethyl N, N-dimethylphosphoramidocyanidate (Tabun)
- 3. iso-Propyl methylphosphonofluoridate (Sarin)
- 4. 1,2,2-Trimethylpropyl methylphosphonofluoridate (Soman)

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- 5. Bis(2-chloroethyl)sulphide (Mustard gas)
- 6, 3-Quinuclidinyl benzilate (BZ)
- 7. Saxitoxin
- 8. 3,3-Dimethylbutanol-2 (Pinacolyl alcohol)
- 9. Methylphosphonyl difluoride

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- 1. Carbonyl chloride (phosgene)
- 2. Cyanogen chloride
- 3. Hydrogen cyanide
- 4. Phosphorus oxychloride
- 5. Phosphorus trichloride
- 6. Trichloronitromethane (chloropicrin)
- 7. Thiodiglycol

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SCHEDULE C

Key precursors for super-toxic lethal chemicals

- 1. Chemicals containing the P-methyl, P-ethyl or P-propyl bond
- 2. Methyl and/or ethyl esters of phosphorous acid
- 3. 3,3-dimethyl butanol-2 (pinacolyl alcohol)
- 4. N,N disubstituted-B-amino ethanols
- 5. N,N disubstituted-B-amino ethane thiols
- 6. N,N disubstituted-B-aminoethyl halides (halide = Cl, Br or I)

Key Precursors for other toxic chemicals

- 1. Phenyl-, alkyl- or cycloalkyl-substituted glycolic acids
- 2. 3- or 4-hydroxypiperidine and their derivatives

Toxic chemicals

(To be discussed)

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SCHEDULE D

Lethal toxicity should be measured by the procedures specified below: (text of procedures contained in document CD/CW/WP.30, Annexes III and IV; 22 March 1982)

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ANNEX III

RECOMMENDED STANDARDIZED OPERATING PROCEDURES FOR ACUTE SUBCUTANEOUS TOXICITY DETERMINATIONS

1. Introduction

Three categories of agents were defined on the basis of their toxicity:

- (i) super-toxic lethal chemicals;
- (ii) other lethal chemicals;
- (iii) other harmful chemicals.

Lethality limits in terms of ID50 for subcutaneous administration were established to separate three toxic categories at 0.5 mg/kg and 10 mg/kg.

2. Principles of the test method

The test substance is administered to a group of animals in doses corresponding exactly to the category limits (0.5 or 10 mg/kg respectively). If in an actual test the death rate was greater than 50 per cent, then the material would fall into the higher toxicity category; if it was lower than 50 per cent the material would fall into the lower toxicity category.

3. Description of the test procedure

- 3.1 Experimental animal Healthy young adult male albino rats of Wistar strain weighing 200 + 20 g should be used. The animals should be acclimatized to the laboratory conditions for at least five days prior to the test. The temperature of the animal room before and during the test should be 22 + 3 °C and the relative humidity should be 50-70 per cent. With artificial lighting, the sequence should be 12 hours light, 12 hours dark. Conventional laboratory diets may be used for feeding with an unlimited supply of drinking water. The animals should be group-caged but the number of animals per cage should not interfere with proper observation of each animal. Prior to the test, the animals are randomized and divided into two groups; twenty animals in each group.
- 3.2 Test substance Each test substance should be appropriately identified (chemical composition, origin, batch number, purity, solubility, stability etc.) and stored under conditions ensuring its stability. The stability of the substance under the test conditions should also be known. A solution of the test substance should be prepared just before the test. Solutions with concentrations of 0.5 mg/ml and 10 mg/ml should be prepared. The preferable solvent is 0.85 per cent saline. Where the solubility of the test substance is a problem, a minimum amount of an organic solvent such as ethanol, propylene glycol or polyethylene glycol may be used to achieve solution.

- 3.3 Test method Twenty animals receive in the back region 1 ml/kg of the solution containing 0.5 mg/ml of the test substance. The number of dead animals is determined within 48 hours and again after seven days. If the death rate is lower than ten animals, another group of twenty animals should be injected by the same way with 1 ml/kg of the solution containing 10 mg/ml of the test substance. The number of dead animals should be determined within 48 hours and again after seven days. If the result is doubtful (e.g. death rate = 10), the test should be repeated.
- 3.4 Evaluation of the results If the death rate in the first group of animals (receiving a solution containing 0.5 mg/ml) is equal to or higher than 50 per cent, the test substance will fall into the "super-toxic lethal chemical" category. If the death rate in the second group (receiving a solution containing 10 mg/ml) is equal to or higher than 50 per cent, the test substance will fall into the "other lethal chemical" category; if lower than 50 per cent, the test substance will fall into the "other harmful chemical".

4. Data reporting

A test report should include the following information:

- (i) test conditions: date and hour of the test, air temperature and humidity;
- (ii) animal data: strain, weight and origin of the animals;
- (iii) test substance characterization: chemical composition, origin, batch number and purity (or impurities) of the substance; date of receipt, quantities received and used in the test; conditions of storage, solvent used in the test;
 - (iv) results: the number of dead animals in each group, evaluation of results.

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CD/CW/WP.30 Annex IV

ANNEX IV

RECOMMENDED STANDARDIZED OPERATING PROCEDURES FOR ACUTE INHALATION TOXICITY CRITERIA

1. In the assessment and evaluation of the toxic characteristics of chemicals in a vapour state determination of acute inhalation toxicity is necessary. In every case, when it is possible, this test should be preceded by subcutaneous toxicity determination. Data from these studies constitute the initial steps in the establishing of a dosage regimen in subchronic and other studies and may provide additional information on the mode of toxic action of a substance.

Three categories of agents were defined on the basis of their toxicity:

- (i) super-toxic lethal chemicals;
- (ii) other lethal chemicals;
- (iii) other harmful chemical.

Lethality limits in terms of LCt₅₀ for inhalatory application were established to separate three toxic categories at 50 2,000 mg min/m³ and 20,000 mg min/m³.

2. Principles of the test method

A group of animals is exposed for a defined period to the test substance in concentration corresponding exactly to the category limits (2,000 mg min/m or 20,000 mg min/m respectively). If in an actual test the death rate was greater than 50 per cent, then the material would fall into the higher toxicity category; if it was lower than 50 per cent, the material would fall into the lower toxicity category.

3. Description of the test procedure

- strain weighing 200 ± 20 g should be used. The animals should be acclimatized to the laboratory conditions for at least five days prior to the test. The temperature of the animal room before and during the test should be 22 ± 3°C and the relative humidity should be 50-70 per cent. With artificial lighting, the sequence should be 12 hours light, 12 hours dark. Conventional laboratory diets may be used for feeding with an unlimited supply of drinking water. The animals should be group-caged but the number of animals per cage should not interfere with proper observation of each animal. Prior to the test the animals are randomized and divided into two groups, twenty animals in each group.
- 3.2 Test substance. Each test substance should be appropriately identified (chemical composition, origin, batch number, purity, solubility, stability, boiling point, flash point, vapour pressure etc) and stored under conditions ensuring its stability. The stability of the substance under the test conditions should also be known.

- 3.3 Equipment. A constant vapour concentration may be produced by one of several methods.
 - (i) by means of an automatic syringe which drops the material onto a suitable heating system (e.g. hot plate),
 - (ii) by sending airsteam through a solution containing the material (e.g. bubbling chamber),
 - (iii) by diffusion of the agent through a suitable material (e.g. diffusion chamber).

A dynamic inhalation system with a suitable analytical concentration control system should be used. The rate of air flow should be adjusted to ensure that conditions throughout the equipment are essentially the same. Both a whole body individual chamber exposure or head only exposure may be used.

- 3.4 Physical measurements. Measurements or monitoring should be conducted of the following parameters:
 - (i) the rate of air flow (preferably continuously),
 - (ii) the actual concentration of the test substance during the exposed period,
 - (iii) temperature and humidity.
- 3.5 Test method. Twenty animals are exposed for 10 minutes to the concentration of 200 mg/m^3 and then removed from the chamber. The number of dead animals is determined within 48 hours and again after 7 days. If the death rate is lower than 10 animals, another group of twenty animals should be exposed for 10 minutes to the concentration of $2,000 \text{ mg/m}^3$. The number of dead animals should be determined within 48 hours and again after 7 days. If the result is doubtful (e.g. death rate = 10), the test should be repeated.
- 3.6 Evaluation of results. If the death rate in the first group of animals (exposed to the concentration of 200 mg/m) is equal to or higher than 50 per cent, the test substance will fall into the "super-toxic lethal chemical" category. If the death rate in the second group (exposed to the concentration of $2,000 \text{ mg/m}^2$) is equal to or higher than 50 per cent, the test substance will fall into the "other legal chemical" category; if it is lower than 50 per cent, the test substance will fall into the "other harmful chemical".

4. Data reporting

A test report should include the following information:

(i) Test conditions. date and hour of the test, description of exposure chamber (type, dimensions, source of air, system for generating the test substance, method of conditioning air, treatment of exhaust air etc) and equipment for measuring temperature, humidity, air flow and concentration of the test substance.

- (ii) Exposure data: air flow rate, temperature and humidity of air, nominal concentration (total amount of test substance fed into the equipment divided by volume of air), actual concentration in test breathing zone.
- (iii) Animal data: strain, weight and origin of animals.
- (iv) Test substance characterization: chemical composition, origin, batch number and purity (or impurities) of the substance; boiling point, flash point, vapour pressure; date of receipt, quantities received and used in the test; condition of storage, solvent used in the test.
 - (v) Results: number of dead animals in each group, evaluation of results.

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Document Regarding Action Prior to Entry into Force of the Convention: Detailed Views

A document containing the following should be associated with the Convention:

- 1. When signing the Convention, every State should declare whether chemical weapons stocks or chemical weapons production facilities are under its control anywhere or located within its territory.
- 2. Not less than 90 days after the Convention is opened for signature a Preparatory Commission, composed of representatives of all signatory States, should be convened for the purpose of carrying out necessary preparations for the coming into force of the Convention's provisions, including preparing the first session of the Consultative Committee.
- 3. The Commission should include one representative from each signatory. All decisions should be made by consensus. The Preparatory Commission should remain in existence until the Convention comes into force and thereafter until the first meeting of the Consultative Committee. Its actions must be consistent with the provisions of the Convention.
- 4. The expenses of the Preparatory Commission should be met as follows (details).
- 5. The Preparatory Commission should:
- (a) elect its own officers, adopt its own rules of procedure, meet as often as necessary, determine its own place of meeting and establish such committees as it deems necessary;
- (b) appoint an executive secretary and staff, who shall exercise powers and perform such duties as the Commission determines;
- (c) make arrangements for the first session of the Consultative Committee, including preparing a provisional agenda, drafting rules of procedure, and choosing the site; and
- (d) make studies, reports, and recommendations for the consideration of the Consultative Committee at its first meeting on procedural matters of concern to the Committee which would require immediate attention, including:
 - (1) financing of the activities for which the Committee is responsible;
 - (2) the programs and budget for the first year of the Committee's activities;
 - (3) staffing of the Secretariat; and
 - (4) the location of the permanent offices of the Committee.
- 6. The Preparatory Commission should submit a comprehensive report on its activities to the Consultative Committee at the Committee's first session.

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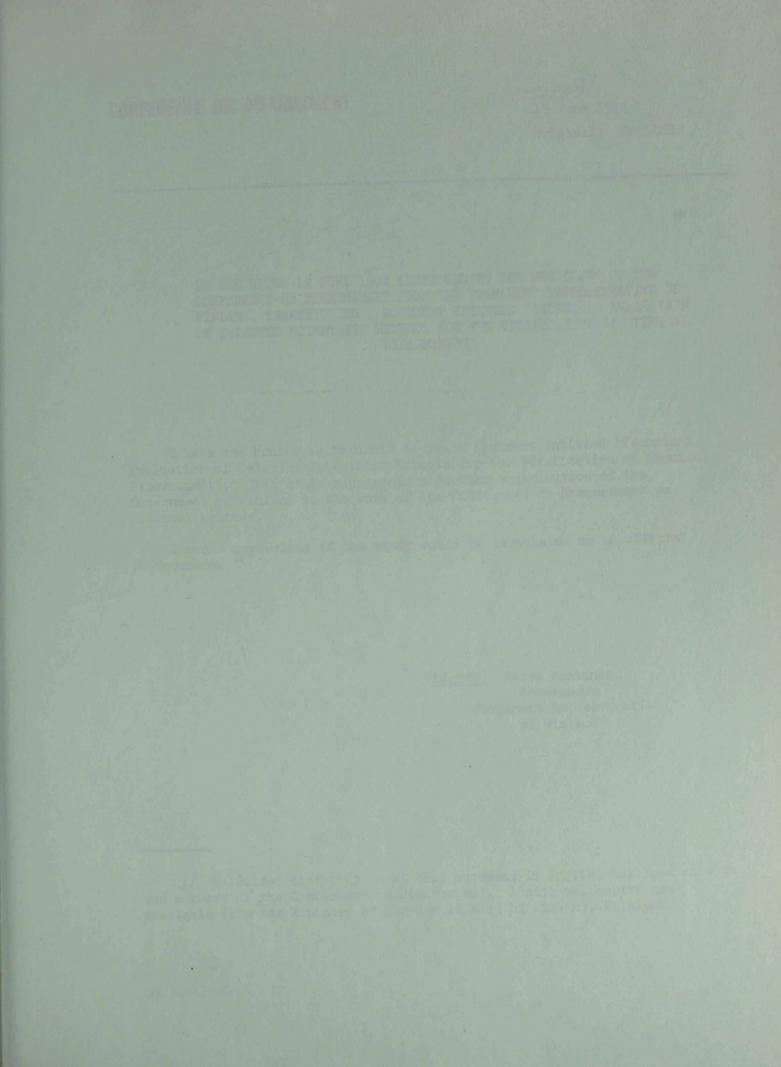
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CONFERENCE ON DISARMAMENT

CD/5051/ 13 June 1984

Original: ENGLISH

LETTER DATED 12 JUNE 1984 ADDRESSED TO THE PRESIDENT OF THE CONFERENCE ON DISARMAMENT FROM THE PERMANENT REPRESENTATIVE OF FINLAND, TRANSMITTING A DOCUMENT ENTITLED "TECHNICAL EVALUATION OF SELECTED SCIENTIFIC METHODS FOR THE VERIFICATION OF CHEMICAL DISARMAMENT"

I have the honour to transmit to you a document entitled "Technical Evaluation of Selected Scientific Methods for the Verification of Chemical Disarmament". This study represents a further contribution of the Government of Finland to the work of the Conference on Disarmament on chemical weapons.

I would appreciate if the study would be circulated as an official CD document.

(<u>Signed</u>) Paavo Rantanen
Ambassador
Permanent Representative
of Finland

^{1/} A limited distribution of this document in English has been made to the members of the Conference on Disarmament. Additional copies are available from the Ministry of Foreign Affairs of Finland, Helsinki.

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CD/508 15 June 1984 Original: ENGLISH

NORWAY

WORKING PAPER

Verification of a Chemical Weapons Convention. Sampling and Analysis of Chemical Warfare Agents under Winter Conditions

Introduction

In connection with Norway's participation in the Ad hoc Committee on Chemical Weapons and as a Norwegian contribution to the work of the Conference on Disarmament, the Norwegian Ministry of Foreign Affairs initiated in 1981 a research programme on the sampling and identification of chemical warfare agents under winter conditions. The research programme is carried out by the Division for Environmental Toxicology of the Norwegian Defence Research Establishment at Kjeller.

A primary objective of the research programme is to focus on the verification issues which would have to be dealt with within the framework of a Chemical Weapons Convention. More specifically, the aim is to establish the possibility of positive verification some weeks after alleged use, and developing a system for selection, handling, transportation and analysis of samples.

The first part of the programme was carried out in 1981/82. The analytical methods and the results were included in a report, which was presented to CD in August 1982, together with Working Paper CD/311. The English version of the report was annexed to CD/311.

The report of the second part of the programme, which was carried out in 1982/83, was presented to CD in July 1983. The English version of the report was annexed to Working Paper CD/396. At the same time Norway submitted Working Paper CD/397 on verification of non-production of chemical weapons.

The present Working Paper is based on the results of the third part of the research programme, which was carried out during the winter 1983/84. The research report is circulated as a separate CD document.

Figure 1

TIME FRAME FOR RESEARCH PROJECTS

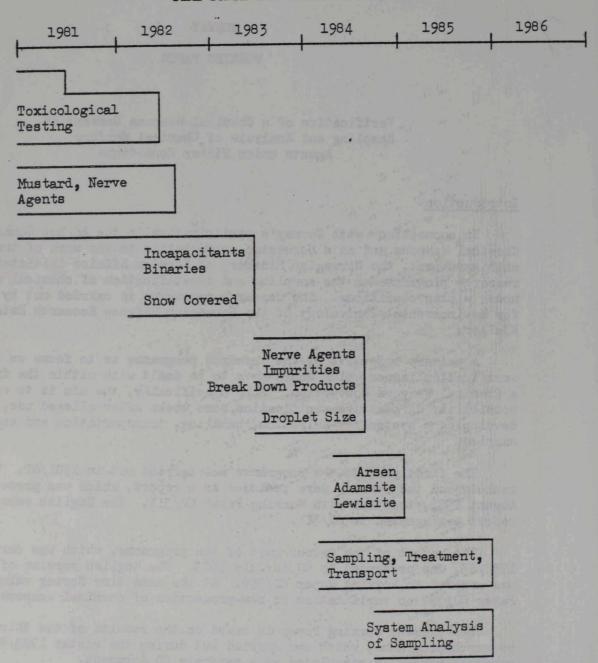


Figure 1 shows the progress of the Norwegian research programme. New factors and chemical warfare agents have been included in the investigation each year to establish complete verification procedures. The examination of sample treatment was started in 1983/84 and will be continued during the winter 1984/85. The main issue of future investigations is planned to be sampling procedures.

Description of the Research Programme

The research programme is based on experiments carried out under field conditions. This implies that the samples are kept outdoor to deteriorate by exposure to the prevailing weather conditions, such as wind, changing temperature and snowfall. The sample preparation, collection and transportation to the laboratory for analysis have been tested in two practical exercises. The purpose of this has been to compare different procedures in order to find a procedure giving minimal deterioration of the samples.

The first part of the research programme in 1981/82 covered an investigation of representatives of nerve agents and mustard gas, ref. CD/311.

The second part of the programme in 1982/83 comprised a similar investigation, including incapacitating agents and precursors, ref. CD/396.

The agents investigated during the winter 1983/84 were the nerve agents GB and GD, both pure and mixed with 20 per cent of a corresponding diester usually found as a production impurity. In addition to analysis of the two agents, their decomposition products were also analyzed. The experiments with mustard gas included both pure mustard gas (HD) and mustard gas mixed with 20 per cent lewisite (HD + L). In addition to the standard 1 mg droplets samples were prepared using larger droplets (2, 4, 6, 8 and 10 mg). All agents were placed as a single droplet on the top of the snow. To simulate the effect of snowfall after the attack, duplicate samples were covered with 5 cm snow. The samples were collected for analysis after 14 and 28 days.

In order to gain practical experience in the problems of sample collection, sample preparation and transportation of samples, two exercises were carried out in 1983/84. The first exercise took place 100 km west of the main laboratory, whereas the second exercise took place 1400 km north of the laboratory.

The analyses were started by melting the snow samples. The volume of the melted samples varied from 100 to 150 ml. The samples were extracted with chloroform. The methods used for the analyses of the chemical warfare agents were combined gas chromatography/mass spectrometry (GC/MS) with multiple ion detection (MID). The quantitative analysis of the methyl esters of the hydrolysis products of GB and GD and the impurities of GB and GD did not require the high sensitivity of GC-MS and a gas chromatographic method was sufficient for the quantitative analysis.

Results of the Research Programme

Decomposition

The results of the analysis of the different groups of snow samples exposed to the prevailing winter conditions show that for the nerve agents GB and GD both the hydrolysis products and the impurities can be found in large amounts after two and four weeks. After four weeks most of the original agents have either evaporated or decomposed. For the diester impurities the recoveries were high, more than 50 per cent of the applied amount. For the decomposition products, the recoveries were slightly lower, generally between 10 and 50 per cent. This is in contrast to the recoveries for the agents themselves. After four weeks GB is present in concentrations about 100,000 times lower than the applied amount. The nerve agents were also applied in increasing droplet sizes to establish any effect on the agent recovery, but no significant effects were found.

CD/508 page 4

For mustard gas, increasing droplet size was postulated to increase both stability and recovery. The results showed a marked increase in recovery with increased droplet size. Larger droplets both evaporate and dissolve in water more slowly. The latter is especially important, as mustard gas is very unstable towards hydrolysis when dissolved in water.

Other experiments on mustard gas were carried out to study the effects of mixing mustard gas with lewisite. These experiments showed an increase in recovery with increased droplet size. The effects were, however, smaller than for pure mustard gas. This may be due to lewisite and its hydrolysis products making mustard gas more soluble in water.

Sample preparation and transportation

In order to find the best method of transportation of samples the following methods were used in the two above-mentioned exercises of transporting the samples to the laboratory: on dry ice, in a polystyrene case, in chloroform solution, in water at room temperature and with no precaution.

For the most stable agents, the tear gas agents CN and CS, the results of the analysis of the samples show no significant difference between any of the transportation methods investigated. Recoveries are high and more than 50 per cent of the amount of agent originally applied were found.

For the nerve agent GB and mustard gas there are significant differences between the different methods of transportation. During transportation of sarin (GB), deterioration is negligible if the samples are kept at a temperature below -20° on dry ice. If the samples are kept in water solution near zero, deterioration becomes slightly larger, but it is acceptable when the transportation time is one day or less. The rate of deterioration increases with temperature. In water at room temperature less than 10 per cent is left after one day of storage.

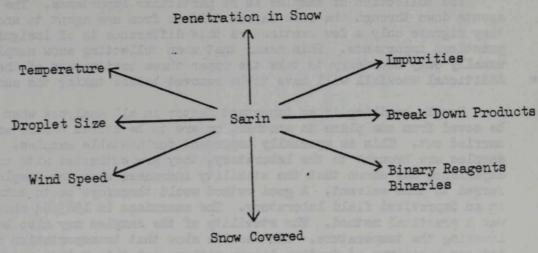
For mustard gas the difference in the results of the various transportation methods are even more pronounced. Samples transported at temperatures below -20° show a slight, but significant deterioration. When the samples were transported at temperatures near zero, about 10 to 20 per cent were present after one day. Without any precaution regarding temperature, only 2 and 9 per cent were still present. After one day at room temperature most of the agent had hydrolyzed, and the concentration had decreased to less than 1/10,000 of its original value.

Conclusions

Experiments carried out during the winters 1981/82 to 1983/84 have shown that it is possible to verify use of chemical warfare agents under winter conditions. This can be accomplished by chemical analysis of snow samples at least four weeks after alleged use.

There are many factors that influence the possibility to verify chemical warfare agents. During this research programme an in-depth investigation of the most important factors has been carried out. Figure 2 illustrates the factors investigated, using sarin as an example.

Figure 2



Most agents are sufficiently persistent and stable to be verified as the original agent, but there are also some that are relatively unstable and difficult to verify as the original agent after four weeks. For these hydrolytically unstable agents, the temperature will have strong influence on the amount of agent to be found. In fact, both high temperature and strong wind is unfavourable to positive verification. On the other hand, a snowfall covering the samples reduce evaporation and has a preserving effect on the agents.

To increase the reliability of the verification procedure, methods for analysis of decomposition products and production impurities of some agents have been developed. The experiments carried out during the winter 1983/84 have shown that this extension is very useful in the verification of the unstable nerve agents sarin (GB) and soman (GD). The decomposition products and impurities of both agents are very persistent. They are not known to occur naturally in the environment in significant concentrations, and their presence is therefore a strong indication of the use of the corresponding nerve agents.

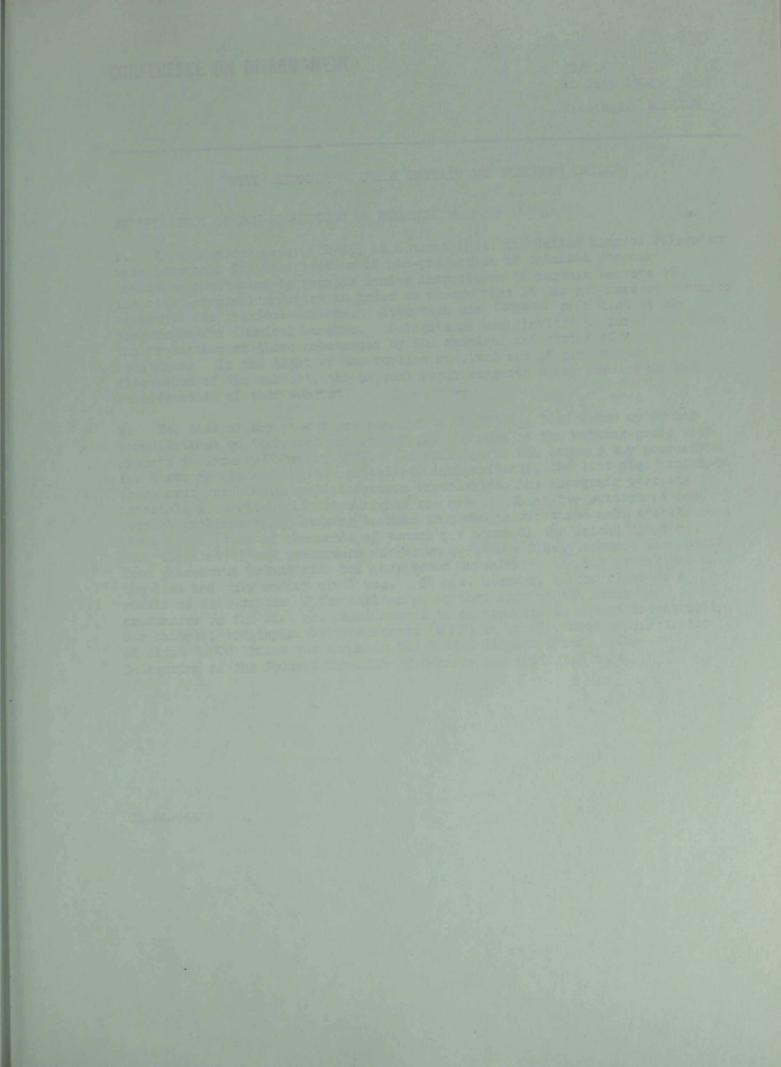
Mustard gas has proved to be difficult to verify after four weeks. Increased droplet size of the agent, however, improves the possibility for verification of mustard gas. The reasons for this is that mustard gas dissolves slowly from the droplet surface, and hydrolyses rapidly when dissolved in water. Larger droplets have relatively less surface, and decomposition is retarded. Larger agent GB is so rapidly dissolved in water that this is not the main factor determining the rate of breakdown of the agent. Increased droplet size is therefore of less importance.

This means that use of selective and sensitive analytical methods, including analysis of decomposition products and production impurities make it possible to verify use of at least the following agents even after four weeks: the physical incapacitating agents CS, CN and DM, the immediate decomposition product of the "didi" precursor, the nerve agents VX, GA, GB, GD and the blister agent HD.

CD/508 page 6

The collection of samples is of particular importance. The penetration of agents down through the snow layers differs from one agent to another, but as they migrate only a few centimeters this difference is of insignificant practical importance. This means that when collecting snow samples it is usually only necessary to take the upper three centimeters of the snow. Additional snowfall will have to be removed before taking the samples.

Sample handling is an important factor in all analyses when samples are to be moved from one place to another, or are to be stored before analysis can be carried out. This is specially important for unstable samples. When the samples are brought to the laboratory, they are extracted with chloroform, and experience has shown that the stability increases when the samples are transferred to this solvent. A good method would therefore be to extract the samples in an improvised field laboratory. The exercises in 1983/84 showed that this was a practical method. The stability of the samples may also be increased by lowering the temperature. The results show that transportation on dry ice induces a minimum of further decomposition, and this method may be as useful as extraction in the field. Both methods have, however, the disadvantage that prior preparation is needed as well as trained personnel. Transportation in a thermically insulated polystyrene box gives high recoveries of sarin (GB) and the tear gas agents CN and CS and satisfactory recovery for mustard gas. When no precautions are taken, the unstable compounds will undergo significant decomposition. Samples of unstable agents should therefore be transported at as low temperature as possible, or extracted into a chloroform solution.



CD/514 10 July 1984

Original: ENGLISH

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

VERIFICATION OF NON-PRODUCTION OF CHEMICAL WEAPONS

- 1. In a previous paper (CD/353 of 8 March 1983) the United Kingdom delegation made proposals for verification of non-production of chemical weapons including monitoring by routine random inspections of certain sectors of the civil chemical industry in order to ensure that it was not used as a source of agents for chemical warfare. Attention was focused on a list of key of agents for chemical weapons. Delogations were invited to furnish data on precursors for chemical weapons. Delogations were invited to furnish data on the production of these substances by the chemical industries of their own countries. In the light of the replies received and of preliminary discussion of the subject, the present paper suggests a way forward in the consideration of this subject.
- 2. The list of key precursors annexed to CD/353 had been drawn up during consultations on technical matters by the Chairman of the working group with experts in January/February 1983. In addition to the organic key precursors for nerve agents and for the glycollate incapacitants, the list also contained phosphorus trichloride and phosphorus oxychloride, the inorganic starting materials from which all nerve agents are made. These two substances pose special problems of monitoring because they are manufactured industrially on a large scale (tens of thousands of tonnes per annum in the United Kingdom). When the list of key precursors was drawn up it was widely assumed that apart from phosphorus trichloride and phosphorus oxychloride the key precursors on the list had only modest civil use. It has, however, become clear as a result of discussions of the earlier paper that some of the other key procursors on the list are manufactured to an appreciable extent industrially. For example, dimethylmethylphosphonate (DMTP) is manufactured in quantities of about 1 000 tennes per annum in the United Kingdom alone. The Delegation of the Federal Republic of Germany has indicated that

GE.84-63478

methyldichlorophosphine is to be produced industrially for the herbicide glufocinate (CD/CW/CRP.90). Both of these substances fall into the important category of key precursors having a phosphorus-methyl bond, which have a special importance because of the close relationship of their structure to many nerve agents. The importance of this category of precursors has led to proposals by some Delegations that their manufacture should be banned altogether.

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- 3. The United Kingdom Delegation would not propose to ban the manufacture of any substances with a legitimate civil use. The aim would be rather to monitor their manufacture in a way that provides confidence that there is no production of chemical weapons, and that the manufacture of any relevant precursors can be justified by their civil applications.
- 4. The verification of non-production would be carried out in co-operation with national chemical industries. In order to minimize the effect on civil industry it is clearly desirable to concentrate monitoring on compounds with fewest peaceful uses, but the application of this criterion should not provide a loophole whereby chemicals produced in industrial quantities which pose a real danger to the stability of the treaty remain unmonitored. It would be in the interests of all parties to the proposed convention to identify chemicals that might be used for the manufacture of chemical weapons and then to devise appropriate monitoring procedures. With this aim a classification of chemicals according to risk is proposed as a basis for further work.

Classification of chemicals and precursors

- 5. The chemicals listed below, be they chemical weapons or their precursors, are classified solely according to risk. It is important to remember that the word "risk" has two interpretations. First of all there is the biological risk (hazard) of poisoning associated with toxic chemicals. In addition there is the perceived risk (threat) to the convention if toxic materials and key precursors are manufactured industrially.
- 6. For the purposes of verifying the non-production of chemical weapons chemicals are placed in one of two categories according to the risk (hazard) associated with their chemical or texic properties or according to the risk (threat) they pose to the convention. These two categories would, in the case of chemical agents themselves, correspond with the upper bands associated with the texicity criteria. Associated with these categories of risk are appropriate verification procedures. Thus not all chemical production will be subject to the same degree or type of monitoring.

Categories

7. Reasons for including precursors in a particular category and their known civil uses are given in the manner illustrated by the Australian and Netherlands Delegations (CD/CW/CRP.81).

Category H 1: High risk chemical agents

- Verification regular reporting which will include description/ justification of the civil uses for which the chemical is produced
 - routine, random on-site inspection as outlined in CD/353
- (a) Supertoxic lethal chemicals, including sulphur mustard
- (b) Other named compounds which warrant similar attention, e.g. nitrogen mustards, lewisite and glycollate incapacitants.

Category H 2: High risk precursors

Verification - as for H 1.

(a) Chemicals containing one phosphorus-alkyl bond, where alkyl is methyl, ethyl or n- or isopropyl

Reason key precursors for V agents and some G agents (including binary weapon components).

Civil use: manufacture of flame retardants, pesticides, herbicides.

(b) Di- and tri-methyl/ethyl esters of phosphorous (PIII) acid

Reason: key procursors for V agents and some G agents

Civil use: same as H 2(a) as they are readily converted into phosphonates (PV)

(c) Pinacolyl alochol

Reason: key precurser for G agents of the Soman type Civil use: little or none.

(d) N.N- Diisopropylaminoethyl-2-halides, N.N- diisopropylaminoethan-2-ol and N.N- diisopropylaminoethane-2-thiol

Reason: key precursors for VX

Civil use: little or none.

(e) Aryl, alkyl and cycloalkylglycollic acids/esters

Reason: key precursors for psychotomimetic incapacitants

listed in H 1(b).

Civil use: pharmaceutical intermediates.

(f) 2, 2'-dihydroxyothylsulphide (Thiodiglycol)

Reason: key precursor for sulphur mustard

Civil use: anti-oxidant, vulcanizing agent, solvent for textile

dyes, synthetic intermediates

(g) Arsenic trichloride

Reason: key precursor for lewisite

Civil use: proparation of chloroarsines; ceramic industry.

(h) Other named compounds that warrant this level of monitoring.

Category M 1: Medium risk chemicals

Verification - Regular reporting to include information/data exchange on production statistics.

"Other lethal chemicals" which might be divorted to chemical warfare purposes:

(a) Hydrogen cyanide (HCN)

Reason: known chemical warfare agent

Civil use: feedstock for polymers, weedkillers, sequestrants, pharmaceuticals manufacture, grain fumigation.

(b) Phosgene (COCl₂)

Reason: known chemical warfare agent

Civil use: general chlorinating agent; synthesis of dyes, pharmaceuticals, herbicides, pesticides, resins, polyurethane foams and lacquers.

(c) Cyanogen Chloride (CNC1)

Reason: known chemical warfare agent.

Civil use: synthesis of organic compounds; warning agent in fumigant gases.

(d) Other named chemicals that warrant this level of monitoring.

Category M 2: Medium Risk Precursors

Verification as for M 1

(a) Phosphorus trichloride (PCl3)

Reason: precursor for most types of G and V agents.

Civil use: manufacture of phosphorus oxychloride; chlorinating agent; catalyst; textile finishing agent; making intermediates for organophosphorus pesticides; making surfactants, phosphites, gasoline additives, plasticizers and dyes.

(b) Phosphorus oxychloride (POCl3)

Reason: precursor for some G agents

Civil use: manufacture of cyclic and acyclic esters for plasticizers, gasoline derivatives, hydraulic fluids, organophosphorus compounds, chlorinating agent; catalyst; making trichlorophenols and fire retarding agents.

(c) N, N-disubstituted- -aminoethanols (R1R2NCH2CH2OH)

Reason: precursor for V agents (including binary weapon components).

Civil use: corrosion control; synthesis of fine chemicals, surfactants, ion-exchange resins, oil additives, thickeners and pharmaceuticals.

(d) N,N-disubstituted- β -aminoethylhalides ($R_1R_2NCH_2CH_2X$) X = Cl, Br

Reason: precursor for V agents and some psychotomimetic

incapacitants listed in H 1(b).

Civil use: paper production, preparation of pharmaceutical

intermediates.

(e) N,N-disubstituted-/2-aminoethanethiols (R1R2NCH2CH2SH)

Reason: precursor of V agents.

Civil use: little or none.

(f) Quinuclidinols: 3- and 4-hydroxypiperidines

Reason: key precursors for psychotomimetic incapacitants

listed in H 1(b).

Civil use: pharmaceutical intermediates.

(g) Sulphur monochloride (S2Cl2)

Reason: key precursor for mustard.

Civil use: manufacture of lubricating oil additives and agents for cold vulcanization of rubber products.

- 8. For the G and V agents both the phosphorus and the alcohol or aminoethyl moieties contribute to the character of the chemical agents. This is particularly so for Soman and VX and both moieties have accordingly been listed; namely pinacolyl alcohol and the appropriate N,N- disopropylaminoethyl compounds respectively.
- 9. In considering the psychoactive glycollate incapacitants both the amine and glycollic acid moieties contribute to the biochemical action. However such pharmacological activity is not confined to quinuclidinyl or piperidinyl esters of glycollic acids other amine esters can elicit it. The glycollate moiety is thus considered to be the most important precursor to monitor and placed in category H 2; the heterocyclic alcohols are nonetheless, important for the precise characteristics of these incapacitating weapons and are still included, but in category M 2.
 - 10. Mustard can be prepared by two processes; from thiodiglycol using hydrogen chloride or from ethylene using sulphur monochloride. Hydrogen chloride and ethylene are employed on such a large scale industrially that it would be more logical to monitor the other reaction constituents thiodiglycol and sulphur monochloride. The route from thiodiglycol is technically easier than the Levinstein process from ethylene; consequently thiodiglycol is put in category H 2 and sulphur monochloride in M 2.

- 11. Similarly, of the two precursors for lewisite, arsenic trichloride is produced in a much lower quantity industrially than acetylene and is consequently selected as the precursor to monitor, as an H 2 key precursor.
- 12. Quantity of production per se should not be a criterion for rejecting particular compounds for monitoring. But where one precursor of a pair is made in much smaller quantities than the other it could be argued that the prudent action would be to monitor that with the lower production rate. This reasoning has been applied to the compounds in paragraphs 10 and 11.

Modifications to the lists of chemicals

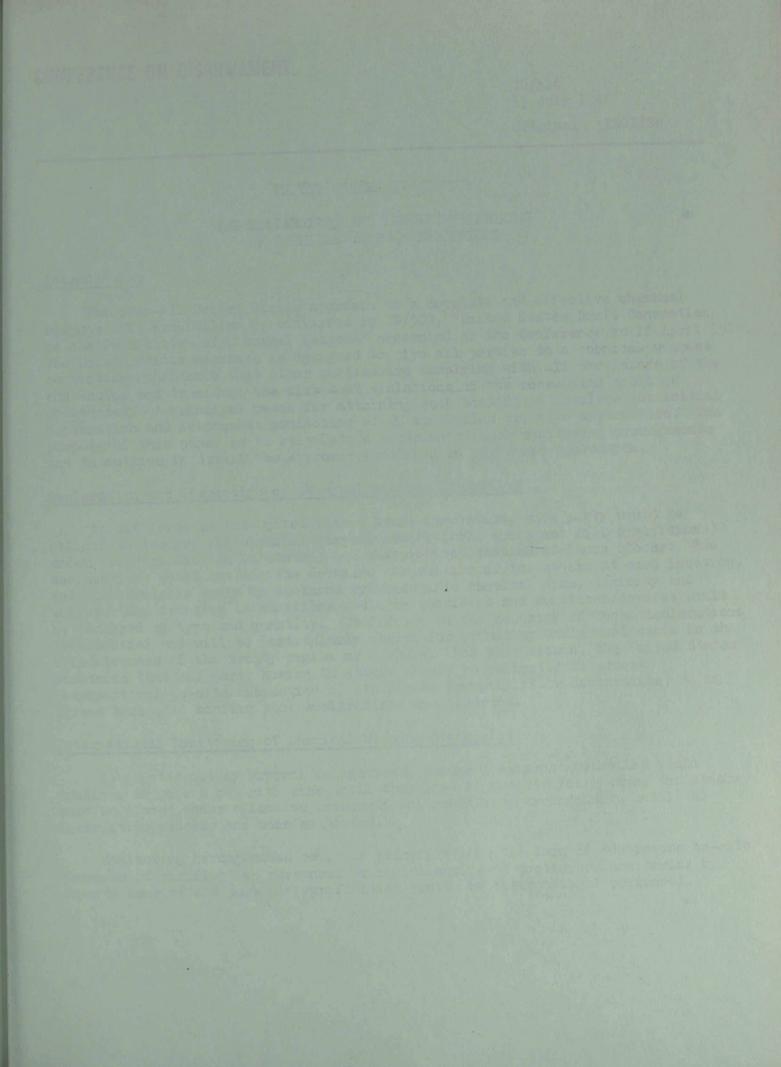
13. Any agreed list for the purpose of verification of non-production may need to be modified in the future, by agreement, to take account of technological advances. It would therefore be desirable for the convention to provide for the possibility of amendments to the list through the machinery of the Consultative Committee.

Declarations and Verification

- 14. All states in which any company or organization produces materials in the high and/or medium risk categories on a scale of one tonne or greater should declare:
 - (a) Chemical name and formula of the material.
- (b) Name of the company or organization operating the plant in the state making the declaration.
- (c) The full postal address of site where the plant is located together with unequivocal grid references (geographical co-ordinates).
 - (d) Whether the chemical is solely for domestic use or for export as well.
 - (e) The state(s) to which the chemical is exported (if appropriate).
 - (f) Whether the chemical is made in dedicated plant or by a batch process.
- (g) If by a dedicated plant, the maximum annual capacity in tonnes per annum.
- (h) If by a batch process, the weight in tonnes produced in the last calendar year.
- (i) Whether the chemical is stored on site and the maximum storage capacity (tonnes) if it is.
 - (j) Whether the chemical is used "on stream".
- 15. The declarations 14(d) and 14(e) are important because a correlation should be observed between exporting and importing states. States should also declare whether or not any of the materials in the high or medium risk categories are imported in quantities of one tonne or greater by any one company or organisation and whether they are used in that state or re-exported.

Verification and monitoring

- 16. The need to describe the reason(s) why a compound in the H l (high risk chemicals) or H 2 (high risk precursors) should be manufactured for permitted purposes places the responsibility to provide this information on to the manufacturer. However this requirement would also enable the bona fide production of a high risk chemical or key precursor to continue if a legitimate purpose for such a compound were revealed and the manufacturer submitted to an appropriate monitoring scheme.
- 17. The declarations in paragraph 14 would be made to the appropriate body of the Consultative Committee. The substance in the high risk categories would be subject to stringent monitoring including on-site inspection on a random basis. The same degree of stringency would not be appropriate for the medium risk category. Much could be done by exchanging information and data about the production process with the appropriate organ of the Consultative Committee.
- 18. While it is important that confidence in the convention should rest as far as possible on routine methods of verification, it would of course be open to any party to the convention to challenge another party suspected of non-compliance with any aspect of the convention, including the provisions on non-production, in accordance with the proposals in the United Kingdom paper CD/431 and other proposals on the table.



CD/516 13 July 1984

Original: ENGLISH

UNITED STATES OF MERICA

THE DECLARATION AND INTERIN MONITORING OF CHEMICAL WEAPONS STOCKPILES

Introduction

The over-all United States approach to a complete and effective chemical weapons (CW) prohibition is contained in CD/500, "United States Draft Convention on the Prohibition of Chemical Weapons" presented to the Conference on 18 April 1984. The United States approach is designed to give all parties to a chemical weapons convention confidence that other parties are complying with all provisions of the convention and to reduce the risk that violations of the convention could go undetected. A principal means for attaining such confidence involves the initial declaration and subsequent monitoring of CW stockpiles prior to destruction. The purpose of this paper is to stimulate discussion of such monitoring arrangements and to outline in detail the approach contained in our draft convention.

Declaration and Inspection of Chemical Weapons Stockpiles

As set forth in the United States Draft Convention, each party would be obliged to declare all chemical weapons stocks (bulk agent and filled munitions) under its jurisdiction or control and the precise location of those stocks. The under its jurisdiction or control and the precise location of those stocks. The declarations would include the detailed composition of the stocks at each location, and the chemicals would be declared by scientific chemical name, toxicity and weight. The fraction in munitions would be specified and munitions/devices would be declared by type and quantity. Confidence in the accuracy of these declarations be declared by type and quantity useful for promoting early confidence in the is essential and will be particularly useful for promoting early confidence in the effectiveness of the treaty regime as a whole. For this reason, the United States maintains that any party having CW stocks should be obligated to accept international on-site inspection of its stocks promptly after declaration, on an agreed basis, to confirm that declarations are accurate.

International Monitoring of Chemical Weapons Stockpilos

As pointed out by several delegations, chemical weapons stockpiles would continue to pose a security risk until they have been destroyed; thus, the stocks must be placed under effective international manitoring arrangements until the destruction process has been completed.

Monitoring arrangements could in principle take the form of continuous on-site presence of verification personnel or a combination of continuous monitoring by on-site sensors and periodic verification visits by international personnel.

In our view a combination of on-site sensors and periodic on-site visits would be the optimum approach. Under the United States Draft Convention such monitoring could be required for up to ten years.

During the initial confirmatory on-site inspection of declared stockpiles to assure the accuracy of a declaration, an on-site survey would be undertaken at each location to determine which of the agreed types of sensors would be required for monitoring the stocks there, prior to removal for destruction. After emplacement of sensors by international personnel was completed, on-site inspection would be performed to ensure no stocks had been removed from that location since the initial confirmatory inspection.

The types of sensors to be installed would depend on such variables as the type of storage structure, the nature of the structure floor and the climate of the area. (For stocks in open-in storage, temporary storage structures may be required to accommodate sensor emplacement.) Redundancy should be built into the monitoring system to ensure that failure of an individual sensor will not jeopardize the monitoring capability of the system. Similarly a back-up power supply would be needed to ensure that sensors (and the lighting for a TV system) would continue to operate in the event of a power failure. To increase confidence and minimize false alarms, three types of temper resistant sensors should be utilized:

Point sensors, such as a balanced magnetic sensor, would detect and record entries into the storage structure through normally used or available entry points.

Volumetric sensors, such as a motion detecting sensor, would detect the presence of an individual or vehicle within the storage building and ensure against entry gained by defeating the point sensor.

An exterior TV system should be installed so as to permit unobstructed coverage of several bunker or storage structures (actual placement would be determined during the site survey). To minimize equipment problems, the TV cameras would be enclosed in special boxes to protect them from the weather and tampering. Adequate lighting would also be required within the facility. The suplacement of this exterior system should not interfere with the operation of existing exterior security systems.

Remote Monitoring of On-Site Sensons

An international verification center (IVC) operated by international personnel could be established at an agreed location (for example, Geneva, Switzerland). Data from each site would be sent, through a location transmitter, to a receiver in the IVC.

The sensor system, including the tolovision camera, would operate 24 hours per day. Transmission of data would only occur, however, when one of the sensors indicated that a storage structure was being opened.

To ensure the integrity of the data, the sensors and cables between the sensors and transmitter would be protected by tamper-indicating devices. Data would be converted from analog to digital form whenever necessary and an "authentication" scheme would be adopted. Data would not be encrypted, but a unique identifier would be added to each group of data points transmitted. This identifying "tog" or signal would be generated by each sensor. Any attempt to alter the data during transmission

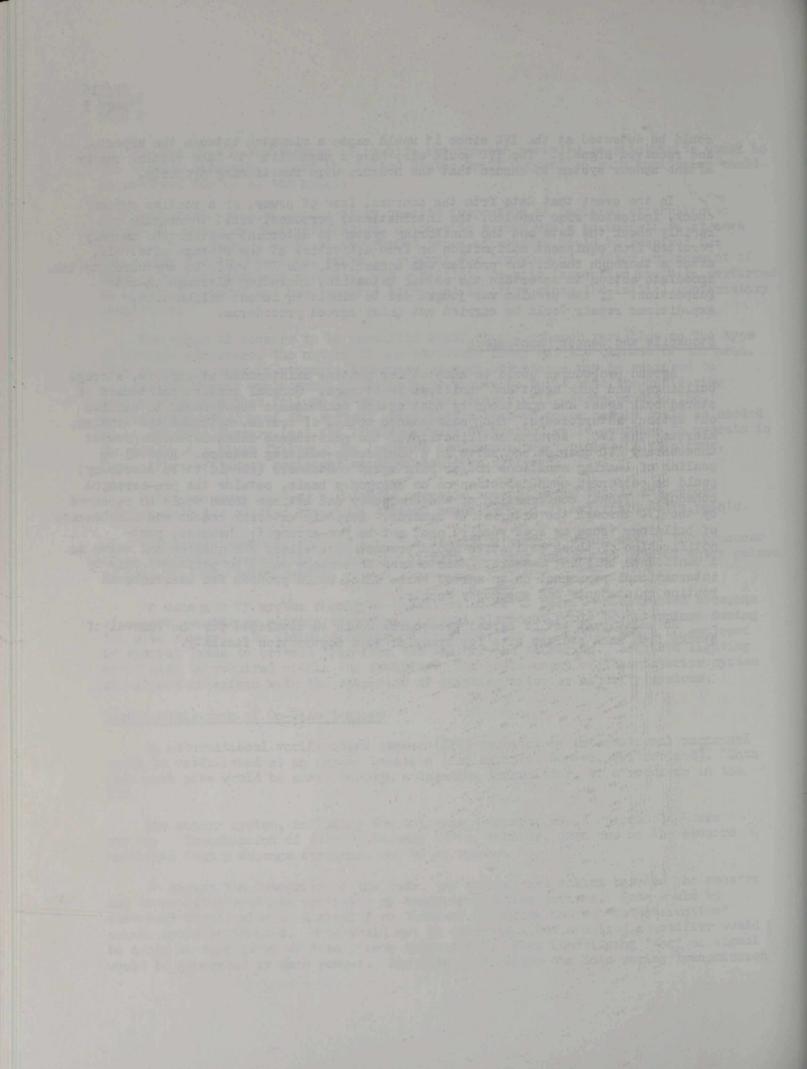
could be detected at the IVC since it would cause a mismatch between the expected and received signals. The IVC would also have a capability to make routine checks of the sensor system to ensure that the sensors were functioning properly.

In the event that data from the sensors, loss of power, or a routine system check, indicated some problem, the international personnel would theroughly and rapidly check the data and the monitoring system to determine whether the anomaly resulted from equipment malfunction or from activities at the storage site. If, after a thorough check, the problem was unresolved, the IVC would be empowered to take immediate action to ascertain the actual situation, including thorough on-site inspection. If the problem was judged due to simple equipment malfunction, expeditious repair would be carried out under agreed procedures.

Stockpile and Sensor Maintenance

Agreed procedures would be adopted for routine maintenance of sensors, storage buildings, and bulk agent and munitions in storage. General routine maintenance of stored bulk agent and munitions by host nation maintenance crews could be carried out without interference. Such maintenance would, of course, activate the sensors, alerting the IVC. Advance notification of the maintenance schedule would prevent unnecessary IVC queries and serve as a confidence-building measure. Removal or sealing of leaking munitions and/or bulk agent containers (should it be necessary) could be performed upon detection on an emergency basis, outside the pre-arranged schedule. Visual confirmation of the emergency and actions taken would be received by the IVC through the exterior TV cameras. Periodic exterior checks and maintenance of buildings (such as roof repair) need not be pre-arranged; however, postnotification of these activities would prevent unnecessary IVC queries and serve as a confidence building measure. Maintenance of sensors would be performed only by international personnel on an agreed basis which would provide for unencumbered routine maintenance and emergency repair.

An additional set of agreed procedures would be developed for the removal of stocks from each storage site for transfer to a destruction facility.





CD/518 17 July 1984

Original: ENGLISH

FEDERAL REPUBLIC OF GERMANY

negotiations on a future chemical weapons ban. A threat to

Verification of the Destruction of Chemical Weapons

Report on the workshop from the 12th to the 14th of June 1984 organized by the Government of the Federal Republic of Germany in Munster, Lower Saxony

1. The Government of the Federal Republic of Germany organized a workshop for the discussion of problems relating to the verification of the destruction of chemical weapons from 12 - 14 June 1984 at the chemical weapons destruction facility in Munster, Lower Saxony.

It was the purpose of the workshop to which member and observer delegations of the Conference on Disarmament where invited to acquaint these delegations with the procedures used by a destruction facility of chemical weapons and to provide a forum for discussions of all aspects relating to the verification of destruction of chemical weapons. The destruction facility in Munster undertakes to eliminate old stocks of chemical weapons that were found after World Wars I and II.

The recent workshop in Munster followed the tradition of the Federal Government of making particular contributions in the field of verification. In this endeavour the Federal Government has been guided by the intention to develop a concept of verification that establishes a careful balance between the need to maximize the risk factor for anyone who intends to violate the convention on the one hand, and the principle that international verification measures while being effective should be manageable and practical at the same time.

The Federal Government had chosen to devote its 1984 workshop to the verification of the destruction of chemical weapons stocks because it holds the view, that the destruction of stocks deserve a particularly high priority in the

negotiations on a future chemical weapons ban. A threat to use chemical weapons emanates in the first instance from the existence of chemical weapons stockpiles. Furthermore, the Federal Government considers the verification of the destruction of chemical weapons stocks to be a key problem of the entire verification complex of a future CW Convention. If it proves possible to reach agreement on the verification of the destruction of stocks, it should also be possible to agree on the necessary inspections for the other areas of the Convention.

The Workshop on the Verification of the Destruction of Stocks of Chemical Weapons organized by the Federal Government in Munster was attended by 51 participants representing 39 nations. By demonstrating the operations in a plant for the destruction of old chemical weapons from World Wars I and II it was the intention to show how verification measures can be applied and what form they should take.

- 2. The conclusions drawn by the Federal Government from the workshop in Munster as far as they relate to the negotiations of a total ban on chemical weapons are as follows:
 - The requirement of effective verification of the destruction of stocks of chemical weapons can be met only with a monitoring system operating on a continuous basis.
 - A continuous monitoring system should comprise a complementary combination of checks by inspectors and monitoring by tamper-proof measuring devices.
 - The integration of technical monitoring devices should aim at reducing the number of inspectors required to be present at all times thus diminishing the degree of intrusiveness that inspections can evoque.
 - All technical problems relating to the destruction of chemical weapons can be solved with current technology.
 - 3. It is the purpose of the Working Paper to record the results of the Workshop and thus make them available to the participants as well as to those countries not represented in the Workshop. In the following shortened versions of three lectures are provided, namely:
 - "Verification of the Destruction of Chemical Weapons under a Chemical Weapons Convention" by Professor Dr. Johannes Pfirschke, Federal Ministry of Defence

- "The Use of Optoelectronic Sensors to Support Verification by International Inspectors" by Dr. H. Bueker, Nuclear Research Center Juelich, and
- "Application of Mass Spectrometry to Qualitative Analysis of Chemical Warfare Agents in Demilitarisation of CW Agent Supplies" by Dr. B. Odernheimer, Federal Armed Forces Defence Science Agency for NBC Protection (WWDBw ABC-Schutz).

Annexes:

"Verification of the Destruction of Chemical Weapons under a Chemical Weapons Convention" by Professor Dr. Johannes Pfirschke, Federal Ministry of Defence

1. There is a general consensus that international verification measures are indispensable in monitoring compliance with a convention prohibiting the development, production and stockpiling of chemical weapons. Such measures should comprise systematic inspections, including on-site inspections, for particularly sensitive elements of the convention as well as on-challenge inspections on special grounds when suspecting that another Party is violating the convention.

There is also a consensus that the destruction of existing stocks necessitates reliable verification, which should include continuous monitoring of the destruction process.

2. An effective system for verifying the destruction of stocks must be equipped in terms of staff, installations and organizational facilities in such a manner that the Consultative Committee or its executive body obtains reliable confirmation of the national declarations on the type and quantity of material to be destroyed and of the actual, complete destruction of the material from the start to the end of the allowed period of destruction. Such confirmation is necessary not least from the point of view of internationally balanced destruction, meaning that during the period of destruction no Contracting Party should derive advantages or disadvantages from the stocks still to be destroyed.

The requirement of effective verification of the destruction of stocks can be met only with a monitoring system operating on a continuous basis.

3. Since a readiness is now generally emerging to allow the constant presence of an international team of inspectors to verify the destruction of stocks, the implementation of the necessary inspection measures is generally facilitated. The continuous monitoring system could comprise a complementary combination of systematic international onsite inspections and monitoring with the aid of secure and reliable measuring instruments.

The operating conditions of a plant should be such that it is possible for the inspector to confirm that the verification requirements of the convention are met with regard to the determination of the declared type and quantity of the material to be destroyed and its actual and complete destruction and that no pathways for diversion exist. For this purpose, a coordinated degree of verification, comparable monitoring procedures with a high degree of accuracy and reliability, and the calibration of sensors and other measuring devices in the presence of the inspector must be agreed on.

4. The workshop which took place in Munster afforded an opportunity to participants, on the basis of the organizational and technical operations involved in destroying stocks of chemical weapons from World Wars I and II, to acquaint themselves with aspects of systematic monitoring from a particular angle.

In working paper CD/CW/CTC 18 of August 1982, it was pointed out in connection with the verification of the destruction of stocks that the inspections and monitoring to be carried out in this incineration plant correspond to national measures prescribed by the authorities for the purposes of operating safety and environmental protection. The inspection facilities of this plant are therefore not to be regarded as a model for international verification measures.

The intention of the workshop was to draw attention to the specific problems relating to the destruction of chemical weapons. We regarded the workshop as an opportunity to present our efforts and experience in the field of the destruction of stocks so as to provide better information and wider knowledge for the elaboration of international verification measures.

On the basis of verbal explanations and visual observation, participants were able to convince themselves that not only the capacity and specific features of the incineration plant but also the heterogenous composition of the generally highly corroded remaining stocks of chemical weapons of varying, limited quantities preclude a highly technicized, automatic control mechanism for the determination of quantities and identities. In the light of the technical

conditions and operating experience of this plant, the effective, continuous monitoring of the destruction of stocks under a chemical weapons convention requires the constant presence of inspectors.

5. The smal size of the overall plant at Munster for the destruction of chemical weapons produced a good overview of technical and organizational procedures in the areas of storage, demilitarization and incineration. This could give participants some ideas for proposals on how to effect combined international inspections of central stores and destruction plants. Several concepts exist which envisage the destruction of stocks in the immediate vicinity of central stores, which means that it would obviously be expedient to combine the inspection measures.

In this context, one can assume that the existing safeguards and monitoring facilities for stores of chemical
weapons have attained a similar high level of development
in every country. Optimum monitoring will therefore involve
numerous technical means designed to prevent unauthorized
and unnoticed entry from without and to guarantee safe
storage within, observance of transport procedures and early
detection of any leaks. It can be assumed that, like the
destruction of stocks, the monitoring processes of individual areas can be combined at a central station, which can in
turn control the various stations. Joint monitoring of the
central store and the incineration plant for chemical weapons
by means of systematic international on-site inspections should
therefore be possible, provided that certain technical and
local requirements are met.

"The Use of Optoelectronic Sensors to Support Verification by International Inspectors" by Dr. H. Bueker, Nuclear Research Center Juelich

1. The Principle of the Control System

Within the framework of the Non-Proliferation Treaty, the IAEA has been operating an international control system for nuclear material for many years. Many components of the IAEA control system can be analogously transferred into an international safeguards system for the destruction of CW-Stocks.

In the case of a warfare agent store or destruction facility the principle of material balancing can be applied as follows:

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- 1. A routine check of the store's inventory with respect to the type and quantity of warfare agent must be undertaken at regular intervals. In addition to checking the accountancy, individual projectiles must be selected on a random basis, opened and their content of warfare agent analyzed with respect to type and quantity. If the projectiles are in sealed containers then a check on the seal integrity and integrity of the container walls is sufficient. In this case the book values of the warfare agent contents can be carried over.
- 2. The type and quantity of the warfare agent taken out of the store under safeguards are registered upon entering the material balance area of the destruction facility e.g. the intermediate store first of all as book values.
- 3. Immediately before beginning destruction random samples are taken from the projectiles taken from the intermediate store or, depending on the number of containers or projectiles, the samples are generally taken and an in-coming analysis is made. The type and quantity of warfare agent being fed into the destruction process is thus known.
- 4. During combustion the relevant process parameters must be continuously recorded at strategically important points of the facility. This means that the temperature-time and pressure-time profiles should be recorded in the main burn chamber and the evaporation chamber.
 - 5. At the end of the combustion process the inspector can satisfy himself of the completeness of the destruction by a "product analysis".

There are two main groups of instrumentation, which in principle can be used for safeguards systems: measuring instruments and containment/surveillance instrumentations.

To date there are still no tamper-proof measuring procedures which can be integrated into a safeguards system for destruction facilities. Furthermore, incorporation of process instrumentation into the control system represents a serious safeguards problem since the control authority must undertake "independent" verifications which is only possible with the authority's own instrumentation. Apart from being tamper-proof, the operational reliability of the measuring instruments is of great significance. Thus, for example, a slow drift of the measuring instrument calibration can lead to erroneous conclusions on the part of the inspector and thus possibly cause great political problems for the safeguarded state. Moreover, failure of a measuring instrument can lead to

the facility being shut down since the inspector cannot fulfil his control tasks without this instrument. In order to be able to employ measuring systems comparable with the process instrumentation as sensors in a control with the process instrumentation as sensors in a control system considerable development efforts still have to be invested in candidate systems in order to make them sufficiently tamper-proof and operationally reliable.

On the basis of the above description and with regard to the spatial and technical factors, it would appear meaningful here not to undertake controls by means of measuring procedures or with the aid of process instrumentation, but rather by employing containment/surveillance measures.

As indicated above in the case of such a control system it is also especially important that the sensors used - e.g. TV cameras, electronic seals, instrumented containers, pressure load cells, flow meters etc. - are maintenance-free, operationally reliable and tamper-proof. Moreover, the whole system must be designed for fully automatic operation in order to generate control information in a verifiable form by correlating the various sensor signals, thus reducing the inspector's work load as well as minimizing the duration of the inspector's presence in the dangerous sections of the facility. This means that the generation, transmission and evaluation of the control data must be tamper-proof. To put the control authorities in a position to satisfy themselves at all times that no warfare agent is being channelled out of the store or past the extensive and complex combustion facility, the whole control system must be designed on the basis of on-site remote verification. This means that all control information must converge on a central monitoring station, the verification center, which can for example be located in a separate room inside the facility. The on-site remote verification system must be designed in such a way that the safeguards-relevant sensor information can be interrogated individually or in a correlated form at any time, and that an alarm is automatically set off in the central monitoring station in the case of an irregularity. Studies must be made of the most favourable transmission path for the control data from the sensor to the verification center. This has to be done under the aspects of security and cost-effectiveness. Such transmission path may be e.g. the in-plant telephone network, special lines, radio transmission etc.. Furthermore, the whole remote verification system must be designed in such a way that in the case of a line interruption or power failure no control information can be lost so that the "continuity of knowledge" is ensured for the control authority.

2. The Control System for a CW-Store

On the basis of the above explanation, a control system for a CW-store could be designed in the following way:

The whole store is regarded as one material balance area. The control system must ensure that no CW-container brought into the store can leave it again clandestinely. Furthermore, it must also be guaranteed that no container can be opened in the store and the warfare agent removed without this being registered. Safeguarding the store would then be restricted to so-called "item counting". This means that during an inspection it would only have to be checked whether all declared containers were still present and that no container had been opened or its walls damaged.

A control system supplying this information in a tamperproof manner can be implemented relatively rapidly. This merely
requires the utilization of some electronic seals and, depending
on the application (size of the container), some geometrically
suitably designed transport or storage containers which are
automatically and continuously monitored with respect to
their opening status and the integrity of their shell. An
on-site or local remote verification system connected to all
the seals and containers is also required. All safeguardsrelevant information converge via this system in a control
room (verification center) where the inspector sits.

3. The Control System for a CW-Destruction-Facility

A control system for a CW-destruction-facility (combustion facility) can be approximately outlined as follows:

The combustion facility, including the intermediate store, is regarded as one material balance area. It must be ensured that all warfare agent containers brought into this MBA either end up in the intermediate store or in the evaporation or burn-out chambers. If this can be established in a verifiable form and it can moreover be proved that the warfare agent containers brought into the evaporation chamber also reach the burn-out chamber and have there been heated to 1200°C for a certain period so that all the warfare agent is definitely evaporated then this thus documents that the warfare agent has reached the actual main burn chamber. By providing evidence of simultanuous burner operation and the intactness of the hot gas tubes from the evaporation and burn-out chamber to the main burn chamber, destruction of the warfare agent brought in can be conclusively proved.

Monitoring the destruction of liquid warfare agents can be carried out analogously. However, in this case suitable sensors - e.g. flow meters - must be installed in the warfare agent tube to document in a verifiable manner that the tube feeds warfare agent into the main burn chamber during burner operation.

Safeguarding the intermediate store is implemented as described in the previous chapter.

From the set-up of the control system outlined above it can be seen that no complicated physical or chemical measuring systems are required at any point. Moreover, data from the control system are not influenced by operational stoppages or similar events. Accordingly, the control system does not influence the actual process sequence.

The inspector of the international control authority sits in the in-plant verification center where he has direct access to all safeguards-relevant data and thus, as far as necessary, to all process data to be supplied by the operator.

The realization of this system requires the utilization of several electronic seal systems and monitoring cameras, several sensors for recording the direction of movement of the furnace loading cars, several flowmeters, one or more monitorable transport containers for transporting the projectiles or the warfare agent containers to the intermediate store, monitorable storage containers in the intermediate store - these could be the transport containers - as well as an in-plant remote verification system connected to all the sensors.

- 4. The Components of the Control System
- 4.1 The Optoelectronic_Sensors_
- 4.1.1 The electronic seal system VACOSS-3

The electronic seal system VACOSS-3 consists of three components: the seal itself with a light guide as the "seal wire" and the adapter-boxes I and II. Each of these components is equipped with a microcomputer. The seal stores up to 10 opening and closing events, the current status of the light guide, the battery status and the status of the seal casing, i.e. whether it has been opened or not. Opening and closing times of the light guide circuit are stored together with the date and time. Attempts to manipulate the seal casing are also recorded.

The seal is initialized (i.e. activated) by the adapter-box I. The memory contents of the seal will be interrogated with this box, too. All the data are then shown in decoded form on the adapter-box-display. This is therefore the instrument with which the inspector can verify the statuses of the individual seals when he goes through the facility.

Adapter-box II has basically the same task as adapter-box I; but it only reads out all the seal data in encrypted form and does not permit to initialize the seal. It is intended for "manual" remote verification of the seal with the aid of the facility operator in that the control authority rings him up and asks him to read out the data from the seals and to inform the authority by telephone of the coded data appearing on the display of the adapter-box. The authority can decode the data with the aid of adapter-box I and thus verify the seal status. The coded information appears on the display in the form of 16 alpha-numeric characters.

The seal can either be initialized in-situ or in the control authority's headquarters. Every 250 ms it automatically checks the light guide circuit. The time resolution of opening and closing events is approximately 1 min. Up to 10 such events can be stored in the seal.

Up to 255 seals can be connected simultaniously to one adapter-box with a four-wire "party-line" and also individually interrogated by this means. The seal number programmed into each seal is the individual address by means of which it is dialed by the adapter-box.

4.1.2 The Transport-Container ELCODRUM-I

The transport-container ELCODRUM-I (Electronically Controlled Drum) represents a technological advancement in the optoelectronic sensor principle which first became ready for application with the development of VACOSS-3. This is a container where both the opening status as well as the integrity of its whole surface can be automatically verified at any time in a tamper-proof manner. The central component of the container is a VACOSS-3. The container is composed of an outer and an inner drum, which are open at the top. An unsheathed light guide 125 μm in diameter is positioned in the space between the two drums. When the drum is closed, the light guides of the container and the lid are automatically linked with each other by means of internal connector plugs and connected to the VACOSS-3. This produces a closed light guide circuit covering the entire container surface.

The spaces between the two drums and the two layers of the lid are foamed with polyurethane.

If serveral containers are involved, then they can be interconnected via a "party-line". The status data of each container can then be interrogated individually from one location by means of an adapter-box. In addition, control commands such as recalibrating the time, setting the counters to zero, initializing the seals etc. can be transmitted from this location to each individual container.

4.1.3 The Other Sensors

Further sensors in the automatic monitoring system discussed here for CW-combustion-facilities are, in addition to monitoring cameras, also temperature sensors, flowmeters and electronic load cells and pressure transducers. These sensors are all currently commercially available and operate with high reliability. In order to integrate them into the verification system discussed here, however, they still have to be equipped with a microcomputer-based "universal interface" which converts the monitoring and status data supplied by the sensor in such a way that they can be transmitted in encrypted form to the sub-station and evaluated by it.

4.2 The Local Remote Verification System

For the instrumented monitoring of CW-stores and facilities for destroying CW-stocks a number of optoelectronic sensors has to be installed in every facility. A suitable on-site or local remote verification system is required to maintain continuous, automatic monitoring. The system serves to monitor a large number of sensors operating on the basis of the VACOSS-3 system. An in-plant verification center is located inside the facility where all information converges. This station is equipped with a computer (CPU) which handles the data evaluation and the control of the sensors. In addition to this central processor unit (CPU) the system also has satellite processor units (SPU) located decentrally in the individual sections of the facility, e.g. in the individual buildings. The satellite processor units are connected to the sensors of each section of the facility via a "party-line". Communication between the central processor unit and the decentralized satellite processor units, the so-called substations, is effected via the normal in-plant telephone system or via dedicated lines. Up to 255 sensors can be connected to each sub-station.

The current status of the individual sensors, the verification-relevant correlations of their data as well as the status of the whole system are continuously recorded and can be interrogated by an inspector in the in-plan verification center at any time. As can be seen from the preceding description, the local remote verification system is structured hierarchically and consists of three levels: central station, sub-station, sensor.

In order to prevent data transfer betwen the various levels being manipulated it takes place in an encrypted form. This means that the data lines used do not have to be especially secured, i.e. the normal in-plant telephone system can for example be used.

5. Concluding Remarks

An automatic monitoring system to support international inspectors in verifying the destruction of CW-stocks seems to be realizable on the basis of containment and surveillance methods. This can be done with technologies currently available. Such a verification system will make safeguarding of the facilities considerably simpler and more effective. This will enable to reduce the number of inspectors continuously present. The development and implementation of this control system can be carried out in a relatively short period of time and does not require any extensive design changes of existing facilities.

"Application of Mass Spectrometry to Qualitative Analysis of Chemical Warfare Agents in Demilitarisation of CW Agent Supplies" by Dr. B. Odernheimer, Federal Armed Forces Defence Science Agency for NBC Protection (WWDBw ABC-Schutz)

1. For more than two decades, mass spectrometry (MS) has been well-established as a versatile and extremely powerful method routinely applied to qualitative and quantitative analysis of a large variety of materials, including toxic organic chemicals. As part of a verification system in demilitarisation plants, a computerised MS system with automated sampling device and combined with a simplified gas chromatographic (GC) system for sample pre-separation will meet all of the requirements essential for qualitative verification. It meets the requirements of specificity, flexible selectivity, adequate sensitivity and speed as well as automation and reliability. Furthermore, the mass spectrometric data of all CW agents stockpiled in various countries, including major decomposition products or by-products, solvents and stabilisers, as well as large libraries of other mass spectra, are available.

2. Qualitative as well as quantitative information of the composition of war gas mixtures, whether they are liquids or vapours, is obtained from representative samples taken permanently or at certain pre-programmed intervals as small portions out of the process line prior to incineration. With the option of either a continuous real-time monitoring, or a discontinuous mode of sample pick-up and analysis using a simplified gas chromatographic system for pre-separation, a very flexible and effective tool is provided for easy inspection of the materials transferred to the incineration chamber. Analytical data can be automatically stored and combined with date and time of analysis, flow rates, temperatures or any other data relevant for inspection.

The sensor system consists of a one-stage membrane separator for enrichment, sample introduction and pressure reduction, combined with a high vacuum tight valve; a dual electron impact ioniser for ion production; a rugged quadrupole mass filter for ion separation with a mass range of 1-400 atomic mass units, and a secondary electron multiplier connected with a highly sophisticated digital amplification system, which has a dynamic range of seven orders of magnitude. The ultra high vacuum required for operation is provided by an ion getter pump. No mechanical pump is needed. With the inlet valve closed, the vacuum inside the sensor recipient is maintained for months, when the mass spectrometer is switched off. The system is fully micro-processor-controlled and analytical data are automatically displayed, documented and stored.

3. The commercial system demonstrated during the workshop has been developed for mobile environmental survey and rapid point analyses of contamination in the air, in water and on the ground. Therefore, certain modifications would be necessary according to requirements that would have to be worked out and specified in detail for the application in the field of verification.

A MS or GC-MS identification system dedicated to that purpose can be developed at moderate costs using state-of-art technology. The particular analytical problem does not require the MS sensor to perform at maximum sensitivity as normally specified. Main features of the system will have to be specificity and a high degree of automation and reliability with minimum of down-time for maintenance.



CD/519 18 July 1984

Original: ENGLISH

LETTER DATED 16 JULY 1984 FROM THE PERMANENT REPRESENTATIVE OF THE ISLAMIC REPUBLIC OF IRAN ADDRESSED TO THE PRESIDENT OF THE CONFERENCE ON DISARMAMENT TRANSMITTING THE TEXT OF THE RESPONSE OF HIS EXCELLENCY SEYYED ALI KHAMENEI, PRESIDENT OF THE ISLAMIC REPUBLIC OF IRAN, TO A MESSAGE OF THE SECRETARY-GENERAL OF THE UNITED NATIONS

I have the honour to refer to the message of the Secretary-General of the United Nations, Mr. Perez de Cuellar, to my Government and to the Government of Iraq, requesting a solemn commitment not to use chemical weapons of any kind for any reason in the course of the war imposed on my country. My Government, in pursuit of its policy of respect for the 1925 Geneva Protocol, immediately communicated its positive response to the Secretary-General, a copy of which is attached for your kind consideration.

It would be deeply appreciated if the attached response of His Excellency Seyyed Ali Khamenei, President of the Islamic Republic of Iran, to the Secretary-General of the United Nations, could be printed and distributed as an official document in the Conference.

(Signed) Nasrollah KAZEMI KAMYAB
Ambassador
Permanent Representative

Excellency,

I acknowledge the receipt of your message about terminating the use of chemical weapons in the course of the war imposed on Iran by Iraq. His Excellency is fully aware that, despite the fact that the Iraqi Regime, in contravention of all international norms and conventions, has resorted to extensive use of chemical weapons against our forces, the Islamic Republic of Iran has never indulged in reciprocal measures. The Islamic Republic of Iran categorically opposes any resort to their use.

Although Iraqi use of chemical weapons drew widespread international condemnation, the United Nations Security Council, in continuation of its partial and unfair policy, chose to adopt the same position as it had previously in the case of the destruction of civilian areas. Unfortunately, this position was adopted even in the case of the disruption of security in the Persian Gulf by Iraq.

Notwithstanding this bitter fact, the Government of the Islamic Republic of Iran, out of respect for the United Nations Charter as well as His Excellency's recent proposals and also in order to reaffirm its good faith, welcomes your appeal and declares that it is willing and ready to continue its policy not to use chemical weapons.

However, I deem it necessary to express once again our total lack of faith in the commitments undertaken by the Iraqi Regime. The claim as to the concentration of military forces in civilian areas (civilian population centres) is merely an excuse for the bombardment of these areas. These acts justify our lack of faith in the Iraqi Regime's reliability. The situation requires His Excellency's vigilance and firmness.

With my best regards, Seyyed Ali Khamenei, President of the Islamic Republic of Iran.

CONFERENCE ON DISARMAMENT

CD/532 CD/CW/WP.84 8 August 1984

ENGLISH

Original: RUSSIAN

Working Paper submitted by a group of socialist States

The organization and functioning of the Consultative Committee

I. General provisions and structure

- 1. With a view to ensuring broader international consultations and co-operation, exchanging information and promoting verification in order to obtain compliance with the provisions of the Convention, a Consultative Committee shall be established by the States Parties to the Convention within 30 days after the Convention's entry into force.
- 2. Each State Party shall be entitled to designate a representative to the Consultative Committee who may be accompanied at the meetings by one or more advisers. The Chairman of the sessions of the Consultative Committee shall be elected by the Consultative Committee itself.
- 3. The Consultative Committee shall meet in regular sessions annually unless it decides otherwise. Every five years the Committee shall review the implementation of the Convention to ensure that its objectives and provisions are being fulfilled. An extraordinary (special) session of the Consultative Committee may be convened to consider matters of urgency at the substantiated request of any of the States Parties within 30 days of the receipt of such a request.
- 4. The Consultative Committee shall take its decisions on matters of substance by consensus. If consensus cannot be reached during the session, each State Party may record its opinion in the final report of the session for subsequent study by the Governments of the other States Parties to the Convention. Decisions on procedural matters related to the organization of work of the Committee shall be taken by consensus where possible, and otherwise by a majority of those present and voting.
- 5. The results of the sessions of the Consultative Committee shall be reflected in the records of its meetings and in the final report which shall be circulated to all the States Parties.

GE.84-64647

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6. In the intervals between sessions, questions relating to promoting the implementation of and compliance with the Convention shall be dealt with by the Executive Council acting on behalf of the Consultative Committee.

The Executive Council shall be composed of 15 members representatives of the States Parties and a Chairman, who shall be the Chairman of the last session of the Consultative Committee. Ten members of the Council shall be elected by the Consultative Committee after consultation with the States Parties, taking into account the principle of equitable political and geographical representation, for a term of two years, five members being replaced each year. The remaining five seats shall be reserved for the permanent members of the Security Council parties to the Convention.

- 7. The Executive Council shall take its decisions on matters of substance by consensus. If consensus with regard to a request for on-site inspection cannot be reached within 24 hours, the State subject to the request shall be informed of the individual opinions expressed by all the members of the Executive Council on the matter. The Executive Council shall take its decisions on procedural matters related to the organization of its work by consensus where possible, and otherwise by a majority of those present and voting.
- 8. The Technical Secretariat shall be staffed proceeding from the principle of equitable political and geographical representation of States Parties. It shall be composed of inspectors and experts who shall be nationals of the States Parties.
- 9. The Consultative Committee may establish such subsidiary technical bodies as may be necessary.

II. Functions

The Consultative Committee shall:

- 1. Provide a forum for discussion by all the States Parties concerned of all issues related to implementation of and compliance with the Convention;
- 2. Co-ordinate all forms of verification and provide for communication between national and international verification bodies;
 - 3. Elaborate, in agreement with all Parties, standard verification techniques;
- 4. Receive, store and disseminate information presented by the States Parties in accordance with the Convention, including declarations, notifications and statements on chemical weapon stockpiles and production facilities, plans for the destruction or diversion of such stockpiles and for the elimination (destruction, dismantling or diversion) of the facilities, and annual declarations concerning chemicals for permitted purposes that are produced, diverted from stockpiles, used, acquired or transferred;

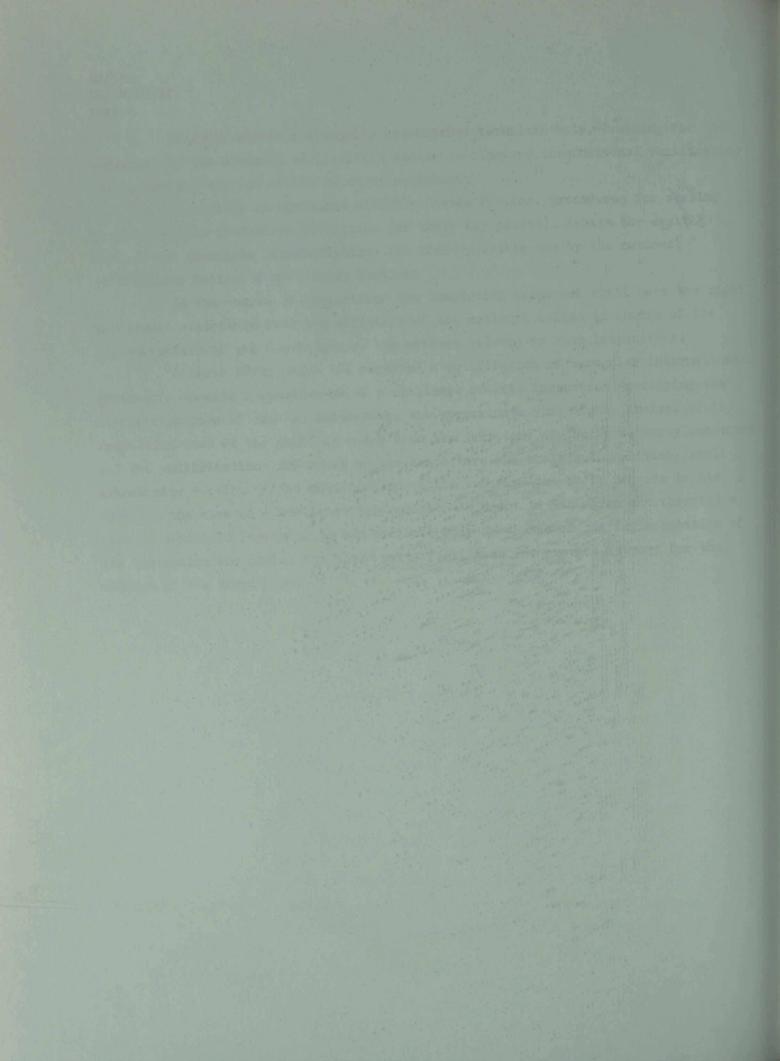
- 5. Provide the States Farties, at their request, with services in respect of holding consultations among themselves on questions with regard to implementation of and compliance with the Convention, as well as in respect of exchanging information on a bilateral or multilateral basis or obtaining services from relevant international organizations;
- 6. Adopt, at its first session, the criteria that it will subsequently use to determine the modalities and time frames for on-site inspections at each facility for the destruction of stockpiles or for the production of supertoxic lethal chemicals for permitted purposes;
- 7 Verify, in accordance with the provisions of the Convention, reports on the use of chemical weapons;
- 8. Determine, on the basis of the information presented by the States Parties on chemical weapon stockpiles and the technical characteristics of the facilities for their destruction, as well as on the technical characteristics of the facilities for the production of supertoxic lethal chemicals for permitted purposes, the modalities and time frames for the implementation of international on-site inspections at each individual facility, proceeding from the agreed criteria;
- 9. Consider requests for on-site inspections filed by States Parties and, in the event of a positive decision, carry out the inspection, subject to the consent of the host State;
- 10. Assign, in cases of on-site inspections by challenge, conducted by agreement directly between the States Parties concerned, inspectors from its Technical Secretariat to participate in such inspections, if this is requested by one or several States Parties;
- 11. Approve the reports of the Executive Council containing information on implementation of and compliance with the Convention, recommendations on particular technical matters and the factual report on the work done by the Executive Council between the sessions of the Consultative Committee;
- approve the budget on the basis of an agreed scale of financial contributions.

 III. Co-operation with the national verification bodies of the States Parties

 The Consultative Committee shall:
- 1. Hold regular meetings, on a bilateral or multilateral basis, with the national bodies of the States Parties in order to enhance the effectiveness of co-operation in ensuring compliance with the Convention;

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- 2. Provide, within a specially established technical body, training for the personnel of the national verification bodies in standard international verification techniques and the use of the relevant equipment;
- 3. Elaborate, in agreement with the States Parties, procedures for sealing chemical weapon production facilities (or their key points), design the sealing devices and formulate recommendations for their possible use by the national verification bodies of the States Parties;
 - 4. In the course of inspections the inspecting personnel shall have the right to request assistance from the officials of the national bodies in charge of the implementation of the Convention on any matters related to such inspections;
 - 5. A State Party which has received a notification of a regular international systematic on—site inspection or of a challenge on—site inspection specifying the concrete purpose of such an inspection, the approximate time of the arrival of the inspection team at the point of entry into the territory of the State Party concerned and the qualifications and names of the inspectors and their nationalities, shall acknowledge receipt of the notification within two days and shall provide in its turn (in the case of a challenge inspection subject to its agreement thereto) a list of officials representing the national body in charge of the implementation of the Convention who could, for their part, facilitate and provide support for the conduct of the inspection.



CD/537 */ 17 August 1984 Original: ENGLISH

Letter dated 14 August 1984 from the Chargé d'affaires a.i. of the Permanent Mission of Denmark, transmitting a working paper on the verification of non-production of chemical weapons

Please find enclosed a Danish working paper on the verification of non-production of chemical weapons.

My authorities submit this paper for circulation as an official conference document.

(Signed) Henrik Skouenborg Chargé d'affaires a.i.

^{*/} Reissued for technical reasons.

Denmark

Verification of non-production of chemical weapons

In document CD/353 of 8 March 1983 the United Kingdom delegation made proposals for verifying that certain chemicals, the key precursors for super-toxic lethal chemicals, produced by the civil chemical industry are not being diverted for hostile purposes. At the same time the United Kingdom drew up a list of companies for which on-site inspections could be carried out. Quite a few countries have also provided information of a similar kind showing the number of companies to be monitored at the present stage of the definition of key precursors.

As a contribution to this joint survey at which the British proposal is aimed, Denmark has compiled some preliminary data concerning the Danish companies producing and marketing the chemicals classed as "key precursors". These data are given in the table annexed to this document.

Danish production of key precursors for civil purposes

Key precursors for super-toxic	Number of companies in
lethal chemicals	Denmark producing and
	marketing these precursors
Phosphorus tráchloride (pcl3)	1
Phosphorus oxychloride (pocl3)	0
Chemicals containing the p-methyl and/or p-ethyl bond	• 0
Methyl and/or ethyl esters of phosphorous acid	0
Pinacolyl alcohol	0
N.n disubstituted beta - amino ethanol	0
N.n disubstituted beta - amino ethane thicl	0
N.n disubstituted beta - amino ethyl halidez	0
Key precursors for other super- toxic chemicals	
Phenyl, alkyl or cycloalkyl substituted glycolic acid	0
3- or 4-hydroxy piperidine and their derivatives	0



CD/539 28 August 1984

Original: ENGLISH

Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Disarmament

I. INTRODUCTION

1. At its 245th plenary meeting on 28 February 1984, the Conference on Disarmament adopted the following decision on the re-establishment of an ad hoc subsidiary body on chemical weapons (CD/440):

"The Conference on Disarmament, keeping in mind that the negotiation of a Convention should proceed with a view to its final elaboration at the earliest possible date, in accordance with United Nations General Assembly resolution 38/187/B; and in discharging its responsibility to conduct as a priority task the negotiations on a multilateral convention on the complete and effective prohibition of the development, production and stockpiling of chemical weapons and on their destruction, and to ensure the preparation of the convention, decides to re-establish, in accordance with its rules of procedure, for the duration of its 1984 session, an ad hoc subsidiary body to start the full and complete process of negotiations, developing and working out the convention, except for its final drafting, taking into account all existing proposals and drafts as well as future initiatives with a view to giving the Conference a possibility to achieve an agreement as soon as possible. This agreement, if possible, or a Report on the progress of the negotiations, should be recorded in the report which this ad hoc subsidiary body will submit to the Conference at the end of the second part of its 1984 session."

2. The term "ad hoc subsidiary body" was used in this connection pending a decision by the Conference on its designation. Subsequently, at its 248th plenary meeting on 8 March 1984, the Conference on Disarmament decided to designate as "Ad Hoc Committee on Chemical Weapons" the subsidiary body.

II. ORGANIZATION OF WORK AND DOCUMENTATION

- 5. In accordance with the decision mentioned above (CD/440), Ambassador Rolf Ekéus of Sweden was appointed Chairman of the Ad Hoc Committee. Mr. Abdelkader Bensmail, Senior Political Affairs Officer, Department for Disarmament Affairs, continued to serve as Secretary of the Committee.
- 4. The Ad Hoc Committee held 22 meetings from 29 February to 28 August 1984. The Ad Hoc Committee benefited from the inclusion in delegations of national experts. In addition, the Chairman held a number of informal consultations with delegations.

GE.84-65180

- 5. At the 250th plenary meeting on 15 March 1984 of the Conference on Disarmament, the Chairman of the Ad Hoc Committee reported on the progress of its work.
- 6. At their request, the Conference on Disarmament decided to invite the representatives of the following States not members of the Conference to participate in the work of the Ad Hoc Committee: Austria, Colombia, Democratic Yemen, Denmark, Ecuador, Finland, Greece, Ireland, New Zealand, Norway, Portugal, Senegal, Spain, Switzerland, Turkey and United Republic of Cameroon.

- 7. During the 1984 session, the following official documents dealing with chemical weapons were presented to the Conference on Disarmament:
 - CD/429, dated 7 February 1984, entitled "Report of the Ad Hoc Working Group on Chemical Weapons on its work during the period 16 January-6 February 1984"
 - CD/431, dated 10 February 1984, submitted by the United Kingdom entitled "Chemical Weapons Convention: Verification and Compliance The Challenge Element"
 - CD/432, dated 13 February 1984, submitted by the Islamic Republic of Iran, entitled "Letter dated 30 January 1984 from the Permanent Representative of the Islamic Republic of Fran addressed to the President of the Conference on Disarmament transmitting a report containing a description of an attack with chemical weapons in Piranshahr, Iran"
 - CD/435, dated 20 February 1984, submitted by a group of socialist countries, entitled "Improved effectiveness of the work of the Conference on Disarmament in the field of the prohibition of chemical weapons"
 - CD/437, dated 23 February 1984, submitted by Czechoslovakia, entitled "Letter dated 23 February 1984 addressed to the President of the Conference on Disarmament from the Permanent Representative of Czechoslovakia transmitting a proposal of Warsaw Member States to the Member States of NATO on the question of freeing Europe from chemical weapons, presented at the USSR Ministry of Foreign Affairs on 10 January 1984"
 - CD/439, dated 24 February 1984, submitted by the Federal Republic of Germany, entitled "Proposals on 'Prohibition of Transfer' and 'Permitted Transfers' in a future CW agreement"
 - CD/440, dated 28 February 1984, entitled "Decision on the re-establishment of an ad hoc subsidiary body on chemical weapons"
 - . CD/443, dated 5 March 1984, submitted by China, entitled "Proposals on Major Elements of a future Convention on the Complete Prohibition and Total Destruction of Chemical Weapons" (also issued as CD/CW/WP.68)
 - CD/444, dated 19 March 1984, submitted by the USSR, entitled "Letter dated 6 March 1984 from the Representative of the Union of Soviet Socialist Republics to the Conference on Disarmament, transmitting excerpts from the speech of the General Secretary of the Central Committee of the Communist Party of the Soviet Union, Mr. K.U. Chernenko, delivered on 2 March 1984 to voters of Moscow's Kuibyshev district"

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- CD/445, dated 7 March 1984, submitted by the Netherlands, entitled "Size and Structure of a Chemical Disarmament Inspectorate"
- CD/446, dated 8 March 1984, entitled "Decision on the designation of ad hoc subsidiary bodies of the Conference on Disarmament"
- CD/447, dated 9 March 1984, submitted by the Islamic Republic of Iran, entitled "Letter dated 2 March 1984 from the Permanent Representative of the Islamic Republic of Iran addressed to the President of the Conference on Disarmament containing information on missile attacks and bombardments in both military and civilian areas of the Islamic Republic of Iran"
- CD/482, dated 26 March 1984, submitted by Yugoslavia, entitled "Working Paper National verification measures" (also issued as CD/CW/WP.73)
- CD/483, dated 27 March 1984, submitted by the Islamic Republic of Iran, entitled "Letter dated 20 March 1984 from the Permanent Representative of the Islamic Republic of Iran addressed to the President of the Conference on Disarmament containing proposals on some elements of a future convention on the complete prohibition and total destruction of chemical weapons" (also issued as CD/CW/WP.74)
- CD/494, dated 3 April 1984, submitted by France, entitled "Elimination of stocks and of production facilities" (also issued as CD/CW/WP.79)
- CD/496, dated 4 April 1984, submitted by the Federal Republic of Germany, entitled "Considerations on including a ban on the use of chemical weapons and the right of withdrawal in a future chemical weapons convention"
- CD/497, dated 11 April 1984, submitted by the USSR, entitled "Letter dated 11 April 1984 from the Representative of the Union of Soviet Socialist Republics addressed to the President of the Conference on Disarmament transmitting the answers of the General Secretary of the CPSU Central Committee, K.U. Chernenko, to questions of the newspaper 'Pravda'"
- CD/500, dated 18 April 1984, submitted by the United States, entitled "Draft convention on the prohibition of chemical weapons"
- CD/501, dated 26 April 1984, submitted by Hungary, entitled "Letter dated 25 April 1984 from the Head of the Hungarian delegation to the Conference on Disarmament transmitting the text of the communiqué of the meeting of the Committee of Foreign Ministers of the States Parties to the Warsaw Treaty, held in Budapest on 19 and 20 April 1984"
- CD/505, dated 13 June 1984, submitted by Finland, entitled "Letter dated 12 June 1984 addressed to the President of the Conference on Disarmament from the Permanent Representative of Finland, transmitting a document entitled 'Technical Evaluation of Selected Methods for the Verification of Chemical Disarmament'"
- CD/508, dated 15 June 1984, submitted by Norway, entitled "Verification of a Chemical Weapons Convention. Sampling and Analysis of Chemical Warfare Agents under Winter Conditions"

- CD/509, dated 15 June 1984, submitted by Norway, entitled "Letter dated 13 June 1984 addressed to the President of the Conference on Disarmament from the Permanent Representative of Norway transmitting a research report entitled 'Verification of a Chemical Weapons Convention. Sampling and Analysis of Chemical Warfare Agents under Winter Conditions'"
- CD/514, dated 9 July 1984, submitted by the United Kingdom, entitled "Verification of non-production of chemical weapons"
- CD/516, dated 12 July 1984, submitted by the United States, entitled "The declaration and interim monitoring of chemical weapons stockpiles"
- CD/518, dated 17 July 1984, submitted by the Federal Republic of Germany, entitled "Verification of the Destruction of Chemical Weapons"
- CD/519, dated 18 July 1984, submitted by the Islamic Republic of Iran, entitled "Letter dated 16 July 1984 from the Permanent Representative of the Islamic Republic of Iran addressed to the President of the Conference on Disarmament transmitting the text of the response of His Excellency Seyyed Ali Khamenei, President of the Islamic Republic of Iran, to a message of the Secretary-General of the United Nations"
- CD/532, dated 8 August 1984, submitted by a group of socialist States, entitled "The Organization and Functioning of the Consultative Committee" (also issued as CD/CW/WP.84)
- CD/537, dated 15 August 1984, submitted by Denmark, entitled "Letter dated 14 August 1984 from the Chargé d'affaires a.i. of the Permanent Mission of Denmark, transmitting a working paper on the verification of non-production of chemical weapons"
- 8. In addition, the following Working Papers were circulated to the Ad Hoc Committee:
 - CD/CW/WP.67, dated 28 February 1984, entitled "Chairman's suggestion for a Working Structure for the negotiations on a Chemical Weapons Convention"
 - CD/CW/WP.68, dated 5 March 1984, submitted by China, entitled "Proposals on Major Elements of a Future Convention on the Complete Prohibition and Total Destruction of Chemical Weapons" (also issued as CD/443)
 - CD/CW/WP.69, dated 14 March 1984, entitled "Programme of work of the Ad Hoc Committee on Chemical Weapons for the first part of the 1984 session"
 - CD/CW/WP.70, dated 9 March 1984, entitled "Outline for the organization of work"
 - CD/CW/WP.71, dated 22 March 1984, submitted by Yugoslavia, entitled "Suggested alternative definitions"
 - CD/CW/WP.72, dated 25 March 1984, submitted by the Union of Soviet Socialist Republics, entitled "Proposal concerning the content of the provision of the future convention on the prohibition of chemical weapons relating to the procedure to be followed in considering a request for an on-site inspection by the State which receives it (amendment to para. 4.3 of the Report of the Co-ordinator of Contact Group B (document CD/416, annex II, p.14))"

- CD/CW/WP.73, dated 26 March 1984, submitted by Yugoslavia, entitled "Working Paper National verification measures" (also issued as CD/482)
- CD/CW/WP.74, dated 27 March 1984, submitted by the Islamic Republic of Iran, entitled "Letter dated 20 March 1984 from the Permanent Representative of the Islamic Republic of Iran addressed to the President of the Conference on Disarmament containing proposals on some elements of a future convention on the complete prohibition and total destruction of chemical weapons" (also issued as CD/483)
- CD/CW/WP.75, dated 26 March 1984, submitted by China, entitled "Some aspects on 'Small-Scale Production Facility'"
- CD/CW/WP.76, dated 30 March 1984, submitted by the Islamic Republic of Iran, entitled "Proposal concerning the content of chemical weapons relating to the procedure to be followed in considering a request by a Member State for an on-site inspection. (Amendment to Article 4 of the Report of the Co-ordinator of Contact Group B (document CD/416, annex II, p. 14))"
- CD/CW/WP.77, dated 2 April 1984, entitled "Programme of work of the Ad Hoc Committee for the month of April 1984"
- CD/CW/WP.77/Rev.1, dated 5 April 1984, entitled "Programme of work of the Ad Hoc Committee for the month of April 1984" (English only)
- CD/CW/WP.78, dated 2 April 1984, submitted by the USSR, entitled "Proposal concerning the content of procedures for the verification of the destruction of chemical weapons stockpiles"
- CD/CW/WP.79, dated 3 April 1984, submitted by France, entitled "Elimination of stocks and of production facilities" (also issued as CD/494)
- CD/CW/WP.80, dated 17 April 1984, entitled "Programme of work of the Ad Hoc Committee on Chemical Weapons for the second part of the 1984 session"
- CD/CW/WP.81, dated 26 April 1984, entitled "Proposals by the Chairman of the Ad Hoc Committee on Chemical Weapons for draft Articles for parts of a chemical weapons convention"
- CD/CW/WP.82, dated 6 July 1984, entitled "Preliminary structure of a Convention on chemical weapons"
- CD/CW/WP.82/Rev.1, dated 6 August 1984, entitled "Preliminary structure of a Convention on chemical weapons"
- CD/CW/WP.83, dated 16 July 1984, entitled "Programme of work of the Ad Hoc Committee on Chemical Weapons for the remainder of the 1984 session"
- CD/CW/WP.84, dated 8 August 1984, submitted by a group of socialist States entitled "The Organization and Functioning of the Consultative Committee" (also issued as CD/532)
- CD/CW/WP.85, dated 8 August 1984, entitled "Draft Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Disarmament"

- CD/CW/WP.85/Add.1, dated 15 August 1984, entitled 'Draft Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Disarmament Annex I"
- CD/CW/WP.85/Add.2, dated 14 August 1984, entitled "Draft Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Disarmament Annex II"
- CD/CW/WP.86, dated 10 August 1984, submitted by the United Kingdom, entitled "Verification of non-production of chemical weapons

III. SUBSTANTIVE WORK DURING THE 1984 SESSION .

- 9. In accordance with its mandate, the Ad Hoc Committee started the full and complete process of elaboration and negotiation of the convention, except for its final drafting, on the basis of existing material and new proposals made by delegations. To this effect, the Ad Hoc Committee accepted the Chairman's proposal to set up three Working Groups which dealt with specific aspects of the following spheres of the Convention as follows:
 - (a) Working Group A: Scope (Chairman: Mr. S. Duarte, Brazil)
 - (b) Working Group B: Elimination (Chairman: Mr. R.J. Akkerman, The Netherlands)
 - (c) Working Group C: Compliance (Chairman: Mr. H. Thielicke, German Democratic Republic)

In addition, the Chairman of the Ad Hoc Committee was assisted by Ambassador J.A. Beesley (Canada) and Ambassador S. Turbanski (Poland) in dealing with the issues of prohibition of use of chemical weapons and the structure of the Convention.

10. On the basis of the results achieved in the Working Groups, and the proposals put forward by the Chairman, preliminary drafting was undertaken on some of the provisions of the Convention. These preliminary draft articles or parts thereof are included in Annex I and structured according to the preliminary structure of the Convention (CD/CW/WP.82/Rev.1). The Committee took note of the intention of the 1984 Chairman to revise the record of positions on substantive issues contained in CD/CW/WP.67 using material submitted by delegations concerned so as to reflect changes in positions. */ Annex II contains reports by the Working Group Chairmen. Annex III contains some proposals introduced during the 1984 session of the Conference on Disarmament as formulated and presented in Conference Documents.

Some delegations expressed doubts about the necessity of updating this document.

IV. CONCLUSIONS AND RECOMMENDATIONS .

- 11. The content of Annex I reflects the stage of negotiations on a Chemical Weapons Convention, but it does not bind any delegation.
- 12. The Ad Hoc Committee recommends to the Conference on Disarmament:
- (a) that Annex I be used for further negotiation and drafting of the Convention;
- (b) that the reports of the Chairmen of the Working Groups as contained in Annex II, including their proposed draft formulations, together with other relevant present and future documents of the Conference also be utilized in the further elaboration of the Convention;
- (c) that the Ad Hoc Committee resume its work under the Chairmanship of Ambassador R. Ekéus (Sweden) and under its present mandate, for a session of limited duration during the period 14 January 1 February 1985; that the work cover the two specific issues of Permitted Activities and Verification on challenge including related issues with regard to the Consultative Committee, as well as further negotiations on the material in Annex I which has been subject to preliminary drafting; furthermore that consultations be undertaken by the Chairman in the meantime in preparation for the resumed session, and that the Committee present to the Conference on Disarmament a report on its work during that period;
- (d) that the Ad Hoc Committee be re-established before the end of the second week of the 1985 session with the 1984 mandate, and that Ambassador S. Turbanski (Poland) be appointed as its Chairman;
- (e) that a decision be taken early in the first part of the 1985 session on the continuation of the process of negotiation on the Convention after the closure of the 1985 session, with a view to holding a resumed session of a duration which will ensure that the time available in the period between September 1985 and January 1986 is more fully utilized for negotiations.

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ANNEX I

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ANNEX I

This Annex to the report of the 1984 session of the Ad Hoc Committee on Chemical Weapons has been structured so as to reflect the work accomplished by the Ad Hoc Committee in discharging its mandate (CD/440). The preliminary character of the texts presented is to be stressed. The different stages of the preliminary drafting process within the negotiations on the text of a Convention are reflected as texts having different status as explained below. In accordance with the mandate of the Committee, the texts, whatever their status, are not binding for any delegation. Due to the extensive and complicated nature of the substance and the limited time available, it was not possible to consider a number of the parts of the Convention during this session. The texts reproduced in this Annex therefore do not contain all positions or reflect changes in them.

The text is arranged following the preliminary structure of a future Convention in CD/CW/WP.82/Rev.1, which has been used on the understanding that it is still tentative. The placement of provisions within the structure has not been discussed in most cases. Thus Annex I does not reflect all proposals regarding placement which have been made; the issues remain open and will be discussed at a later stage.

In the texts, differing views appear within brackets in cases where alternative formulations were suggested. Other views, expressed in a more general way, are presented in footnotes.

The differing types of texts, reflecting the different stages of the preliminary drafting process within the negotiations are as follows:

- 1. On the basis of the reports of the Chairmen of the Working Groups and the proposals by the Chairman of the Committee, some texts have been subject to extensive consultations and drafting efforts conducted by the Chairman of the Committee. Such texts are marked with two lines in the margin.
- 2. Other texts, based on the same material, have not been subject to extensive drafting but the Chairman of the Committee or the Working Groups Chairmen were to a varying extent able to consult with delegations on substance but not necessarily on formulations. Such texts are marked with one line in the margin.
- 3. Some issues, dealt with in the report of the previous session (CD/416) which was re-edited at the beginning of the session as CD/CW/WP.67, have not been further considered during this session. These are indicated at appropriate places with the headings from CD/CW/WP.67 and marked "67" in the margin.

Preliminary structure of a Convention on chemical weapons

Preamble

- I. General provisions on scope
- II. Definitions and Criteria
- III. Declarations
- IV. Measures on chemical weapons
- V. Measures on chemical weapons production facilities
- VI. Permitted activities
- VII. National implementation measures
- VIII. Consultative Committee
 - IX. Consultations, co-operation and fact finding
 - X. Assistance
 - XI. Economic and technological development
 - XII. Relation to other international agreements
- XIII. Amendments
 - XIV. Duration, withdrawal
 - XV. Signature, ratification, entry into force
 - XVI. Languages

Annexes and other documents

^{*/} Discussions are still continuing on where different issues like verification measures are to be placed under this structure.

Preamble

Determined, for the sake of all mankind, to exclude completely and forever the possibility of chemical weapons which utilize the toxic properties of toxic chemicals, to cause death, or temporary or permanent harm to man and animals, being used.

I. GENERAL PROVISIONS ON SCOPE

Each State Party undertakes not to develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone.

Each State Party undertakes not to assist, encourage or induce, in any way, anyone to engage in activities prohibited to Parties under this Convention.

Each State Party undertakes not to use chemical weapons
[in any armed conflict] [in any conflict in any circumstances,
and also not to use herbicides for other than/non-hostile/
permitted **/purposes [for methods or means of warfare].

[Each State Party undertakes not to [conduct other activities in preparation for use of chemical weapons] [engage in any military preparations for use of chemical weapons].]

^{*/} With this alternative is suggested the following reservations:

a) except for the use of irritants for the purpose of riot control;

b) other exceptions.

It was noted that the definition of "permitted purposes" refers only to the definition of chemical weapons. Such a reference may not be applicable in this context. In such a case the permitted purposes would have to be spelt out in full in these undertakings.

Each State Party undertakes to [destroy] [destroy or divert for permitted purposes] chemical weapons which are in its possession or under its [jurisdiction or] control.*/

Each State Party undertakes to [destroy] [destroy or dismantle] chemical weapons production facilities which are in its possession or under its [jurisdiction or] control.**/

II. DEFINITIONS AND CRITERIA

For the purposes of this Convention:

1. *** The term "chemical weapons" shall apply to the following, together or separately:

(i) toxic chemicals and their precursors, [including components of binary or multicomponent chemical weapons] except those intended for permitted purposes as long as the types and quantities involved are consistent with such purposes.

^{*/} An alternative formulation and placement of this undertaking is given under "Measures on chemical weapons" on page 15.

An alternative formulation and placement of this undertaking is given under "Measures on chemical weapons production facilities" on page 19.

The definitions of chemical weapons are presented on the understanding that problems related to irritants used for law enforcement and riot control, and also to chemicals intended to enhance the effect of the use of chemical weapons if their inclusion in the convention is agreed could be handled outside the definitions of chemical weapons if this will result in a more clear and understandable definition. Preliminary suggestions made to solve these problems are given below and consultations on them will be continued.

^{****/} Toxic chemicals and their key precursors not intended for permitted purposes are also called chemical warfare agents.

- (ii) munitions and devices specifically designed to cause death or other harm through the toxic properties of those toxic chemicals referred to under (i) above which would be released as a result of the employment of such munitions and devices.
- (iii) any equipment specifically designed for use directly in connection with the employment of such munitions or devices.
 - [The term "chemical weapons" shall not apply to those chemicals which are not super-toxic lethal, or other lethal chemicals and which are used by a Party for domestic law-enforcement and domestic riot control purposes.]
 - [States Parties agree not to [develop, produce, stockpile or] utilize for chemical weapons chemicals intended to enhance the effect of the use of such weapons.]
- [2. "Toxic chemicals" means:

chemicals [regardless of the method of their production]
[whether produced in plants, munitions or elsewhere] whose
toxic properties can be utilized [in armed conflicts*] to
cause death or temporary or permanent harm, to man or
animals or plants, involving:

[2. "Toxic chemical" means:

any chemical, regardless of its origin or method of production, which through its chemical action on life processes can cause death, temporary incapacitation, or permanent harm to man or animals

Depending on the formulation of the prohibition of use.

Toxic chemicals are divided into the following categories:]

- (a) "super-toxic lethal chemicals", which have a median lethal dose which is less than or equal to 0.5 mg/kg (subcutaneous administration) or 2,000 mg-min/m³ (by inhalation) when measured by an agreed method* set forth in
- (b) "other lethal chemicals", which have a median lethal dose which is greater than 0.5 mg/kg (subcutaneous administration) or 2,000 mg-min/m³ (by inhalation) and less than or equal to 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m³ (by inhalation) when measured by an agreed method*/set forth in
- [(c) "other harmful chemicals", being anytoxic chemicals not covered by (a) or (b) above, [including toxic chemicals which normally cause temporary incapacitation rather than death[at similar doses to those at which supertoxic lethal chemicals cause death].]

[and "other harmful chemical" has a median lethal does which is greater than 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m³ (by inhalation).]

- 3. Permitted purposes means:
 - (a) industrial, agricultural, research, medical, law enforcement or other peaceful purposes; and
 - [a) industrial, agricultural, research, medical or other peacedul purposes, law enforcement; and
 - (b) protective purposes, namely those purposes directly related to [means of] protection against chemical weapons;

^{*/} It was noted that after such measurements had actually been performed, the figures mentioned in this and the following section might be subject to slight changes in order to cover sulphur mustard gas under the first category.

The suggestion that such permitted protective purposes should relate only to "an adversary's use of" chemical weapons was removed pending a decision on where in the Convention the question of prohibiting other military preparations for use of chemical weapons than those mentioned under scope should be dealt with.

- (c) military purposes which [are not related to the use of chemical weapons] [do not rely upon the toxic properties of toxic chemicals or which are purposes otherwise permitted under sub-paragraphs (a) and (b) of this paragraph].
- 4. "Precursor" means:

 a chemical reagent which takes part in the production of a toxic chemical.
- a precursor which poses a significant risk to the objectives of the Convention by virtue of its importance in the production of a toxic chemical.

 It may possess possesses the following characteristics.
 - (a) it may play [plays] an important role in determining the toxic properties of a [toxic chemical] [super-toxic lethal chemical].
 - (b)' it may be used in one of the chemical reactions at the final stage of production of the [toxic chemical] [super-toxic lethal chemical], whether in large scale production or in binary or multi-component weapons [or elsewhere].
 - (b)'' it may be is used in one of the chemical reactions at the final stage of production of the [toxic chemical] [super-toxic lethal chemical], whether in a production facility, in a munition or device, or elsewhere.
 - (b)''' it may be used in one of the chemical reactions at the final stage of formation of the [toxic chemical] [super-toxic lethal chemical].

^{*/} Although different opinions exist on the place for these characteristics, there is no disagreement that they have to be taken into account when drawing up the list of key precursors forming part of the Convention.

[(c) it may [is] not be used, or [is] used only in minimal quartities, for permitted purposes]

Key precursors are listed in

[The list in ... shall be subject to revisions according to ... taking into account the above characteristics as well as any other relevant factor.]

The list in ... may be subject to revisions according to ... taking into account the above characteristics.

For the purpose of the relevant provisions in a Chemical Weapons Convention key precursors should be listed according to the characteristics.

[As an exception to the rule, chemicals which are not key precursors but are deemed to pose a threat [particular risk] with regard to a Chemical Weapons Convention should be included in a list, if an understanding to this end can be reached.]

6. Chemical weapons production facility means:

Chemical weapons production facility means any building or equipment designed, constructed or used (in any degree) for the production of chemical weapons or for filling chemical weapons.]

["Chemical weapons production facility" means any building or any equipment which in any degree was designed, constructed or used since I January 1946, for:

- (a) the production for chemical weapons of any toxic chemical, except for those listed in (Schedule B), or the production for chemical weapons of any key precursor; or
- (b) the filling of chemical weapons.

^{*/} It seems generally acceptable that this para. could appear in the list of key precursors.

III. DECLARATIONS

Declarations of chemical weapons

Each State Party undertakes to submit not later than 30 days after entry into force for it of the Convention declarations to the Consultative Committee, stating:

- whether it possesses or does not possess any chemical weapons */
- whether it has on its territory any chemical weapons under the [jurisdiction or] control of anyone else;
- the composition of stocks of chemical weapons, i.e.: **
 - toxic chemicals and their [key] precursors comprised in such stocks by their chemical names, [structural chemical formulae,] toxicities where applicable and weights in metric tons in bulk and filled munitions;
 - munitions by types, calibres, quantities and chemical fill;
 - [other delivery] devices by types, quantities, [volume], [size] and chemical fill;
 - equipment [or chemical] specifically designed for use directly in connection with the employment of such munitions or [other delivery] devices;
- [- the precise location of chemical weapons under its control and the detailed inventory of the chemical weapons at each location]

[Each State Party undertakes to submit to the Consultative Committee declarations stating the location of storage depots adjacent to destruction factilities [within 3 months after entry into force of the Convention].]***

^{*/} Regardless of quantity or location.

^{**/} It has been proposed that some of this material could be placed in an Armex.

[[]Within 6 months with respect to binary weapons and within 24 months for other chemical weapons.]

[Each State Party undertakes to submit to the Consultative Committee declarations on the detailed composition of each batch of chemical weapons to be destroyed upon arrival at the storage depot adjacent to the destruction facility.]

[Each State Party undertakes to submit to the Consultative Committee declarations on the detailed composition of each batch of chemical weapons to be diverted for permitted purposes before it is transported to the facility which will assure its diversion.]

Plans for [destruction] [destruction or diversion for permitted purposes] of chemical weapons

Each State Party undertakes to submit to the Consultative Committee, not later than [30 days] [3 months]*/[6 months] after entry into force for it of the Convention, initial plans for the [destruction] [destruction or diversion for permitted purposes] of chemical weapons containing:

- types of operation;
- schedules with respect to quantities and types of chemical weapons to be [destroyed] [destroyed or diverted to permitted purposes] and end products;
- [location of destruction plants to be used]

 [schedules for declaration within two years after
 entry into force for it of the location of destruction
 plants*/to be used]

Each State Party undertakes to submit to the Consultative Committee [three] [six] months before the [destruction] [destruction or diversion] operations are to begin detailed plans containing the information needed by the Consultative Committee as provided for in

^{*/} The [3 months] timeframe is a working variant subject to further consideration taking into account the results of elaboration of specific contents of the initial plans.

^{**/} To be based on agreed principles.

^{***/} It has been proposed that some of this material could be placed in an armex.

Each State Party undertakes to submit to the Consultative Committee [periodic] [annual] progress reports on implementation of plans for the [destruction] [destruction or diversion for permitted purposes] of chemical weapons and a notification of the completion of [destruction] [destruction or diversion] of chemical weapons within 30 days thereafter.

Old Stocks

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Initial declaration of chemical weapons production facilities

#67#

Submissions of plans and notifications

"67"

IV. MEASURES ON CHEMICAL WEAPONS

Each State Party undertakes to [destroy] [destroy or divert* for permitted purposes as defined in]

[1.to destroy and 2. have the right to divert for permitted purposes as provided for in ...] [as rapidly as possible] [all] chemical weapons if any under their [jurisdiction or] control.

[All chemical weapons stocks should be totally destroyed except for dual purpose toxic chemical and dual purpose key precursors which, as agreed upon, may be diverted to permitted purposes.]

[[Destruction] [destruction or diversion for permitted purposes] shall commence within 6 months and be completed within ten years after the Convention's entry into force for the Party, in accordance with the schedule specified in]

[[Destruction] [destruction or diversion for permitted purposes] shall be carried out in accordance with the schedule specified in ... within the overall timeframe beginning from 6 months and ending within 10 years after the Convention's entry into force.]

^{*/} Diversion is suggested not to relate to super-toxic lethal chemicals and their key precursors, except as allowed in with respect to-permitted activities admitting possession of an aggregate amount of up to one ton a year.

It is understood that such a schedule is based on the principle that during the entire stage of [destruction] [destruction or diversion for permitted purposes] no Party that has declared the possession of chemical weapons shall gain any military advantage. Some delegations suggested that the most toxic chemicals such military advantage, tabun, mustard gas etc. shall be destroyed in the first place, as VX, soman, sarin, tabun, mustard gas etc. shall be destroyed in the

[The Consultative Committee shall consult with Parties no later than [three months] [between three to ... months] after entry into force of the Convention with a view to co-ordinate their plans for destruction or diversion of chemical weapons submitted in accordance with...]

[Destruction] [destruction or diversion for permitted purposes] shall employ non-reversible procedures which will [allow] [not artificially hinder] the systematic international on-site inspection by the Consultative Committee provided under ...

Each State Party undertakes to protect population and environment in fulfilling the obligations connected with the [destruction] [destruction and the diversion for permitted purposes] of chemical weapons.*

Each State Party undertakes

- to declare within... days any chemical weapons which might be found [after the initial declarations] [and which were left without its knowledge] [anywhere] [on its territory] under its [jurisdiction or] control, submitting to the Consultative Committee all relevant data in its possession about the found chemical weapons and planned methods, timetables and the place of their destruction, according to

It is understood that the protection of population and environment should also be observed in the destruction of chemical weapons production facilities.

- to destroy such weapons in a manner which would ensure the safety of population and environment, taking into account the quantity and the state of the discovered chemical weapons.

Non-removal of stocks

"67"

Verification measures

116711

V. MEASURES ON CHEMICAL WEAPONS PRODUCTION FACILITIES

Each State Party undertakes to destroy its chemical weapons production facilities.*

Destruction of production facilities can be carried to the following methods alone, or as appropriate together:

- dismantling and physical destruction of all components and structures;
- 2. dismantling and physical destruction of certain components, while reusing other components for permitted purposes;
- 3. dismantling and physical destruction of certain structures.

The specific method or combination of methods to be used in respect of each production facility shall be determined by each State Party according to the nature of the facility concerned and in accordance with the principles laid down in

Each State Party shall indicate in its plan(s) for destruction of production facilities the specific methods of destruction envisaged.

^{*/} To be defined elsewhere; this text refers only to "single-purpose" facilities.

^{**/} It has been proposed that this paragraph might be placed in an annex.

^{***/} It is an understanding that the methods mentioned may not be exhaustive and that further consideration should be given to this problem, taking into account the future definition of chemical weapons production facility.

Elimination of Production Facilities

Cessation of production activities

Non-construction and non-conversion of production facilities

"67"

Verification measures

VI. PERMITTED ACTIVITIES*

Each State Party has the right, in accordance with the provisions of this Convention, to [develop], produce otherwise acquire, retain, transfer and use toxic chemicals and their precursors for permitted purposes, in types and quantities consistent with such purposes, subject to the following [restrictions]:

^{*/} It is generally felt that a provision stating that nothing in the Convention should be interpreted as hampering the activities of Parties in the chemical field should be formulated. The precise formulation and placement of such provision should be further discussed. (Formulations on this matter appear under XI. "Economic and technological development")

^{**/} A provision on transfer should be elaborated.

[&]quot;Toxic chemicals and their precursors" used here with reference to the section on "definitions".

^{****/} In accordance with procedures set forth in ... and, as appropriate, on the basis of lists of chemicals. including those of particular risk, to be determined according to agreed criteria.

- 1. Super-toxic Lethal Chemicals
 - (a) a limitation to an amount which is the lowest possible and in any case does not exceed one metric ton of the aggregate quantity of supertoxic lethal chemicals [and their precursors] [and key components of binary systems] produced, diverted from stocks, or otherwise acquired annually or possessed at any one time [for protective purposes] [for all permitted purposes];
 - (b) a limitation of the production of these chemicals to a single small-scale facility having a capacity limit of;
 - (c) a notification to the Consultative Committee of the location and capacity of the small-scale production facility within 30 days after entry into force for a State Party, or when constructed later days before the date of commencement of operations;
 - (d) monitoring of the small-scale production facility by annual data reporting with justification, on-site instruments, and systematic international on-site inspections [periodically] [on a quota basis].

+/

^{+/} This material was put together by the Chairman of the Working Group following consultations with some delegations as a presentation of positions.

- [2. a prohibition of the production of compounds with methyl-phosphorus bond in commercial production facilities [and to restrict such production to the single small-scale facility].]
 - [(e) monitoring of all facilities producing super-toxic lethal chemicals by regular reporting which would include description/justification of the civil uses for which the chemical is produced and systematic international on-site inspection.]
 - [(f) a prohibition of production and use of listed supertoxic lethal chemicals, except for the production and use of such chemicals in laboratory quantities, for research, medical, or protective purposes at establishments approved by the Party.]
 - 3. Other Lethal and Other Harmful Chemicals
 - (a) monitoring of production and use by annual data reporting [according to the level of risk posed by particular chemicals whether per se or as precursors];
 - [(b) a declaration to the Consultative Committee of the location of facilities for the production of certain other lethal and other harmful chemicals deemed to pose a particular risk.]
 - 4. Key precursors [which are not key components of binary systems and/or which do not contain methyl-phosphorus bond]

 Monitoring by annual data reporting of production and use [and declaration to the Consultative Committee of the location of facilities for the production of key precursors] [and systematic international on-site inspection on a random basis.]
 - [5. Precursors (to be elaborated)]

^{+/} This material was put together by the Chairman of the Working Group following consultations with some delegations as a presentation of positions.

RESTRICTIONS ON ACQUISITION AND TRANSFER

"67"

Cessation of acquisition and transfer

"67"

Permitted Transfers

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VII. National Implementation Measures

Each State Party undertakes to adopt measures necessary in accordance with its constitutional processes to implement the Convention, and in particular, to prohibit and prevent any activity in violation of the Convention and to monitor compliance with the Convention anywhere under its [jurisdiction or] control.

It undertakes to inform the Consultative Committee*/
of the legislative and administrative measures taken to
implement the Convention.

Each State Party undertakes to co-operate with the Consultative Committee in the exercise of all its functions and in particular to provide, through any national organization or authority assigned to implement the Convention, assistance to the Consultative Committee including data reporting, assistance for international on-site inspections and a prompt response to all requests for the provision of expertise, information and laboratory support.

National Technical Means

"67"

^{*/} Any mentioning of the Consultative Committee may also relate to its appropriate subsidiary organ, whichever may be decided.

^{**/} It has been proposed to place this paragraph under Section VIII.

VIII. CONSULTATIVE COMMITTEE */

- 1. For the purpose of facilitating the implementation of the Convention by assisting States Parties in consultations and cooperation, as well as by promoting verification of compliance with the Convention, a Consultative Committee shall be established. It shall consist of the representatives designated by the States Parties to the Convention.**
- 2. The first session of the Committee shall be convened by the Depositary at [venue] not later than 30 days after the entry into force of the Convention.
- The Committee shall
 - a) consider any matter raised, related to the objectives or the implementation of the Convention;
 - b) review scientific and technical developments [which could affect the operation of the Convention and consider other technical matters] related to the implementation of the Convention;
 - (c) consider measures to be taken by States Parties at the emergence of any situation which poses a threat to the Convention or impedes the achievement of its objectives;
 - [d) consider practical measures to be taken by States Parties in assistance of any endangered State Party;]***/

^{*/} Further material on the Consultative Committee can be found in Annex II, pp. 11-20 and in Annex III, CD/294, p. 7, and CD/500, pp. 7-8 and annex I.

^{**/} Concerning the participation in the Committee of States signatories to the Convention, it was suggested that an appropriate provision be included in the Convention. According to another view, this matter should be decided by the Committee itself.

^{***/} The proposals are not thought to affect in any way the rights of States to have recourse to the Security Council as provided in the UN Charter. According to another view, however, it would be appropriate to consider these proposals in close connection with a possible role of the UN Security Council in the compliance procedure, especially concerning assistance for a State Party which has been harmed or is likely to be harmed as a result of violation of the Convention.

4. The Committee shall meet in regular sessions annually during the first ten years after the entry into force of the Convention. After that period, it may meet annually, unless States Parties decide otherwise.* The Committee shall review the operation of the Convention at its regular sessions every 5 years.*

An extraordinary session of the Committee may be convened at the request of any State Party or the Executive Council within 30 days after the receipt of such request.

- The Committee shall take its decisions by consensus [whenever possible] [on matters of substance]. If a consensus cannot be reached [within 24 hours, a decision may be taken by a majority of those present and voting. The report on a fact-finding inquiry should not be put to a vote, nor should any decision be taken as to whether a Party is complying with the provisions of the Convention.] [during the session, each State Party may record its opinion in the final report of the session for subsequent study by the Governments of the other States Parties to the Convention. Decisions on procedural matters related to the organization of work shall be taken by consensus, whenever possible, and otherwise by a majority of those present and voting.]
- 6. The Committee shall elect its Chairman at the beginning of each regular session.

^{*/} It was suggested that the decision could be taken at the end of each session or the Chairman of the Committee could elicit the views of States Parties.

It was suggested that in such a case the regular session may be divided into two part: (a) normal regular session; (b) review session. According to another view, the possibility of holding regular review conferences should be considered in close connection with the procedure for amendments.

^{***/} It was suggested that the request forwarded by a State Party should be substantiated. According to another view, it should be supported by a certain number of States Parties (e.g. 5)

It was suggested that decisions on all questions should be taken either by consensus or by a majority vote. It was furthermore suggested that there should be a clear understanding as to the difference between procedural and substantive matters.

- 7. The Committee shall, after each regular session, present to the States Parties a report on its activities.*
- 8. The expenses for the activities of the Committee shall be borne by the States Parties to the Convention.
- 9. Legal Status ***/
- 10. For the purpose of assisting the Committee in carrying out its functions, an Executive Council and a Technical Secretariat shall be established.
- 11. The Consultative Committee may set-up other [technical] subsidiary organs as may be necessary for its work.
- 12. The Executive Council shall have delegated authority to discharge the functions of the Consultative Committee set out in sub-paras. 3 [......] as well as any other functions which the Committee may delegate to it. The Council shall report to the Committee at its regular sessions on its exercise of these functions. [In the intervals between the sessions, questions with regard to promoting the implementation of and compliance with the Convention shall be dealt with by the Executive Council acting on behalf of the Consultative Committee.]
- 13. The Council shall be composed of representatives of [15] States Parties and a non-voting Chairman.

[Ten members of the Council shall be elected by the Consultative Committee upon consultation with the States Parties, taking into account the principle of equitable political and geographic representation, for a term of 2 years with an annual replacement of five members. The remaining five seats shall be reserved for the permanent members of the Security Council participating in the Convention.]

[Based on the principle of the sovereign equality of States, members shall be elected by the Consultative Committee from among all States Parties. Elections could be made on the basis of a regional allocation of seats or on any other adequate basis that will be agreed upon, excluding the possibility of institutional permanent membership of any State Party.]

^{*/} It is understood that the report might consist of the proceedings of the regular session and the final document of the session. In case there is no annual regular session of the Consultative Committee, the Executive Council may present a technical report to States Parties.

It is understood that the Preparatory Commission would make a recommendation concerning the financing of the activities of the Committee.

It was suggested that the Technical Secretariat should be able to enter into the legal contracts necessary to fulfil its functions. This matter should be addressed in a comprehensive way after agreement is reached on the conduct of addressed in a comprehensive way after agreement is subsidiary organs.

The Council shall take its decisions by consensus [whenever possible] 14. [on matters of substance]. If a consensus cannot be reached within [24 hours] [a decision may be taken by a majority of those present and voting. The report on a fact-finding inquiry should not be put to a vote, nor should any decision be taken as to whether a Party is complying with the provisions of the Convention.] [with regard to a request for on-site inspection, the State subject to the request shall be informed of the individual opinions expressed by all the Members of the Executive Council on the matter. The Council shall take its decisions on procedural matters related to the organization of its work by consensus whenever possible, and otherwise by a majority of those present and voting.]

[A fact-finding team shall be automatically sent out by the Executive Council in response to the request made by a State Party for inspection to be carried out in territories under its control.]

- [The Council shall be able to be convened on short notice and to function continuously. Each member of the Council shall for this purpose be represented at all times at the seat of the Consultative Committee.]
- The Chairman of the previous regular session of the Consultative Committee 16. shall serve as Chairman of the Council.
- The Executive Council may set-up such subsidiary organs as may be necessary 77. for its work.
- A Fact-Finding Panel subordinate to the Executive Council shall be established. The Panel shall be responsible for conducting fact-finding inquiries, including the oversight of challenge on-site inspection.]**/

It was suggested that decisions on all questions should be taken either by consensus or a majority vote.

Different suggestions have been made with regard to such an organ: **/

It would not be necessary to provide for such a body, since the three bodies already envisaged would suffice;

Panel with political and technical functions as subsidiary organ to the Executive Council, composed of

i) five members; or

ii) technical experts belonging to the delegations to the Executive Council.

Staff of technical experts which would provide technical advice and carry out inspections. The following forms are envisaged:

i) permanent unit in the Secretariat;

ii) roster of quickly available experts.

- 19. The Technical Secretariat shall
 - a) provide administrative support to the Consultative Committee and the Executive Council;
 - b) render technical assistance to States Parties, the Consultative Committee and the Executive Council;
 - c) carry cut international on-site inspections as provided for in the Convention;
 - d) assist the Consultative Committee and the Executive Council in tasks related to information and fact-finding as well as in other tasks provided to it by those organs.*/
- 20. [The staff of the Secretariat shall be appointed on the basis of the principle of just political and geographical representation of States Parties to the Convention. It shall be composed of inspectors and experts who shall be nationals of the States Parties.]

[The paramount consideration in the employment of the staff of the Secretariat and in the determination of the conditions of service shall be the necessity of securing the highest standards of efficiency, competence, and integrity. Due regard shall be paid to the importance of recruiting staff on as wide a geographical basis as possible among States Parties to the Convention.]

^{*/} The functions of the Technical Secretariat might be specified further.

It was suggested that other questions connected with the establishment of the Secretariat should be considered by the Preparatory Commission, which should make appropriate recommendations to the Consultative Committee.

^{***/} Material on cooperation between the Consultative Committee and the national verification bodies can be found in Annex II, p.18 and Annex III, CD/294, pp. 6 and 7.

IX. CONSULTATION, CO-OPERATION AND FACT-FINDING

Each State Party undertakes to consult and co-operate in any matter related to the implementation of the Convention, directly among themselves or through appropriate procedures, including the services or good offices of the Consultative Committee* (or its subsidiary organs) as well as of appropriate international organizations.

Each State Party shall endeavour to clarify and resolve, through bilateral consultation, any situation which may give cause to doubts about compliance with the Convention, or which gives rise to concerns about a related situation which may be considered ambiguous. A State Party seized with a request from another State Party for clarification of a particular situation shall [within 7 days] [as soon as possible] provide the requesting State Party with relevant information in order to dispel doubts and to clarify the situation [as a final, or, as an exception, a preliminary answer. A preliminary answer should give the reasons for the delay, and should be followed by a final answer within ...]

Systematic International Procedures

^{*/} Any mention of the Consultative Committee may also relate to its appropriate susidiary organ, whichever may be decided.

Fact-Finding

General Provisions

- 1. [Each State Party undertakes to ensure non-routine verification of compliance with the Convention by the application of fact-finding procedures including on-site inspection on the basis of obligations as set forth in, arranged bilaterally, or by a request to the Consultative Committee as provided for in paragraph 3 of this Article.]
- 2. Any State Party may at any time request the Consultative Committee (or its appropriate subsidiary organ) to carry out, in the exercise of its functions, appropriate procedures with regard to itself or another State Party to clarify and resolve any situation which may give cause to doubt about compliance with the Convention, or which gives rise to concerns about a related situation which may be considered ambiguous. Such a request may include a request for an on-site inspection.
 - 3. Requests sent to the Consultative Committee (or its subsidiary organ) under Paragraph 2 of this Article should contain objective and concrete elements supporting doubts and concern of the compliance with the Convention and should be directly relevant to such doubts and concerns. (Requests should specify the action the Executive Council is requested to take).

- 4. Each State Party undertakes to co-operate [fully] with the Consultative Committee and its subsidiary organs and/or international organizations, which may, as appropriate, give scientific, technical and administrative assistance to the Consultative Committee in order to facilitate fact-finding activities so as to ensure the speedy clarification of the situation which gave rise to the original request.
- Parties of the initiation of any fact-finding procedures as provided for in .. in which it will be involved and shall provided soon as possible [with the consent of the Parties concerned] all available information related thereto to all State Parties.
- 6. Any State Party which has reason to believe that any other State Party is acting in breach of obligations deriving from the provisions of the Convention may have recourse to appropriate procedures under the Charter of the United Nations [and that nothing in this Article should be interpreted as affecting the rights and duties of Parties under the Charter of the United Nations.]

^{*/} It should be observed that a request by one Party for information from another Party transmitted by the Technical Secretariat need not constitute initiation of a fact-finding process.

United Nations "67"

Provisions for requests for fact-finding

Upon receipt of a request from a State Party for clarification and fact-finding the Technical Secretariat shall, on behalf of the Executive Council, transmit within [....] [2 days] the request to the State Party giving rise to the doubt or concern.

The Party which was asked for clarification shall within provide its information to the requesting Party, sending it directly to the requesting State Party or to it via the Technical Secretariat [within ... days].

The requesting State Party, upon receipt of the clarification, will decide if the doubts or concern have been resolved. If it finds that its doubts and concerns have not been resolved it can request the Executive Council to start a fact-finding procedure.

Upon receipt of such a request the Executive Council shall within... initiate the requested fact-finding procedure which will be conducted as specified in

A report on the requested fact-finding procedure, whether interim or final, shall be presented to the Executive Council within [2 months].

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The report shall contain the information and the views presented during the requested fact-finding procedure.*

On-site inspection by Challenge

Verification of the Prohibition of Use-

"E7"

X. ASSISTANCE ***

Assistance

"67"

XI. ECONOMIC AND TECHNOLOGICAL DEVELOPMENT

Promotion of Development Goals

"67"

XII. RELATION TO OTHER INTERNATIONAL AGREEMENTS

Preamble

67

XIII. AMENDMENTS

XIV. DURATION, WITHDRAWAL

Withdrawal

"67"

^{*/} Regarding possible further actions which could be taken by a State Party not satisfied with the outcome of the requested fact-finding report the State Party could ask for the convening of a special meeting of the Consultative Committee. A State Party would have such a right under the part of the Convention regulating the functions and procedures of the Consultative Committee. Whether a specific provision is needed in the section of fact-finding is still under discussion.

Material on on-site inspection by challenge can be found in Annex II, pp. 21-23, which contains the relevant part of the Report of the Chairman of Working Group C, dated 16 April 1984, and in Annex III, pp. 7 and 8 (from CD/294 dated 21 July 1982) and pp. 10 and 11 and annex II, pp. 7 and 8 (from CD/500, dated 18 April 1984).

See 3 c and d under Consultative Committee

XV. SIGNATURE, RATIFICATION, ENTRY INTO FORCE

Depositary

"67"

XVI. LANGUAGES

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- any other separate document (e.g. as part of the report of the Co the the the fact containing the draft Communities)

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ANNEXES AND OTHER DOCUMENTS

Preparatory Commission

- 2. The Commission shall consist of the representatives designated by the States which have signed the Convention. Any State which has not signed the Convention may apply to the Commission for observer status which will be accorded on the decision of the Commission. The designate an observer to the Commission.

Participation of intergovernmental organizations

- The Commission shall be convened at Geneva/Geneva, New York or Vienna/ and shall remain in existence until the Convention comes into force and thereafter until the Consultative Committee has convened.
- 4. All decisions of the Commission shall be made by consensus.
- 5. The Commission shall adopt its own rules of procedures and appoint an executive secretary and staff, as shall be necessary.
- 6. The expenses of the Commission shall be met I from the regular budget of the United Nations, subject to the approval of the General Assembly of the United Nations. I by a loan provided by the United Nations which shall be repaid by the Consultative Committee. I by the States signatories to the

^{*/} There have been a number of suggestions on the format of the document on the Preparatory Commission which should be further explored. It was proposed that provisions on the Commission could be contained in

⁻ a resolution of the UNGA commending the Convention;

⁻ an Annex to the Convention which would enter into force before the Convention

⁻ any other separate document (e.g. as part of the report of the CD to the UNGA containing the draft Convention)

The figure should be identical with the number of States provided for in the Article of the Convention dealing with ratification and entry into force.

Convention, participating in the Commission, in accordance with the United Nations scale of assessment, adjusted to take into account differences between the United Nations membership and the participation of States signatories in the Commission.7

- 7. The Commission shall have the following functions:
 - a) make arrangements for the first meeting of the Consultative Committee, including the preparation of a provisional agenda and draft rules of procedure [and choosing the site for the first meeting of the Consultative Committee];
 - b) make [studies, reports and] recommendations for the first meeting of the Consultative Committee on subjects of concern requiring immediate action, including
 - (i) the financing of the activities for which the Consultative Committee is responsible;
 - (ii) _[the programme of work and] the budget for the first year of the activities of the Consultative Committee;
 - (iii) the establishment of the Technical Secretariat;
 - (iv) the location of the permanent offices of the Consultative Committee.
- 8. In the exercise of its functions, the Commission may have recourse, as appropriate, to the services of appropriate international organizations within the UN system.
- 9. The Commission shall report on its activities to the first meeting of the Consultative Committee.

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ANNEX II

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Report of the Chairman of Working Group A

Working Group A held seven meetings between 18 June and 30 July. In the course of its work, and in accordance with its mandate, it had before it the questions of scope, definitions and non-production of chemical weapons, with a view to finding generally acceptable formulations for the articles in the Convention dealing with those subjects. Work was based on CD/CW/WP.67 as well as on proposals presented by delegations.

I. Scope:

There were still divergences of view on the way in which the matters which appear under the title "Purpose and Commitments" in WP.67 (page 4) should be finally drafted for inclusion in the Convention and whether they should be contained in a single article or in more than one article. This did not, however, prevent the Working Group from discussing possible formulations relating to such matters. Several proposals were made in this connection.

The tentative heading for the first article ("Basic Undertakings") was found to be subject to widely different interpretations. */ It was generally felt that an appropriate heading could best be chosen once the content of the article is agreed.

The Working Group agreed that the prohibitions to develop, produce, otherwise acquire, stockpile and retain chemical weapons, to transfer such weapons, and to assist, encourage or induce anyone to engage in activities prohibited to parties, should be included in the first article. Views differed on the inclusion of other obligations.

The Working Group agreed that there should be a clear prohibition of use of chemical weapons, but decided not to discuss its formulation due to the fact that this particular question was being dealt with in another framework of the negotiations.

Regarding the proposals for a prohibition of "other activities in preparation for use of chemical weapons", three main trends emerged: some of the proponents of the inclusion of such a provision stated their willingness to discuss the

^{*/} A delegation proposed the inclusion, as a "basic undertaking" of an additional provision stating the obligation of parties to "provide access to relevant facilities and locations for the purpose of international verification of compliance". Other delegations did not believe that such a provision should be included.

possibility of its incorporation elsewhere in the Convention; other proponents stated that they were prepared to present their position in further detail; other delegations did not think that such a prohibition should be included in the Convention as they considered that the existing proposals were unclear and could be subject to different interpretations.

Views differed on the need to include a destruction obligation in the first article. Some considered this necessary, others questioned its need.

Taking into account the discussions held, as well as of the proposals made, the Chairman submits the following formulations for further elaboration.

Each State Party undertakes, in accordance with the relevant provisions of this Convention, not to:

- develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone;
- assist, encourage or induce, in any way, anyone to engage in activities prohibited to parties under this Convention;
- use chemical weapons (in any armed conflict);
- (conduct other activities in preparation for use of chemical weapons); and to:
 - destroy (or divert for permitted purposes) chemical weapons and chemical weapons production facilities which are in its possession or under its jurisdiction or control (alternative): under its control.

II. Definitions:

Working Group A devoted three meetings to the question of the definition of "chemical weapons production facility". At the close of the discussion, the Chairman presented an informal working paper, dated 29 June, which is attached to this report.

III. Non-production of chemical weapons:

Working Group A was unable to hold discussions on this question. The Chairman undertook to hold informal consultations, the results of which are not yet available at the time of this report.

^{*/} Documents CD/97, CD/142, CD/CW/CRP.29 and CD/426 were mentioned by those delegations as intended to clarify their views on this question.

Chairman's Paper of 29 June 1984 on

PRODUCTION FACILITIES

This paper is intended to summarize the discussions within Working Group A on 11, 25 and 27 June 1984 on the question of production facilities for chemical weapons. It does not engage any delegation and does not prejudice their positions. It represents the Chairman's understanding of the results of the discussion and its purpose is to provide a focus for further work on the matter. The paper draws both on the discussion and on proposals presented by individual delegations.

I. Definition.

Alternative A: a simple definition based on the definition of chemical weapons, e.g.,

Chemical weapons production facility means any building or equipment (any facility) designed and constructed, or used (exclusively) for the production of chemical weapons as defined in this Convention.

Alternative B: a definition based on the types of chemicals produced by the facility, and containing a cut-off date, e.g.: (CD/500)

Chemical weapons production facility means any building or any equipment which in any degree was designed, constructed or used since 1 January 1946, for

- (a) the production for chemical weapons of any toxic chemical, except for those listed in Schedule B, or the production of any key precursor; or
 - (b) the filling of chemical weapons.

II. Consequences.

1. Under the approach envisaged in Alternative A, neasures to be taken regarding production facilities would be specified in the appropriate section of the Convention. Facilities would be categorized and measures would be specified accordingly. Categories would take into account factors such as the types of chemicals, munitions, etc., produced at the facility, the potential threat of chemical weapons produced, the purpose of the production, the practicability of verification, etc.

Production facilities would be subject to:

- (a) declaration, as provided for in the Convention;
- (b) total destruction;
- (c) partial destruction (or conversion);
- (d) verification, as provided for in the Convention.
- 2. Under the approach envisaged in Alternative B, all production facilities so defined would be completely destroyed.

- 3. Common features of both approaches:
 Under both approaches, facilities to be destroyed would include:
 - (i) facilities designed and built, or used, solely for production of chemicals defined in the Convention as chemical weapons, and which have no use for purposes not prohibited by the Convention;
 - (ii) facilities designed and built, or used, for filling chemical weapons;
 - (iii) facilities designed and built, or used, exclusively for the production of shell casings and similar metal components for chemical weapons.

III. Topics for further discussion and clarification: (in Working Group A or elsewhere)

- 1. Whether a definition such as Alternative A is needed, once facilities can be categorized and specific measures agreed for each category.
- 2. Types of specific measures; nature and scope of such measures.
- 3. Which types of facilities would fall under the scope of Alternative B.
- 4. Need for a cut-off date (as in Alternative B); consequences of its adoption.
- 5. Verification measures.
- 6. Types and categories of facilities (illustrative list):
 - (i) facilities designed and built solely for purposes not prohibited by the Convention but which have been used at least once for production of a chemical for chemical weapons (common commercial chemicals or chemicals that have little use except for chemical weapons);
 - (ii) facilities designed and built both for purposes not prohibited by the Convention and for production of chemicals that have little use except for chemical weapons;
 - (iii) facilities designed and built, or initially used, for production of a chemical that has little use except for chemical weapons, but later converted to purposes not prohibited by the Convention; possibility and speed of their reconversion to CW production;
 - (iv) facilities designed and built, or used, solely for production of chemicals that have little use except for chemical weapons;
 - (v) facilities designed and built, or used, for filling chemical weapons;
 - (vi) facilities designed and built, or used, for production of shells and casings for chemical weapons exclusively, or also for the production of other weapons;
 - (vii) facilities designed and built, or used, for the production of chemicals which may be used as precursors in binary or multi-component chemical weapons;
 - (viii) facilities designed and built, or used, for the production of chemicals which may bring harm to the environment in case they are used as chemical weapons.

Report of the Chairman of Working Group B

Working Group B held seven meetings from 20 June to 3 August 1984. In the course of its work and in accordance with its mandate, it considered the issues of elimination of stocks of chemical weapons and elimination of production facilities, with a view to finding generally acceptable formulations for the articles in the Convention dealing with these issues. Work was based on CD/CW/WP.67 as well as on proposals presented by delegations and by the Chairman.

Stockpile Declarations

There remains a difference of views as regards declarations of locations of chemical weapons.

According to one view a State Party should declare the locations of all its chemical weapons to the Consultative Committee within 30 days after entry into force for it of the Convention. (International on-site verification should in the same view be enabled at the site of declaration immediately following declarations.)

According to another view a State Party would be under an obligation to submit to the Consultative Committee detailed declarations including their locations on each batch of chemical weapons that would be relocated for subsequent destruction. (Declarations and international on-site verification of the declarations would thus be implemented gradually over a period of up to approximately eight years.)

According to yet another view, a State Party would be under obligation to submit to the Consultative Committee within 30 days, a detailed declaration of all its stocks of chemical weapons as well as its destruction facilities and their storage areas where the chemical weapons will be progressively grouped in order to be destroyed. (An international on-site inspection should take place within three months after the declaration of stocks and the grouping sites.)

Those however who held different views on declarations of locations of chemical weapons agreed that, depending on the timeframe, States Parties may redeploy chemical weapons before declaration of their locations, so as to avoid compromising their security due to collocation of chemical weapons with other military objects to which the Convention bears no relation.

Another difference of views concerns the question of whether all precursors of toxic chemicals in chemical weapons stocks should be declared or key precursors only.

Further deliberations are necessary on whether there is a need to include in stockpile declarations "chemicals specifically designed for use directly in connection with munitions or other delivery devices".

Initial Plans

The differences of views on time limits within which a State Party should submit to the Consultative Committee its initial plans now ranges between one month and three months; related to this difference of views is the question whether a State Party should include in its initial plans the locations of the destruction plants to be used or (only) schedules for declarations, within two years after entry into force for it of the Convention, of such locations of destruction plants to be used.

Verification Measures

The differing positions with respect to declarations of locations of chemical weapons have their consequences on positions as regards (on-site) verification of stocks of chemical weapons. The differing positions are reflected hereunder, marked with 1, 2, and 3 respectively. 1 + 2 + 3 indicates where the positions are identical.

verification of initial declarations of stocks, their storage, destruction and diversion for permitted purposes

initial declaration

- [to submit the initial declaration of stocks of chemical weapons to verification by means of systematic international on-site inspection on an immediate basis
- to submit the initial declaration of stocks of chemical weapons to verification by means of systematic international on-site inspection within three months

storage

- to monitor the stocks at their location upon entry into force of the
 Convention with monitoring instruments installed by international
 inspectors following verification of the initial declaration and systematic
 international on-site inspection on a periodic basis and to monitor, within
 three months after entry into force of the Convention, the stocks at their
 relocation sites with monitoring instruments installed by international
 inspectors following verification of the initial declaration and systematic
 international on-site inspection on a periodic basis and]
 to submit stocks to verification between the declarations and the
 commencement of destruction [or diversion for permitt4d purposes] by
- 1 + 2 + 3 continuous monitoring with on-site instruments and by systematic international on-site inspection on a periodic basis as from the moment of their arrival at the storage site adjacent to the specialized facilities for the destruction.

^{*/} This concept needs further study and elaboration in the framework of the Conference on Disarmament.

destruction or diversion

to submit the destruction [or the diversion for permitted purposes] of chemical weapons to systematic international verification by on-site

- 1 + 2 + 3 monitoring with instruments throughout the process and by systematic
 - . international on-site inspection throughout the time the facility is in
 - operation
 - for the most dangerous chemical weapons, including supertoxic lethal
 - . chemical weapons; and for all other chemical weapons by combination of
 - . permanent on-site monitoring and systematic international on-site
 - 2 + 3 inspection on a periodic basis or on a quota basis]

Production facilities

Attention was also devoted to the elimination of production facilities, notwithstanding the absence, for the time being, of agreement on a definition of production facilities.

For practical purposes the discussion focused on facilities dedicated to production for hostile purposes only.

Although the discussion helped clarify the methods to be used in eliminating chemical weapons production facilities, as reflected in the Chairman's proposal in this respect, it was not possible, within the time available, to narrow down the divergences with respect to: declarations, plans and notifications, and verification measures. The positions in this regard remain as reflected in CD/CW/WP.67.

* * *

On the basis of the discussions in the Working Group, the Chairman drafted proposals for articles of the Convention that are reflected hereunder. These proposals represent the Chairman's understanding of the results of the discussions and their purpose is to provide a focus for further work on these issues; they in no way commit delegations nor do they prejudice their positions.

Proposals by the Chairman of the Working Group

Stockpile Declarations

Each State Party undertakes to submit not later than 30 days after entry into force for it of the Convention declarations to the Consultative Committee, stating:

- whether it possesses or does not possess any chemical weapons
- whether it has on its territory any chemical weapons under the jurisdiction or control of anyone else;

^{*/ (}regardless of quantity or location)

- the composition of stocks of chemical weapons, i.e.:
 - toxic chemicals and their [key] precursors comprised in such stocks by their chemical names, structural chemical formulae, toxicities where applicable and weights in metric tons in bulk and filled munitions;
 - munitions by types, calibres, quantities and chemical fill;
 - other delivery devices by types, quantities, size and chemical fill;
 - equipment [or chemical] specifically designed for use directly in connection with munitions or other delivery devices;

[- the precise location of chemical weapons under its control and the detailed inventory of the chemical weapons at each location]

[Each State Party undertakes to submit to the Consultative Committee declarations stating the location of storage depots adjacent to destruction facilities when the first batch of chemical weapons to be destroyed has arrived there.

Each State Party undertakes to submit to the Consultative Committee declarations stating the location of storage depots adjacent to destruction facilities within three months after entry into force of the Convention.

Each State Party undertakes to submit to the Consultative Committee declarations on the detailed composition of each batch of chemical weapons to be destroyed upon arrival at the storage depot adjacent to the destruction facility.

Each State Party undertakes to submit to the Consultative Committee declarations on the detailed composition of each batch of chemical weapons to be diverted for permitted purposes before it is transported to the facility which will assure its diversion.]

Initial plans

Each State Party undertakes to submit to the Consultative Committee, not later than [30 days] [three months]* after entry into force for it of the Convention, initial plans for the destruction [or diversion for permitted purposes] of chemical weapons containing:

- types of operation;
- schedules with respect to quantities and types of chemical weapons to be destroyed [or diverted for permitted purposes] and end products
- [schedules for declaration within two years after entry into force for it of the] location of destruction plants to be used

^{*/} The [three months] timeframe is a working variant subject to further consideration taking into account the results of elaboration of specific contents of the initial plans.

Detailed Plans

Each State Party undertakes to submit to the Consultative Committee six months before the destruction or diversion operations are to begin detailed plans containing the information needed by the Consultative Committee for adequately preparing itself for its task.

Progress Reports

Each State Party undertakes to submit to the Consultative Committee annual reports of progress on implementation of plans for the destruction or diversion for permitted purposes of chemical weapons and a notification of the completion of destruction or diversion of chemical weapons within thirty days thereafter.

Verification Measures

In view of the fact that the consideration of the verification of stockpile declaration was not exhausted, no proposals for draft articles are at this stage included.

Elimination of production facilities

Each State Party undertakes to destroy production facilities. In relation to production facilities destruction can mean any of the following methods:

- dismantling and physical destruction of all components and structures
 (= razing to the ground);
- 2. dismantling and physical destruction of certain components, while reusing other components for permitted purposes;
- 3. dismantling and physical destruction (razing) of certain structures;
- 4. a combination of 2 and 3.

The specific method or combination of methods to be used in respect of each production facility shall be determined according to the nature of the facility concerned and in accordance with the principles laid down in

Each State Party shall indicate in its plan(s) for destruction of production facilities the specific methods of destruction envisaged.

^{*/} to be defined elsewhere

Report of the Chairman of Working Group C

Working Group C held seven meetings between 22 June and 10 August 1984. It did not consider matters that had already been dealt with in the first part of the session.

In the course of its work and in accordance with its mandate, it considered mainly institutional issues concerning a Chemical Weapons Convention, including the Consultative Committee and the Preparatory Commission, with a view to finding generally acceptable formulations for relevant articles in the Convention and other documents connected with the Convention.

Work was based on CD/CW/WP.67 as well as on proposals presented by delegations and by the Chairman.

I. Consultative Committee

Appendix I to this report contains preliminary formulations of individual provisions on the Consultative Committee as well as indications of where differences lie, as a departure for further work.

Whereas the Working Group agreed on the general concept of the Consultative Committee and a number of detailed ideas, major differences prevailed especially with regard to the following questions:

- decision-making process in the Consultative Committee and the Executive Council;
- composition of the Executive Council;
 - functions of the Consultative Committee and its subsidiary organs.

These questions should receive attention in future work with a view to elaborating generally acceptable formulae. It was proposed to consider whether there is a need to setting-up a Fact-Finding Panel.*/ It was also proposed to consider procedures for the co-operation between the Committee and national authorities of States Parties assigned to implement the Convention and to elaborate illustrative guidelines for the national authorities.

II. Preparatory Commission

Appendix II contains preliminary formulations of individual provisions concerning the Preparatory Commission as well as indications as to where differences lie, as a departure for further work. This matter might be taken up at a later stage of negotiations on a Chemical Weapons Convention, especially after agreement has been reached on the provisions on the Consultative Committee.

^{*/} See document CD/500.

^{**/} See document CD/532.

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III. National technical means of verification

Working Group C was unable to hold discussions on this matter. Positions of delegations remain the same and are reflected in CD/CW/WP.67, p.20.

IV. United Nations

Positions as reflected in CD/CW/WP.67, p.23, remained the same.

V. Other questions

Issues pertaining to:

- the Depositary of the Convention
- the procedure for amendments should be taken up in the further work at the Ad Hoc Committee's level.

* * *

APPENDIX I

Chairman's Paper

Consultative Committee

- 1. For the purpose of facilitating the implementation of the Convention by assisting States Parties in consultations and co-operation, as well as by promoting verification of compliance with the Convention, a Consultative Committee shall be established. It shall consist of the representatives designated by the States Parties to the Convention.*
- 2. The first session of the Committee shall be convened by the Depositary at [venue] not later than 30 days after the entry into force of the Convention.
- 3. The Committee shall
- (a) consider any matter raised, related to the objectives or the implementation of the Convention;
- (b) review scientific and technical developments [which could affect the operation of the Convention and consider other technical matters] related to the implementation of the Convention;
- [(c) consider measures to be taken by States Parties at the emergence of any situation which poses a threat to the Convention or impedes the achievement of its objectives;]
- [(d) consider practical measures to be taken by States Parties in assistance of any endangered State Party;]**/

^{*/} Concerning the participation in the Committee of States signatories to the Convention, it was suggested that an appropriate provision be included in the Convention. According to another view, this matter should be decided by the Committee itself.

^{**/} The proposals are not thought to affect the rights the Security Council has under the United Nations Charter. According to another view, however, it would be appropriate to consider these proposals in close connection with a possible role of the United Nations Security Council in the compliance procedure, especially concerning assistance for a State Party which has been harmed or is likely to be harmed as a result of violation of the Convention.

(e) obtain, keep and disseminate information presented by States
Parties including ...*

and revise the procedures for the exchange of such information, as necessary;

- (f) co-ordinate all forms of verification and ec-operate with the national authorities of States Parties assigned to implement the Convention;
- (g) oversee and conduct international systematic on-site inspections, including:
 - (i) elaborate standard verification techniques;
 - (ii) adopt, at its first session, criteria it will subsequently use to determine the modalities and time frames for international systematic on-site inspections at ...;
 - (iii) determine the modalities and time frames for international systematic on-site inspections at ..., */ proceeding from the agreed criteria;
 - (iv) carry out international systematic on-site inspections with regard to ...;*/
- (h) receive and consider requests for fact-finding procedures, including requests for on-site inspections, and carry out the inspections, if they are agreed upon;
- (i) facilitate consultations and co-operation among States Parties at their request, by means of rendering services to them with regard to:
 - (i) holding consultations among them;
 - (ii) exchanging information;
 - (iii) obtaining services from appropriate international organizations;
 - (iv) participating in on-site inspections arranged among the States
 Parties;
 - (j) oversee the activities of its subsidiary organs;
 - (k) consider and approve the reports of the Executive Council;
 - (1) consider and approve the budget.

^{*/} Should be further specified in accordance with the relevant provisions of the Convention.

^{**/} It was suggested to elaborate procedures for the co-operation between the Consultative Committee and national authorities in the conduct of verification activities.

Should be regarded in close connection with the fact-finding procedures outlined in the Convention; includes verification of reports on use of chemical weapons.

^{+/} The material was put together by the Chairman of the Working Group on the basic of proposals made by delegations.

4. The Committee shall meet in regular sessions annually during the first ten years after the entry into force of the Convention. After that period, it may meet annually, unless States Parties decide otherwise. The Committee shall review the operation of the Convention at its regular sessions every five years.

An extraordinary session of the Committee may be convened at the request of any State Party or the Executive Council within 30 days after the receipt of such request.

- 5. The Committee shall take its decisions by consensus [whenever possible] [on matters of substance]. If a consensus cannot be reached [within 24 hours, a decision may be taken by a majority of those present and voting. The report on a fact-finding inquiry should not be put to a vote, nor should any decision be taken as to whether a Party is complying with the provisions of the Convention]. [during the session, each State Party may record its opinion in the final report of the session for subsequent study by the Governments of the other States Parties to the Convention. Decisions on procedural matters related to the organization of work shall be taken by consensus, whenever possible, and otherwise by a majority of those present and voting.]
- 6. The Committee shall elect its Chairman at the beginning of each regular session.

^{*/} It was suggested that the decision could be taken at the end of each session or the Chairman of the Committee could elicit the views of States
Parties.

^{**/} It was suggested that in such a case the regular session may be divided into two parts: (a) normal regular session; (b) review session. According to another view, the possibility of holding regular review conferences should be considered in close connection with the procedure for amendments.

^{***/} It was suggested that the request forwarded by a State Party should be substantiated. According to another view, it should be supported by a certain number of States Parties (e.g. 5).

^{****/} It was suggested that decisions on all questions should be taken either by consensus or by a majority vote. It was furthermore suggested that there should be a clear understanding as to the difference between procedural and substantive matters.

CD/539 Annex II page 16

- 7. The Committee shall, after each regular session, present to the States Parties a report on its activities.*
- 8. The expenses for the activities of the Committee shall be borne by the States Parties to the Convention.**
- 9. Legal Status ****
- 10. For the purpose of assisting the Committee in carrying out its functions, an Executive Council and a Technical Secretariat shall be established.
- 11. The Consultative Committee may set-up other [technical] subsidiary organs as may be necessary for its work.
- 12. The Executive Council shall have delegated authority to discharge the functions of the Consultative Committee set out in subparagraphs 3 [......] as well as any other functions which the Committee may delegate to it. The Council shall report to the Committee at its regular sessions on its exercise of these functions. [In the intervals between the sessions, questions with regard to promoting the implementation of and compliance with the Convention shall be dealt with by the Executive Council acting on behalf of the Consultative Committee.]
- 13. The Council shall be composed of representatives of [15] States Parties and a non-voting Chairman.

[Ten members of the Council shall be elected by the Consultative Committee upon consultation with the States Parties, taking into account the principle of equitable political and geographic representation, for a term of two years with an annual replacement of five members. The remaining five seats shall be reserved for the permanent members of the Security Council participating in the Convention.]

[Based on the principle of the sovereign equality of States, members shall be elected by the Consultative Committee from among all States Parties. Elections could be made on the basis of a regional allocation of seats or on any other adequate basis that will be agreed upon, excluding the possibility of institutional permanent membership of any State Party.]

It is understood that the report might consist of the proceedings of the regular session and the final document of the session. In case there is no annual regular session of the Consultative Committee, the Executive Council may present a technical report to States Parties.

^{**/} It is understood that the Preparatory Commission would make a recommendation concerning the financing of the activities of the Committee.

It was suggested that the Technical Secretariat should be able to enter into the legal contracts necessary to fulfil its functions. This matter should be addressed in a comprehensive way after agreement is reached on the conduct of activities by the Consultative Committee and its subsidiary organs.

[whenever possible]
[on matters of substance]. If a consensus cannot be reached within [24 hours]
[a decision may be taken by a majority of those present and voting. The report on a fact-finding inquiry should not be put to a vote, nor should any decision be taken as to whether a Party is complying with the provisions of the Convention.]
[with regard to a request for on-site inspection, the State subject to the request shall be informed of the individual opinions expressed by all the Members of the Executive Council on the matter. The Council shall take its decisions on procedural matters related to the organization of its work by consensus whenever possible, and otherwise by a majority of those present and voting.]

[A fact-finding team shall be automatically sent out by the Executive Council in response to the request made by a State Party for inspection to be carried out in territories under its control.]

- 15. [The Council shall be able to be convened on short notice and to function continuously. Each member of the Council shall for this purpose be represented at all times at the seat of the Consultative Committee.]
- 16. The Chairman of the previous regular session of the Consultative Committee shall serve as Chairman of the Council.
- [17. The Executive Council may set-up such subsidiary organs as may be necessary for its work.]
- [18. A Fact-Finding Panel subordinate to the Executive Council shall be established. The Panel shall be responsible for conducting fact-finding inquiries, including the oversight of challenge on-site inspection.]

^{*/} It was suggested that decisions on all questions should be taken either by consensus or a majoraty vote.

^{**/} Different suggestions have been made with regard to such an organ:

⁽a) It would not be necessary to provide for such a body, since the three bodies already envisaged would suffice;

⁽b) Panel with political and technical functions as subsidiary organ to the Executive Council, composed of

⁽i) five members; or

⁽ii) technical experts belonging to the delegations to the Executive Council.

⁽c) Staff of technical experts which would provide technical advice and carry out inspections. The following forms are envisaged:

⁽i) permanent unit in the secretariat;

⁽ii) roster of quickly available experts.

CD/539 Annex II page 18

19. The Technical Secretariat shall

- (a) provide administrative support to the Consultative Committee and the Executive Council;
- (b) render technical assistance to States Parties, the Consultative Committee and the Executive Council;
- (c) carry out international on-site inspections as provided for in the Convention;
- (d) assist the Consultative Committee and the Executive Council in tasks related to information and fact-finding as well as in other tasks provided to it by those organs.*/
- 20. [The staff of the secretariat shall be appointed on the basis of the principle of just political and geographical representation of States Parties to the Convention. It shall be composed of inspectors and experts who shall be nationals of the States Parties.]

[The paramount consideration in the employment of the staff of the secretariat and in the determination of the conditions of service shall be the necessity of securing the highest standards of efficiency, competence, and integrity. Due regard shall be paid to the importance of recruiting staff on as wide a geographical basis as possible among States Parties to the Convention.]**

[21. Co-operation between the Consultative Committee and the national verification bodies of the States Parties by, inter alia:

- holding regular meetings between the Consultative Committee and the national bodies;
- training of the personnel of the national bodies in standard verification techniques by the Consultative Committee;
- elaborating by the Consultative Committee of procedures for the sealing of the chemical weapons production facilities;
- assistance to be provided by national bodies to the international inspectors.]

^{*/} The functions of the Technical Secretariat might be specified further.

^{**/} It was suggested that other questions connected with the establishment of the secretariat should be considered by the Preparatory Commission, which should make appropriate recommendations to the Consultative Committee.

APPENDIX II

Chairman's Paper

Preparatory Commission

- 1. For the purpose of [carrying out the necessary administrative and technical preparations for the effective operation of the provisions of the Convention and for] preparing for the first meeting of the Consultative Committee, the Depositary of the Convention shall convene a Preparatory Commission as soon as possible and in any case not later than 60 days after the Convention has been signed by ... States.**
- 2. The Commission shall consist of the representatives designated by the States which have signed the Convention. Any State which has not signed the Convention [may apply to the Commission for observer status which will be accorded on the decision of the Commission.][may designate an observer to the Commission.]

[Participation of intergovernmental organizations]

- 3. The Commission shall be convened at [Geneva][Geneva, New York or Vienna] and shall remain in existence until the Convention comes into force and thereafter until the Consultative Committee has convened.
- 4. All decisions of the Commission shall be made by consensus.
- 5. The Commission shall adopt its com rules of procedures and appoint an executive secretary and staff, as shall be necessary.
- 6. The expenses of the Commission shall be met [from the regular budget of the United Nations, subject to the approval of the General Assembly of the United Nations.][by a loan provided by the United Nations which shall be repaid by the Consultative Committee.][by the States signatories to the Convention, participating in the Commission, in accordance with the United Nations scale of assessment, adjusted to take into account differences between the United Nations membership and the participation of States signatories in the Commission.]

^{*/} There have been a number of suggestions on the format of the document on the Preparatory Commission which should be further explored. It was proposed that provisions on the Commission could be contained in

⁻ a resolution of the United Nations General Assembly commending the Convention;

⁻ an Annex to the Convention which would enter into force before the Convention

⁻ any other separate document (e.g. as part of the report of the CD to the United Nations General Assembly containing the draft Convention)

The figure should be identical with the number of States provided for in the Article of the Convention dealing with ratification and entry into force.

- 7. The Commission shall have the following functions:
- (a) make arrangements for the first meeting of the Consultative Committee, including the preparation of a provisional agenda and draft rules of procedure [and choosing the site for the first meeting of the Consultative Committee];
- (b) make [studies, reports and] recommendations for the first meeting of the Consultative Committee on subjects of concern requiring immediate action, including
 - (i) the financing of the activities for which the Consultative Committee is responsible;
 - (ii) [the programme of work and] the budget for the first year of the activities of the Consultative Committee;
- (iii) the establishment of the Technical Secretariat;
- (iv) the location of the permanent offices of the Consultative Committee.
- [8. In the exercise of its functions, the Commission may have recourse, as appropriate, to the services of appropriate international organizations [within the United Nations system].]
- 9. The Commission shall report on its activities to the first meeting of the Consultative Committee.

Report of the Chairman of Working Group C to the Ad Hoc Committee on Chemical Weapons dated 16 April 1984

The Working Group held five meetings from 23 March to 16 April 1984. The Chairman also conducted a number of consultations with delegations. Proceeding from the mandate of the Ad Hoc Committee on Chemical Weapons (CD/440) and on the basis of existing material and new proposals made by delegations, the Working Group dealt with Elements concerning Compliance to be included in a convention on the prohibition of chemical weapons and on their destruction. In particular the Working Group considered:

- I. National Implementation Measures
- II. Consultation and Co-operation
- III. Fact-finding
 - IV. On-site Inspection by Challenge

The Annex to this report contains preliminary formulations of individual provisions for the above-mentioned Elements as well as indications of where differences lie, as a departure for further work.

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CD/539 Annex II page 22

On-site inspection by challenge* IV.

- [Each State Party to the Convention] [An understanding that each State Party to the Convention] may at any time submit a [motivated/substantiated] request 1. to the Consultative Committee or its appropriate subsidiary body to carry out an on-site inspection to clarify and resolve any situation which may give cause to doubt about compliance with the Convention, or which gives rise to concerns about a related situation which may be considered ambiguous.
- Upon receipt of a request from a State Party for an on-site inspection, the Consultative Committee or its appropriate subsidiary organ shall as soon as possible and in any case within ... day(s) conduct a prima facie assessment of the request. If the Consultative Committee or its appropriate subsidiary organ concludes that the request contains objective and concrete elements supporting a suspicion of non-compliance with the Convention, it shall forward [the request] [its decision] to the State Party in question.
- Such a [request] [mandatory decision] for an on-site inspection by the Consultative Committee or its appropriate subsidiary organ shall be treated favourably and in good faith by the State Party which receives it.
- A report on the on-site inspection shall be transmitted to the Consultative Committee within ...
- A refusal by a State Party to agree to an on-site inspection shall be [well-founded and] accompanied by the submission of a prompt, factual and exhaustive explanation of its reasons [and shall be made only for the most exceptional reasons].

The Consultative Committee or its subsidiary organ shall assess the explanation submitted and may [send another request] [cancel or confirm the decision], taking into account all relevant elements, including possible new elements received by the Consultative Committee after the original request.

[A refusal to accept a challenge on-site inspection would, as a first step, automatically require the challenged party to propose within ... days of such a refusal, some alternative on-site inspection measures which could establish beyond reasonable doubt whether or not a case of non-compliance had occurred.

The decision-making procedure of the Consultative Committee will be dealt with in the Element on the Consultative Committee.

6. [If a second request is refused, the State Party which originated the request may have recourse to appropriate procedures under the Charter of the United Nations.] [This provision is without prejudice of any other relevant provisions of the Charter of the United Nations.*/]

[If the decision is not complied with, the Secretary-General of the United Nations will be requested to have recourse to appropriate procedures under the Charter of the United Nations, on behalf of all Parties to the Convention.]

[Nothing in the Convention shall be interpreted as in any way limiting or detracting from the rights and obligations assumed by any State under the Charter of the United Nations.]

^{*/ -} Some delegations deemed that mention of the procedures under the United Nations Charter is not necessary.

⁻ Other delegations proposed to include into the Convention special provisions concerning a complaints procedure with the United Nations Security Council.

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ANNEX III NOT REPRODUCED

ANNEX III

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This Annex contains proposals introduced by delegations as formulated and presented in Conference documents. At appropriate places in Annex I reference is made to this Annex.

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ANNEX III NOT SEPTICALED

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CD/539/Corr.1 31 August 1984

Original: ENGLISH

Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Disarmament

Corrigendum

On page 6, paragraph 8, penultimate line:

After the words "United Kingdom", add "of Great Britain and Northern Ireland".

On page 6, paragraph 10, last sentence:

Replace the words, "... during the 1984 session", by the word, "in".

Annex I, page 5, foot-note 1:

Replace the page number to read "12".

Annex I, page 5, foot-note 2:

Replace the page number to read "14".

Annex I, page 10, foot-note 2:

The word "Annex" should be in lower case.

Annex I, page 19, foot-note 1:

1st line: page numbers should read "13-18".

2nd line: delete the word "and" before "CD/500", and replace the "full stop"
by a "comma" and add the following words "and in CD/532.".

Annex I, page 23, foot-note 3:

Last line: Replace the "full stop" by a "comma" and add the following words "and in CD/532, pp.3 and 4.".

Annex I, page 28, foot-note 2:

4th line: replace the word "and" by a "comma" before "pp.10 and 11".

5th line: replace the "full stop" by a "comma" and add the following words "and p.3 (from CD/532, dated 8 August 1984).".

Annex III

Document CD/532 of 8 August 1984 should also be attached so that Annex III contains the following documents: CD/294, CD/500 and CD/532.

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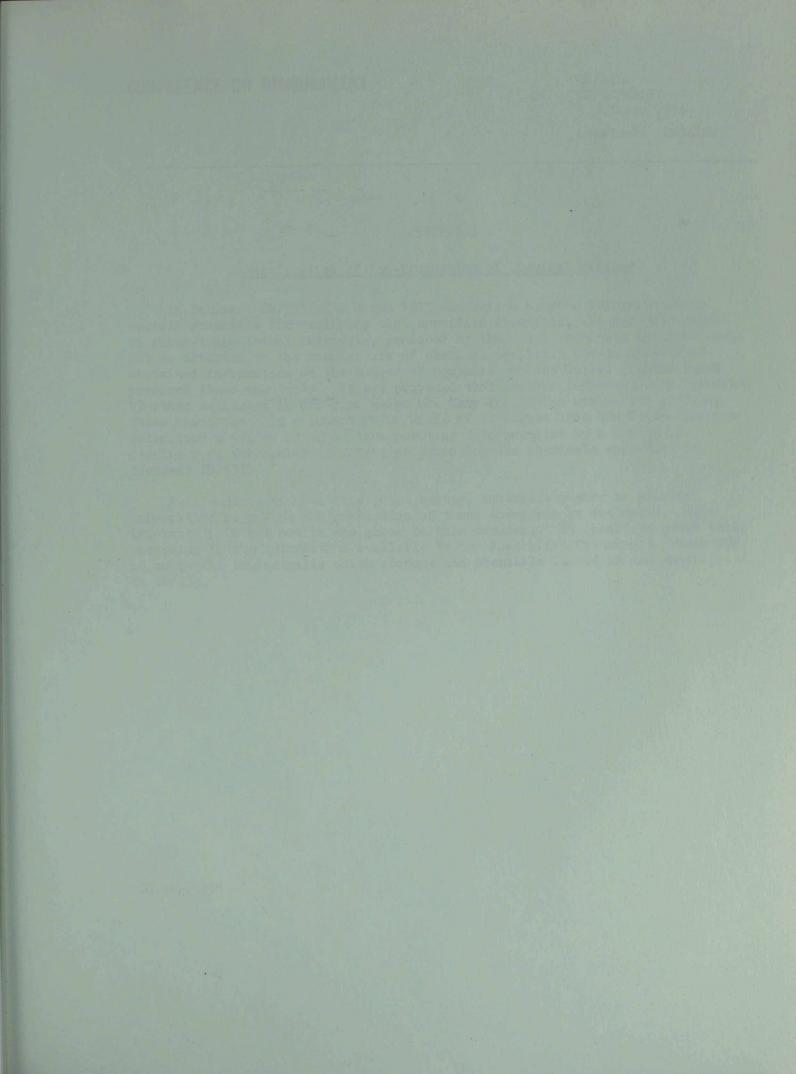
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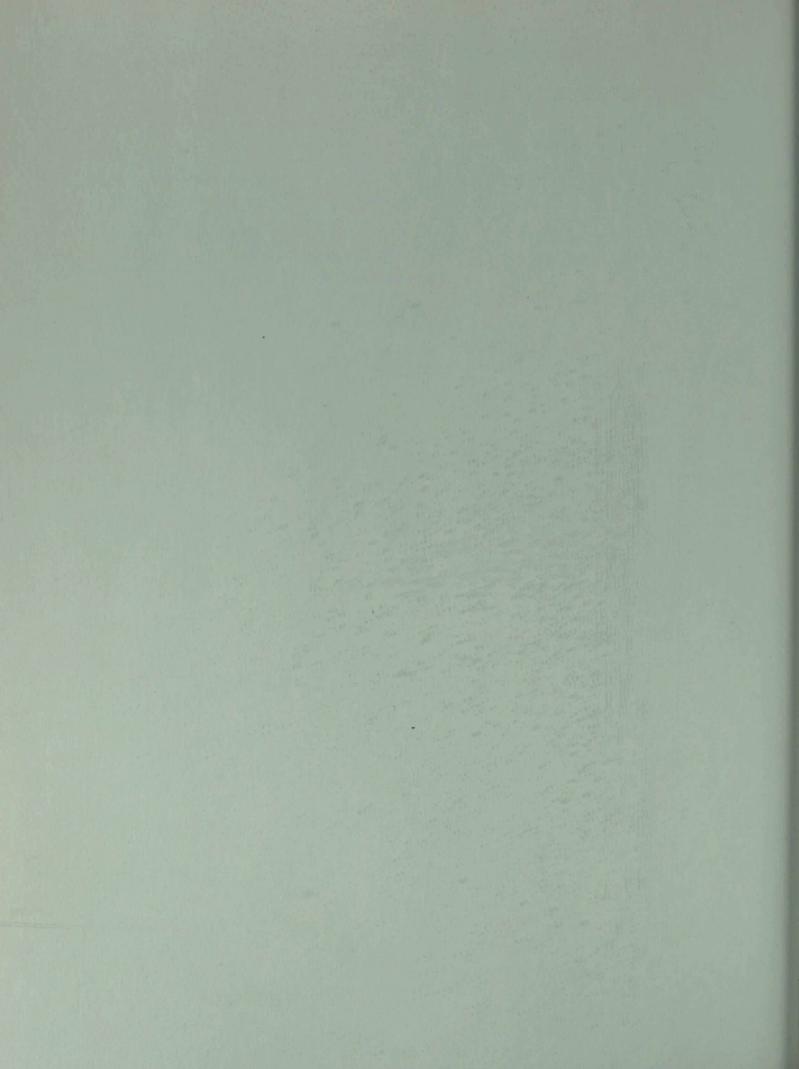
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CD/541 CD/CW/WP.87 9 October 1984

Original: ENGLISH

AUSTRALTA

Verification of Non-Production of Chemical Weapons

In document CD/353 of 8 March 1983 the United Kingdom delegation made certain proposals for verifying that specified chemicals, the key precursors to super-toxic lethal chemicals, produced by the civil chemicals industry would not be diverted to the manufacture of chemical weapons. The document also contained information on the number of companies in the United Kingdom which produced these chemicals. It was proposed that similar information be furnished by other countries in order to gauge how many facilities world-wide produced these chemicals. In document CD/CW/WP.86 of 10 August 1984 the United Kingdom delegation provided an annex incorporating data supplied by a number of countries on the number of companies producing the chemicals specified in document CD/353.

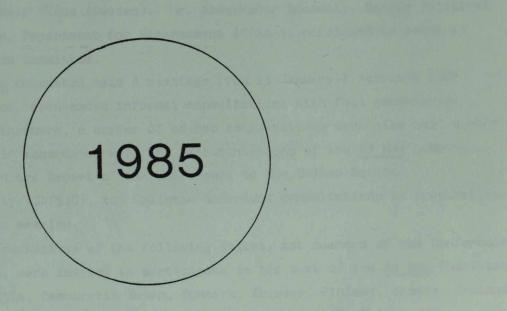
As a contribution to this joint survey, Australia wishes to provide information regarding the production of these chemicals in Australia. This information is set out in the annex to this document. It should be noted that, according to the information available to the Australian Government, there are no companies in Australia which produce the chemicals listed in the annex to CD/353.

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ANNEX

AUSTRALIAN PRODUCTION FOR SUPER-TOXIC LETHAL CHEMICALS

KEY PRECURSORS FOR SUPER-TOXIC LETHAL CHEMICALS	NUMBER OF COMPANIES IN AUSTRALIA PRODUCING THESE PRECURSORS
Phosphorus trichloride (PCl ₃)	0
Phosphorus oxychloride (POCl ₃)	0
Chemicals containing the P-methyl and/or	0
P-ethyl bond	0
Methyl and/or ethyl esters of phosphorus acid	. 0
3.3 dimethyl butanol-2 (pinacolyl alcohol)	
N.N. disubstituted - amino ethanol	0
N.N. disubstituted - amino ethane thiol	0
N.N. disubstituted - amino ethyl halides (halide = Cl, Br or I)	
KEY PRECURSORS FOR OTHER SUPER-TOXIC CHEMICALS	
Phenyl, alkyl or cylcoalkyl substituted glycolic acid 3- or 4-hydroxy piperidine and their derivatives	0





CD/546 CD/CW/WP.97 1 February 1985 Original: ENGLISH

Report of the Ad Hoc Committee on Chemical Weapons on its work during the period 14 January-1 February 1985

- 1. In accordance with the decision taken by the Conference on Disarmament at its 287th plenary meeting, held on 31 August 1984, the Ad Hoc Committee on Chemical Weapons resumed its work on 14 January 1985 under the Chairmanship of Ambassador Rolf Ekéus (Sweden). Mr. Abdelkader Bensmail, Senior Political Affairs Officer, Department for Disarmament Affairs, continued to serve as Secretary of the Committee.
- 2. The Ad Hoc Committee held 4 meetings from 14 January-1 February 1985 and 10 scheduled, open-ended informal consultations with full secretariat services. Furthermore, a number of ad hoc consultations were also held during this period. In accordance with the recommendations of the Ad Hoc Committee as contained in the Report of the Conference to the United Nations General Assembly (CD/540), the Chairman undertook consultations in preparation for the resumed session.
- The representatives of the following States, not members of the Conference on Disarmament, were invited to participate in the work of the Ad Hoc Committee: Austria, Colombia, Democratic Yemen, Denmark, Ecuador, Finland, Greece, Ireland, New Zealand, Norway, Portugal, Senegal, Spain, Switzerland, Turkey and United Republic of Cameroon.
- 4. During this period, the following documents were presented to the Ad Hoc Committee:
- CD/CW/WP.88, dated 14 January 1985, entitled 'Preliminary Programme of Work for the Ad Hoc Committee on Chemical Weapons during the period 14 January-1 February 1985'
- CD/CW/MP.89, dated 14 January 1985, submitted by the Chairman of the Ad Hoc Committee on Chemical Weapons, entitled 'Discussion basis regarding "Permitted Activities"

- CD/CW/WP.90, dated 14 January 1985, submitted by the Chairman of the Ad Hoc Committee on Chemical Weapons, entitled 'Proposals for some principal provisions of an article on Consultation, Co-operation and Fact-Finding'
- CD/CW/WP.91, dated 14 January 1985, submitted by the Chairman of the Ad Hoc Committee on Chemical Weapons, entitled 'Discussion basis regarding principal order for the complete destruction of chemical weapons'
- CD/CW/WP.92, dated 15 January 1985, submitted by Finland, entitled 'Description of a Facility for the Small-Scale Production of Chemical Warfare Agents for Protective/Permitted Purposes'
- CD/CW/WF.93, dated 22 January 1985, submitted by Spain, entitled 'Production facilities: control of multinationals'
- CD/CW/WP.94, dated 25 January 1985, entitled 'Preliminary Programme of Work for the week 28 January 1 February 1985'
- CD/CW/WP.95, dated 31 January 1985, submitted by the Chairman of the Ad Hoc Committee on Chemical Weapons, entitled 'Questions and answers regarding CD/CW/WP.89, 14 January 1985, Discussion basis regarding "Permitted Activities"
- CD/CW/WP.96, dated 31 January 1985, entitled 'Working Paper prepared on the basis of consultations on the "Functions of the Consultative Committee and some other questions concerning the Consultative Committee and its subsidiary organs":
- 5. In accordance with its mandate the Ad Hoc Committee during this period continued its work on "Permitted Activities", "Verification on challenge including related issues with regard to the Consultative Committee", as well as on material in Annex I of the report of the Ad Hoc Committee on its 1984 session (CD/539 and Corr.1), inter alia the prohibition of use of chemical weapons.

Consideration of these issues was based on the report of the Ad Hoc Committee on its 1984 session as well as on proposals and documents put forward by the Chairman and individual delegations.

Consultations were chaired by the Chairman of the Ad Hoc Committee and Dr. J. Lundin (Sweden), Ambassador J. Beesley (Canada), Mr. S. Duarte (Brazil) and Dr. H. Thielicke (German Democratic Republic).

- 6. The work of the Committee resulted in further clarification of some of the issues involved, while other issues were identified and explored for the benefit of the future negotiations in the Ad Hoc Committee under its new Chairman.
- 7. A more extensive report by the Chairman of the Ad Hoc Committee on the work of the Committee during this period is Annexed. The intention is to provide the Conference with further material for the negotiation of the Convention.

 However, the views contained therein do not in any way bind any delegation.

Report by the Chairman of the Ad Hoc Committee on Chemical Weapons on the resumed session of the Committee during the period 14 January - 1 February 1985

The following constitutes a summary of the work of the Committee during its resumed session 14 January - 1 February 1985 as seen by the Chairman. It is not binding for any delegation.

Document CD/CW/WP.89 of 14 January 1985, entitled: "Discussion basis regarding "Permitted Activities", formed a starting point for the consideration of the issue of "Permitted Activities".

The deliberations were focused on various options for the production of chemicals for permitted purposes. In this connection a series of questions for clarification of the concepts in WP.89 were raised. Some of these, together with answers and comments, are reflected in CD/CW/WP.95 of 31 January 1985, entitled: "Questions and answers regarding CD/CW/WP.89". A view was expressed that a regime for permitted activities should be based on the principle that production of all chemical weapons should be prohibited. A number of different suggestions were made on principles and circumstances related to production for permitted purposes under the Convention.

The concept of a "single small-scale production facility" was addressed in CD/CW/WP.92 of 15 January 1985, entitled: "Description of a Facility for a small-scale production of chemical warfare agents for protective/permitted purposes". The ensuing discussion centered around two main approaches. One approach was that such a facility should have a production capacity just about the agreed maximum production limit for one year. Different opinions were expressed on the degree of verification measures needed for such a facility. The other approach, as expressed in WP.92, was that the facility concerned should allow for a larger production capacity. It could then operate technically and economically more efficiently. It would also allow for a highly automated verification system, thus making the verification of such a facility less intrusive.

CD/546 CD/CW/WP.97 Annex page 2

Possible alternatives for the production of "laboratory quantities" of listed "super-toxic lethal chemicals" were explored in relation to suggestions put forward in WP.89. It was proposed that the degree of verification would be linked to the size of production in "laboratory quantities" (10-100 grams were mentioned). A view was put forward that the production of "laboratory quantities" of "super-toxic lethal chemicals" for research and medical purposes should only be allowed at a single small-scale production facility. It appeared that no information is generally available about the possible number of "super-toxic lethal chemicals" that might be relevant in this context. A view was presented that the number of laboratories that might have to be declared and perhaps verified probably would be rather small.

Based on material in Annex II of the report of the Committee (CD/539), attempts were made to identify "production facilities", which would be subject to different measures under the Convention. Attention was paid to the questions of how to handle production facilities which had only temporarily or partly been used to produce toxic chemicals and key precursors intended for the production of chemical weapons in other facilities.

The Chairman presented document CD/CW/WP.90 of 14 January 1985, entitled:
"Proposals for some principal provisions of an article on consultation, co-operation and fact-finding", which was intended to serve as a basis for deliberations on the subject on "Verification by challenge including related issues with regard to the Consultative Committee". It was proposed that the possible modalities for a bilateral consultation process under the future convention be addressed. Attempts were made by the Chairman to explore the issues of verification by challenge as well as possible modalities for bilateral consultations.

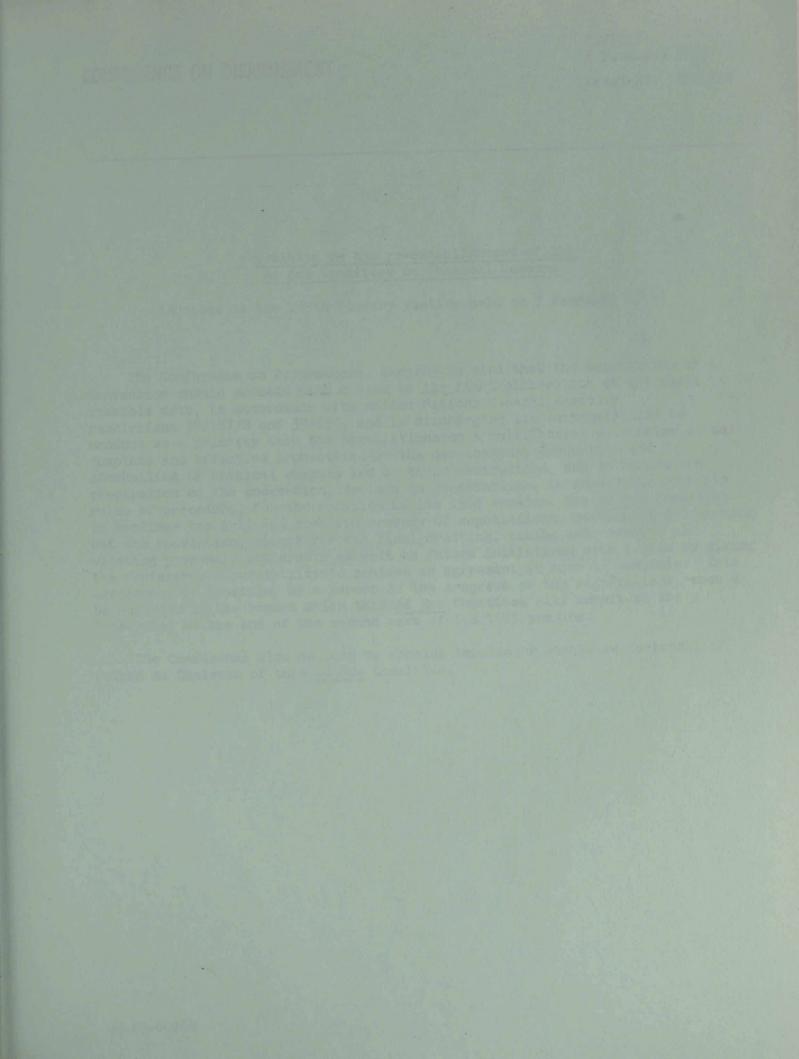
Committee. These discussions were based upon material in Annex II of the report of the Ad Hoc Committee on the 1984 session (CD/539). Inter alia, a general understanding seemed to emerge that the Convention would include basic procedures for the conduct of systematic international on-site verification to be carried out in accordance with relevant Articles of the Convention. After the entry into force of the Convention, these procedures will be tailored by the Consultative Committee and its subsidiary organs to each facility subject to systematic international

on-site inspection. The result of the work is reflected in CD/CW/WP.96 of 31 January 1985, entitled: "Functions of the Consultative Committee and some other questions concerning the Consultative Committee and its subsidiary organs".

One issue contained in Annex I (CD/539), the question of prohibition of use of chemical weapons in the future Convention, was subject to consultations aimed at finding a common approach. In particular the interrelationship between the Geneva Protocol of 17 June, 1925 and the future convention, as well as formulations of the prohibition of use of chemical weapons were discussed.

Document CD/CW/WP.91 of 14 January 1985, entitled: "Discussion basis regarding principal order for the complete destruction of chemical weapons", was distributed by the Chairman to facilitate deliberations on identifying and discussing various factors which might have to be taken into account in a future convention in order to ensure that the destruction of chemical weapons does not lead to a military advantage for a Party possessing chemical weapons.

It was obvious that the time allotted for the resumed session allowed only for exploratory work on the issues involved.





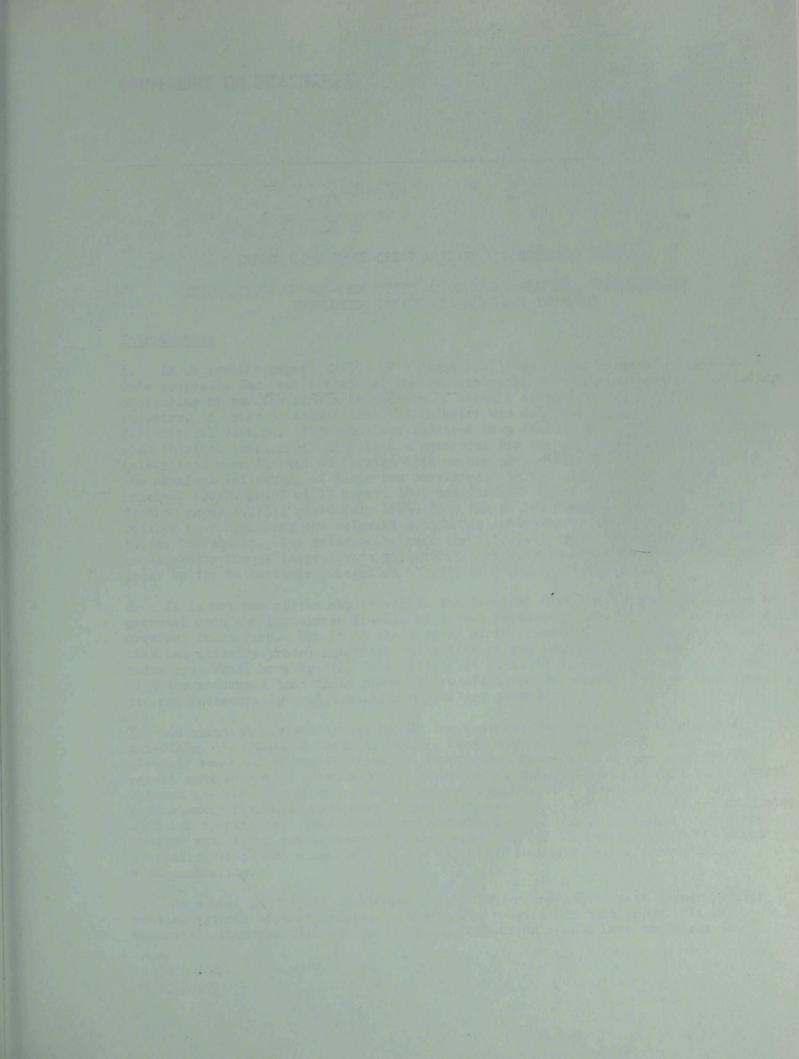
CD/551 8 February 1985 Original: ENGLISH

Decision on the re-establishment of the Ad Hoc Committee on Chemical Weapons

(Adopted at the 289th Plenary meeting held on 7 February 1985)

The Conference on Disarmament, keeping in mind that the negotiation of a Convention should proceed with a view to its final elaboration at the earliest possible date, in accordance with United Nations General Assembly resolutions 38/187/B and 39/65C, and in discharging its responsibility to conduct as a priority task the negotiations on a multilateral convention on the complete and effective prohibition of the development, production and stockpiling of chemical weapons and on their destruction, and to ensure the preparation of the convention, decides to re-establish, in accordance with its rules of procedure, for the duration of its 1985 session, the Ad Hoc Committee to continue the full and complete process of negotiations, developing and working out the convention, except for its final drafting, taking into account all existing proposals and drafts as well as future initiatives with a view to giving the Conference a possibility to achieve an agreement as soon as possible. This agreement, if possible, or a Report on the progress of the negotiations, should be recorded in the report which this Ad Hoc Committee will submit to the Conference at the end of the second part of its 1985 session.

The Conference also decides to appoint Ambassador Stanislaw Turbanski of Poland as Chairman of this Ad Hoc Committee.





CD/575 CD/CH/MP.100 6 March 1965

Original: ENGLISH

UNITED KINGDOM OF GREAT BRITAIN AND MORTHERN IRELAND

VERIFICATION OF NON-FRODUCTION OF CHEMICAL WEAPONS: PROPOSALS FOR INSPECTION PROCEDURES AND DATA EXCHANGE

Introduction

- nade proposals for verification of the non-production of chemical weapons, including monitoring by routine random inspection of certain sectors of the civil chemical industry, in order to ensure that the industry was not used as a source of agents for chemical warfare. Attention was focussed on a list of key precursors and high-risk chemical substances which have a potential for use as chemical weapons. Other delegations were invited to furnish data on the production of these substances by the chemical industries of their own countries. In the light of the replies received (CD/CW/WP.57 of 17 August 1983 and CD/CW/WP.86 of 10 August 1984), a further paper (CD/514 of 10 July 1984) took the United Kingdom proposals a stage further by classifying the relevant substances according to the risk they posed to the Convention. The relation between the different types of verification and the requirements for an inspectorate to perform them were analysed in the pioneering paper by the Netherlands Delegation (CD/445 of 7 March 1984).
- 2. It is not one of the objectives of the proposed Chemical Weapons Convention to encroach upon the legitimate freedom of States Parties to develop their respective chemical industries. Nor is it the purpose of the Convention to impose upon the chemical industry procedures which would disrupt the day-to-day working of that industry. What, however, the Convention must do is to provide all States Parties with the assurance that these products, manufactured for wholly innocent purposes, are not subsequently used for illicit military purposes.
- 3. As chemical warfare agents may be manufactured from relatively accessible materials, the proposed Chemical Meapons Convention must endeavour, through adequate measures of verification, to ensure that no substances are diverted for covert manufacture of such weapons. Therefore, a careful balance needs to be struck between the need for an acceptable inspection regime to assure compliance and sufficiently flexible procedures to permit the chemical industry to proceed unimpeded with its operations. This paper puts forward United Kingdom proposals on how the routine monitoring arrangements envisaged in CD/353 and developed in CT/514 might be applied in practice and embrace the important requirement for commercial confidentiality.
 - 4. As stated in CD/514, confidence in the Convention should rest primarily upon routine methods of verification such as those proposed in this paper. It is essential, however, that any party to the Convention should have the right to

cn/575 cn/cw/wp.100 page 2

challenge any other party suspected of non-compliance with any aspects of the Convention, including the provisions on non-production. Proposals for challenge inspection have been addressed in the United Kingdom paper CD/431 and elsewhere.

International Atomic Energy Agency (IAEA)

- 5. The Safeguards System of the International Atomic Energy Agency has been in existence for many years and provides a wealth of practical experience of verification by on-site inspection and other methods to ensure that materials are not diverted from peaceful to military purposes. It is the most comprehensive system of the kind in existence and it enjoys wide confidence in the international community. It would therefore seem desirable to draw as far as is relevant on the experience of IAEA Safeguards in devising a system of inspection for the Chemical Weapons Convention.
- 6. The statute of the IAEA embraces two fundamental and complementary principles. On the one hand the Agency has the objective of promoting the application of nuclear energy for peaceful purposes, on the other it must endeavour to ensure that assistance provided by it or under its supervision or control is not used in such a way as to further any military purposes. Similarly one of the primary aims of the verification system under a Chemical Weapons Convention would be to provide assurances that substances produced for purposes permitted under the Convention were not diverted or transformed to make chemical weapons.
- 7. The IAEA Safeguards System is based on strict control of the two chemical elements uranium and plutonium by means of materials accounting, containment and surveillance. The problem of verifying that materials used for peaceful purposes are not diverted to military uses prohibited in a Chemical Weapons Convention is much more complex than it is in the nuclear field. Because of the variety and nature of the chemical substances whose diversion would pose a potential threat to the Convention it would not be practicable to monitor specific chamical elements as is done by the IAEA for uranium and plutonium. The proposals contained in the United Kingdom paper CD/353 for verification of non-production of chemical weapons were therefore based on the principle of routine inspection on a random basis of declared sites where key precursors of chemical warfare agents are produced.
- 8. The basic purpose of routine inspections under a Chemical Weapons Convention would be to perform impartial observations which would then be compared by the relevant organization with the data submitted to it by the State as required by the Convention. The right to conduct inspections would accordingly be crucial. Inspections would be conducted by the international organization established by the Convention to be responsible for the prohibition of chemical weapons (hereafter referred to as the Organization). As indicated in the Netherlands paper CD/445 this Organization would comprise a Consultative Committee, and Executive Council and a Technical Secretariat consisting mainly of inspectors and supporting staff. Inspections would be carried out on the basis of detailed principles agreed in advance and incorporated into the Chemical Weapons Convention.
- 9. Inspectors would be chosen for their competence and personal integrity, appointments also taking into account the principle of equitable geographical representation. A State should have the right under the Convention to refuse to accept an inspector suggested by the Organization which would then designate or substitute another inspector. Only two such refusals would be allowed. The careful process of appointing a team of inspectors for a country might take a brief period. However, experience in the IAEA has shown that the number of problems arising either from the names put forward by the Agency or from the activities of inspectors is very low.

- 10. During an inspection visit under the Chemical Weapons Convention an inspector aight be authorized to carry out the following functions:
 - to examine relevant records held on the site;
 - to make independent measurements of all substances subject to control under the Convention;
 - to check measurements and control equipment;
 - to observe facility measurement, sampling and calibration procedures;
 - to take auplicate or additional samples and measurements and arrange for the transfer of such samples to the Organization for analysis.
- 11. Rights of access of inspectors, as well as their privileges and immunities, would need to be carefully laid down in the Convention (or the annexes thereto) and agreed between the Organization and the State concerned. It would be necessary for the rights of inspectors, particularly in relation to access to relevant parts of the plant, to be defined in advance in relation to each declared plant by agreement between the Organization and the authorities of the State concerned. This would be done within the framework of general principles contained in the Convention designed to ensure uniformity of requirements for all parties to the Convention. These arrangements would be designed not to hamper the safe or normal operation of the chemical plant being inspected. Limitations on the movement of inspectors would reflect the need for such operation. Inspectors might need to be accompanied by a representative of the authorities of the State whose plant was being inspected. The movement of inspectors in plants or installations under inspection would be governed by the provisions of a detailed agreement between the Organization and the State concerned. They would not, for example, be permitted to operate or direct the operation of any equipment belonging to the operator of the plant. These limitations would at the same time need to be designed to ensure the effectiveness of the inspection itself.
 - 12. These arrangements should contain effective provisions protecting the information (including commercially sensitive information) gained by the Inspectorate through inspections and the reports it was entitled to receive from the State. The International Inspectorate would not be permitted to communicate any information to any other State organizations or persons. Only those staff members of the Organization who needed to know would have access to restricted information. In the event that inspection results gave no cause for concern, the Organization would report only this fact. It would provide the State in whose territory the inspection had taken place with an assessment of the results of inspections and of the conclusions to be drawn from its verification activities. Only in the event of problems arising from an inspection of wider relevance to the Convention than the private interests of the inspected State would the information and assessment in question be given to the Executive Council.
 - 13. Allocation of the costs of inspections would need to be dealt with in the Convention. The United Kingdom Delegation suggest that the IAEA principle should be followed, and that the State and the Inspectorate should each bear their own expenses.

Declarations and Routine Monitoring Procedures for Declared Facilities

14. Annex I to this paper contains the detailed proposals of the United Kingdom for suggested inspection procedures for declared production facilities for high risk chemicals and precursors. It covers the content of the declaration to be made to the Organization in respect of each facility, the procedures for the inspection of

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a plant, the production details to be made known to the inspection team and the areas of the plant to be visited. In many, perhaps most, cases the high risk substances will be used on stream or on the same site for further transformations into materials that will not pose a high risk to the Convention. To the extent that this is not the case and that such substances are transported to other sites for processing and storage, these sites will also need to be subject to random routine inspection as appr priate. The special case of transfers of designated compounds from one country to another has been considered in document CD/439 tabled by the Federal Republic of Germany.

15. Annex II to this paper contains the United Kingdom's proposals for a system of reporting to the Organization of data relating to compounds in both the high and medium risk categories as defined in CD/514 by Parties to the Convention in relation to their own territories. The facilities at which high risk chemicals and precursors are produced, stored or processed would, under these proposals, be liable to routine inspection on a random basis in accordance with Annex I of this paper. In contrast, there would be no liability to routine inspection for facilities producing, storing or processing compounds in the medium risk category some of which are produced in large quantities for civil uses. As indicated in paragraph 5 of CD/353, it is proposed that the Convention should contain a requirement for declaration of information to the Organization. Many of the compounds in this category are highly toxic and are subject in many countries to national reporting requirements for purposes of health and safety. For example European Community legislation requires companies with plants that produce or process certain chemicals to notify their national safety executives of the existence of these chemicals on site: the levels at which notification is required varies from one substance to another. The experience gained in the European Community in this reporting system, which was originally introduced to reduce major industrial hazards, could with advantage be applied in the development of a system of reporting for compounds posing a risk to the Chemical Weapons Convention. In the view of the United Kingdom Delegation the general availability in this information would reduce suspicion and enhance confidence in the Convention. It would of course be possible for any suspicion in this regard to b, allayed by means of the system of inspection by challenge which would be applicable to all systems of the Convention.

Settlement of Dispute Procedures

- 16. It will be necessary to institute methods of settling disputes or other problems arising out of the conduct of routine monitoring. Two categories of problems are likely to arise:
 - (i) procedural or administrative difficulties;
 - (ii) substantive problems, as a result of an inability on the part of the Inspectorate to verify adequately that there is no ambiguous situation at the facility being inspected.

If the Inspectorate and the State Party concerned are unable, in consultation, to resolve differences between them of the first kind, then the State Party should have the question submitted to the Executive Council for consideration. If the State Party is not a member of the Council, it should have the right to attend and participate in the relevant discussion. In addition, provision should be made in the Chemical Weapons Convention for artification of difficulties which cannot be settled within the Executive Council.

17. As for substantive problems arising from concerns about illicit diversion emerging in the course of an inspection, if these are not satisfactorily allayed by the State Party concerned, the Organization will be obliged to bring the matter before the Executive Council for prompt action in accordance with the relevant provisions of the Convention.

Conclusions

- 18. The proposals contained in this paper and its annexes are comprehensive and detailed. They are intended simultaneously to provide the necessary confidence that the Chemical Weapons Convention is being observed and to avoid hampering the activities of legitimate chemical industries. The United Kingdom believes that they are sufficiently flexible to achieve these aims and hopes that they may form a sound basis for further discussion in the CD of this crucial topic.
- 19. The United Kingdom Delegation would emphasize again that the proposals contained in this and earlier papers are designed not to place any unnecessary restrictions or burdens on the operation and further development of the chemical industry. The purpose of the measures is to provide the international community with the essential assurance that products manufactured for innocent purposes are not being misused. The United Kingdom Delegation believes that these proposals would achieve this result.
- 20. The United Kingdom Delegation hopes that those Delegations who have not already furnished data on their civil chemical industries similar to that contained in CD/CW/WP.86 will be encouraged to do so. We consider that agreement on a Convention with adequate measures of verification of non-production will create a positive climate of greater international co-operation and exchange between States Parties, and will remove a source of international suspicion and facilitate the expansion and development of the civil chemical industry.

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ANNEX 1

Inspection Procedures for Declared Plants

(a) Appointment of Inspectors and Skills Required

1. The inspectors would be designated by the Organization. Inspectors should be suitably qualified and are likely to be chemists and chemical engineers, skilled in plant design and operation and knowledgeable in analytical and industrial chemistry. As much of the inspection appraisal would be based upon a knowledge of the operation of a plant, inspectors should be qualified and trained to observe plant activities, carry out sampling and discuss any ambiguities. They would be strictly bound to protect commercial confidentiality.

(b) Arrangement of Inspection

- 2. Arrangements for inspection of a facility would be made through the relevant national authorities in the state concerned whose representatives attend each inspection.
- 3. The following information would have been given to the Organization for each facility when the initial declarations required by the Convention are made, and the team of inspectors charged with inspection of a facility would have had access to it before the inspection:
 - (a) Chemical Name and formula of the designated chemical(s).
 - (b) Name of company or organization operating the plant(s).
- (c) Full postal address of the site where the plant is located, together with an unequivocal grid reference. If the site is very large this reference should be, say, to the main headquarters or administrative building.
 - (d) Whether the chemical is for domestic use solely or for export as well.
 - (e) The state(s) to which the chemical is exported.
 - (f) Whether the chemical is made by dedicated plant or by batch process.
 - (g) Maximum annual design output of dedicated plant.
 - (h) Previous calendar year's output (tonnes) if a batch process.
 - (i) Whether the chemical is stored on site and the maximum storage capacity if it is.
 - (j) Whether the chemical is used on stream.

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(c) First Stage of Inspection: Reception of Inspectors at Plant Site

- 4. The inspectors would be met by representatives of the national authorities and taken to the site on which the relevant plant is located. During their visit, the inspectors would be accompanied by appropriate representatives of the site staff in accordance with the detailed procedures agreed in advance. Appropriate site staff would take samples from any agreed areas in the presence of the inspector, if requested by them to do so, and analyse such samples on site, if similarly requested.
- 5. The inspection team (inspectors, site staff and state representatives) would first check items (a) to (j), listed in paragraph 3 above, checking that the information initially declared is up-to-date. Any changes and/or new developments would be noted by the inspectors. Such developments might include the manufacture of other designated chemicals, import-export status, and any switch to production by a different type of process possibly coupled to an increase or decrease in output.
- 6. The site or plant manager would then give a description of the production process indicating the flow of materials to and from the reaction vessel(s) concerned. This description would not require disclosure of commercially sensitive process information or of aspects of novel plant technology; its purpose would be rather to acquaint the inspectors with the way the chemicals are handled during the production process. The description might include:
 - (i) (a) how the feed chemicals are brought to the plant, e.g. pipeline from a production plant on-site, road tanker, rail tanker, road or rail cargo, ship, other.
 - (b) how feed chemicals are stored on site, drums, tank, warehouse etc.
 - (c) all feed lines leading to the reactor vessel, together with the nature of their contents, i.e. gas, liquid, solution of solid in liquid etc.
 - (d) the reactor vessel and associated equipment such as stirrer, condenser, cooling pipes, air or gas inlets, heater, dump tank (for safety) and any other features that would be visible during an inspection.
 - (e) any relevant separate plant equipment involved in subsequent manipulative stages such as distillation, fractionation, filtration, centrifugation etc.
 - (f) destination of all lines from (d) and (e) e.g. distillates, cooling pipes, liquid or gaseous products.

- (g) destination of principal product (designated chemical); storage on site in drums, tank, warehouse, transported from site, used onstream elsewhere on the site without bulk storage.
- (ii) the manner in which the chemical reactions are controlled on the plant, e.g. manually involving labour to control and time the various operations, or automatically controlled and monitored by computer.
 - (iii) the stages during the manufacture at which quality control is performed and the nature of the analytical processes and routines, e.g. glc, ir, uv, ms, colorimetry, wet chemistry, etc.
- (iv) description of relevant plant records; in particular those concerned with logging the quantities of principal feed chemicals used and the weight of designated chemical produced.

The description of the production process would familiarize the inspectors with the way the designated chemical is produced at the plant so that they would be adequately briefed before conducting their inspection of the relevant areas of the site.

- (e) Second Stage of the Inspection: Visit to Relevant Parts of the Site Connected with Production of the Designated Chemical
- 7. The inspection tour would be undertaken by the inspectors (accompanied possibly by representative of the state) who would be conducted by the plant manager to those parts of the site described during the briefing in paragraph six above. The tour would include:
 - (i) where feed chemicals (reactants) are delivered and/or stored.
 - (ii) where manipulative processes (e.g. dissolving in solvent) are performed upon the reactants prior to addition to the reaction vessel.
 - (iii) feed lines as appropriate from (i) and/or (ii) to the reaction vessel, together with any associated valves, flowmeters etc.
 - (iv) the external aspect of the reaction vessel and its ancilliary equipment.
 - (v) lines from the reactor vessel leading to long or short term storage or onstream use of the designated chemical.
 - (vi) control equipment associated with any of the items (i) to (v).

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(f) Third Stage of the Inspection: Discussion of Inspection

- 8. The inspectors would have the right at any stage during the inspection to ask for samples to be taken from previously agreed points of the plant. (Typical points for sampling might include input feed lines, the final storage tank and final product line from the reaction vessel). The inspectors will also have the right to request that an appropriate analysis be performed in their presence by in-house chemists, or they may take the properly packaged sample away with them for analysis at a centre designated by the Organization. They may request clarification of any ambiguities arising during the inspection.
- 9. Upon completion of any in-house analysis requested, the inspectors would leave with the national representatives and prepare a report for the Organization. If ambiguities remain, the Inspectors may recommend appropriate steps for their clarification.

Conclusion

10. The procedures outlined in this Annex would apply to high risk chemicals and precursors where routine random on-site inspection is proposed, as in CD documents CD/353 and CD/514.

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ANNEX II

Information Exchange as Part of the Monitoring System to Verify the Non-Production of Chemical Weapons

1. Introduction

(a) It was suggested in CD/514 that chemicals and precursors in the High Risk Category could most appropriately be monitored by measures including routine random plant inspection and complementary information and data exchange. For medium risk chemicals and precursors the regular reporting would be limited to information and data exchange. This Annex suggests the type of information that would be appropriate to include in this system of exchange. The categories referred to below are those described in paragraph 7 of CD/514.

2. High Risk Chemicals (Category H1)

- (a) The national authorities would notify the Organization of each facility that produces 1 tonne or more of the designated chemical.
- (b) For each facility reported, the following information would be given annually to the Organization.
 - (i) the location of the production facility
 - (ii) maximum annual design capacity of the plant in tonnes
 - (iii) previous year's production and anticipated production for the coming year
 - (iv) whether the material is used 'in situ', 'on stream' or stored on
 - (v) if the material is stored on site how is this done and what is the maximum storage capacity?
 - (vi) if the material is used in situ/on stream, what is the end product?
 - (vii) the State which is the consignee of the material if exported
 - (viii) end use e.g. pesticide (specify), herbicide (specify) etc.
- (c) In addition to the routine annual report for each plant described in paragraph 2b above ad hoc reports would be required in certain circumstances. The national authorities would notify the Organization:
 - (i) not less than ten (10) days in advance of any import, export or internal transfer greater than 1 tonne of the weight, destination and end use of the chemical
 - (ii) not less than ninety (90) days in advance of any increase in the design manufacturing capacity
 - (iii) not less than ninety (90) days in advance of the commissioning of a new plant

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4. High Risk Precursors (Category H2)

- (a) The national authorities would notify the Organization of each facility that produces 1 tonne or more of the designated substances.
- (b) For each facility reported the following information shall be given annually to the Organization.
 - (i) the location of the production facility
 - (ii) maximum annual design capacity of the plant in tonnes
 - (iii) previous year's production and anticipated production for the coming year
 - (iv) whether the material is used 'in situ', 'on stream' or stored on site
 - (v) if the material is stored on site, how is this done and what is the maximum storage capacity?
 - (vi) if the material is used in situ/on stream, what is the end product?
 - (vii) the State which is the consignee of the material if exported
 - (viii) end use e.g. pesticide, herbicide, fire retardant, pharmacoutical intermediate, etc.
 - (ix) imports, exports, and production figures (in tonnes) aggregated for each precursor
 - (c) In addition to the routine annual report in 3b above ad hoc reports would be required to be given to the Organization as follows:
- (i) at least ten days notice of any export or transfer of 1 tonne or more of a designated substance
 - (ii) at least 90 days notice of any increase in the design manufacturing capacity
 - (iii) at least 90 days notice of the commissioning of a new plant

5. Medium Risk Chemicals and Precursors

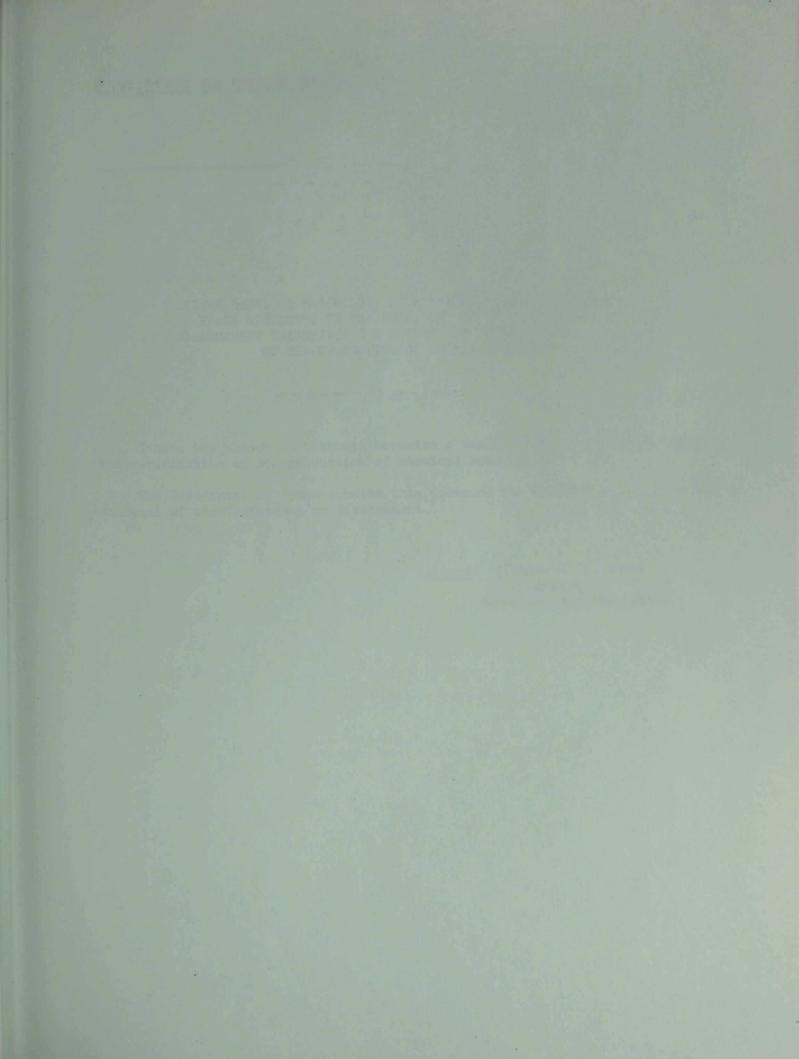
(a) The national authorities would notify the Organization of each facility that produces 20 tonnes or more of these substances together with the location of the facility and its maximum design capacity in tonnes.

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- (b) In addition the national authorities would notify the Organization annually of
 - (i) the preceding year's production of each substance
 - (ii) the aggregate import and export quantities for each substance.

6. Inspections

As mentioned above there would be routine, random inspections for plants producing high risk chemicals and precursors. Thus the only inspections envisaged for plants producing medium risk chemicals would, be those resulting from challenges that arose from persistent ambiguities in the data reporting procedures.





CONFERENCE ON DISARMAMENT

CD/585 2 April 1985

ENGLISH

Original: SPANISH

LETTER DATED 25 MARCH 1985 FROM THE PERMANENT REPRESENTATIVE
OF SPAIN ADDRESSED TO THE PRESIDENT OF THE CONFERENCE ON
DISARMAMENT TRANSMITTING A DOCUMENT ENTITLED "VERIFICATION
OF NON-PRODUCTION OF CHEMICAL WEAPONS"

I have the honour to transmit herewith a Working Paper prepared by Spain on the verification of non-production of chemical weapons.

The Government of Spain submits this document for circulation as an official document of the Conference on Disarmament.

(<u>signed</u>) Alfonso de la Serna Ambassador Permanent Representative

SPAIN

Verification of non-production of chemical weapons

A number of delegations have submitted information on production of key precursors in their civilian chemical industries, in accordance with the proposal by the United Kingdom delegation contained in document CD/353 of 8 March 1983.

The Spanish delegation wishes to contribute to the study relating to verification of the fact that substances produced by civilian chemical industry are not diverted for hostile purposes, and to that end has the pleasure to annex hereto a table containing the information supplied by the Spanish chemical industry to the competent authorities.

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Annex
SPANISH PRODUCTION OF KEY PRECURSORS FOR CIVILIAN PURPOSES

	Number of companies in Spain producing these precursors
Key precursors of supertoxic lethal chemicals	
Phosphorus trichloride (PCl ₃)	0
Phosphorus oxychloride (POCl ₃)	
Chemicals containing the P-methyl and/or P-ethyl bond	0
Methyl and/or ethyl esters of phosphorous acid	0
Pinacolyl alcohol	0
N.N. disubstituted B - amino ethanol	0
N.N. disubstituted \$ - amino ethane thiol	0
N.N. disubstituted B - amino ethyl halides	
Key precursors for other supertoxic chemicals	
Phenyl, aklyl or cylcoalkyl substituted glycolic acid	0
3- or 4-hydroxy piperidine and their derivatives	0

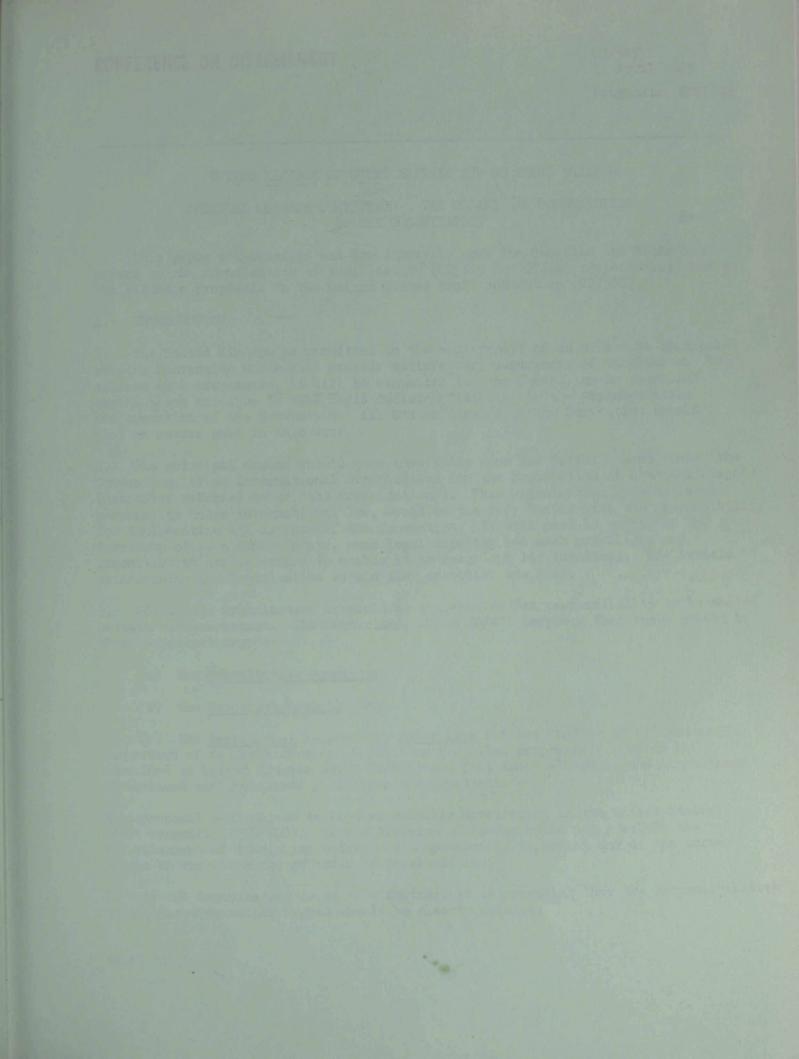
Note: There is some small-scale production of phosphorus trichloride, in insignificant quantities, intended exclusively for internal purposes and not marketed.

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CD/589 11 April 1985 Original: ENGLISH

UNITED KINCDOM OF GREAT BRITAIN AND NORTHERN IRELAND

CHEMICAL WEAPONS CONVENTION: THE ORGANS AND CONSTITUTION OF THE ORGANIZATION

This paper acknowledges and draws heavily upon the Canadian and Netherlands papers on the organization of verification (CD/313 and CD/445 respectively) and on the valuable proposals in the United States draft convention (CD/500).

A. INTRODUCTION

- 1. The United Kingdom is committed to the achievement of an effective chemical weapons Convention which will provide satisfactory assurances of compliance. To achieve such assurances, it will be essential for the Convention to establish organs which are able to take rapid decisions relating to the implementation and operation of the Convention. All States Parties to the Convention should play an active part in this work.
- 2. The principal organs should come into being upon the establishment, under the Convention, of an International Organization for the Prohibition of Chemical Weapons (hereafter referred to as "the Organization"). This Organization, having legal personality under international law, would be the body vested with the responsibility for implementing all aspects of the Convention. It will need to enjoy, in the territory of each Member State, such legal capacity and such privileges and immunities as are necessary to enable it to carry out its functions. The Article establishing the Organization should also establish its seat.
- 3. Within the Organization it would be appropriate for responsibility to be shared between various organs. The Netherlands paper CD/445 proposed that there should be three principal organs:
 - (a) the Consultative Committee;
 - (b) the Executive Council; and
 - (c) the <u>Secretariat</u> responsible <u>inter alia</u> for the conduct of (i) routine inspection of declared chemical facilities (detailed proposals for which are contained in United Kingdom paper CD/575) and (ii) immediate challenge inspections of declared and undeclared facilities and locations.

This proposal was subject to further valuable development in the United States draft convention (CD/500). Such a division of labour would not preclude the establishment of subsidiary bodies where appropriate to assist any of the three organs in the discharge of their responsibilities.

4. If the Organization is to be effective, it is essential that the responsibilities of the three principal organs should be clearly defined.

- 5. The Convention should therefore contain separate provisions on each of the organs, dealing with their composition, functions and main methods of working. There should also be a provision relating to the functions of the Director General of the Organization and his staff, their appointment, status and the main factors relating thereto, as well as a reference to the terms and conditions of their employment to be regulated by the Executive Council.
- 6. The Consultative Committee (consisting of all States Parties) would be the principal organ of the Organization. It would be able to review any questions or matters within the scope of the Convention or relating to the powers and purposes of the Organization and its main organs. It would also be empowered to make recommendations to the membership of the Organization and to take decisions upon any matter referred to it by the Executive Council. The Committee would meet annually or on special occasions in between, if circumstances so required.
- 7. The Executive Council, which would meet as often as may be necessary, would be endowed with day-to-day executive powers of decision.
- 8. In addition, to enable the Consultative Committee and the Executive Council to carry out their work, they would require the assistance of a Technical Secretariat, headed by a Director General.
- 9. This paper proposes that the Convention should enter into force when 30 States have ratified. The Executive Council should have upon entry into force a membership of 15 States, rising to 30 States upon the sixtieth ratification. Membership of the Executive Council would comprise two categories to enable there to be well balanced representation.
- 10. This paper also proposes that a Preparatory Commission shall be established immediately the Convention is opened for signature to make all necessary arrangements for the functioning of the Organization. The Commission would begin to work once the Convention is opened for signature and remain in existence until the Convention has entered into force and the Consultative Committee and Executive Council have met for the first time.
- B. THE FRINCIPAL CRGANS: DETAILS
- ll. It is important that the division of tasks and responsibilities between the organs produces the most efficient and practical structure for carrying out the objectives of the Convention. There are a number of precedents and the United Kingdom has based its proposals on these where relevant, in particular, where applicable, those provided by the IAEA.

(a) The Consultative Committee

- 12. The Consultative Committee would be established upon entry into force of the Convention. It would be the principal organ of the Organization. Its chairman would be the chairman of the Executive Council (see below).
- 13. Its membership would consist, as provided for in the United States draft treaty (CD/500), of representatives of all States Parties. It would meet in regular annual or bi-annual session, and in such special sessions as might be convened, for example by the Director General at the request of the Executive Council. The sessions would be held at the headquarters of the Organization unless otherwise agreed by the Consultative Committee.

- 14. The Consultative Committee would be empowered to review any questions or matters relevant to the Convention or relating to the powers and functions of any organs established under the Convention. In addition, it would foster the international exchange of scientific and technical information on the chemical industry as provided for in the Convention.
- 15. The Consultative Committee would in addition have the following specific responsibilities:
- (a) election of members of the Executive Council in accordance with the relevant provisions of the Convention (see below);
 - (b) formal approval of States for membership of the Organization;
- (c) final action against a member and on its privileges and rights of membership in the light of a violation of the provisions of the Convention, in accordance with the provisions to be laid down in the Convention;
 - (d) consideration of the annual report of the Executive Council;
- (e) approval of the Organization's budget as recommended by the Executive Council;
- (f) approval/taking note of any reports to other international organizations such as recommended by the Executive Council and forwarded by the Director-General;
- (g) approval of any modification to the Convention in accordance with the relevant provisions of the Convention;
- (h) approval of the appointment of the Director-General of the Organization by a two-thirds majority present and voting;
- (i) review, of the operation of the Convention at five year or such other intervals agreed by a majority of the Parties.

The Consultative Committee would also have the authority to take decisions on any matter specifically referred to it by the Executive Council; and to propose matters for initial consideration by the Executive Council; and to request from the Executive Council reports on any matter relating to the functions of the Organization.

16. In the discharge of its functions, the Consultative Committee would proceed by consensus where possible. If consensus were not possible, the Committee would take its decision by voting as follows:

financial matters, modifications to the Convention and suspension of a Member from the rights and privileges of membership

two-thirds majority

All other matters would be decided by simple majority.

(b) The Executive Council

- 17. Because of the composition of the Consultative Committee, and because it would meet less frequently than the Executive Council, day-to-day responsibility for the implementation of routine international inspection, and challenge inspection should devolve upon the latter, following reports from the Director General. This would ensure there was no undue delay in decisions relating to the implementation and operation of the Convention.
- 18. Under the Convention the Executive Council would have delegated authority from the Consultative Committee, which would remain the principal organ, to carry out the day-to-day functions of the Organization. The Council should therefore be endowed with the necessary powers to enable the objectives of the Convention to be implemented in a timely and efficient manner. Its decisions would be implemented by the Secretariat of the Organization under the direction of the Director-General. The Executive Council would be established when the Convention entered into force upon the deposit of the thirtieth instrument of ratification.
- 19. Upon such deposit the Executive Council would comprise 15 members. Upon deposit of the sixtieth ratification, as the workload of the Council developed, membership would rise to 30. Membership would be in two categories. In the first category members would be elected by the Consultative Committee annually with due regard to equitable (geographical) representation on the United Nations model according to the number of seats allocated. Members in this category in one term of office would not be eligible for re-election in the same category for the following term of office, save as necessary in the early years of the Convention in order to produce a quorum for the Executive Council.
- 20. Similarly, in the second category, the membership of the Executive Council would comprise, according to the number of seats allocated, those members of the Organization with the largest industrial chemical base, on the basis of criteria (e.g. output, number of declared plants, investment) to be established by the Director-General of the Organization, on the advice of a representative group of States members of the Preparatory Commission. The list of these members would be reviewed annually.
- 21. The election for the membership referred to in paragraph 19 above would take place at the regular annual session of the Consultative Committee for a term of two years, half of them being re-elected each year to maintain continuity. Membership of the Council under paragraph 20 above would be by designation each year by the outgoing Executive Council.
- 22. Each member of the Executive Council would have one vote; it would wherever possible proceed by consensus. In the event this were not possible the Council would take its decision on all substantive matters by a two-thirds majority, and by a simple majority on all procedural matters.
- 23. The Executive Council would meet at such times as it might determine; the meetings would take place at the headquarters of the Organization unless otherwise determined by the Council. The Council would elect a Chairman and other officers from amongst its members and, subject to the provisions of the Convention, would adopt its own rules of procedure. The Council would make reports as necessary, and at least annually, to the Consultative Committee concerning the affairs of the Organization. The Council would also prepare for submission to the Consultative Committee such reports as the Organization may be required to make to the United Nations, or to third countries.

- 24. The Executive Council's principal functions would be:
- (a) supervision of the conduct of routine and challenge inspections, to be conducted by the Inspectorate Staff of the Organization;
- (b) ensuring between sessions of the Consultative Committee the effective implementation of, and compliance with, the Convention;
- (c) receiving requests from States Parties, including requests for challenge inspection, and acting upon them in accordance with the provisions of the Convention within [] days;
- (d) taking immediate and appropriate action, in accordance with the provisions of the Convention, in relation to the failure by a State Party to comply with its obligations under the Convention including possible action on a member's rights and privileges;
 - (e) requesting when necessary a special meeting of the Consultative Committee;
- (f) referring unresolved compliance issues to the Consultative Committee within [] days with a recommendation for further action;
- (g) overseeing the activities of subsidiary organs established under the Convention;
 - (h) establishing such committees and Working Groups as it deems necessary;
- (i) recommending to the Consultative Committee approval of any modification to the Convention in accordance with the relevant procedures of the Convention.
- 25. The Executive Committee would hold its first meeting within 15 days following the entry into force of the Convention.

(c) The Secretariat

- 26. The Secretariat, comprising the staff of the Organization would be headed by the Director-General. He would be appointed by the Executive Council, with the approval of the Consultative Committee for a term of [five] years, renewable for one further term of [five] years, but not thereafter.
- 27. The Director-General would be responsible for the appointment, organization and functioning of the Secretariat and would be under the authority of and subject to the control of the Executive Council, and ultimately the Consultative Committee. The Staff of the Secretariat would comprise qualified and widely experienced personnel with the highest standards of efficiency, technical competence and integrity to fulfil the objectives and functions of the Organization. Without sacrificing the high standards of competence required, due regard should be paid in their appointment to the contributions of States Parties to the Organization and to the importance of recruiting the staff on as wide a geographical basis as possible from all States Parties. The terms and conditions on which the staff would be appointed, remunerated and dismissed would be in accordance with regulations made by the Executive Council.

- 28. In the performance of their duties, the Director General and the Secretariat would be forbidden to seek or receive instructions from any source external to the Organization. They should refrain from any action which might reflect on their position as officials of the Organization. The Convention should provide that members of the Secretariat would not disclose any industrial secret or other confidential information coming to their knowledge by reason of their official duties. Each State Party would undertake to respect the international character of the responsibilities of the Director General and the Secretariat and not seek to influence them in the discharge of their duties.
- 29. The provisions of the Convention should be so drafted as to give adequate expression to the importance of the role of the Director General and the Secretariat within the framework of the Convention. The Director General would not only be entrusted, as head of the Secretariat, with the ordinary and everyday administration of the Organization. He would also be responsible, under the Convention, for bringing immediately to the attention of the Executive Council any matter which calls into question the compliance with the Convention of a State Party. It would be the Director General to whom a State Party would first report its evidence of suspected non-compliance and the request for further investigation, possibly including a challenge inspection. The Director General would also be responsible for forwarding the request for clarification to a party whose compliance had been called into question and for transmitting the conclusion of the Inspectorate following clarification of the matter. He would also inform the Executive Council of a failure by the State Party concerned to comply with the request for inspection. Lastly the Director-General would assist the Chairman of the Executive Council in ensuring that the correct and necessary steps are taken to resolve any apparent violation of the provisions of the Convention.
- 30. These responsibilities would be spelled out in detailed provisions along the above lines in an integral Armex to the Convention.
- 31. The United Kingdom proposes that the international Inspectorate, responsible for carrying out random routine international on-site inspection of declared chemical facilities and for the conduct of challenge inspections would be part of the Secretariat's staff.
- 32. The United Kingdom would also propose that a special challenge inspection panel be formed within the Inspectorate. Designated by the Director-General, the Panel would comprise a sufficiently large pool of the most senior and experienced members of the international inspectorate, with due regard to equitable geographical distribution, with special and rotating standby responsibility for the conduct of sensitive and immediate inspections. Challenge inspections would be carried out by an appropriately composed ad hoc inspection team, and comprising at least seven inspectors and more, as necessary, according to the size of the challenged site. Inspectors from the challenging and challenged State would be excluded from participation in the inspection of a site in the latter country.
- 53. It would therefore be necessary for the Director-General after his appointment to designate a team of inspectors to constitute the special challenge inspection team. The inspectors would be selected for their high qualifications, wide experience, international integrity, good moral character and complete independence. It may be appropriate, as suggested in CD/445, to maintain a standing list of qualified experts who would be immediately available on a contingency basis without being full-time members of the staff of the Organization.

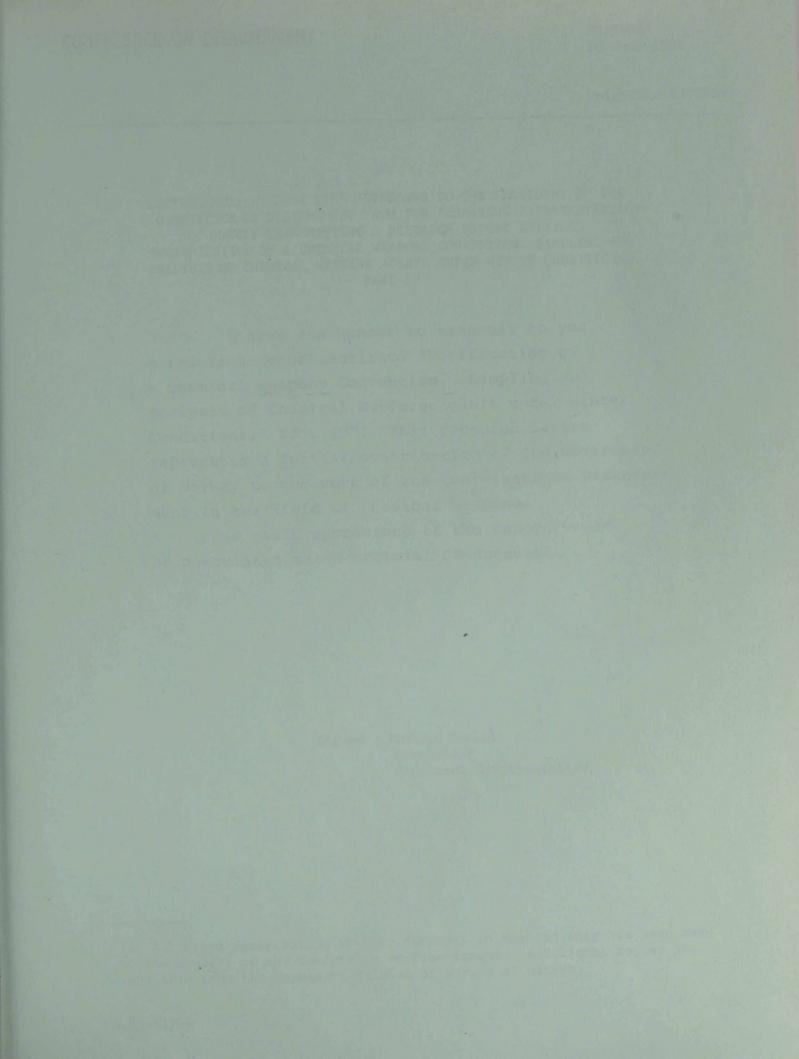
- 34. Only this team of inspectors, answerable directly to the Director-General of the Organization and through him to the Executive Council and ultimately the Consultative Committee would conduct challenge inspections. The team being part of the regular Inspectorate, should be organized in such a manner to enable them to carry out an inspection at very short notice. Membership of the challenge inspection team would not preclude the participation by members of the Inspectorate in routine on-site inspections.
- 35. To fulfil its tasks, the Director General, the Secretariat and (as necessary) members of the Executive Council should enjoy in the territory of each State Party such legal capacity and such privileges and immunities as necessary for the exercise of their functions. The legal capacity, privileges and immunities would be defined in an integral Annex to the Convention.

C. PREPARATORY COMMISSION

- 36. If the Organization and its organs are to begin work immediately upon entry into force of the Convention so that the provisions of the Convention relating to such important matters as initial stockpile declarations and verification of non-production can be effected by the agreed deadlines (to be specified in the Convention), much preliminary work would need to be done between signature and ratification. This suggests to the United Kingdom the establishment of a Preparatory Commission to carry out this work.
- 37. The Preparatory Commission would come into existence on the first day the Convention is opened for signature. It should be composed of those States Parties who have signed the Convention. The Commission would remain in existence until the Convention had entered into force and thereafter until the Consultative Committee had convened and the Executive Council had met for the first time, in accordance with the relevant provisions of the Convention.
- 38. The Preparatory Commission would need to elect its own officers, adopt its own rules of procedures, meet as often as necessary, determine its own place of meeting and establish such committees as it deemed necessary. The Commission would be completely separate from the Conference on Disarmament (CD) since its tasks will be sufficiently specialist to fall outside the scope of the CD. Its proceedings would be by consensus.
- 39. The Preparatory Commission should appoint an Executive Secretary and staff as necessary, who would exercise such powers and perform such duties as the Commission might determine. Other functions of the Preparatory Commission could be similar to those in Annex I of the IAMA Statute.

D. CONCLUSION

40. The proposals contained above (based upon the approach contained in previous vorking papers and taking into account where appropriate the parallels in the LAEA Statute) represent, in the view of the United Kingdom, a practical way of establishing an effective and viable Organization with full responsibility for the implementation of the proposed Chemical Weapons Convention. The paper has attempted to strike a balance between the relevant organs, by ensuring on the one hand through the Consultative Committee the responsibility of all States Parties for the implementation of the Convention and, on the other, devolution of certain powers to the Executive Council to enable it to discharge the day-to-day responsibility for implementation and operation of the Convention when the Consultative Committee is not in session. This sharing of responsibility would enable all States Parties to play a full part in the operation of the Convention and thus make a direct contribution to the maintenance of intermational prace and security in this important field of arms control.





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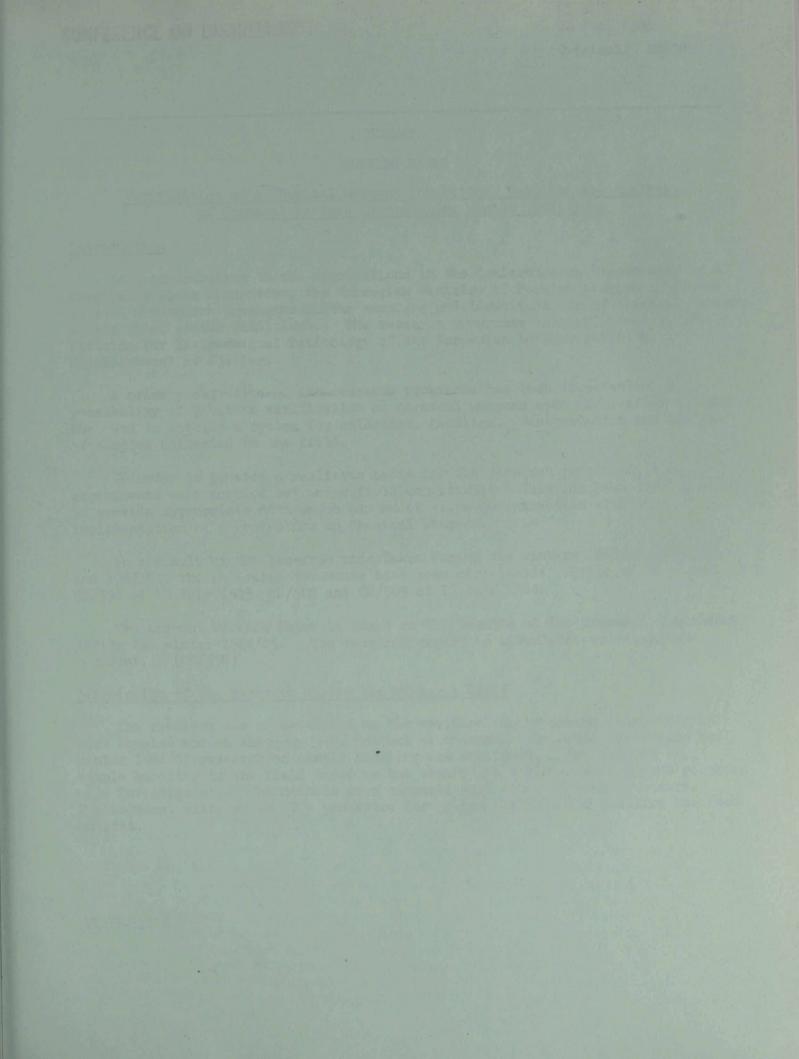
LETTER DATED 19 JUNE 1985 ADDRESSED TO THE PRESIDENT OF THE CONFERENCE ON DISARMAMENT FROM THE PERMANENT REPRESENTATIVE OF NORWAY TRANSMITTING A RESEARCH REPORT ENTITLED "VERIFICATION OF A CHEMICAL WEAPONS CONVENTION. SAMPLING AND ANALYSIS OF CHEMICAL WARFARE AGENTS UNDER WINTER CONDITIONS. PART IV"

I have the honour to transmit to you a research report entitled "Verification of a Chemical Weapons Convention. Sampling and Analysis of Chemical Warfare Agents under Winter Conditions. Part IV". This research report represents a further contribution of the Government of Norway to the work of the Conference on Disaramament in the field of chemical weapons.

I would appreciate if the report would be circulated as an official CD document.

Signed : Martin Huslid
Ambassador
Permanent Representative

^{1/} A limited distribution of this document in English only has been made to the members of the Conference on Disarmament. Additional copies are available from the Permanent Mission of Norway at Geneva.





CD/500 20 June 1985

Original: ENGLISH

NORWAY

WORKING PAPER

Verification of a Chemical Weapons Convention, Sampling and Analysis of Chemical Warfare Agents under Winter Conditions

Introduction

As a contribution to the negotiations in the Conference on Disarmament on a Chemical Weapons Convention, the Norwegian Ministry of Foreign Affairs initiated in 1981 a research programme on the sampling and identification of chemical warfare agents under winter conditions. The research programme is carried out by the Division for Environmental Toxicology of the Norwegian Defence Research Establishment at Kjeller.

A primary objective of the research programme has been to establish the possibility of positive verification of chemical weapons some weeks after alleged use, and to develop a system for selection, handling, transportation and analysis of samples collected in the field.

In order to provide a realistic basis for the research programme, the experiments were carried out under field conditions. This has been done in order to provide appropriate data which can be of value in connection with the implementation of a convention on Chemical Weapons.

As a result of the research undertaken during the winters 1981/82, 1982/83 and 1983/84, the following documents have been circulated: CD/311 of 11 August 1982, CD/396 of 19 July 1983, CD/508 and CD/509 of 15 June 1984.

The present Working Paper is based on the results of the research undertaken during the winter 1984/85. The research report is circulated as a separate document. (CD/598)

Description of the research during the winter 1984/85

The research was concentrated on the verification of arsenic compounds in snow samples and on the hydrolysis product of mustard. In addition, during the winter 1984/85 research on sample handling was continued. New methods of sample handling in the field based on the absorption efficiency of porous polymers were investigated. The methods were compared with other work-up procedures. Furthermore, elaboration of a procedure for system analysis for sampling has been started.

Results of the research in 1984/85

Analytical results

Lewisite A was found to be very unstable. It was only found in trace amounts even a few days after release. Lewisite B and Lewisite C which are impurities from the production of Lewisite A are, however, much more persistent and important in the verification of use of Lewisite. Lewisite B was detected in snow samples after two weeks of exposure, but was also found in some samples after four weeks of exposure. Lewisite C was detected in all samples even after four weeks. Snow covering has a preserving effect even for Lewisite B and Lewisite C as has previously been shown for all other agents.

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Mustard has been difficult to verify after four weeks exposure, due to its rapid hydrolysis in snow. It was, therefore, of importance to develop methods both for detection and especially for concentrating thiodiglycol from large amounts of water. These methods have now been established. Thiodiglycol was investigated during the winter 1984/85 and was found to be very persistent under winter conditions. This illustrates the importance of thiodiglycol as a tool in the verification of use of mustard.

In connection with verification of alleged use of chemical warfare agents under winter conditions it was also shown that it is possible to analyse biological samples from humans who have been contaminated by being present in the actual area during the attack. The first test of a method for these purposes was performed in 1984/85 when urine samples spiked with mustard and thiodiglycol were analysed. The method was based on the adsorption of mustard and thiodiglycol to porous polymers, which was used to concentrate these agents from an aqueous solution before analysis by gas chromatography. The experiments showed that mustard was easily adsorbed from the urine as was thiodiglycol. This method was further improved by addition of HCl.

In sample handling the porous polymers XAD-2, -4. -7 and -8 showed very promising properties in adsorption of chemical warfare agents. The agents tested were the most unstable agents GA, GB, GD and HD which were all adsorbed with a high recovery and were found to be very stable by this method of sample handling. All over XAD-2 was shown to be most suitable. The best method explored in 1983/84 was to extract chemical warfare agents from melted samples with chloroform. Another method is to use dry ice, which is not practical, however, to use by an international fact-finding team. The most practical method in the field is at present extraction in chloroform. But the method using porous polymers is, however, very promising and seems to be ideal for large-scale sampling.

Sempling results from field experiments

Porous polymers (XAD) were tested with respect to adsorption of chemical warfare agents also during field experiments. The great advantage of this method is that the sample size is reduced from a sample of 100 g to a small column containing about 1 g of porous polymer. The method is more convenient for transportation of samples. It also reduced the need for precautions to prevent snow samples containing agents unstable to hydrolsis from melting. Experiments have shown that samples up to 200 g can be adequately treated on such a column.

Experiments were also carried out to determine the size of contaminated areas after explosions of a CS grenade (250 g) and a shell filled with the nerve gas simulant DMMP (250 g). The agents represent examples of both an aerosol and a liquid agent respectively. From the midline in the downwind direction samples were collected to both sides to define the size of the contaminated area. The agents were distributed

in an area of approximately 1,000 m². The samples taken after 14 days for DMMP and 28 days for CS were taken after 3 snowfalls of totalling 0.5 metre. The CMMP and CS were distributed in an area of approximately 1,000 m² and covered with snow. The sampling was, therefore, very difficult, though it gave an opportunity to test how to take adequate samples after snowfall and determine where to collect them. The experiments showed that the sampling procedure was successful even under these conditions.

Conclusions

Lewisite itself is very unstable, but use of the by-products Lewisite B and C allowed identification four weeks after exposure to the prevailing weather conditions. The verification of mustard has shown to be difficult in all previous investigations due to its rapid hydrolysis to thiodiglycol. Therefore, methods were developed for isolation and detection of thiodiglycol which is much more persistent than mustard itself.

The crucial step in any verification procedure will always be the sampling procedure. It is therefore of critical importance to know the exact location of the alleged attack since samples collected too far outside the attacked area may not contain any agent. If a sample is collected at the border of the contaminated area it may only contain traces of the agent, but due to the sensitive analytical methods available it may still be positively verified. The reliability of the analysis will, however, always depend on the detected amount of agent. This illustrates the importance of collecting adequate samples. It should always be borne in mind that samples collected on the battlefield for chemical analysis of possible traces of chemical warfare agent content will constitute crucial evidence to be considered by the Consultative Committee. This makes it particularly important to have a sampling team of the highest professional standard possible.

The samples should preferably be collected by the fact-finding team itself. Samples should be processed as soon as possible, and should be carefully packed and sealed before transportation in tamperproof condition to the preselected laboratories for analysis. Each sample should be marked with a unique coded identification, and separately written records should be made to link the codes to when, where, how, and by whom the samples were collected as well as other relevant information. These records should preferably be transmitted separately if the samples are transported by others than members of the team. Detailed written records should also be made of all relevant information concerning the transport of the samples.

Division into subsamples in a specially chosen reference laboratory and following distribution to other laboratories should generally be avoided. This procedure has few advantages and implies handling by more people than necessary and thus increases the possibility for cross contamination and mismanagement.

Samples should be collected within the area where the highest concentrations of chemical agents are believed to be found. Sampling upwind from the target area should be avoided. Liquid or solid samples of chemical warfare agents from unexploded weapons are especially important, but the team should be aware of the dangers involved in handling these agents. It is also important to collect samples of snow from the layer containing the warfare agents. Samples collected from deeper layers of snow are less likely to contain high concentrations of agents. After a snowfall it is, however, necessary to distinguish between different snow layers to collect the adequate samples.

CD/600 page 4

Furthermore, it is necessary for the fact-finding team to have as exact knowledge as possible of the localization of the target area. This means that the area should be determined to be within not more than 1 km², preferably less than 100,000 m². If the area is as large as 1 km², the area should be inspected for signs of battle activity in order to carry out a proper and adequate on-site inspection. The probability of reliably verifying a chemical attack will increase with the number of samples analysed. In practice, however, the number of samples will always depend on the available resources. Furthermore, the samples should be collected as representatively as possible in the defined area rather than collecting all samples from a small part of the area. As regards an alleged attack as described above, a number of 10 to 20 samples of approximately 100 g of snow is considered sufficient and adequate.

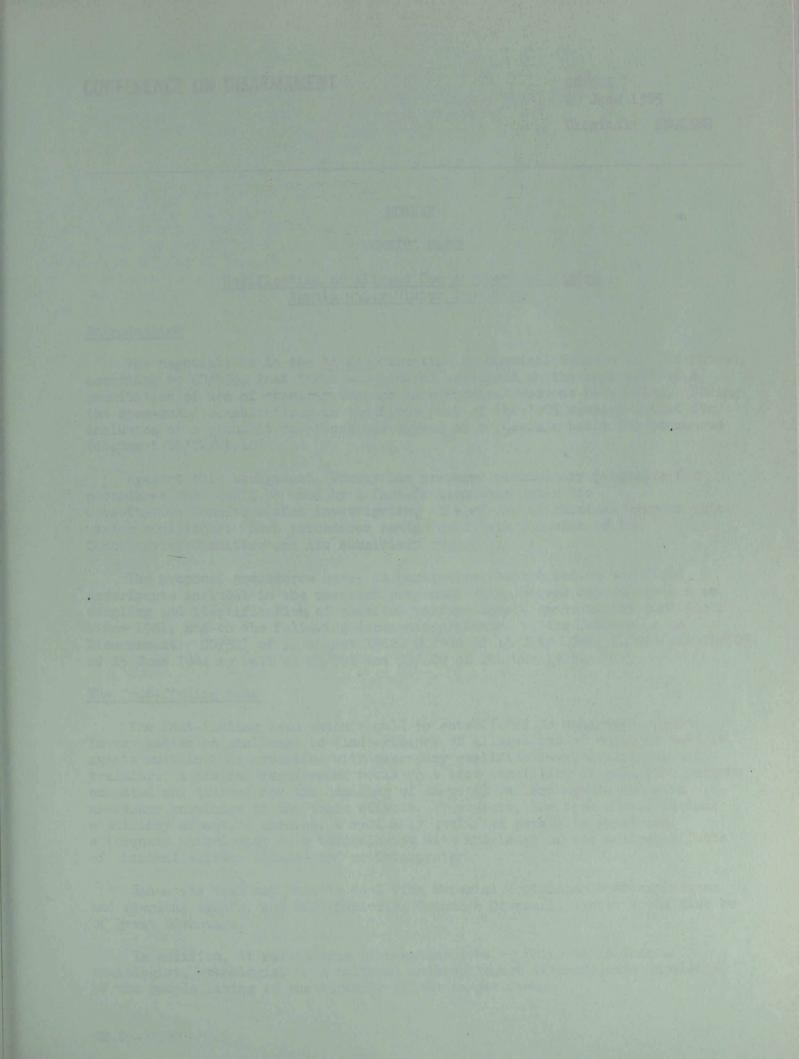
When collecting samples from a target area the sampling team should be reasonably certain (more than 90 per cent probability) that at least some of the samples will contain the agent in concentrations sufficiently high to be positively verified. The time factor is also important and samples should be collected in a reasonably short time after an attack. The studies have clearly shown that chemical warfare agents may be verified in snow samples up to four weeks after an attack, but the probability for positive verification will certainly increase if this period is shorter.

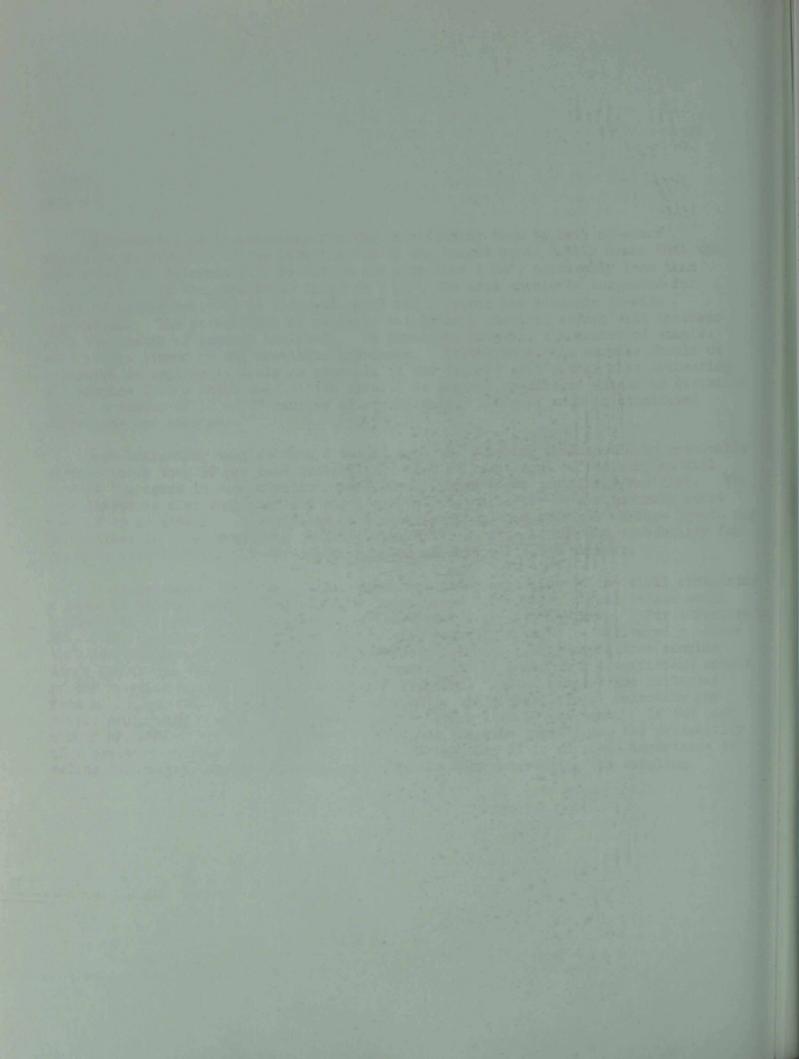
It is estimated that the contaminated area after explosion of one shell containing a chemical warfare agent (3 kg) will at least cover 2,000 m². A real attack would probably be carried out with several shells spread over a larger area. For effective use of the weapons, the individual shells will probably have to be delivered so close that the contaminated ground areas will largely overlap. This means that samples taken inside the target area have a high probability of containing a sufficient amount of the respective agent for positive identification. If 20 samples are collected from an area of 100,000 m² covered with 40 shells, the probability of selecting one sample containing a chemical warfare agent is higher than 98 per cent. If the same number of samples are collected from 1 km² under the same conditions, the probability of a positive verification is 80 per cent. Therefore, it is of great importance to define the target area as accurately as possible when undertaking the sampling.

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CD/601 20 June 1985

Original: ENGLISH

NORWAY

WORKING PAPER

Verification of Alleged Use of Chemical Warfare Agents under Winter Conditions

Introduction

The negotiations in the Ad Hoc Committee on Chemical Weapons in 1984 showed, according to CD/539, that there was general agreement on the inclusion of a prohibition of use of chemical weapons in a Chemical Weapons Convention. During the open-ended consultations in the first part of the 1985 session a text for inclusion of a prohibition of use was agreed as a possible basis for consensus (document CD/CW/WP.107).

Against this background, Norway has prepared preliminary proposals for procedures that could be used by a fact-finding team under the Consultative Committee when investigating alleged use of chemical weapons under winter conditions. Such procedures could facilitate the work of the Consultative Committee and its subsidiary organ(s).

The proposed procedures have, in particular, been based on the field experiments included in the research programme which Norway has undertaken on sampling and identification of chemical warfare agents under winter conditions since 1981, and on the following documents presented to the Conference on Disarmament; CD/311 of 11 August 1982, CD/396 of 19 July 1983, CD/508 and CD/509 of 15 June 1984 as well as CD/598 and CD/600 of 20 June 1985.

The fact-finding team

The fact-finding team which should be established to undertake on-site investigation on challenge to find evidence of alleged use of chemical warfare agents must include expertise with necessary qualifications, experience and training. A minimal requirement would be a team consisting of qualified persons educated and trained for the handling of chemical warfare agents and with necessary knowledge of the toxic effects. Therefore, the team should include a military expert, a chemist, a medically qualified person (a physician, a forensic pathologist or a toxicologist with knowledge of the medical effects of chemical warfare agents) and an interpreter.

Since the team may have to deal with material containing both explosives and chemical agents, and EOD (Explosive Ordnance Disposal) expert would also be of great advantage.

In addition, it may in some circumstances be of value to include a sociologist, ethnologist or a cultural anthropologist with adequate knowledge of the people living in the vicinity of the target area.

CD/601 page 2

The members of the team should be chosen on an equitable geographical basis and should be well prepared for undertaking such an investigation. The team must have the necessary experience in collecting and handling of snow samples. This is of importance since the evidence will largely depend on a proper sampling and handling procedure under highly variable weather conditions.

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Collection of samples

An attack with chemical warfare agents will often be related to areas of both military and civilian importance. It is desirable that the fact-finding team undertakes consite inspections and interview people or victims living in or near the target area in order to identify the area affected. It will be of importance to collect blood and other tissue samples from people claimed to be victims of an alleged chemical attack. The team may conduct preliminary chemical analysis in the field with a portable vapour detector. This will enhance the probability of collecting appropriate snow samples from the area which is contaminated. When the target area has been localized, it is of importance to consider the local topography in order to carry out a detailed on-site inspection of a possible use of chemical warfare agents.

A small target area may be in the order of approximately 100,000 m2 or smaller and the collection of 20 samples from such an area is considered to be appropriate. The team would need to inspect a much larger area. This area would have to be identified by the government of the country where the fact-finding team is doing its investigation in order to select spots for sampling. Furthermore, an adequate number of comparable control samples (five) must also be collected from the area outside the contaminated area. The group should have the necessary equipment to collect snow samples from two incidents and the list of equipment should be composed to accomplish this task. The investigation should be undertaken as soon as possible and in any case no later than four weeks after a report has been received by the Consultative Committee on an alleged use of chemical weapons. The team should always give high priority to safety and therefore establish, a base camp outside the contaminated area. This is also important due to risk of contamination of equipment and sample packing material. Hence, only equipment necessary for collection of samples should be brought to the target area. The experts should be allowed to select their personal protection equipment, to provide security and comfort.

Handling of samples

Samples containing traces of chemical warfare agents collected during an on-site inspection will constitute important evidence of an attack and should be treated with utmost care.

Different handling procedures are suitable for handling and transportation of snow samples containing chemical warfare agents. Extraction of the agents to an organic solvent (chloroform) in the field and subsequent transportation in a special sealed container would be accomplished with least difficulties. Suitable containers, stainless steel including absorption material, should be constructed to accomplish transport between countries. It is recommended that the snow samples (100 g) be melted and the chemical warfare agents extracted with chloroform (5 ml) in a separation funnel. Work should be encouraged to find also other suitable ways of concentrating or preserving samples of chemical warfare agents, impurities and hydrophilic decomposition products.

CD/601 page 3

The solvent should be divided into three samples (approximately 1 ml) and transferred to sampling tubes. Sodium sulphate (100 mg) is added to prevent hydrolysis of the chemical agents. Snow samples (100 g) from the same contaminated area must also be melted and transferred to three separate sampling tubes. Each sample should be labelled with an identification number in accordance with an agreed system of coding and thereafter sealed. For each sample a written record should give all details concerning collection and treatment of samples. The sampling tubes should be sent to three different laboratories for analysis.

List of equipment

The proposed list of equipment, as contained in the Annex, is considered necessary for the fact-finding team when investigating an alleged use of chemical weapons. This equipment is selected for investigations under winter conditions and included on the basis of field experiments during the four years from 1981-1985.

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Annex

Suggested list of essential equipment for the fact-finding team:

Personal protection

- 3 protective suits
- 2 gas masks
- 5 pairs protective gloves
- 3 pairs protective boots
- 2 complete sets of winter clothing

Field detection equipment

Portable vapour detection equipment (CAM)
Kits for detection of CW agents in water

Sampling and handling equipment

- 150 sample glass tubes with caps (50 ml)
- 150 sample glass tubes with caps (2 ml)
- 100 sampling glass containers with lids (400 ml)
 - 10 separation funnels with caps (250 ml)
 - 5 glass funnels
 - 5 glass pipettes (5 ml)
 - 5 pipette peleus balloons
 - 2 butane stoves
 - 2 casseroles

Chemicals

6 x 250 ml chloroform

10 x 25 g sodium sulphate (Na₂SO₄)
1 kg sodium hydroxide (NaOH)

1 kg calcium hypochlorite (bleaching powder)

1 kg Fuller's earth

Tools

- 3 snow spades
- 10 plastic spoons
 - 5 spatulas
 - 2 scissors
 - 2 knives
- 400 plastic bags and absorption material (for transportation and storage) al-foil

tissue paper

labelling material

tape

marking pens (different colours)

notebooks

Other necessary equipment

cameras

binoculars

search-lights

snow-shoes

ski-equipment

Medical supplies

- 10 autoinjectors (atropine/oxime)
- 10 vials of diazepam (2 ml, 5 mg/ml)

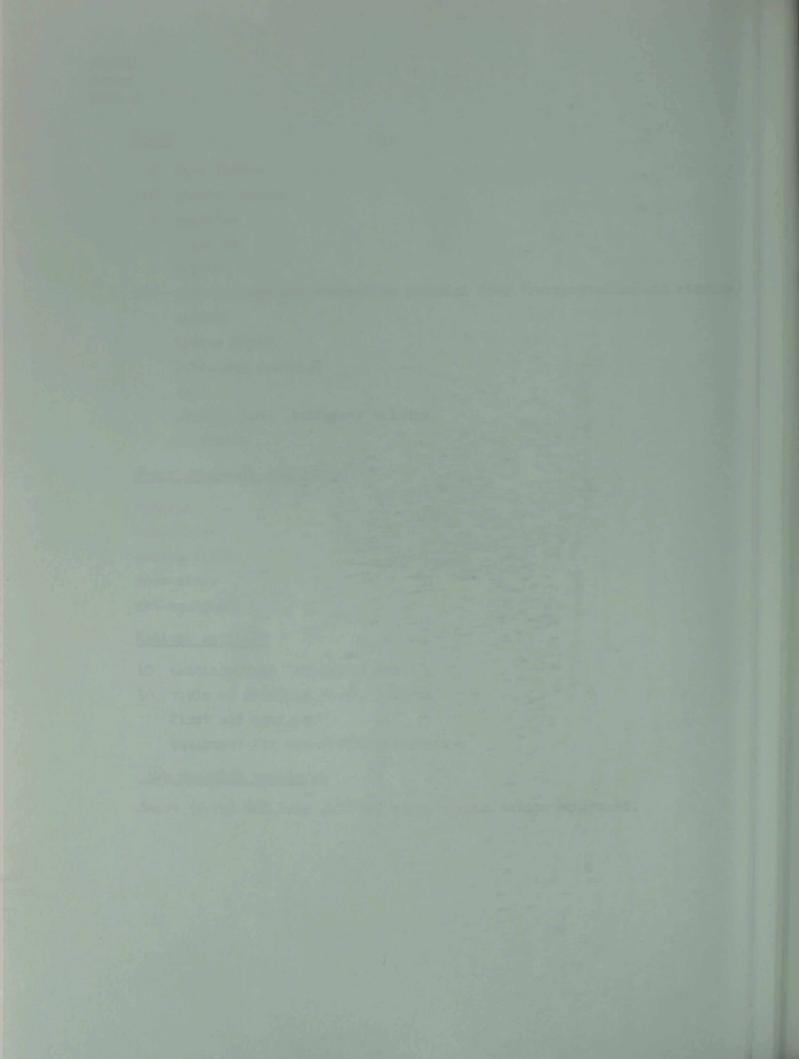
 first aid equipment

 equipment for artificial respiration

Communication equipment

Short (5 km) and long (100 km) range communication equipment.

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CD/605 CD/CW/WP.114 4 July 1985 ENGLISH Original: CHINESE

CHINA

WORKING PAPER

DESTRUCTION OF CHEMICAL WEAPONS

Element V of working paper CD/443 (1984, China) entitled "Proposals on Major Elements of a Future Convention on the Complete Prohibition and Total Destruction of Chemical Weapons" contains the following provisions:

- 2. All chemical weapon stocks should be totally destroyed except for dual-purpose chemical agents which, as agreed upon, may be diverted for peaceful uses. Destruction should commence at the earliest possible date after entry into force of the Convention and should be completed within 10 years at the latest.
 - 3. In order to eliminate as early as possible the threat to mankind of chemical warfare, States in possession of chemical weapons should in the first place destroy stocks of the most toxic and dangerous types of chemical weapons, e.g. supertoxic lethal agents such as VX, Soman, Sarin, Tabun, mustard gas, etc.

The delegation of the People's Republic of China now proposes further that:

- The States Parties concerned destroy their chemical weapon stocks proportionally and in phases;
- The destruction quantities in each phase by the States Parties concerned be determined by the formulae for calculating the stockpiled equivalent and destruction quantity as specified in Annex ...

Annex

STOCKPILED EQUIVALENT OF CHEMICAL WARFARE AGENTS

List of contents

- 1. Introduction
- 2. Toxicity Intensity (TI)
- 3. Stockpiled Equivalent (SE) of Chemical Warfare Agents
- 4. Illustrations of Application
- 4.1. Illustrative Calculation of SE
- 4.2. Illustrative Calculation of Destruction Quantity (Wdes)
- 5. Discussion and Conclusion

1. Introduction

The destruction of existing chemical weapon stockpiles is one of the most important elements of the future Convention on the prohibition of chemical weapons and would be a step of great practical significance toward eliminating the threat of chemical warfare (CW). In this connection, agreement seems to have been reached on the following:

- Each State Party in possession of chemical weapons will start destroying its stockpile at a certain time after the entry into force of the Convention and complete the process within 10 years.
- No State Party possessing such stockpiles will gain any military advantage through the destruction process.

As regards the order of destruction, various proposals have been put forward, for instance, destruction of the most toxic and dangerous types of chemical weapons first, alternate destruction of CW agents of different toxicities and other options. Whichever order is applied, it is essential to determine how many tons of a CW agent a State concerned must destroy in a given phase. This paper is an attempt in this direction.

Till now, the stockpiled weight of chemical weapons or CW agents has been used as the most important measurement of the CW capability of a State. Under ordinary circumstances, this is sufficient. However, if this were to be used as the basis for balanced destruction of chemical weapons, the drawbacks are obvious, for CW capability is determined by both the quantity and the quality, i.e. toxicity, of CW agents.— Therefore, it is necessary to develop a new concept which will take into account the two aspects when estimating CW capability.

2. Toxicity Intensity (TI)

Definition: The Toxicity Intensity of a CW agent is defined as the weight of lives harmed (in the case of harmful agents) or killed (in the case of lethal agents) by one milligramme of the agent.

^{*/} For the purpose of this paper, other factors affecting CW capability, such as the efficiency of weapon systems and the level of training and organization of personnel, are not reckoned.

It is clear that the TI is the reciprocal of the lethal dose (LD, in the case of lethal agents) or the effective dose (ED, in the case of harmful agents), i.e. $TI = \frac{1}{LD} \text{ (or ED)}$ (I)

It is expressed as kg/mg.

For the sake of reliability, the median lethal dose (LD_{50}) or the median effective dose (ED_{50}) is always used instead of LD or ED, so the above formula can be converted into

$$TI = \frac{1}{LD_{50}} (or ED_{50})$$
 (II)

This is tantamount to introducing a constant coefficient into Formula (I) which, being identical for all States possessing chemical weapon stockpiles, will not affect the correlation in their CW capabilities.

3. Stockpiled Equivalent (SE) of CW Agents

Definition: The product of the stockpiled weight of a CW agent and its

Toxicity Intensity is referred to as the Stockpiled Equivalent

of the CW agent. That is,

Obviously, there can be two kinds of SE, i.e. lethal SE (for lethal agents) and harmful SE (for harmful agents). SE can be expressed in any unit or weight (in kilogrammes, for example), but its values do not represent the actual quantities of stockpiled CW agents. The physical significance of SE is the theoretical weight of the casualties caused by W tons of CW agents. Hence, SE is a quantitative expression of the CW capability of a State.

The formula shows that the CW capability of a State is in direct proportion to the TI as well as the weight of its stockpile.

4. Illustrations of Application

4.1. Illustrative Calculation of SE

Assuming that Country A possesses two kinds of CW agents, CWA₁ and CWA₂, and Country B possesses CWA₂ and CWA₃, with the following weights and TIs respectively:

$$W_{CWA_1(A)} = 100 \text{ tons},$$
 $TI_{CWA_1} = 5 \text{ kg/mg};$ $W_{CWA_2(A), (B)} = 200 \text{ tons},$ $TI_{CWA_2} = 20 \text{ kg/mg};$ $W_{CWA_3(B)} = 100 \text{ tons},$ $TI_{CWA_3} = 10 \text{ kg/mg};$

Then, according to Formula (III), the SE of each CW agent is:

$$SE_{CWA_1} = 0.5 \times 10^{12} \text{ kg}$$

 $SE_{CWA_2} = 4 \times 10^{12} \text{ kg}$
 $SE_{CWA_2} = 1 \times 10^{12} \text{ kg}$

and the total SE of each country is:

$$SE_{total(A)} = 4.5 \times 10^{12} \text{ kg}$$

$$SE_{total(B)} = 5x10^{12} kg$$

The values of SE_{total(A)} and SE_{total(B)} show that, though the two countries are equal in terms of stockpiled weight (300 tons each), the CW capability of Country B is in fact 11.1 per cent (i.e. 0.5x10¹² kg) higher than Country A, because their stockpiles contain different kinds of CW agents. Thus, the SE concept truly reflects the CW capabilities of the two countries, which would be impossible if the stockpiled weights alone were taken into consideration.

4.2. Illustrative Calculation of Destruction Quantity (Wdes)

From the SE conversion Formula (III) can be derived Formula (IV) for calculating $W_{\rm dec}$.

where W : the actual weight of a CW agent to be destroyed by a State in one phase of destruction

K: the agreed destruction percentage in that phase

SE_{total}: the total Stockpiled Equivalent of the State

TI,LD₅₀ or ED₅₀: the Toxicity Intensity, the median lethal dose or median effective dose of the CW agent to be destroyed in that phase

SE des: the Stockpiled Equivalent to be destroyed by the State in that phase

In Formula (IV), K is an agreed constant and SE_{total} , a set value for any given State. Therefore, the W_{des} of an agent to be destroyed is in inverse proportion to its TI. In this way, a quantitative link is established between the destruction quantity and toxicity of the CW agent

to be destroyed, thereby making it possible to determine the quantity of specific kinds of stockpiled agents to be destroyed by different States.

Assuming that the two above-mentioned countries, A and B, are each to destroy one kind of CW agent at an agreed ratio of 10 per cent in a certain phase, then each country should destroy 10 per cent of its total Stockpiled Equivalent no matter which agent is to be destroyed. Thus,

$$SE_{des}(A) = K \cdot SE_{total(A)}$$

= $4.5 \times 10^{11} \text{ kg}$
 $SE_{des}(B) = K \cdot SE_{total(B)}$
= $5 \times 10^{11} \text{ kg}$

From this, the actual weight of any CW agent to be destroyed can be calculated by applying Formula (IV):

These results show that if Country A wishes to destroy its CWA₂ stockpile first, it need only destroy 22.5 tons in that phase. However, if CWA₁ is chosen instead, it must destroy 90 tons, that is, four times as much as CWA₂, because the TI of CWA₁ is only a quarter of that of CWA₂.

The results also show that if countries A and B both destroy CWA₂ first, even though the tonnages of their total stockpiles and of CWA₂ are equal, the actual weights of CWA₂ to be destroyed by the two sides are not the same owing to the inequality of their actual CW capabilities, as indicated by their SEs.

The above illustrates that by using the SE concept it is easy to determine how many tons of a CW agent a State should destroy in a given phase of destruction.

5. Discussion and Conclusion

- (a) The concept of Stockpiled Equivalent of chemical warfare agents can truly reflect the CW capabilities of States. It may, therefore, serve as an appropriate basis for balanced destruction of CW stockpiles.
- (b) The formulae in this paper are applicable to any lethal or harmful CW agent.

- (c) The present formulae are also applicable to binary weapons, in which case certain key precursors would be involved. Hence, when calculating the Stockpiled Equivalent or Destruction Quantity of a key precursor, the formulae in this paper should be used together with the relevant chemical equations by which the end-product (i.e. a CW agent) is formed from the precursor.
- (d) If the diversion of some CW agents for peaceful purposes is allowed as a means of elimination of CW stockpiles under the future Convention, the formula for Destruction Quantity will be the formula for diversion quantity as well.
- (e) In view of the purity change of the stockpiled CW agents, a purity percentage "P" may be added to Formula (III), which becomes

SE = P · W · TI

(f) The present concept and formulae, being of a purely technical and neutral nature, give no preference to any proposed order of destruction. Furthermore, by this concept the States concerned would be free to choose in the light of their specific conditions their own order of destruction without endangering the existing balance of forces between them.

CD/613 CD/CW/WP.115 10 July 1985

Original: ENGLISH

YUGOSLAVIA

PERMITTED ACTIVITIES

VERIFICATION MEASURES */

Upon entry into force of the Chemical Weapons Convention, two types of permitted activities would need to be considered:

- (a) permitted activities for protective purposes, and
- (b) other permitted activities.
- (a) Permitted activities for protective purposes

The permitted activities for protective purposes imply all activities aimed at the research, development and production of protective items and medicaments—antidotes. Some of these activities may create doubt about the compliance with the Convention and thus lessen confidence among States Parties. In order to avoid this and to enhance mutual confidence, it would be necessary, to define the following parameters: the type of toxic chemical, the criteria and measures of verification.

As far as the type of toxic chemicals is concerned, there are very different chemical structures which include a wide range of compounds. This creates a complex picture of the problem and difficulties for the monitoring of the research and development, as well as the implementation of verification measures.

A somewhat clearer view would be provided if all toxic chemicals were classified into groups according to their effects on the living organisms, and if a model substance was chosen on the basis of its application to living organism. Such an approach permits consideration of only a few groups of toxic chemical compounds:

- nerve gases;
- neuro-toxic compounds;
- skin poisons;
- blood poisons;
- cell poisons;
- irritants and psycho agents, etc.

If the criteria of toxicity were also to be taken into account, the number of toxic compounds could be reduced to a reasonable extent. Thus, for example,

^{*/} See CD/393, CD/401 and CD/482.

CD/613 CD/CW/WP.115 page 2

all poisons from the group of nerve poisons that are used for protective purposes, belong to the group of "super-toxic lethal chemicals" and the same criterion could be applied to all of them. Consequently, they can be subject to the same verification measures. The pesticides and derivates of phosphorous organic compounds and carbamic acid would naturally be excluded.

The quantities of toxic chemicals used for permitted-protective purposes are determined on an agreed basis up to one metric ton.

l. <u>Small-scale production facilities</u> are for the purpose of CW Convention, considered as facilities designed for the production of super-toxic chemicals for protective purposes in particular. The prevailing view is that this type of facility should produce toxic chemicals in aggregate quantity (up to one metric tonne per year). Such facility should not therefore be larger than the ordinary pilot plant.

In negotiations so far opinions were expressed that such facilities should be allowed to produce the aggregate annual quantity of all super-toxic chemicals-chemical warfare agents permitted under the Convention. This mostly refers to the production of super-toxic lethal chemicals. The concentration of production in one place would be most appropriate from the point of international verification.

As described in the Finnish paper (CD/CW/WP.92), this type of facility should be flexible and independent enough to allow production of different toxic chemicals, monitoring of the production process and the filling of samples for protective purposes. This facility in the production process should, in the view of the Yugoslav delegation, comprise the following elements: storages for raw materials; production (intermediates, final products); control analysis (analytical laboratory), storages for products and intermediates; filling facilities and destruction of wastes.

The facility would in general produce super-toxic lethal chemicals and their key precursors. Consequently, the production should be divided into:

- (a) the facility for the production of key precursors, and
- (b) the facility for the production of final products.

Similarly, two types of reaction vessels (reactors) may be used for carrying out the reaction of fluorination in the first vessel, and the reactions of acillation, alkilation, esterification, etc. in the second vessel. The first reactor should be specially designed to permit to carry out in it the reactions with hydrogen fluoride acid and its derivates, while the second one could be enamel-glazed.

The capacity of the facility should be separate for each product: for key precursor and for super-toxic chemical. The number of reactor vessels will thus depend on the number of chemical warfare agents to be produced in the facility.

The production of these agents and the processes carried out in the facility should be automated, and automatic recorders should be placed at crucial points to record material and energy balances: inflow of chemical, pressure and temperature, etc. The data collected should be stored in a computer. All analytical data, spectra, disgrams, etc. should be stored in the control

laboratory analysing the quality and quantity of raw materials, intermediates and products. It is very important that all data relevant to the production be collected and stored in a computer centre. The storages for raw materials, intermediates and products should not exceed the storage capacity permitted under the Convention (aggregate capacity of the final product of one metric tonne).

The filling facility (room) is used for filling the samples and devices to be used for research of the protective effects. This facility should be provided with adequate equipment for filling and control of the material balance.

Bearing in mind the fact that this type of facility is used for the synthesis of highly toxic chemicals, of chemical warfare agents for the most part, it should be effectively automated. Automation would be needed for effective data recording, monitoring of the production and process control. The monitoring of all wastes would also be necessary. The monitoring of the production should, on its part, meet the basic requirements of continuous control of the material and energy balances of the synthesis and storage of the data in a computer centre.

(b) Other permitted activities

1. Laboratory synthesis

The laboratory synthesis implies research of new chemical structures mainly for the (purpose of the) pharmaceutical industry and the production of pesticides (protection of plants). The quantities thus synthesized range from 1 to 100 grammes. The toxicity of the synthetic compounds can be wide-ranging, namely from super-toxic to other harmful chemicals. Having in mind the nature of the laboratory synthesis (its research character; synthesis of small quantities; variety of chemical structures) the control of the syntheses and the quantities produced is very complex and difficult to perform at the international level. On the other hand, although the quantities which are laboratorically synthesized are not of military significance, there is nevertheless potential risk that at a given moment and with necessary development, they may be produced for military use. In addition, the laboratory synthesis improves knowledge about the effects of any new synthesized chemical warfare agents on the living organisms and their efficiency; of the new chemical structures, and of the military usefulness of these chemicals. This stage is therefore the most complex one in the development of new chemical weapons and in reality, an effective control of it is very unlikely.

2. Small-scale production facilities

Having in mind the proposals put forward by many delegations that the Convention should not prevent the development of the chemical, and pharmaceutical industry in particular, the Yugoslav delegation considers that there is a need to examine the possibility of producing super-toxic lethal chemicals for other permitted purposes. Namely, the rapid development of synthetic organic chemistry over the past decades has brought about new methods of synthesis of biologically active chemical compounds whose structure is similar to that of natural compounds. Some of these compounds are highly toxic, but have nevertheless, certain therapeutic characteristics which are increasingly being used in the treatment of many diseases. Due to their high toxicity, the doses of these chemicals used in human treatment are very small. Consequently, the production of these compounds

can be carried out in a pilot plant. In the view of the Yugoslav delegation, the annual production of these super-toxic lethal chemicals for other permitted purposes should not exceed one metric tonne, and only exceptionally their production should be maximally two metric tonnes per year. The number of such facilities will depend on the development of the pharmaceutical industry. The facility, however, should be so designed to permit full automation and monitoring at all stages of the production process. As in the case of small-scale production facilities for protective purposes, these facilities also should be equipped with instruments for recording aggregate material and energy balances and all parameters (pressure, temperature, etc.) in the process of synthesis. The size of the reaction vessel (reactor) in the final technological stage should not be greater than 250 litres. The facility should include all the elements of a small-scale production facility, except for the filling room.

3. Large-scale production facilities or industrial facilities

Facilities of this type are used for the production of dual purpose chemicals and precursors. The chemicals manufactured in such facilities belong to the so-called products for other permitted purposes and are basically intermediates in the industrial technological process. Such compounds today are widely used in the civil chemical industry for the production of many organic products (in pharmaceutical industry, plastics, production of pesticides, etc.).

Depending on the technological process and the capacity of the large-scale facility, methods will have to be devised to monitor the production for verification purposes.

As the designated chemicals are by and large precursors or intermediates used in the process of synthesis of a civil chemical industry, technology and the facilities in which they are produced are part of a chemical plant.

At best, under the terms of the Convention, the capacity of the facility for the production of dual-purpose chemicals and precursors should be such as to meet the requirements of the complete technological process at the plant. In other words, the annual output of the designated chemical at the plant working with full capacity (24-hour production) should be competely processed into the final product. Therefore, the storages for intermediates (dual-purpose chemicals or precursors) should not exceed 30 per cent of the daily output.

Further, the monitoring system and control of the production of dual-purpose chemicals (phosgene, cyanogen, chloride, hydrogen cyanide, etc.) should be such as to permit automatic recording of the material and energy balances.

Moreover, it would be necessary to ensure adequate recording of the parameters such as temperature and pressure inflow of the raw materials and outflow of the product.

The material balance of dual-purpose chemicals and precursors can also be proved by the control of the final product in the over-all technological process.

Thus, for example, the production of phosgene should be automatically controlled and monitored by a computer (Annex I). The whole process can be controlled in this way, and the data collected can be used for reports and control of the transfer and diversion of intermediates into the final product.

Verification measures of the declared facilities

Within the framework of the permitted purposes, each State Party may have facilities for the production of chemical warfare agents which could be used for research of the protective effects, toxic chemicals for medical and agricultural purposes, as well as facilities for the production of chemicals used as intermediates in the civil chemical industry (other permitted activities). Such facilities should be declared by providing the following information:

- (i) the location and name of the company or organization operating yhe facility;
- (ii) chemical name and formula of all dangerous chemicals (CWA, precursors, dual-purpose chemicals, etc.);
- (iii) detailed technology equipment for automated process;
 - (iv) end use of intermediates;
 - (v) whether the whole quantity of the chemical is used <u>in situ</u> or at another plant or is it exported?
 - (vi) full name of the plant using the chemical for further processing;
- (vii) the State(s) to which the chemical is exported;
- (viii) maximum annual design capacity of the plant in tonnes;
 - (ix) the quantities to be exported;
 - (x) aggregate annual output of all chemicals;
 - (xi) aggregate annual use of the designated chemical for processing into other chemical products;
 - (xii) manner of reporting to the international organization;
- (xiii) proposed verification.

Verification of small-scale production facilities

Bearing in mind that such facilities mainly produce CW agents belonging to the group of super-toxic lethal chemicals and their key precursors, and pharmaceutical drugs such facilities should be subject to routine international random inspection. The national team should assist the international team in the process of verification.

In order for the verification to be effective it would be necessary that all relevant information be provided and to automatically control the production process with the help of monitoring and recording devices.

Hence, the international team can, by checking into the documentation and by visiting the plant, verify whether the corresponding synthesis is taking place in the plant.

CD/613 CD/CW/WP.115 page 6

Also the international team has a task to check whether all quantity of super-toxic lethal chemical: CWA and other chemical, were processed and used for research or for production drugs and other chemicals for peaceful purposes.

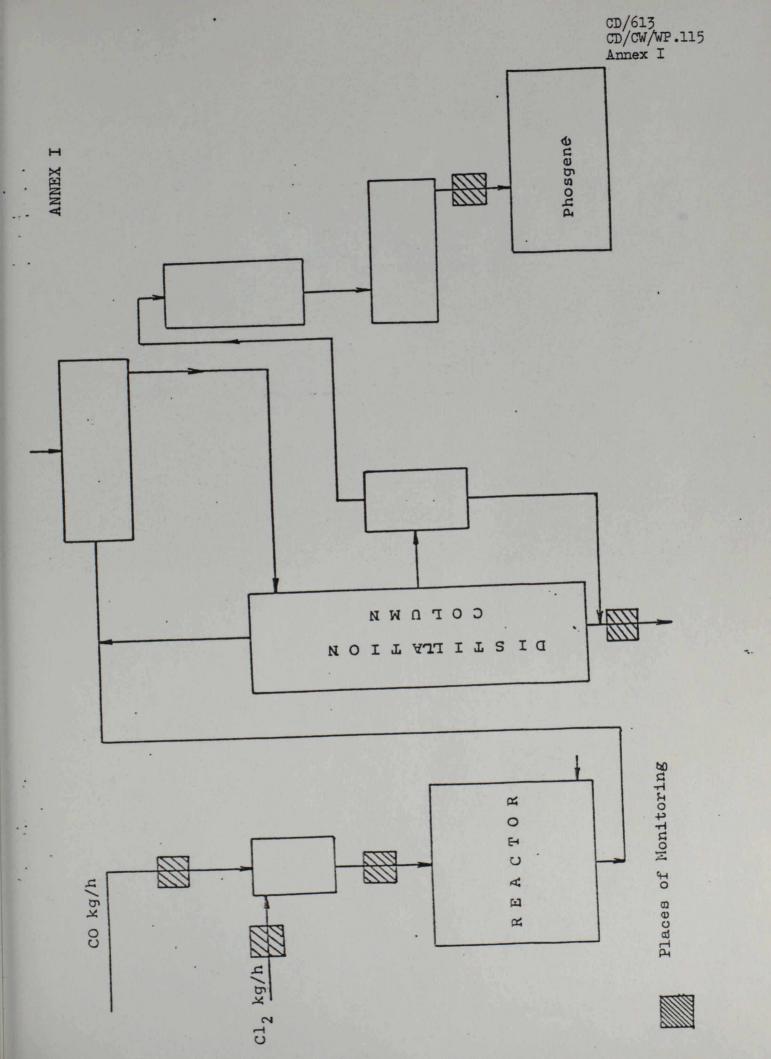
Verification of large-scale production facilities or industrial facilities

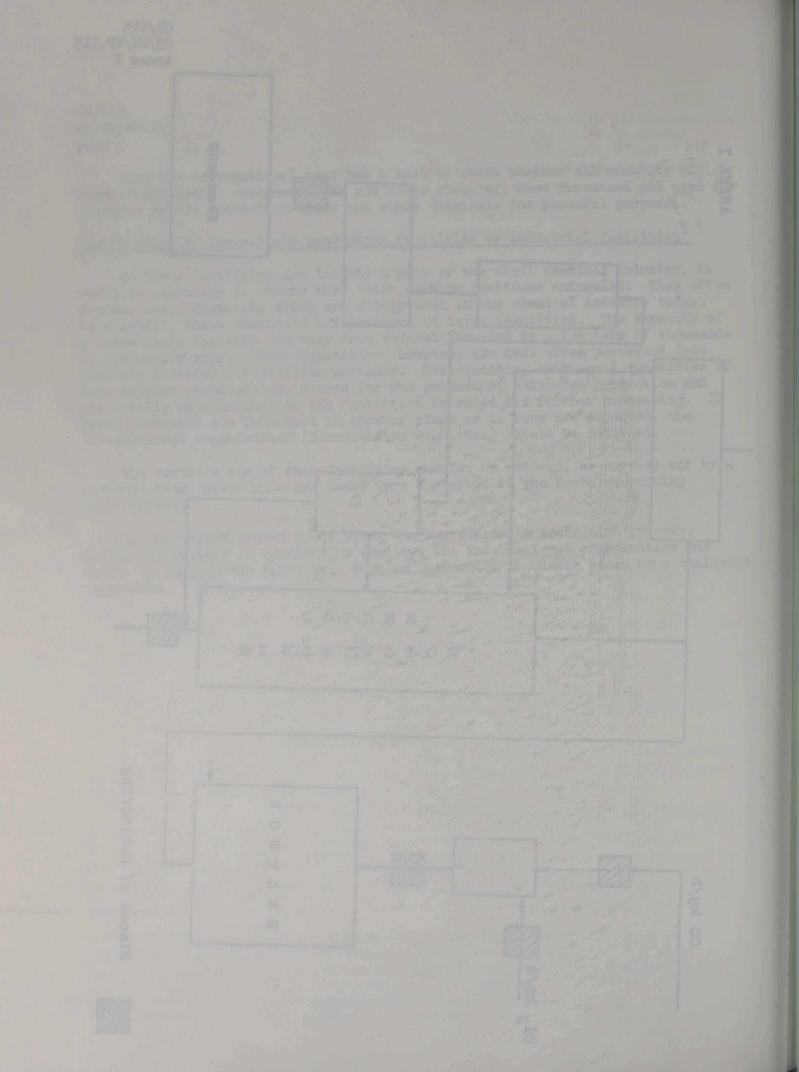
As these facilities are largely a part of the civil chemical industry, it would be necessary to ensure that their working continues unimpeded. They often produce toxic chemicals which are widely used in the chemical industry today. As a result, these chemicals are produced in large quantities. The capacity of a large-scale facility can vary from several thousand to a few tens of thousands of tonnes per year. These quantities, however, are most often processed into products intended for civilian purposes. Subsequently, only small quantities of dual-purpose chemicals are stored for the purpose of unimpeded production and are usually manufactured in the facilities intended for further processing. If these chemicals are processed in another plant or if they are exported, the international organization (Consultative Committee) should be notified.

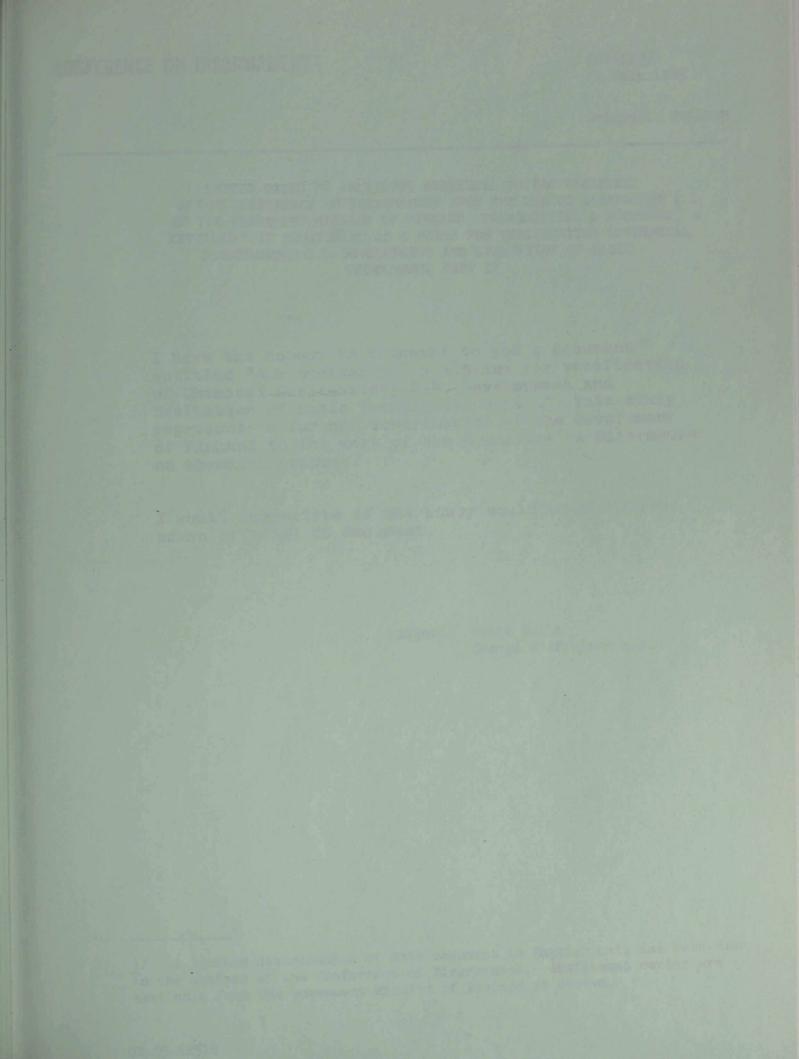
The verification of such facilities should, we believe, be carried out by a national team, whose role and tasks were explained in the Yugoslav working paper CD/482.

If the report leaves doubt about the corresponding production process, whether in respect of quantity or quality, the international organization may decide to inspect the facility. Such an inspection should be based on a challenge inspection.

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Original: ENGLISH

LETTER DATED 12 JULY 1985 ADDRESSED TO THE PRESIDENT
OF THE CONFERENCE ON DISARMAMENT FROM THE CHARGE D'AFFAIRES A.I.
OF THE PERMANENT MISSION OF FINLAND, TRANSMITTING A DOCUMENT
ENTITLED "AIR MONITORING AS A MEANS FOR VERIFICATION OF CHEMICAL
DISARMAMENT; C.2. DEVELOPMENT AND EVALUATION OF BASIC
TECHNIQUES, PART I"

I have the honour to transmit to you a document entitled "Air Monitoring as a Means for verification of Chemical Disarmament; C.2. Development and Evaluation of Basic Techniques, Part I". This study represents a further contribution of the Government of Finland to the work of the Committee on Disarmament on chemical weapons.

I would appreciate if the study would be circulated as an official CD document.

(Signed) Pekka Säilä Chargé d'Affaires a.i.

^{1/} A limited distribution of this document in English only has been made to the members of the Conference on Disarmament. Additional copies are available from the Permanent Mission of Finland at Geneva.

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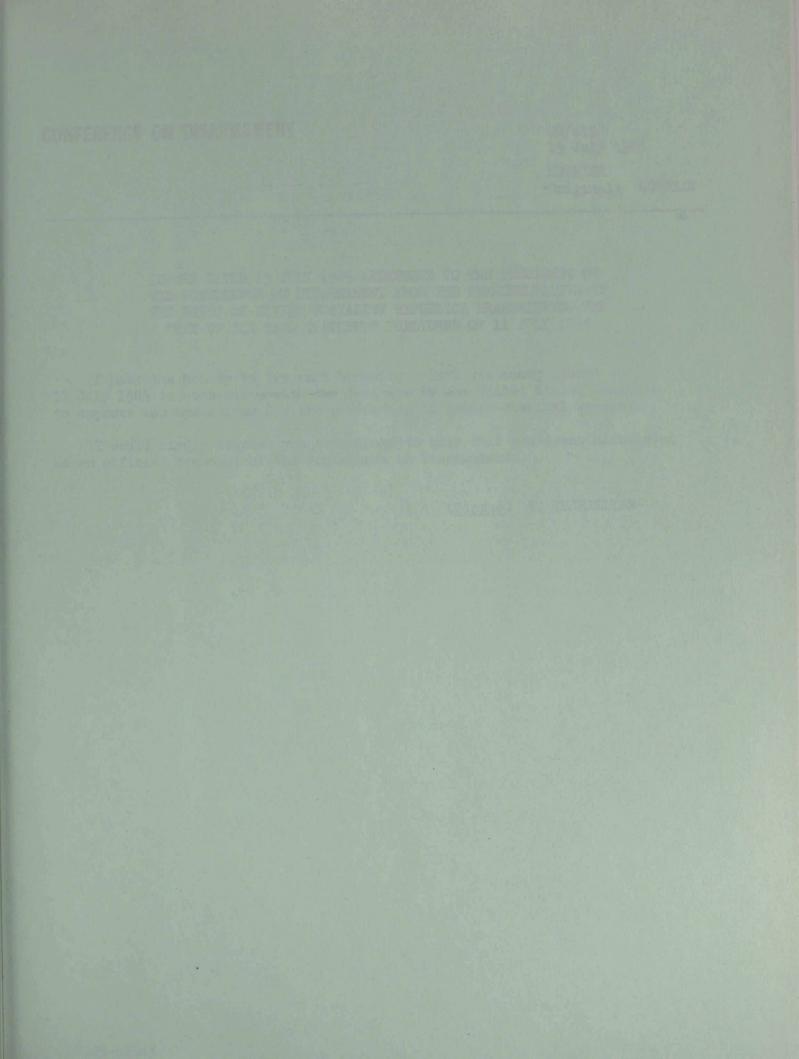
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CONFERENCE ON DISARMAMENT

CD/615 15 July 1985 ENGLISH Original: RUSSIAN

LETTER DATED 15 JULY 1985 ADDRESSED TO THE PRESIDENT OF THE CONFERENCE ON DISARMAMENT FROM THE REPRESENTATIVE OF THE UNION OF SOVIET SOCIALIST REPUBLICS TRANSMITTING THE TEXT OF THE TASS STATEMENT PUBLISHED ON 11 JULY 1985

I have the honour to transmit herewith a TASS statement issued on 11 July 1985 in connection with the decision by the United States Congress to approve appropriations for the production of binary chemical weapons.

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I would kindly request you to arrange to have this statement circulated as an official document of the Conference on Disarmament.

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(<u>Signed</u>) V. ISSRAELYAN

TASS STATEMENT

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Recently the House of Representatives of the United States Congress, following the Senate, decided to appropriate funds for the production of binary chemical weapons. Although the starting date set for this production is 1987, and the decision is accompanied by some reservations, all of this does not change the substance of the matter: the United States is in practice approaching the point of adding to its military arsenal a new and even more dangerous type of barbarous weapon — a deadly nerve—gas mixture.

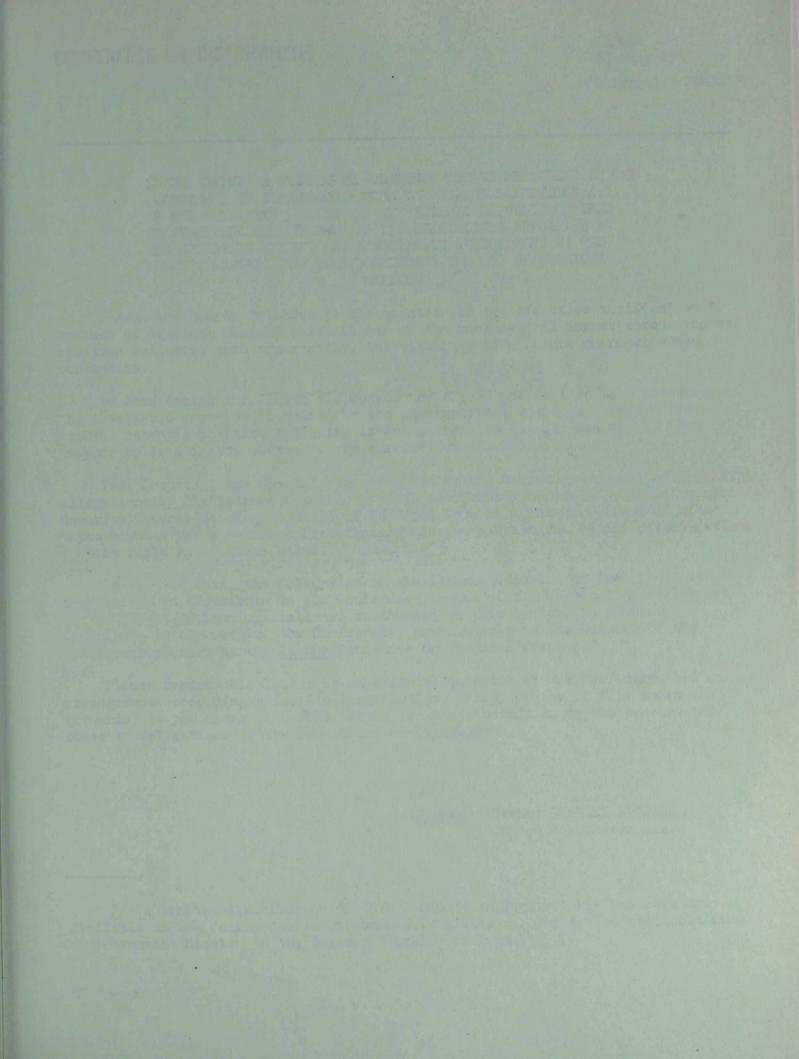
In the intentions of the strategy planners in Washington, the production of binary weapons should be part of a broad programme for the development of new weapons that are intended to ensure the military superiority of the United States. Not a day passes in Washington without the discussion and adoption of decisions relating to the development and deployment of new weapon systems: the MX and Midgetman intercontinental ballistic missiles, ballistic missile submarines, strategic aircraft and offensive space weapons.

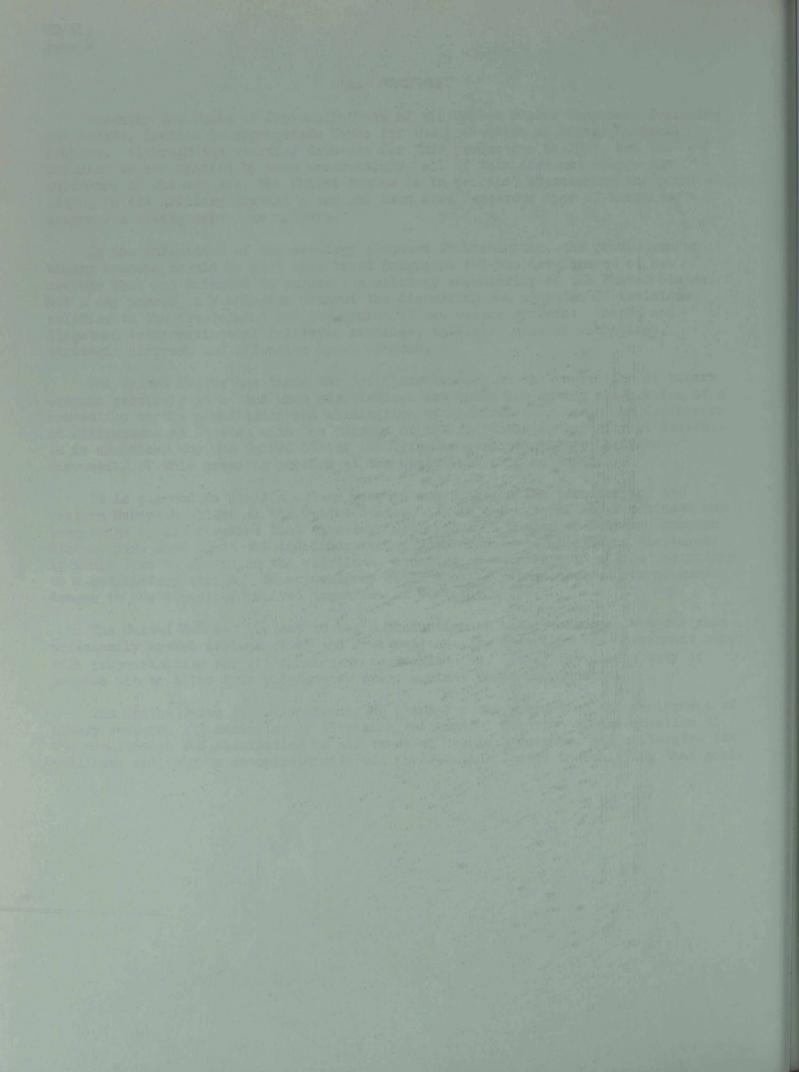
The United States has taken the decisions leading to the production of binary weapons precisely at a time when negotiations are under way on the preparation of a convention on the prohibition and elimination of chemical weapons in the Conference on Disarmament at Geneva, with the support of the overwhelming majority of States. It is now clear why the United States is trying so persistently to lead the discussion of this pressing problem at the Conference into an impasse.

It is planned to station binary weapons above all in the territory of the Western European allies of the United States. As in the case of the Pershing-2 and long-range cruise missiles that have been deployed in a number of Western European States, here once again the insidiousness of Washington's intentions is displayed: it would like to remain on the sidelines, counting on exposing its allies' territory to a retaliatory strike. Binary weapons would thus be yet another source of great danger to the densely-populated countries of Western Europe.

The United States' project to begin production of binary chemical weapons must necessarily arouse serious alarm and indignation. The United States Government bears full responsibility for all consequences of this step. It is the direct duty of peoples not to allow this planned new crime against peace and mankind.

The Soviet Union firmly condemns the plans for the production and deployment of binary weapons. It consistently advocates the radical solution of the question of the prohibition and elimination of all types of chemical weapons, and reiterates its readiness actively to co-operate with all peace-loving States in achieving that goal.





CONFERENCE ON DISARMAMENT

CD/617 22 July 1985

Original: EMGLISH

LETTER DATED 19 JULY 1985 ADDRESSED TO THE PRESIDENT OF THE CONFERENCE ON DISARMANENT FROM THE CHARGE D'AFFAIRES A.I. OF THE PERMANENT MISSION OF THE ICLAMIC REPUBLIC OF IRAN TRANSMITTING THE "REPORT OF THE SPECIALISTS APPOINTED BY THE SECRETARY-GENERAL TO INVESTIGATE ALLEGATIONS BY THE ISLAMIC REPUBLIC OF IRAN CONCERNING THE USE OF CHEMICAL WEAPONS" 1/

I have the honour to refer to the question of the effective verification of the use of chemical weapons which is one of the most central issues concerning the creation and, even more importantly, the viability of a future chemical weapons convention.

In considering this issue the Conference should not fail to take advantage of the invaluable experiences gained by the international community through the reports recently prepared following investigations of the alleged use of chemical weapons by Iraq in the course of the current Persian Gulf conflict.

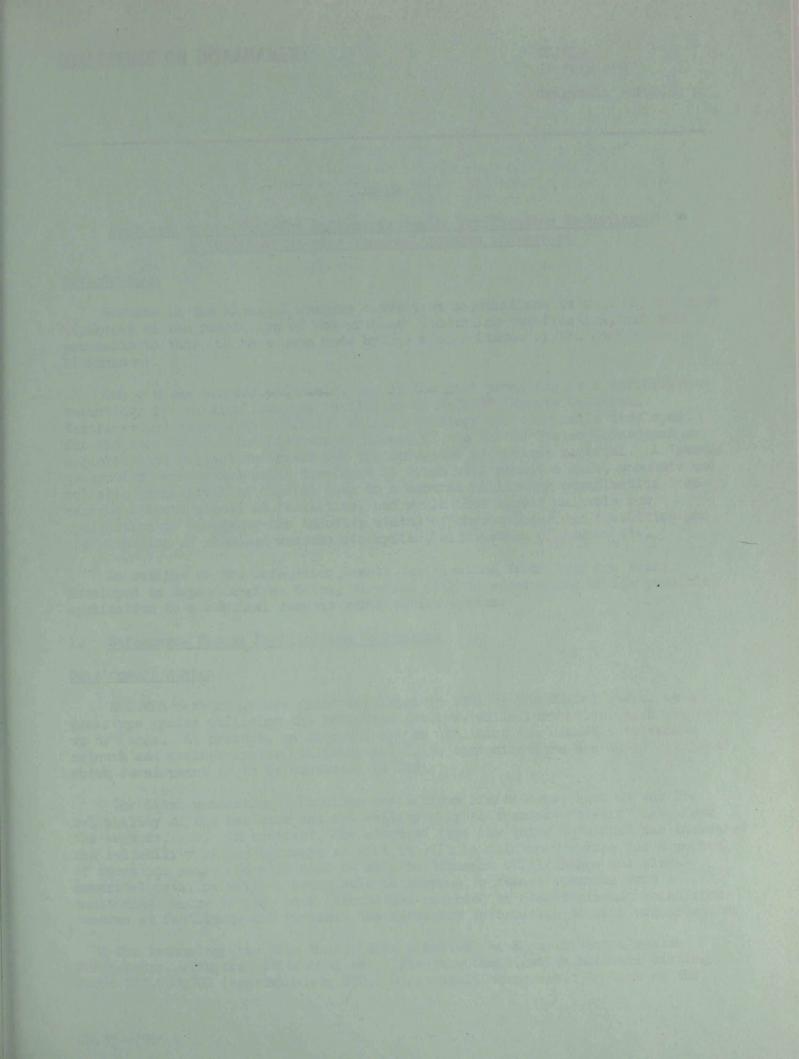
The Report of the Specialists appointed by the Secretary-General to investigat allegations by the Islamic Republic of Iran concerning the use of chemical weapons, Security Council document S/16453 of 26 March 1984 as a unique reflection of an unprecedented yet successful fact-finding mission carried out by the United Nations in this field is of great value.

In view of this, the delegation of the Islamic Republic of Iran finds it appropriate to distribute in the Conference copies of the above-mentioned report of the United Nations specialists, as annexed to this letter, in order to contribute to the work of the Conference, particularly in the context of the endeavours pursued by the Ad Hoc Committee on Chemical Weapons.

Please regard this letter as an official document of the Conference and make arrangements accordingly for its distribution. Fifty copies of this annex are forwarded to you along with this letter for distribution among the members and observer delegations of the Conference on Disarmament.

(Signed) Farhad SHAHABI SIRJANI Charge d'affaires a.i.

^{1/} A limited distribution of this document in English only has been made available to the Conference on Disarmament. Additional copies are available from the Permanent Mission of the Islamic Republic of Iran.





CD/619 23 July 1985

Original: ENGLISH

JAPAN

Application of (Nuclear) Safeguards Remote Verification Technology to verification of a chemical weapons convention

Introduction

Success in the chemical weapons convention negotiations is to a major degree dependent on the resolution of the problems concerning verification, and many proposals to this end have been made by the member States of the Conference on Disarmament.

Among these various proposals, one of the most promising as a verification technology for chemical weapons facilities is RECOVER (Remote Continual Verification) technology (CD/271), which technology was originally developed for the Arms Control and Disarmament Agency of the United States Government as a global data collection system for the safeguard of nuclear material. A "second generation" system now being developed in Japan will permit a safe, economic and reliable transmittal of digital data to a central monitoring organization from various sensors placed at facilities, and would thus appear suitable for application to verifying the inactive status of chemical weapons facilities and the situation of chemical weapons stockpiles, elimination processes etc.

An outline of the Safeguards Remote Verification Technology now being developed in Japan is given below, together with an examination of its possible application to a chemical weapons verification system.

1. Safeguards Remote Verification Technology

Development status

RECOVER technology was first developed in 1981 by the United States as a prototype system utilizing the telephone network, while further research was taken up by Japan. At present, an advanced system utilizing the domestic telephone network and another system utilizing satellite communications are being developed, which development is to be completed in 1985.

The first generation technology had various limitations, such as the low reliability of the hardware and the ability only to transmit "on-off" data from the sensors, etc. In contrast, the advanced type now being developed has increased the reliability of the hardware so that it will be maintenance-free for a period of about one year, and will also be able to transmit still images and alphanumerical data, as well as being able to respond to remote commands from a monitoring centre to play back information recorded by closed-circuit television cameras at facilities and transmit the necessary information to said organization.

The technology has thus become more practical as a verification system. Furthermore, with the addition of satellite telecommunication hardware costing about Y13,000,000 (approximately \$52,000), it would be possible to link up the

(inter)national monitoring organization with facilities located in remote areas where telephone network access would be difficult. A system concept illustration of Safeguards Remote Verification as is being developed in Japan is shown in Figure 1. (Figure 2 shows the technology as applied on board a ship).

System characteristics

The system characteristics of this technology as an automatic remote monitoring system is as follows:

- (a) Communication means ... ordinary public telephone lines, including satellite circuits, may be used for data traffic of up to approximately 2,400 bits per second, as is the normal case (special lines may be used for traffic of greater data intensity).
- (b) Automated operation ... the system is designed to be tamper-resistant and, with the use of high-reliability hardware, should require maintenance only about once a year; thus reducing the frequency of mandatory visits by inspectors.
- (c) Protection of transmitted information ... information to be transmitted is scrambled by a combination of a random factor and a code key, and the accuracy of the transmitted information is assured by various parity checks.
- (d) Transmittable information ... "on-off" data, analogous information, still images and alpha-numerical data.
- (e) Application ... transmission of information to a monitoring centre of a facility where inspectors are permanently stationed or to a (inter)national monitoring organization.

A brief description of the hardware being developed as Safeguards Remote Verification Technology is given in Table 1.

2. Application of Safeguards Remote Verification Technology to a chemical weapons verification system

In examining possible application of Safeguards Remote Verification Technology to a chemical weapons verification system, it is necessary first to clarify in detail what is the exact demand on verification, whether it would suffice to detect abnormalities at the facility monitored or whether more substantial information is required, as well as the overall system of on-site inspection within which framework this technology would be applied.

However, for the purposes of this section, such real-life considerations will be put to one side and possible application of this technology will be shown in an exemplar manner. The demand on verification is understood to be as follows:

(a) as regards chemical weapons stockpile facilities and former production facilities to be destroyed at a future date, verification of their inactive status;

as to elimination facilities and permitted production facilities, monitoring of their activities;

as to the transshipment of chemical weapons, the monitoring of possible container abnormalities both prior to and after completion of transshipment.

(b) communications between the facilities and monitoring organization will be conducted by means of an existing communications network.

Possible applications

Given the understanding above, exemplar application of Safeguards Remote Verification Technology to various facilities for chemical weapons stockpiling, producing, eliminating etc. would be as shown in Table 2.

The estimation of cost was made on the basis of the cost of a complete verification system comprising of:

- for facilities, whose size was understood to be on a scale similar to that of the facilities discussed at the chemical weapons verification workshop at the Tooele Army Depot in November 1983, sensors, on-site multi-plexers, network control units and satellite communication systems;
- for transshipment containers, a complete set of optical fibre seals.

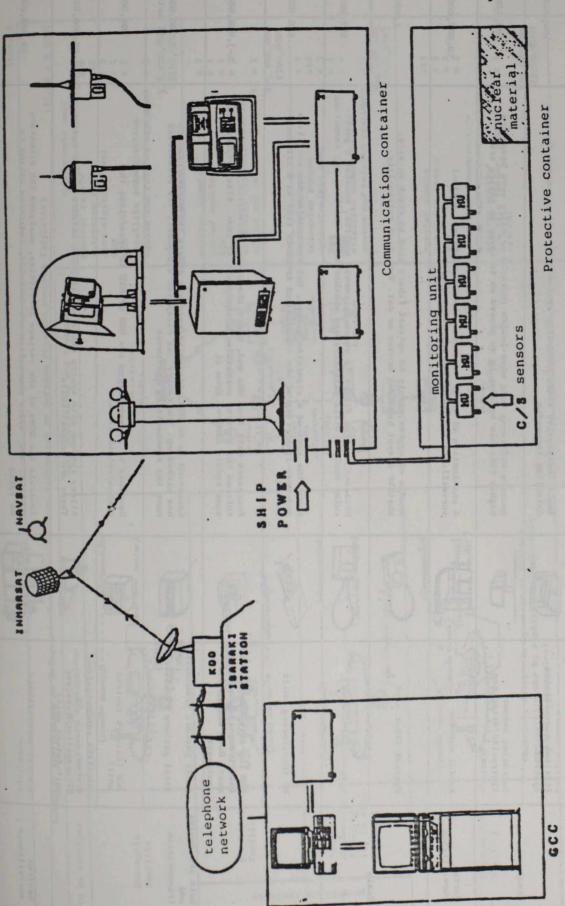
In this estimation the cost of verification hardware for the various facilities were as follows:

- stockpile facilities Y38,000,000 (approximately \$152,000)
- permitted production facilities Y75,000,000 (\$300,000)
- former production facilities Y46,000,000 (\$184,000)
- elimination facilities Y75,000,000 (\$300,000)

(It need not be stressed that these figures are in any case just illustrative and the real cost will vary according to the scale of the facility, its configuration etc.).

Conclusions

The RECOVER system, which was developed for safeguarding nuclear material has, in the course of development of such "second generation" technology as the addition of remote control capability, improved reliability and the utilization of satellite communication, become a more practical system of Safeguards-related technology and the economic aspect, such as the cost of various hardware, is improving rapidly. It is recommended that the Conference on Disarmament give due consideration to a possible application of this and related technology to the verification of a chemical weapons convention, thus greatly advancing its work in the field of verification technology for a comprehensive ban on chemical weapons.

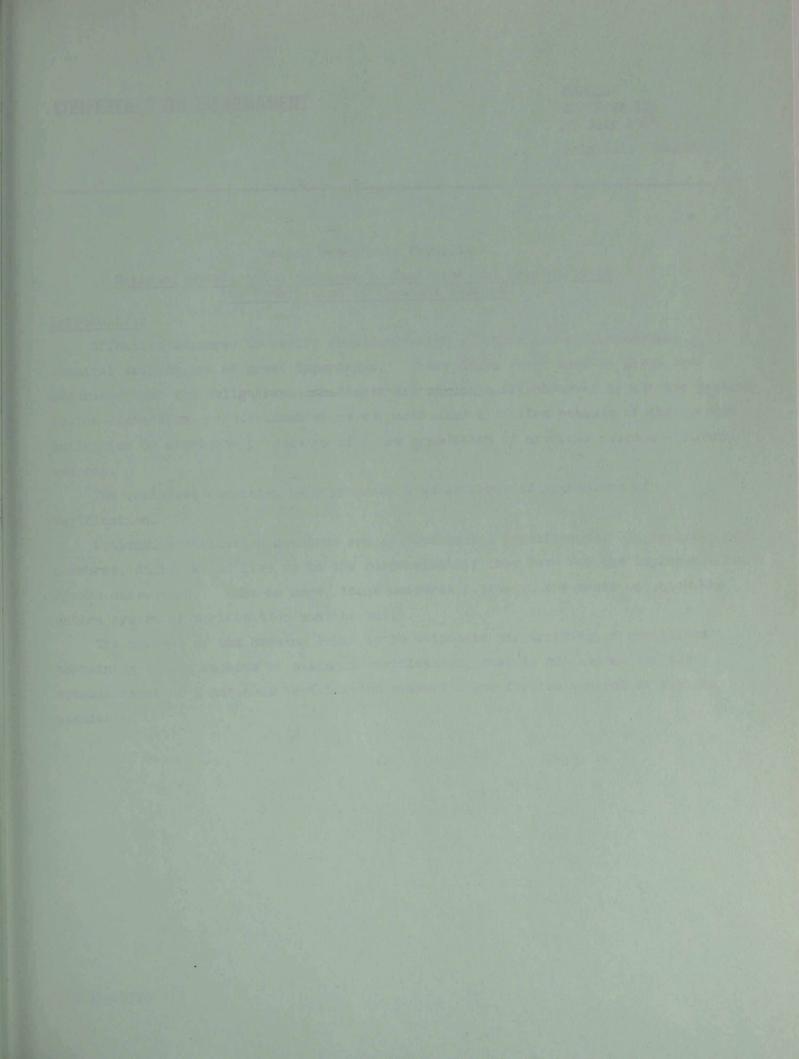


Remote Monitoring System of Nuclear Material under Transportation

Table 1

		Shape	Description	(in yen)
function	monitor camera (Optical surveillance system)		Small inexpensive video recording system with motion monitor for detecting tampering	000,004
Sensors	Intrusion sensor (Intrusion detection system)	1	Sensors utilizing long wave-length infrared or micro wave beams are highly reliable and may be so placed as to cover an entire area	100,000
Portal surveillance	Portal monitor		A combination of metal detectors, motion monitors, optical surveillance equipment and intrusion alarms	000'000'05
	Optical fiber seal	Ö	Bundle of approximately 60 optical fibers used to check on-site, whether a seal has been broken or not. Very high reliability.	1,000
Seals	Opto-electric seal	5	Utilizes optical fibers to check, by remote control, whether a particular seal is still effective and whether there has been any tampering	100,000
	MU (Monitoring unit)		About the size of a cigarette packet, but can monitor the condition and (non-)tampering of the sensors and transmit that as 8 bit data to 05M	100,000
	OSM (On-site Multiplexer, Data transmission equipment, Data encryption equipment)		Processes data from MUs and, where there are anormalies, automatically informs the central surveillance equipment by code. Also responds to some remote control from it	y 2-3,000,000
Data processing and transmission	Still picture transmitter (SPT) Still picture receiver (SPH)		Connected to an OSM, transmits/receives images the monitor camera has picked up. The centre has reception equipment, the facilities have the transmitting equipment	5,000,000
	NCU (Network control		Responds to commands from the OSM or RVU to open/close the communication circuit	200,000
	Satellite communication system (Transmitter/Receiver unit-Antena unit)	4	Allows link-up with centre where no telephone network access exists. There are compact units	13,000,000
Central	Central surveillance equipment		Controls the OSMs at the various facilities, analyses the situation thereat, and, where anormalies are detected, indicates action to be taken	20,000,000

approximate cost	monitor camera x 2 intrusion sensor x 12 intrusion sensor x 3 intrusion sensor x 3 intrusion x 1 int	monitor camera x 8 portal monitor x 1 0SM x 1 NCU satellite communication x 1 system and related equipment x 1 875,000,000 (\$300,000)	or seal unication ated equipment	monitor camera x15 intrusion sensor x 5 OSM x 1 NCU x 1 satellite communication x 1 process monitor x 1 process monitor x 1 system) x 1 (in-flow sensor, control x 1 system) x 1 (\$300,000)	optical fiber seal \$1,000 each		
Data processing and transmission	NCU						
application of Safeguards nemore.		entrance (monter camera) entity (portal annuber) 4! interconnected	(manifor camera) + interconnected A property of intension sensor) A property of (qto-electric sensor)	(Anormaly detection by means of pattern recognitive processes)	optical fiber stad		
Exemplar Exemplar		permitted facility	former production facility (to be eliminated)	Elimination facility	containers		
1	Chemical weapons facilities				Ofpers		





CONFERENCE ON DISARMAMENT

CD/620 CD/CW/WP.119 23 July 1985

Original: ENGLISH

German Democratic Republic

National Verification Measures to Implement the Convention on the Prohibition of Chemical Weapons

Introduction

Effective measures to verify compliance with a future convention banning chemical weapons are of great importance. Every State Party must be given the assurance that the obligations undertaken are scrupulously observed by all the parties to the convention. This issue deserves particular attention because of the current activities to start the production of a new generation of chemical weapons - binary weapons.

The socialist countries have proposed a whole array of mechanisms of verification.

National verification measures are of fundamental significance. In applying such measures, States would live up to the responsibility they have for the implementation of the convention. What is more, those measures represent the basis on which the entire system of verification must be built.

The purpose of the Working Paper is to stimulate the drafting of provisions pertaining to two aspects of national verification, that is guidelines for the establishment of a national verification authority and for the control of certain chemicals.

CD/620 CD/CW/WP.119 page 2

Part I contains proposals and possible organizational guidelines for the operation of a national authority. The establishment of a special or the entrusting of an already existing body will enable the State Party concerned to meet the responsibility for the implementation of the convention on its territory and for compliance with it. The national authority should have appropriate powers and co-operate with the Consultative Committee, especially with regard to the exchange of data and support for international procedures. It may be set up as a single body. Its duties may also be performed by several separate bodies.

Part II sets out possible guidelines for a national system of accounting for and control of chemicals in connection with the convention. An important aspect of the activities of the national authority is to ensure that chemical weapons are not produced.

The problem of non-production recently acquired added topicality in view of the plans to produce a new generation of chemical weapons. The Convention must, therefore, provide for appropriate measures to guarantee that such weapons are not manufactured in a way circumventing the Convention. Clearly phrased regulations concerning permitted activities in the Convention will have to satisfy that requirement.

The Working Paper sets forth the ideas regarding the implementation of national verification measures that have already been dealt with by the Conference. It draws on the positions specified in documents CD/220, CD/333 and CD/334. Also, it takes into consideration what is said in document CD/482 submitted by Yugoslavia and document CD/313 presented by Canada. The Paper does not claim to be complete. The suggestions made in it are to help make progress. They would provide guidance to States in the discharge of their obligations under the convention. It stands to reason that, besides the functions outlined in this Paper, other tasks, e.g., the monitoring of the destruction of CW stockpiles, and facilities may be elaborated in more detail.

GUIDELINES FOR A NATIONAL SYSTEM FOR THE IMPLEMENTATION OF A CW - CONVENTION

- I. Structure and basic functions of the national system
- 1. Each State party to the Convention shall adopt in accordance with its constitutional process measures it considers necessary to implement the Convention and in particular, to prohibit and prevent, on its territory or anywhere under its jurisdiction or control, any activity which would constitute a violation of the Convention. In order to provide for an appropriate instrument to fulfil these undertakings the State party should establish a national system for the implementation of a CW-Convention. Whereas the responsibility for establishing and maintaining of a national system rests entirely with the government of each State, this national system, to fulfil its purpose, should comprise the following:
 - laws and other regulations constituting a legal structure of supervision and control:
 - a national authority;
 - organizational and operational elements at the facility level.

2. Laws and other regulations

In order to ensure strict compliance with the undertakings not to develop, produce, otherwise acquire, stockpile or retain or transfer chemical weapons;

in the Convention. They are collect to this Paper "the chemicals

to destroy or divert for permitted purposes existing stocks and to eliminate chemical weapons production facilities

CD/620 CD/CW/WP.119 page 4

each State party should

- establish directly binding norms with sanctions or penalties for non-compliance;
- establish regulations or other legal measures to organize the implementation of the undertakings under the Convention in respect to chemical weapons, facilities and chemicals touched upon by the Convention.

3. National authority

Each State party shall have a special authority in order to ensure the correct execution of all measures under the Convention. To this end, a special body/bodies could be established or existing institutions, authorities or organizations could be empowered.

4. Functions, rights and duties of the national authority

- (a) In the internal field
 - to serve as a national focal point for questions related to the implementation of the Convention;
 - to get the relevant information from the corresponding national organs, agencies and enterprises;
 - to investigate the actual state of affairs concerning compliance with the Convention;

^{*/} The chemicals and the measures applicable to them will be defined in the Convention. They are called in this Paper "the chemicals concerned".

- to supervise closely the process of destruction or diversion for permitted purposes of stockpiles of chemical weapons and the elimination of production facilities for chemical weapons;
- to establish or assist the Government in establishing provisions on the possession, transfer or use of the chemicals concerned;
- to develop recommendations for the implementation of accounting and control procedures, as necessary, to enable the State to discharge its obligations under the Convention;
- to carry out national inspections;
- to install in facilities involved in activities with regard to chemicals concerned technical means of verification;
- to participate in the overseeing of measures concerning environmental protection in connection with activities to implement the Convention;
 - to receive the financial means necessary for the fulfilment of its functions;
 - to report to the Government on its activities and its findings.

(b) In the international field

- to serve as a point of communication with national authorities of other States Parties and the Consultative Committee;
- to keep the Consultative Committee informed on the structure and the functions of the national authority;
- to co-operate with the Consultative Committee and with national authorities of other States Parties in solving organizational and technical questions in connection with the implementation of the Convention, in particular the training of national inspectors in standard verification techniques and the use of relevant equipment;

CD/620 CD/CW/WP.119 page 6

- to transmit the data as agreed in the Convention to the Consultative Committee or its appropriate subsidiary organ and evaluate the information received from it;
- to provide the Consultative Committee with additional information, expertise and laboratory support if required for the implementation of the Convention;
- to facilitate and provide support for the inspections conducted by the Consultative Committee or its subsidiary organ in accordance with the Convention.

5. Facilities

The facilities on the territory or under the jurisdiction and control of each State Party involved in activities with regard to chemicals concerned should fulfil the following requirements:

- to implementat relevant norms and regulations of the national system of control;
 - to report to the national authority;
 - to provide the conditions necessary for inspections;
 - to allow the installation and unhampered functioning of technical means of verification.

II. The national system for account and control of chemicals

1. The national system should account and control the chemicals concerned in the State and secure the detection of possible losses or unauthorized use or removal of those chemicals.

It should comprise

- an information system;
- inspections.
- 2. In order to provide the national authority with the data necessary for the fulfilment of its functions the facilities as mentioned under I 5 should provide for the following information:

- facility design;
- operations involving the chemicals concerned on an annual basis, i.e.
- (a) volume of production;
- (b) volume of the chemicals acquired from other national facilitiesor by import;
- (c) use of the chemicals for production of other chemicals within the facility or for transfer;
 - (d) transfer to other facilities within this State, or by export.
- The national authority should collect, process and evaluate the following data:
 - the listing of current facilities producing or using the chemicals concerned;
 - the record of data on the inventories of the chemicals concerned possessed at each facility;
 - data on transfers;
 - the record of inspection data and all operational information required for the evaluation of activities with regard to the chemicals concerned.
- 4. National inspections should be carried out with the aim to
 - examine the design information given by the facility;
 - examine the inventories of the chemicals concerned and all relevant facility records;
 - observe the activities by the facility operators in respect to physical inventory taking and measuring;
 - make independent measurements concerning the types and volumes of the production of the chemicals concerned and take samples if necessary;
 - check seals and other containment surveillance equipment.

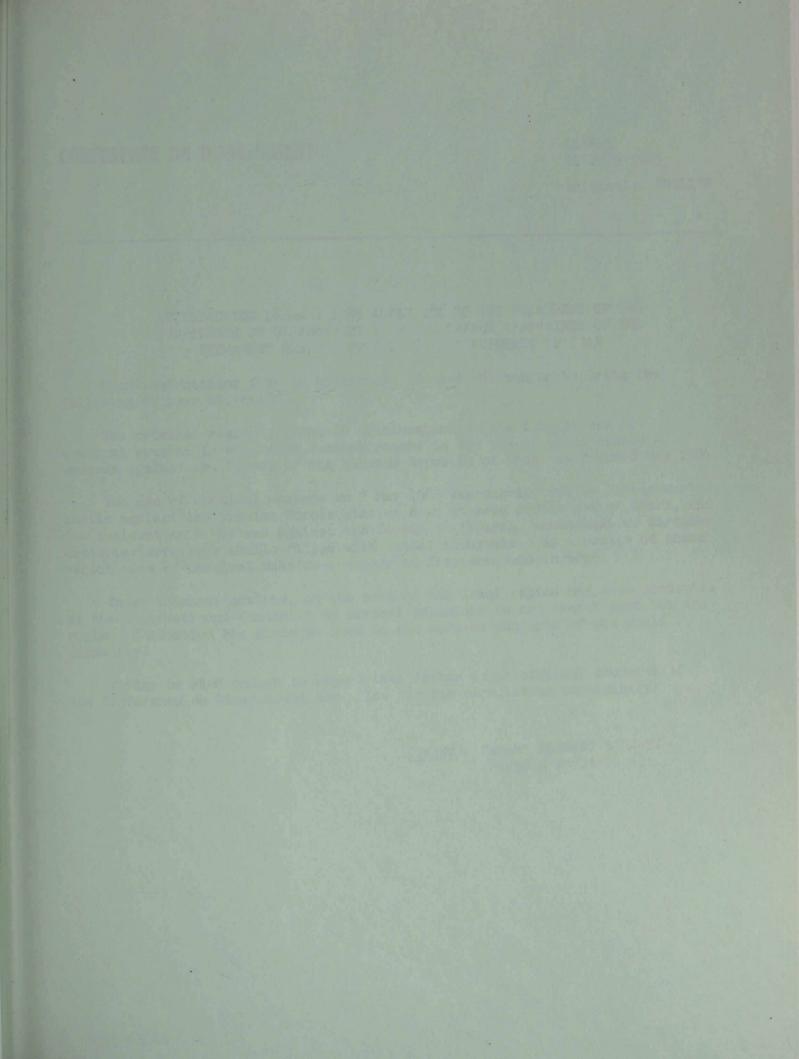
CD/620 CD/CW/WP.119 page 8

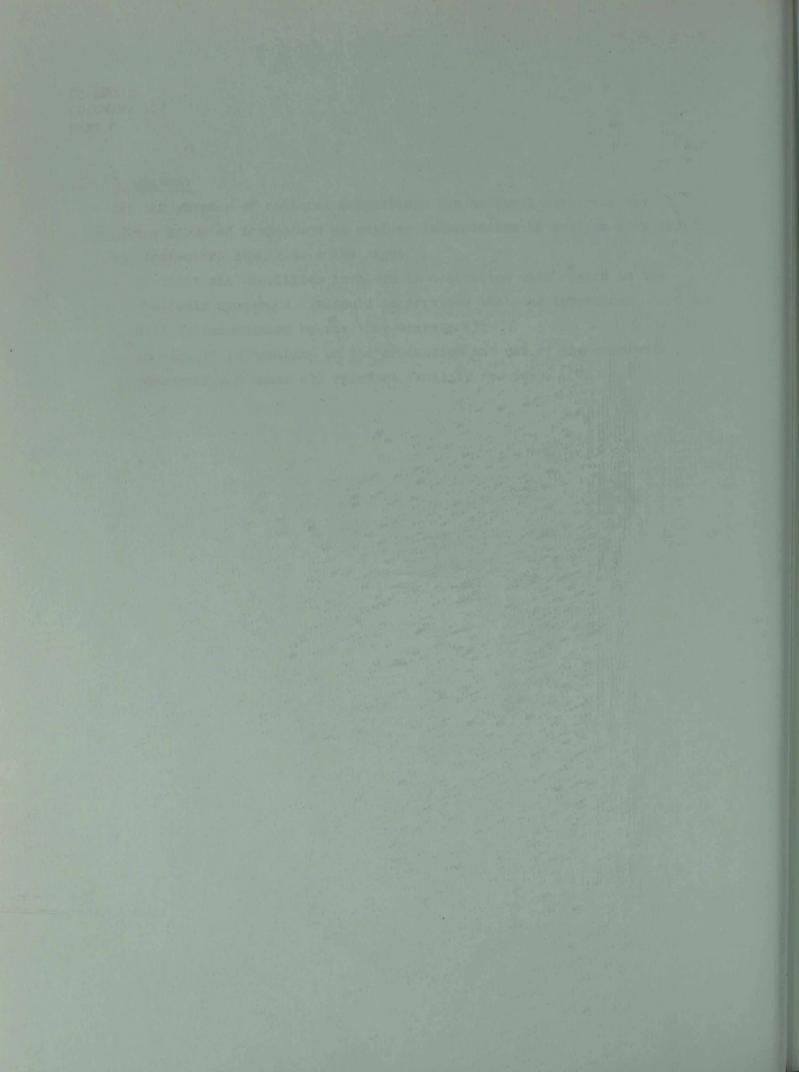
5. Inspectors

For the purpose of national inspections the national authority may designate a group of inspectors as well as laboratories to analyse samples.

The inspectors should have the right

- to visit all facilities involved in activities with regard to the chemicals concerned (It could be provided that the inspectors will be accompanied by facility operators);
- to request information on the production and use of the chemicals concerned and check all relevant facility records.





CONFERENCE ON DISARMAMENT

CD/623 26 July 1985

Original: ENGLISH

LETTER DATED 18 JULY 1985 ADDRESSED TO THE PRESIDENT OF THE CONFERENCE ON DISARMAMENT FROM THE CHARGE D'AFFAIRES OF THE PERMANENT MISSION OF THE ISLAMIC REPUBLIC OF IRAN

Upon instructions from my Government, I have the honour to bring the following to your attention.

The criminal régime of Iraq in continuation of its illegal use of chemical weapons in war, made further resort to the use of those banned weapons against the Forces of the Islamic Republic of Iran, on 7 and 8 May 1985.

The use of chemical weapons on 7 May 1985 was carried out by firing mortar shells against the Iranian Forces stationed in an area north-east of Basra, and the incident on 8 May was against the Forces in Kenareh, south-west of Sardasht employing artillery shells filled with lethal chemicals. As a result of these recent uses of Chemical Weapons a number of Iranians were injured.

These criminal actions, on the part of the Iraqi régime has been condemned by the International Community on several occasions in the recent past but the régime in question has given no heed to the serious concerns of the world community.

Please be kind enough to regard this letter as an official document of the Conference on Disarmament and allow for its circulation accordingly.

(Signed) Farhad SHAHABI SIRJANI Chargé d'Affaires a.i. CONTERENCE ON DESCRIPTION OF THE PROPERTY OF T

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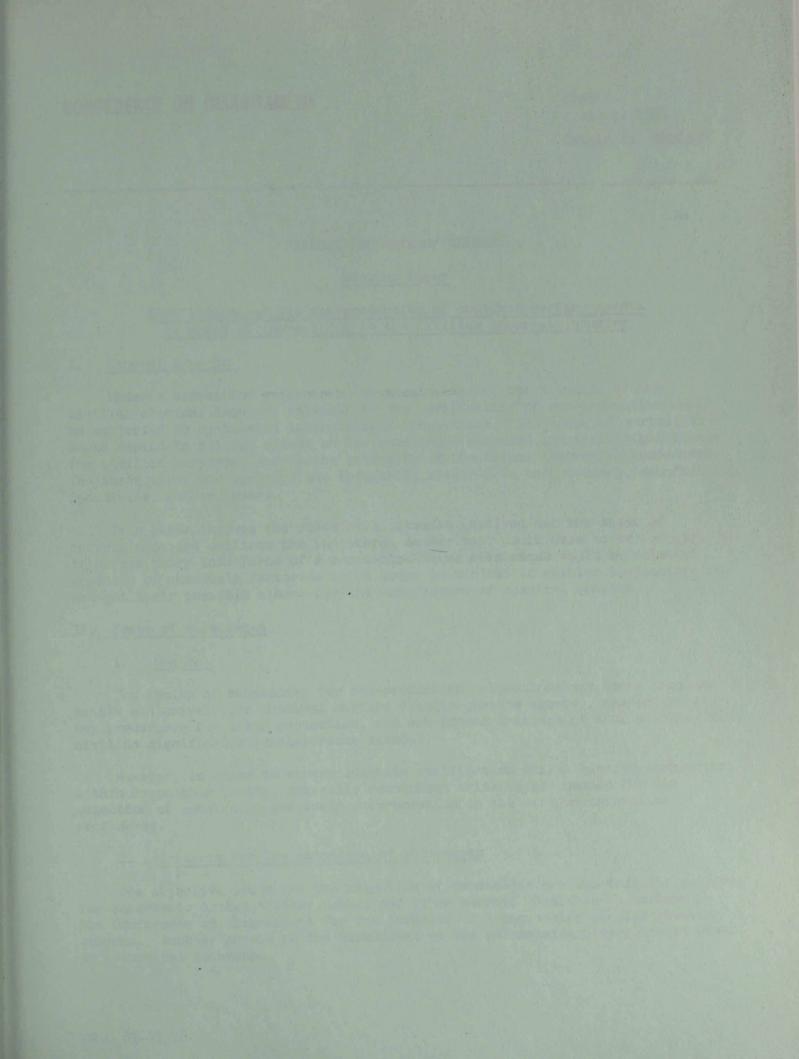
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CD/627 1 August 1985

Original: ENGLISH

FEDERAL REPUBLIC OF GERMANY

Working Paper

Verification of the non-production of chemical warfare agents by means of inspections in the civilian chemical industry

I. General aspects

Under a convention prohibiting chemical weapons, the branches of the civilian chemical industry relevant to the verification of non-production would be subjected to systematic international inspections. The scope of surveillance would depend to a large extent on the substances selected and their significance for civilian purposes, and on the intensity of the actual inspection procedures. The inspections can apply in the industrial sector both to producers, manufacturing industries, and end users.

This paper surveys the range of substances involved and the scope of surveillance and outlines the industrial sector that would have to be covered. After the entry into force of a convention those substances would be selected products of chemicals factories which would be subject to regular inspections to prevent their possible misuse for the manufacture of chemical weapons.

II. Scope of substances

1. General

The choice of substances for non-production inspections may cover products usable exclusively for chemical warfare (single-purpose agents), characteristic key precursors for their production, and substances that are of both military and civilian significance (dual-purpose agents).

However, in order to ensure adequate verification whilst keeping inspections within reasonable limits, generally recognized criteria are needed for the selection of substances and their incorporation in the various inspection procedures.

2. Criteria for the selection of substances

One objective basis for the selection of substances are the toxicity criteria for supertoxic lethal, other lethal and other harmful chemicals as defined by the Conference on Disarmament for the purposes of a convention banning chemical weapons. Another should be the assessment of the potential military threat posed by a chemical substance.

The proposed convention should contain a definition of the term "key precursors". In the opinion of the Federal Republic of Germany the precursors in the final technical reaction stage of the production of supertoxic lethal weapons which are characteristic for the toxicity of the end-product should be defined as key precursors. The final technical reaction stage would be determined by the intermediate product which can still be subjected to quantitative inspections in the manufacturing process. This definition is already contained in working paper CD/439 on the transfer problem submitted by the Federal Republic of Germany in 1984.

This definition encompasses only key precursors that are particularly harmful. The key precursors thus defined are generally only used to a very limited extent for civilian purposes. Given the small number of producers, the scope of the inspections will be kept within reasonable limits.

Notwithstanding this general rule, other precursors could be treated as key precursors if, within the meaning of the convention, they constituted a risk and if the competent body under the convention reaches agreement on this point.

The designated key precursors would be listed and annexed to the convention. No consensus has so far been reached in the Conference on Disarmament on the contents of such a list. Several proposals concerning the chemical products to be included in the list have already been submitted.

3. Supertoxic lethal chemicals and key precursors

The supertoxic lethal chemicals that could be used for chemical warfare have at the present time little civilian significance. They are therefore not produced on an industrial scale for such purposes. Under special convention provisions which would be based on the proposals already worked out in the Conference on Disarmament, their manufacture would be permitted in limited quantities for protective purposes but in a declared, separate facility for this purpose. Consequently, an explicit ban on toxic chemicals and key precursors which are of significance for the production of chemical weapons but for which there is no civilian demand at the present time would appear to suggest itself. Such a ban should be included explicitly in a list and ought to cover any quantities in excess of a production of one metric ton per annum. Should the banned substances acquire a civilian significance justifying their production, on an industrial scale, the competent body under the Convention would have to be notified of the envisaged production. The manufacture and use of such substances would have to be subject to systematic inspections.

The systematic international verification of non-production should consist of an exchange of data as well as on-site inspections on a random basis in companies determined by lot and should be limited to the key precursors for the manufacture of supertoxic lethal chemicals within the meaning of the definition given above because with regard to these substances there is a danger of the convention being circumvented.

Pinacolyl alcohol, for example, might be included in the list in application of the exception-from-the-rule principle. It is of little general use for permitted purposes. If, therefore, it were manufactured in large quantities it would be justifiable to require proof that it is actually being produced for permitted purposes.

In addition to the systematic monitoring of key precursors including on-site inspections, an exchange of data concerning the production and use of certain selected precursors should take place in order to make inspections of particularly dangerous supertoxic lethal chemicals as effective as possible. This might be applied, for instance, to esters of phosphorous acid, which are used on a large scale for civilian purposes or can be produced analogously to esters of phosphoric acid, and similarly to phosphorus trichloride and phosphorus oxychloride as well as the β -substituted derivatives of N, N-dialkylamino ethanes for the production of VX and analogous substances, some of which are used for many different permitted purposes.

Difficulty arises with regard to the question whether the key precursors of mustard gas should be included in systematic non-production verification procedures. A restriction to the key precursor thiodiglykol would be insufficient since there are other modern manufacturing processes without this compound as intermediate product. Really effective monitoring of key precursors of mustard gas would therefore also have to be extended to substances which are produced in large quantities as basic substances by the chemical industry and used for many different purposes. Such comprehensive monitoring would hardly be practicable. It would seem expedient, therefore, to concentrate on an exchange of data regarding thiodiglykol and sulphur chlorides which make for a relatively simple technical process in the production of mustard gas.

In addition, producer countries could agree on export controls if it were established that a country were importing key products for the manufacture of mustard gas.

4. Other lethal substances and precursors

In the Conference on Disarmament other potentially dual-purpose lethal chemicals as well as selected precursors for the production of chemical weapons have been proposed as substances which should fall under non-production verification. Contracting States would only be required to report statistical data.

The proposed substances, which themselves can also be used as chemical weapons, are precursors of a number of civilian products. Every year they are produced in their thousands of tons. This applies principally to hydrogen cyanide, cyanogen chloride, and phosgene. Their potential threat must today be seen in a different light in view of the availability of much more effective chemical and other weapons.

It is therefore doubtful whether it makes sense to include these products in an exchange of data. In so far as their inclusion is envisaged, one should take into account when collecting data concerning their production and use the fact that these chemicals are mass products.

III. Scope of inspections

1. General

The intensity of inspection procedures must be such as to ensure to an adequate degree of certainty that compliance with the contractual undertaking not to produce chemical weapons is systematically and internationally verifiable.

Legitimate interests of the chemical industry can be protected if on-site inspections are carried out without the disclosure of secret technological and industrial information. This could be achieved by the restrictive selection of substances and the application of inspection procedures oriented to the toxicity and potential threat of the substances.

Verification of non-production of key precursors

Verification of the non-production of chemical weapons starts from the physical conditions for the production of such weapons. The supertoxic lethal chemicals produced for chemical warfare differ from those used for civilian purposes in that they have a much higher level of toxicity. For their production, therefore, more has to be invested in safety, which is evident in the physical characteristics of the facility. The absence of the safety precautions necessary for the production of supertoxic lethal chemicals becomes obvious upon viewing the premises and is therefore clear proof that such substances are not being produced in the facility.

In the case of less toxic key precursors manufactured for civilian purposes, which have a lower level of toxicity, the absence of extensive safety precautions is not in itself sufficient evidence that they are not being used for the production of chemical weapons. Consequently, the monitoring of these chemicals must also take other criteria into account and be more comprehensive.

Inspections in the production facility should concentrate on the quantity of key precursor produced or, where the processing is continuous, on the output of finished products. The object of the inspection is not the chemical factory as such, only the one relevant and precisely defined substance.

The actual test should take place in the crucial reaction phase. It should begin at the stage in the overall production process immediately preceding the emergence of the key precursor and cover only this phase.

Inspections of key precursors should be conducted on the basis of annual statistical data and on-site inspections if the total annual quantity produced exceeds one metric ton.

To ensure that the manufacturers of key precursors in question receive equal treatment, on-site inspections should be carried out on a random basis. Companies should be determined by lot, with the competent body under the convention fixing every year the percentage of all firms to be subjected to inspections.

The installation of additional measuring instruments by the inspecting agencies to monitor the quantities produced does not appear necessary and would moreover be impracticable.

The inspection, consisting of statistical data, the review of plant records, interviews, viewing of facility areas, as well as sampling and analysis, must ensure reliable verification of the non-production of chemical weapons. However, they should not provide an overall survey of the production process and hence insights into a firm's own manufacturing processes.

3. Inspections relating to the manufacture of key precursors

The systematic verification of non-production in the chemical industry should serve to confirm that quantities of key precursors that are declared to be intended for permitted purposes are actually used as stated in the information given. Such inspections must therefore be sufficiently accurate and reliable. This is relatively simple in the case of key precursors which, as intermediates, are directly and completely further processed in the same facility. The procedure becomes even more straight forward where the key precursor goes through a continuous and automatic reaction process without being isolated. This will mostly be the case with substances that are produced in large quantities for a finished product for which there is a consistently high demand.

Key precursors with a wide range of uses are sold to other domestic firms or exported for further processing more often than those the use of which as intermediates applies to only a few finished products. The supply of such key precursors to manufacturers makes inspection procedures more difficult and costly. In order to ensure their effectiveness they would have to be extended to the facilities of manufacturers both at home and abroad.

In order to limit the number of companies affected, only those who receive quantities of key precursors in excess of one metric ton per year should fall within the scope of inspections. On the one hand, fixing a much higher limit would include the risk of companies' spreading the processing among several plants to keep below the limit. Moreover, it might give rise to unjustified mistrust where a key precursor which is used for a large variety of products actually is processed in many smaller factories. This is true in the case of substances used for the production of pharmaceuticals, for instance.

The need to include further processing in procedures designed to verify non-production again shows that a restrictive approach has to be adopted when determining key precursors. The proposal for limiting key precursors to such supertoxic lethal chamicals will minimize inspections of manufacturing companies because there are narrow qualitative and quantitative limits on the use of the substances in question for permitted purposes.

4. <u>Inspection relating to the production of other lethal chemicals and precursors</u>

As regards the monitoring of the non-manufacture of other lethal chemicals and precursors for the production of chemical weapons, various proposals have been submitted recommending an inspection procedure which would be restricted to the annual reporting of statistical data.

As these are mostly chemicals that are not only manufactured in large quantities but are also used for a variety of civilian purposes, the cost of ensuring a - as far as possible complete - record would be considerable. In order to achieve this, data on the manufactured, processed imported and exported quantities of every selected substance would have to be officially recorded. It is unknown to us whether and to what extent countries are at present able to maintain such comprehensive records or authorized under their respective data protection legislation to transfer said data to an international inspectorate.

Careful thought has yet to be given to the collection and evaluation of the data. The proposals submitted to date do not clearly indicate how the

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international body can determine from the total data submitted whether a State has violated the convention. Moreover, the collection of comprehensive data must not lead to the disclosure of information about relationships with buyers in a manner and to an extent that might impair national economic interests.

IV. Summary

It is intended that the verification of non-production of chemical weapons should take the form of systematic international surveillance of specific sectors of the chemical industry, covering a list of selected substances to be annexed to a convention.

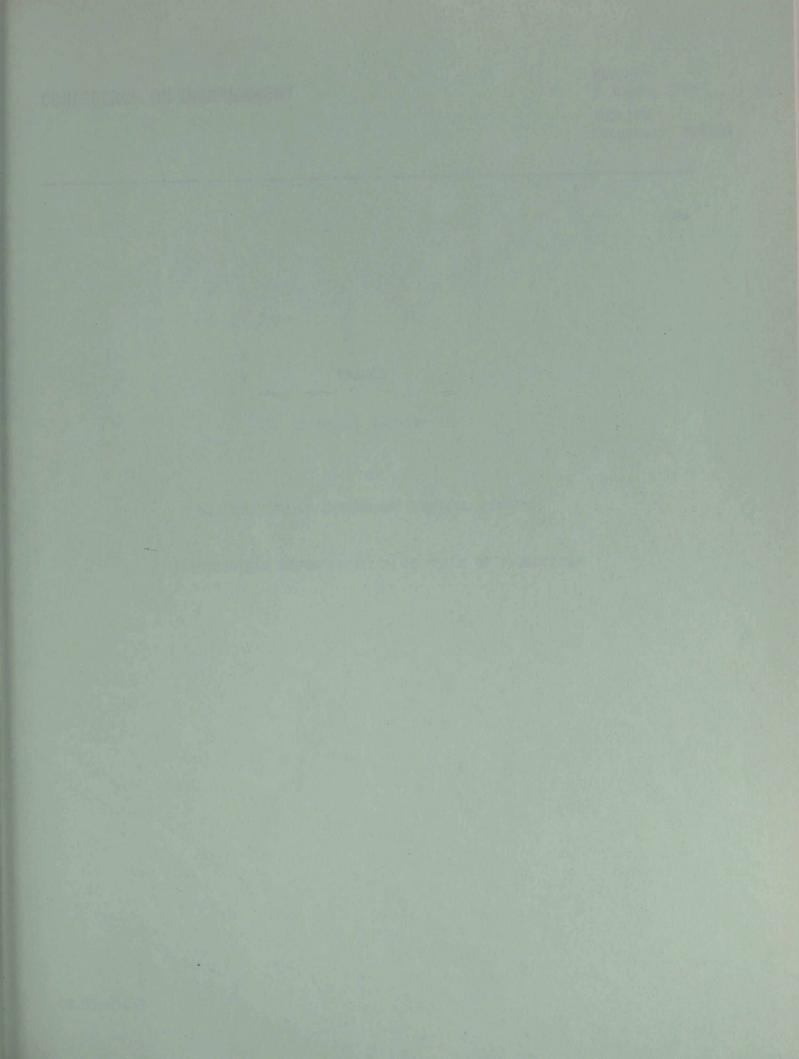
A convention banning chemical weapons will have to contain guidelines for determining the scope of such substances.

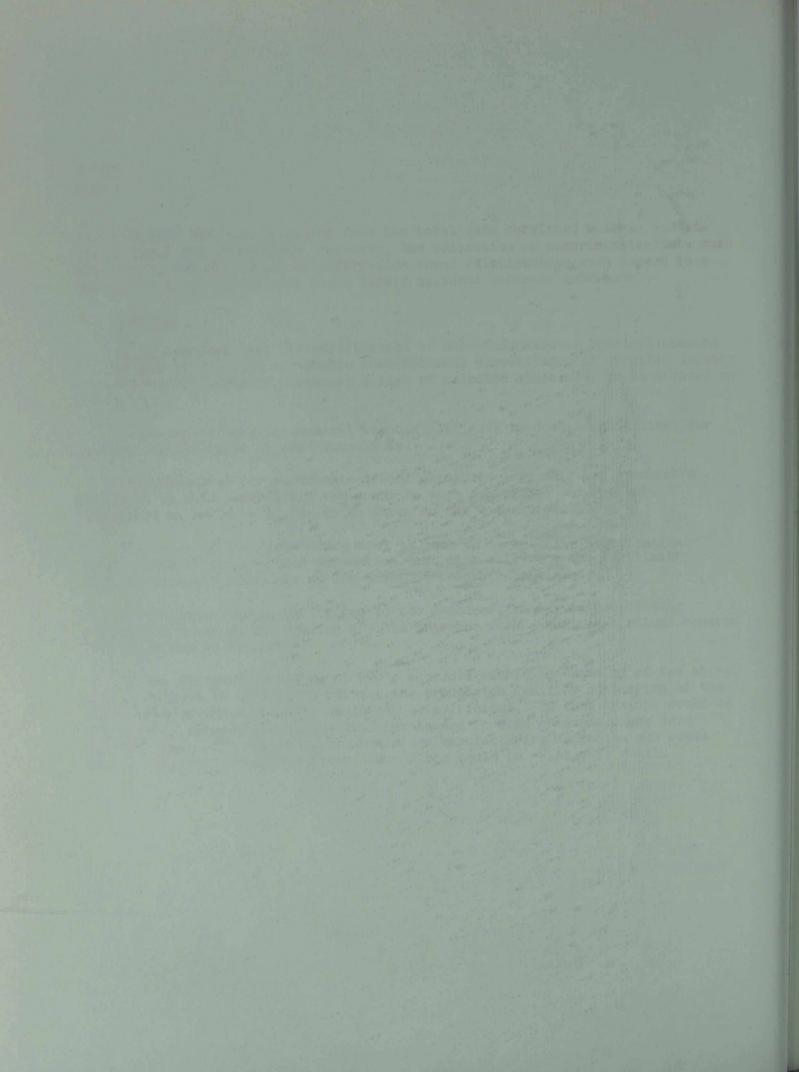
The guidelines for supertoxic lethal chemicals and their key precursors suggested in this paper limit the scope to such substances and specific precursors as would be listed in an annex to the convention.

The scope of the inspections must be such as to meet the verification requirements of the proposed convention, but also allow for the legitimate national economic interests of the chemical industry affected.

Surveillance should be limited to two measures, namely random on-site inspections based on the drawing of lots together with annual statistical reports on a scale yet to be agreed.

If the further processing of key precursors within the meaning of the above definition were to take place outside the production facility monitoring of the manufacture of these products would not be sufficient. In this case it would be necessary to extend inspections to domestic and foreign processors who have received them. The number of producers and manufacturing companies who would thus be subject to non-production inspections would be relatively small.





CONFERENCE ON DISARMAMENT

CD/630 5 August 1985

ENGLISH

Original: FRENCH

FRANCE

CHEMICAL WEAPONS

ELIMINATION OF STOCKS OF CHEMICAL WEAPONS

IRREVERSIBLE NEUTRALIZATION OF MEANS OF PRODUCTION

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CHEMICAL WEAPONS

ELIMINATION OF STOCKS OF CHEMICAL WEAPONS

IRREVERSIBLE NEUTRALIZATION OF MEANS OF PRODUCTION

Under a convention prohibiting chemical weapons, the States parties will undertake to do away with their chemical warfare capability. Two important steps are essential for the implementation of such an undertaking:

The destruction or re-allocation to peaceful uses of the means of production of chemical weapons;

The elimination of existing stocks of chemical weapons, either by destruction or by re-allocation to peaceful uses.

All countries are now in agreement in estimating that it would take ten years to complete such a programme of destruction - re-allocation. This programme of elimination can only be brought to a successful conclusion by respecting the balance of security as between all countries. In no case must this operation enable one country or one group of countries to magnify, even temporarily, a qualitative or quantitative superiority at the expense of other countries.

What is more, a time-table must be approved by agreement among the States possessing stocks, in accord with the other signatory countries, and this time-table must be a document whose legal status vis-à-vis the convention must be defined, before the convention enters into force.

The time-table will take account of existing differences between countries: disparity of stocks and production facilities, and differences in industrial, financial and technological capacities, so as to enable each to best observe the relevant deadlines.

Chemical warfare capability can be done away with only by proceeding to the co-ordinated elimination of chemical-weapon stocks and production facilities, for the two elements are closely interlinked: it would be absurd to proceed to the destruction of a particular chemical agent while its production continued. There must be no possibility whatever for the procedure of destruction of stocks and dismantling of production facilities to be tantamount to enhancement of stocks.

I. SECURITY BALANCE

The concept of security balance must be perceived as a necessity both by "possessing" countries and by countries which do not have stocks. Countries of the latter category have the same interest as States which at present have these weapons in seeing the objective of the convention attained in accordance with the agreed time-table. Management of the destruction of stocks and dismantling of means of production, including solutions to difficulties encountered in the course of these operations, constitute an essential element of the overall balance. Nevertheless, the practical application of the concept of security balance poses numerous problems because the existing stocks quite clearly differ widely in volume and military "qualities", and the production facilities differ in their possible status (specialized military facilities, civilian plants working for defence, plants serving a double purpose) and in their capacity.

It does not seem possible to neutralize as from the entry into force of the convention:

- 1. Existing stocks: even a declaration giving their locations, in combination with international inspection, would not constitute complete assurance since there can be no immediate guarantee that the declaration actually covers the totality of stocks existing at the time of entry into force of the convention; it is only as the level of declared stocks decreases that the military importance of the quantities omitted from the declaration rises.
- 2. Delivery vehicles: These are not specific, for chemical munitions are launched by the same delivery vehicles as conventional explosives; there are no canons, howitzers, mortars, rocket-launchers, launching ramps or aircraft that can be considered as designed exclusively for the launching of chemical loads or the conveyance of means for spreading chemicals.

On the other hand, the neutralization of production facilities is possible, and relatively easy to check through the implementation of efficient verification procedures. Assuming that the production of immediately usable toxic substances, i.e. mainly munitions, has been halted (a verified stoppage of production followed by dismantling), the security balance will then depend on the pace at which existing stocks of weapons are destroyed.

These stocks are not comparable at the beginning of the process. The first task to be accomplished in seeking security balance is therefore to make them comparable while bearing in mind, of course, the military capability of each country. Once this first point has been reached, the second stage should consist of the elimination of the bulk of the stocks so as to leave, at the end of this stage, only a residual retaliatory capacity, i.e. one that is at the lowest possible level while remaining militarily significant.

After military equivalence among all holders of stocks is thus secured at the end of the second stage of destruction, the last stage would be the completion of a linear destruction process until the authorized maximum quantity (one metric ton) is reached.

The security balance also requires the fixing of a precise date for the beginning of the destruction process. It will have to be fixed by agreement among all the signatory countries before the entry into force of the convention

and this will have to take into account the technical and financial possibilities of each country, and the time needed for the construction and qualification of the destruction facilities. It would also be desirable to provide for possible intermediate stages so as to allow for the unpredictable in the destruction process (various breakdowns, serious incidents, etc.). For, it is essential that the technical difficulties that may affect the implementation of the time-table for the destruction of stocks should not serve as a means of circumvening the scheduled deadlines. Any significant alteration of the time-table for destruction will have to be the subject of a detailed report to the parties to the convention and, in the case of a delay of more than six months, of a consultation with them.

The neutralization of production facilities, although indispensable, is not of itself sufficient to assure the security balance, and therefore the first stage of destruction of stocks should also see a reduction in manufacturing potential through the conversion of some facilities to peaceful uses.

The destruction of the remaining facilities should be terminated at the end of the second stage of destruction of stocks.

Special cases

(a) Countries possessing stocks that become parties only after the beginning of the 10-year period will be subject to a special procedure which, upon the entry into force of the convention with respect to them, would include as the minimum:

A detailed declaration of their stocks and, depending on the general deadline schedule, where they are situated or where the places of assembly are situated, along with the establishment of international supervision;

A declaration covering production facilities, with the affixing of seals under international supervision.

The destruction of stocks and the elimination of production capacity should take place in accordance with a time-table determined jointly by the possessing country and the Consultative Committee.

(b) Special provisions should be envisaged for States which become parties after completion of the 10-year period.

II. ELIMINATION OF STOCKS OF CHEMICAL WEAPONS

1. Initial declaration

The declaration of stocks will have to be very precise and detailed.

It will include in particular:

An enumeration; type of munitions - by calibre for artillery and rockets and by weight for bombs, their number; and type, weight and chemical formula of the toxic substance contained;

An enumeration of toxic military products in bulk; number of containers stored; and type, chemical formula and weight of the product contained.

Precursors in bulk or in munitions will be subject to the same declarations.

These very detailed declarations are necessary:

- 1. To verify the initiation of the process of destruction and/or conversion;
- 2. To make sure that the security balance is not upset.

The French delegation does not believe, however, that it is necessary to declare the location of stocks upon the entry into force of the convention. Such a requirement is liable to give rise to many difficulties and might lead some countries to "forget" to declare certain stocks, possibly located in high-security areas. It is nevertheless prepared to accept a solution based on the principle of declaration of location by stages.

2. Composition of stocks

It is reasonable to assume as a working hypothesis that existing stocks consist of:

Neurotoxic type lethal supertoxic substances

Yperite type lethal supertoxic substances

Psychically or physically incapacitating type non-lethal supertoxic substances

Precursors of certain neurotoxic substances

Lethal toxic substances

whether loaded in munitions or held in bulk.

A number of other precursors may be held in bulk.

A very detailed declaration by type and quantity of munitions and by type of chemical should make it possible to prepare a quantitative and qualitative comparison of stocks.

3. Destruction procedures

The best solution would be for all weapons to be destroyed. Nevertheless, it can be accepted that an exception should be made for double-purpose products and that these can be converted to peaceful uses. However, all supertoxic substances regardless of type and their key precursors, whether contained in munitions or not, would remain excluded from this possibility.

What should be destroyed first? The first appropriate option would be to regard the criterion of menace and destructive power as priority considerations and therefore to demand the destruction of supertoxic substances first. This is the option that was advocated by the French delegation in document CD/494 of 3 April 1984. However, it is felt that priority must be given to maintaining the security balance throughout the ten-year period of destruction of stocks and for this it is necessary to compare stocks with one another not only quantitatively but also, and especially, qualitatively. Actually, one very soon realizes that only toxic substances of the same type can be compared.

For example, what would be the phosgene equivalent of a ton of sarin?

If one takes the criterion of toxicity as a basis, the CtL50 value is approximately 100 mg mn/m 3 for sarin while it is 3,200 mg mn/m 3 for phosgene which means that sarin is 32 times more toxic than phosgene. To conclude from this that 32 tons of phosgene are equivalent to 1 ton of sarin seems hazardous, to say the least. Even comparisons between supertoxic substances is difficult: 1 ton of yperite is not the equivalent of 1 ton of VX, for example.

On the other hand, it might be suggested that countries which have a chemical warfare capability possess a militarily significant quantity of lethal or non-lethal supertoxic chemicals. It does not follow, however, that stocks of lethal agents are not also simultaneously kept in their arsenals. The proportion between the two categories (lethal or non-lethal supertoxic and lethal toxic chemicals) within a given arsenal may therefore vary and even change over a given period. Consequently, there may be very substantial asymmetries when it comes to the comparison of stocks and, it seems, only stocks of lethal supertoxic chemicals can be compared with any chance of success.

As regards the order of destruction or conversion, there are actually three possible options:

- 1. Priority to destruction of lethal supertoxic substances;
- 2. Priority to destruction or conversion of lethal substances;
- 3. Simultaneous destruction of some stocks of lethal substances and some stocks of supertoxic substances.

The third option seems technically and economically impractical (specialization of the destruction process and very limited number of destruction plants).

A solution which would give priority to the destruction of stocks whose manufacture is the most specific and consequently the most easily detectable and verifiable (neurotoxic substances) is a less attractive option than that of priority elimination of stocks of lethal toxic chemicals and their filling shops.

This is because the priority destruction of neurotoxic chemicals would serve to enhance the value of stocks of lethal toxic chemicals (phosgene, hydrocyanic acid, cyanogen chloride, etc.) and would greatly risk upsetting the security balance between countries. Moreover, phosgene, hydrocyanic acid and cyanogen chloride are products which are annually produced in large quantities for industrial uses. It follows that the diversion of some of this production for military purposes is more difficult to detect and to verify if, at the same time, during a large part of the ten-year period of destruction, there are stocks of weapons filled with these chemicals, whose interim retention would be entirely legal.

Under the circumstances, it seems definitely desirable that the order of destruction or conversion to be considered should be the following:

- 1. Lethal toxic substances phosgene, cyanogen chloride, hydrocyanic acid, etc.
- 2. Yperites and incapacitating chemicals
- 3. Neurotoxic substances and their key precursors, etc.

Should munitions or chemicals in bulk be destroyed first?

Technically, chemicals in bulk are easier to destroy than munitions. In terms of "security", however, munitions are ready for use and therefore constitute a greater potential danger.

This therefore leads quite naturally to the elimination of stocks in the following order:

- 1. (a) Destruction of munitions (bombs, shells, rockets, mines, etc.) containing phosgene, cyanogen chloride, hydrocyanic acid, etc.;
 - (b) Destruction or conversion of lethal toxic chemicals in bulk phosgene, etc.;
- (a) Destruction of munitions containing incapacitating agents yperites;
 - (b) Destruction of yperites and incapacitating agents in bulk;
- (a) Destruction of munitions containing neurotoxic chemicals and key precursors;
 - (b) Destruction of neurotoxic chemicals in bulk.

4. Destruction time-table

Everyone is in favour of a very precise time-table for destructions or conversions. The period of ten years deemed necessary for the destruction of stocks does seem to be the optimum period, which a priori everyone wishes to respect. However, it would be an illusion to consider this ten-year period as a homogeneous whole, during which the process of destruction would proceed progressively and regularly. Not only should provision be made for the unforeseeable technical and industrial incidents that might occur during the process but also the notion of security balance throughout the period should be

reintroduced; hence the need to subdivide this period into subperiods, each of the subperiods corresponding to the stage of preparation of a destruction site or sites and to each of the destruction stages. As regards balancing the process of destruction, a new stage will begin only when all the countries have satisfied the requirements of the preceding stage.

It also seems necessary to have, at the beginning and at the end of the destruction process, two rather long stages which should serve to absorb any delays that might occur because of unforeseeable technical or industrial incidents. The first stage, in particular, is very important since, during it, the means and all the systems of security, verification, etc. will be put in place and tested. This first stage, which will affect the "industrialization" of destruction (or conversion) should be rather long - two years seem a reasonable period. We will therefore have a time-table which would be as follows:

Preparation and construction of the destruction site or sites, security systems, qualification of the site and systems with possible improvements, beginning of destruction.

Time necessary = two years.

First stage of destruction

See section 3 above, order: l(a), l(b) and 2(a), 2(b), 3(b) and part of 3(a).

Time necessary = three years.

Second stage of destruction

See section 3 above, order: conclusion of 2(a), 2(b) and 3(b), a large part of 3(a) and possibly the remainder of 3(b).

Time necessary = three years.

Third stage

See section 3 above, order: conclusion of 3(a).

Time necessary = two years.

It is understood, of course, that this theoretical time-table cannot be followed literally. Countries which do not possess lethal toxic chemicals in their arsenal must begin the destruction of its stocks at the same time as the other countries.

5. Verification

There is no need to demonstrate the importance of the destruction of stocks and it is therefore necessary for the inspection teams to be associated as soon as possible with the problems of security and verification of the destruction site or sites. It would therefore be highly desirable for the inspection team to be involved in the choice, setting up and qualification of the systems of verification.

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The inspection team will have to be present throughout the destruction campaign. Its presence is not necessary, however, during periods between campaigns. The problem of conversion of certain chemicals to non-hostile uses may pose a number of security problems. If the chemical is contained in munitions, it will have to be subjected to the normal process of destruction.

On the other hand, if the chemical is in bulk form, each container may be sent to the conversion plant after identification and verification of its contents. The quantity delivered will be estimated at the beginning; it will have to appear as a special item in the statistical data to be supplied (with, inter alia, an indication of the final product).

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III. LIQUIDATION OF PRODUCTION CAPACITY

Under the convention, each State party undertakes among other things not to develop and not to manufacture chemical weapons.

A distinction must be made between these two points - development and manufacture. The development of a chemical weapon utilizes laboratories, whether specialized or not, small-scale manufacturing units and testing grounds. Manufacture involves specific facilities (the plants in which the toxic chemicals are produced and the workshops in which they are filled into weapons) and non-specific facilities (workshops producing the structural bodies of munitions or special devices).

Of the facilities used in developing chemical weapons, only the testing grounds will have to be the subject of a very precise declaration giving their location (exact geographical co-ordinates); they will have to be either closed down or converted for purposes of protection. The conversion of laboratories to peaceful uses should be authorized but the convention will have to spell out recommendations in that regard. "Pilot" units generally have only a very short existence; their future will remain the responsibility of the State party.

As regards the manufacture of chemical weapons, a distinction should be made between plants producing toxic substances and workshops for filling them into delivery vehicles, workshops producing the bodies or warheads of munitions or special devices.

The latter workshops are generally part of larger units and are justified only by the existence of the toxic chemical. If the source of the chemical is dried up, these workshops a priori lose their raison d'être. The plants producing toxic chemicals and the workshops for filling them into delivery vehicles are finally the elements which present the greatest risk of circumvention of the convention and are therefore the only means of production which will have to be considered for irreversible neutralization.

1. Definitions

There are likely to be great differences in facilities between the States parties, which have not all attained the same technological standard and which have neither the same political structures nor the same technical organizations. Each factory is in itself a special case. It is, however, essential that a number of common criteria should be established in the convention:

(a) Plants producing toxic chemicals

Such plants are capable of producing either lethal supertoxic substances and/or their key precursors, or incapacitating agents, or lethal toxic substances or harmful products.

(a.1) Facilities for the manufacture of lethal supertoxic chemicals

The manufacture of such extremely dangerous products is possible only in high-security, more or less secret facilities. Generally speaking, therefore, there will be special military facilities (arsenals). Such facilities may be of two kinds: either completely isolated and remote from all other activities, or, on the contrary, constituting an integral part of a far larger military complex.

(a.2) Facilities for the manufacture of incapacitating agents

Facilities for this purpose will be of the same kind as above.

(a.3) Facilities for the manufacture of key precursors for supertoxic substances

The manufacture of these products does not require such elaborate security measures as are needed for the manufacture of supertoxic substances. They can, therefore, be manufactured either in military facilities forming an integral part of the plants mentioned in paragraph (a.l) or in civilian facilities that have concluded contracts with the armed forces.

Facilities for the manufacture of precursors for special munitions can also be of two kinds: civilian or military, but it would seem, at first sight, that they are likely to be military-type facilities.

(a.4) Facilities for the manufacture of lethal products

The majority of such factories are predominantly civilian in nature, but the existence of military units is possible.

(a.5) Facilities for harmful products

All such factories are exclusively civilian in nature.

(b) Filling shops

Such workshops comprise:

Workshops which fill and close the munitions;

Workshops which prepare them for shipment.

For reasons of safety and convenience, the former workshops are located near the production facilities.

The latter workshops are generally located in the same complex, but in a building that is not subject to the same safety conditions as the production facilities or filling shops.

In the case of special munitions (binary or multicomponent), the reagents are generally delivered in special containers. The filling shops then become assembly and shipment-preparation shops that are not subject or are less subject to security requirements.

2. IRREVERSIBLE NEUTRALIZATION PROCEDURES

1. Initial declarations

Production facilities as defined in items (a.1), (a.2), (a.3) and (b) above must be declared with precision. In particular, these shall be declared - after the entry into force of the convention - the geographical location, the toxic substance or substances manufactured, and the theoretical production capacity of each of the said facilities.

2. Irreversible neutralization procedures

The irreversible neutralization of production facilities should comprise two phases: a mothballing or decommissioning phase, and a destruction/conversion phase.

(a) Decommissioning

The production facilities defined in items (a.1), (a.2), (a.3) and (b) above should be sealed under international control as soon as possible after the entry into force of the convention.

(b) Destruction/conversion

It is unquestionably simpler to destroy the production facilities defined above. However, economic imperatives may militate in favour of conversion to civilian use, or even to military use (for example, convention munitions). Each type of factory is, in fact, a special case that must be studied separately, but it must be clear that, by comparison with destruction, conversion implies increased international surveillance in view of the risks of circumvention of the provisions of the convention.

(b.1) Facilities for the manufacture of lethal supertoxic substances or of incapacitating agents

We have seen that such plants are either isolated or, on the contrary, part of a larger complex. In all cases, their vocation is solely military.

With regard to isolated production facilities, two hypotheses are possible:

One or more factories are converted for the purposes of stock destruction;

The remainder are destroyed.

Conversion to other uses would be a possibility for factories forming part of a complex, but the interior would have to be dismantled and the key parts (reactor vessels, distillation columns, etc.) scrapped. The building would have to be properly detoxified and dechemicalized before being reused.

(b.2) Facilities for the manufacture of key precursors for supertoxic substances

Such facilities are either military factories or civilian factories that have concluded contracts with the armed forces. They include factories that manufacture key precursors for binary or multicomponent weapons.

In the first case (arsenals), the facilities should be subject to the regulations described in (b.1).

In the second case (civilian factories), the facility may, if the precursor in question is a single-purpose precursor (that is, one which can only serve to produce a supertoxic substance), be converted to non-hostile uses and placed on the list of facilities subject to routine checking. If the precursor is a dual-purpose precursor, the factory will be placed on the list of facilities subject to routine checking.

(b.3) Facilities for the manufacture of lethal products

Factories of a civilian nature are the most numerous. Their output will be monitored by the provision of statistical data.

Should factories of a military nature still be in service, they would have either to be destroyed or to be placed under civilian control and subjected to routine international checking.

(b.4) Facilities for the manufacture of harmful products

Other than in very exceptional cases, such facilities will not be subject to any form of surveillance.

(b.5) Munitions-filling shops

Such workshops located close to production plants will have to undergo the same fate as the plants.

(b.6) Munitions-shipment-preparation shops

Such shops may be converted to conventional uses.

(b.7) Special-munitions assembly shops

Such shops may be converted to conventional uses.

3. TIME-TABLE

The planned period of 10 years for the destruction of stocks is sufficient for the irreversible neutralization of production facilities.

The first two years after the entry into force of the convention should be devoted to:

The declaration of production sites (geographical location, production capacity, toxic substance manufactured);

The closure and placing under seal of those various facilities;

Their placing under international control;

The transformation of one or more production plants (isolated military factories) into a destruction plant.

The next three years should be devoted to the conversion to other uses of various production units:

Factories for the manufacture of lethal supertoxic substances or of incapacitating agents that form part of a military complex;

Civilian factories which have manufactured key precursors for supertoxic substances;

Special-munitions assembly shops or shops preparing munitions for shipment;

and to the destruction of munitions-filling shops.

The final three years should be reserved for the destruction of isolated facilities for the manufacture of lethal supertoxic substances or of incapacitating agents and of isolated and specific facilities for the manufacture of key precursors for supertoxic substances.

Thus, the production structure would have been completely dismantled by the end of this eight-year period. The remaining two years would see the completion of the last destructions (if necessary) and the definitive verification of facilities taken out of service.

4. Verification

Systematic international verification of initial declarations and of the mothballing or conversion to other uses of production facilities would be mandatory. Sensors would be installed at various key points in facilities and read periodically: intervals of one year would seem suitable.

Each conversion, each destruction would have to be effected under systematic international control.

In the event of there arising anything of such a nature as to cause one of the parties to the convention doubt concerning the way in which the obligations entered into are being discharged, a request for a challenge inspection may be made to the competent international organ.

IV. DEADLINE SCHEDULES

The table below summarizes the proposals contained in this document. The starting point designated "Ao" is the date of entry into force of the convention and Ao + 10 (years) is the end of the destruction of the chemical warfare potential.

In order to ensure balanced destruction of stocks, it is essential to provide for:

- 1. A process whereby the main holders of military stocks are brought to a position of parity half way through the destruction process (i.e., by the end of the fifth year);
- 2. The preservation until the eighth year of an interim militarily significant stock for the countries participating in the munitions-destruction process so as to ensure under verifiable conditions a good balance of security.

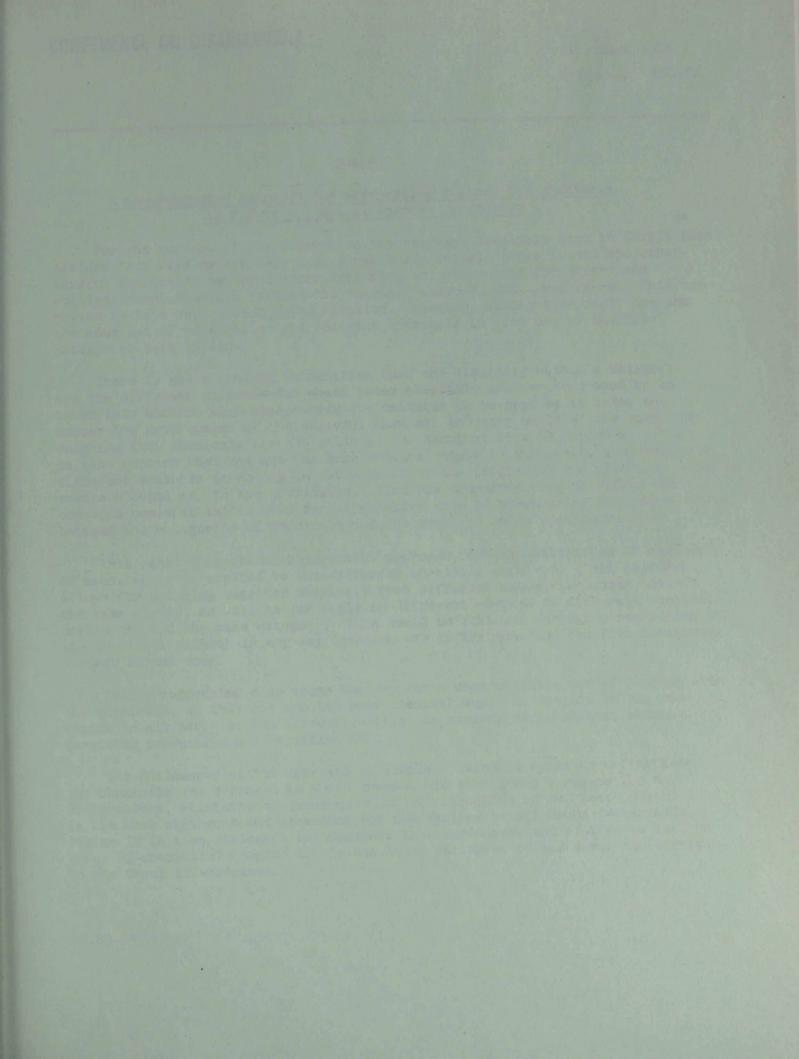
The precise definition of what constitutes a "militarily significant stock" is, of course, a difficult matter. For the purposes of this document, the term has been assumed to mean the quantity appropriate to the deployment for a period of three days by an army in a theatre of military operations of a sustained chemical retaliatory capability (in the case of the USSR and the United States of America, this quantity has been allowed for three armies which may be present in as many as three different theatres). This gives a munitions equivalent of 4,000 metric tons of toxic substances for the United States and the Soviet Union and 1,000 tons for the others. These quantities would have to be destroyed during the last two years of the destruction process.

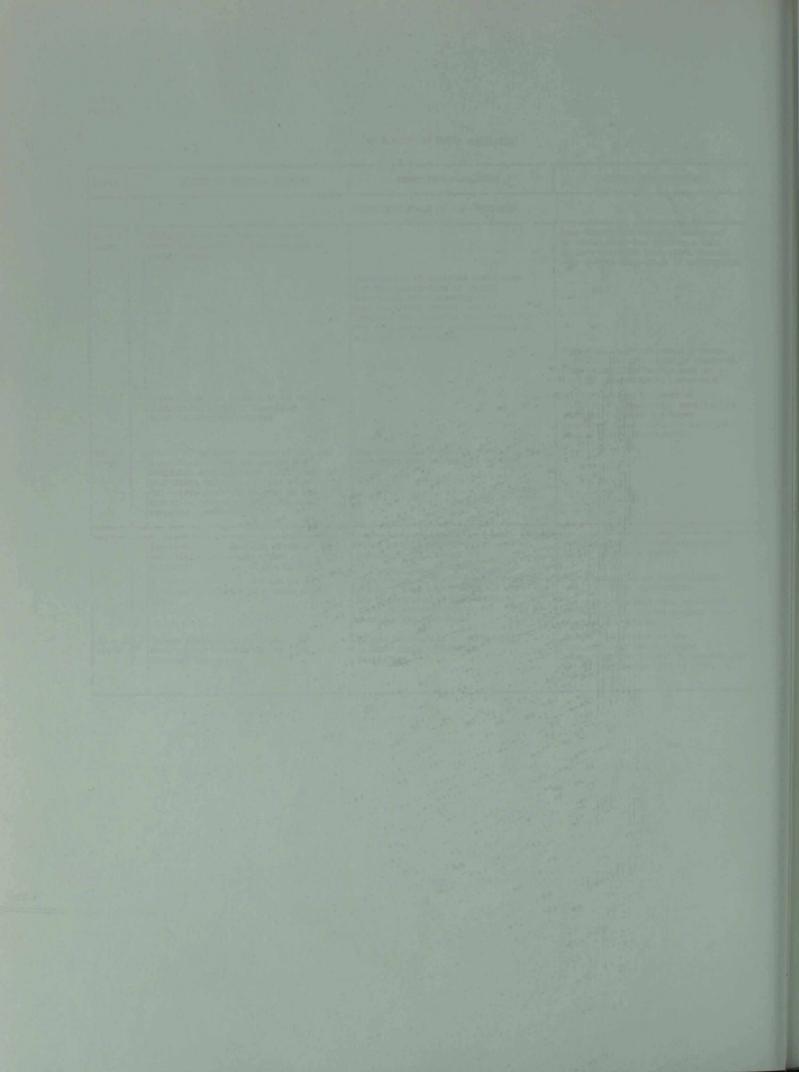
ACTIONS TO BE TAKEN

TES	STOCKS OF CHEMICAL WEAPONS	PRODUCTION FACILITIES	CONTROL/VERIFICATION			
	ENTRY INTO FORCE OF THE CONVENTION					
+ 2 onths	Initial declarations of complete stock of chemical weapons	Initial declarations of production facilities	Setting up of inspection teams responsible for verifying the placing of seals on production facilities			
	Determination of construction of destruction site or sites	Possible transformation of one or more production sites into destruction facilities; Placing of seals on production facilities	Seals are placed and transformations carried out under international control			
o + 1 ear	Establishment of (national and international) control systems Qualification of the destruction site and control facilities; - Transformations, if any; - Declaration and concentration of the stock of chemical weapons at the destruction site (stock consisting of the totality of munitions and chemicals in bulk that are to be destroyed during the second phase)	Establishment of (national and international) control systems in transformed facilities (if any) Qualification of the destruction site and control facilities; - Transformations, if any	Participation of inspection teams in the establishment and qualification of international control facilities Verification and checking of the declared stock to be destroyed, by an international team Verification that the production			
0 + 2 ears	Launching of first destruction phase	Declaration of the production facilities that will be converted to manufacture of civilian or conventional products Launching of the conversion phase	Verification that the production facilities to be converted actually correspond to the category permitted Verification of actual destruction on the spot Verification of actual conversion on the spot (inspection on the spot, as a rule after completion of transformations)			
Ao + 3 years	Destruction or conversion of munitions containing lethal substances (phosgene, hydrocyanic acid, cyanogen chloride, etc.) and of the same toxic substances in bulk; Destruction of munitions containing incapacitating agents and part of the munitions containing ypérites	Conversion to conventional or civilian uses of the following facilities: - Plants producing lethal supertoxic substances or incapacitating agents that are part of an industrial complex; - Civilian plants that have manufactured key precursors of supertoxic substances;	Verification of the destruction of stocks is done on the spot by an international team present only during rounds of destruction; An international inspection team will proceed to remove the seals and will verify on the spot, at the end of the conversion work, that the conversion has actually been carried out; It will place such a plant on the			
Ao + 4 years Ao + 5 years	Conveyance to the destruction site(s) of the stock of chemical weapons to be destroyed during the second destruction phase Possibly, destruction of part of the munitions containing neurotoxic substances Stocks of the principal possessors of chemical weapons must be equivalent	- Workshops assembling special munitions or preparing munitions for shipment; - Destruction of workshops filling munitions Production facilities of the two major Powers must be equivalent	list of Sites subject to routine verification (or will verify that destruction has actually taken place) Verification, by an international team on the spot, of the stock to be destroyed			

ACTIONS TO BE TAKEN (continued)

DATES	STOCKS OF CHEMICAL WEAPONS	PRODUCTION FACILITIES	CONTROL/VERIFICATION			
	ENTRY INTO FORCE OF THE CONVENTION					
Ao + 7 years	Conclusion of the destruction of munitions containing ypérites and of stocks thereof in bulk	Can describe the later of the l	That stocks are actually destroyed is verified on the spot by a team of international inspectors present only during the rounds of destruction			
		Destruction of isolated facilities for the manufacture of lethal supertoxic substances or of incapacitating agents, and of	a ensential to provide			
Transit of	THE RESIDENCE OF THE PARTY OF T	isolated and specific facilities for the manufacture of key precursors of supertoxic substances	Located by Description C. Joseph Address of the Control of the Con			
	The same of the sa	The State of the S	That facilities and their internal installations are actually destroyed will be verified on the spot by a team of international inspectors			
3	Declaration and concentration at destruction sites of remaining stock of chemical weapons	the state of the s	Verification on the spot of the stock to be destroyed; verification that the total of the three inspected stocks actually correspond to the initial declaration			
Ao + 8 years	Stocks of chemical weapons of the two major Powers must not exceed the munitions equivalent of 4,000 t of neurotoxic substances; for other countries, such stocks must be the munitions equivalent of 1,000 t of neurotoxic substances	The production capacity of all countries must be reduced to zero	Significant about			
	Destruction of remaining stock of neurotoxic substances (first, munitions and then, stocks in bulk)	Final elimination, if necessary, of production facilities	Verification of actual destruction on the spot (see above)			
Jens 1	A total quantity of one ton in bulk may be retained for protection	Destruction of transformed plants. A single site may be retained for	Verification by an international team of actual destruction.			
2000	tests	the destruction of any munitions found on battlefields or for possible civilian needs	The plant retained will be placed on the list of plants subject to routine inspections			
Ao + 10 years	Solemn declaration of total destruction of stock of declared chemical weapons	Solemn declaration of definitive elimination of production facilities	Solemn declaration of the international control organ concerning the definitive elimination of military capability in chemical warfare			





CD/632 20 August 1985

Original: ENGLISH

Sweden

A comprehensive approach for elaborating régimes for chemicals in a future chemical weapons convention

For the purpose of the Convention the relevant chemicals have in CD/539 been divided into five categories, i.e. super-toxic lethal, other lethal and other harmful chemicals, key precursors including key components for binary and multicomponent chemical systems for chemical weapons, and, precursors. This has multicomponent chemical systems for chemical weapons, and precursors and proved to be a very useful categorization. However, attempts to apply one and the same set of measures to all relevant chemicals in each one of the five categories have failed.

There is now a growing recognition that the diversity within a category and the different purposes for which these chemicals are produced need to be taken into account when elaborating the measures to be applied in order not to hamper the development of the peaceful chemical industry while at the same time ensuring that chemicals are not produced for chemical weapons purposes. There is also concern that one and the same chemical might be subject to qualitatively different measures depending on the purpose of its production and that this might foreate "loopholes" in the Convention. Time has therefore come to refine the concepts somewhat and to look for alternative ways of structuring the relationship between the categories of chemicals and the measures to be applied to them.

This paper suggests an alternative approach for the elaboration of régimes of measures to be applied to the different chemicals involved. This approach allows for bringing together chemicals from different categories under one and the same régime, as well as for applying different régimes to different chemicals within one and the same category. This could be achieved through a regrouping of the chemicals without in any way changing the definitions and the five categories already agreed upon.

Such a regrouping also opens the way for a comprehensive way of dealing with the chemicals, so that one and the same chemical would be subject to the same régime in all parts of the Convention (i.e. as regards declarations, elimination, permitted production and verification).

The philosophy of the approach is simple. Based on existing definitions the chemicals are arranged in three groups. To each group a régime for the declarations, elimination, production and verification is devised. Régime I is the most stringent and demanding one and applies to all Group I-chemicals. Régime II is also stringent but somewhat less burdensome and applies to all the Group II-chemicals. Régime III is the least stringent of the three and applies to the Group III-chemicals.

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The three Groups and some main elements in their respective Régimes are described below. The main purpose of this paper is to outline the basic approach, not to suggest solutions for each and every detailed problem. The arrangement of the chemicals into groups is made irrespective of which procedures will eventually be agreed upon for establishing lists or otherwise identifying individual chemicals within the categories. Furthermore, this working paper deals only with chemicals and the means of their production. Munitions and other devices are not covered. It is understood, however, that declarations and elimination of existing munitions and other devices should follow Régime I when applicable.

GROUP I CHEMICALS - RÉGIME I

Group I Chemicals

- 1. Super-toxic lethal chemicals developed, produced or stockpiled for chemical weapons purposes. Examples: Tabun, Soman, Sarin, VX.
- 2. Super-toxic lethal chemicals which are found to be presumptive chemical weapons. Examples: Amiton, skin penetrating carbamates.
- 3. Other lethal and harmful chemicals developed, produced or stockpiled only for chemical weapons purposes: Examples: Adamsite, BZ.
- 4. Key precursors with no or very limited use for permitted purposes. Key components of binary and/or multicomponent chemical weapons. Examples: DF, QL, pinacolylalcohol.

Régime I

Declarations. All stocks of Group I chemicals should be declared: aggregate quantities of each compound within 30 days and detailed composition and location of each stock to be eliminated before the commencement of each elimination period. All facilities for production of Group I chemicals should also be declared and the declarations should contain information about the facilities, locations and production capacities as well as the compounds produced.

Elimination. All stocks of Group I chemicals should be eliminated through destruction. Exceptions to this rule should be very few. One such exception would be a provision allowing for Group I chemicals to be retained for protective and possibly other permitted purposes. Facilities for production of Group I chemicals should also be completely destroyed.

Production of Group I chemicals should be prohibited, the exceptions being very few and limited. Such production for protective and possibly other permitted purposes (e.g. pharmaceutical) should take place at a single small-scale production facility. The annual aggregate amount of Group I chemicals produced, production or acquired through transfer or possessed at any one time should be limited to 1 ton.

Furthermore extremely limited production in laboratory quantities (grams/year) could be envisaged in laboratories approved by the State Party. Transfer of Group I chemicals should be prohibited except for limited quantities to other State Parties. The Consultative Committee should be notified in advance of all such transfers.

The <u>verification</u> measures applied to the Group I chemicals and the facilities for their production should be the most stringent under the Convention. International inspectors should be present during elimination processes. Permitted production should be carefully monitored and subject to systematic international on-site inspection.

GROUP II CHEMICALS - RÉGIME II

Group II Chemicals

- 1. Super-toxic lethal chemicals (other than those in Group I) which are presently developed, produced or stockpiled only for permitted purposes but which warrant special attention to ensure that they are not developed, produced or stockpiled for chemical weapons purposes in the future. Example: Strophantin (a glycocide for heart ailments).
- 2. Key precursors (other than those in Group I) used for permitted purposes but which have also been produced for chemical weapons purposes. Example: thiodiglycol.

Régime II

Declarations of Group II chemicals should encompass all key precursors in chemical weapons stocks as under Régime I, as well as stocks for permitted purposes and aggregate annual production of each of the Group II chemicals stating also their respective end uses. Facilities for production of Group II chemicals should their respective end uses. Facilities for production of Group II chemicals should be declared as under Régime I if production has been for chemical weapons purposes (key precursors) or if the production exceeds certain quantities.

Elimination. Key precursors in chemical weapons stockpiles should be eliminated either through destruction or through diversion to permitted purposes. Facilities having produced key precursors for chemical weapons purposes should be eliminated through destruction or dismantling if the total production capacity exceeds what is consistent with production for permitted purposes.

Production of Group II chemicals should take place at the single small-scale facility or at other especially approved facilities. The possibility of limiting production to a certain amount annually or at any one time could also be considered, in which case provisions for granting exceptions in specific cases might prove needed.

To ensure that these chemicals are not developed into new types of chemical weapons or produced for chemical weapons purposes the <u>verification</u> needs to be stringent. Data reporting as well as systematic international on-site inspection is envisaged. If a chemical is found to be a presumptive chemical weapon it should immediately be moved to Group I and be subject to measures under Régime I.

GROUP III CHEMICALS - RÉGIME III

Group III Chemicals

- 1. Other lethal chemicals used for permitted purposes but which have also been produced for chemical weapons purposes. Examples: phosgene, hydrogen cyanide.
- 2. Other harmful chemicals used for permitted purposes, but which have also been produced for chemical weapons purposes. Example: phosgeneoxime.
- 3. Precursors. Examples: phosphorus oxychloride, phosphorus trichloride.

Régime III

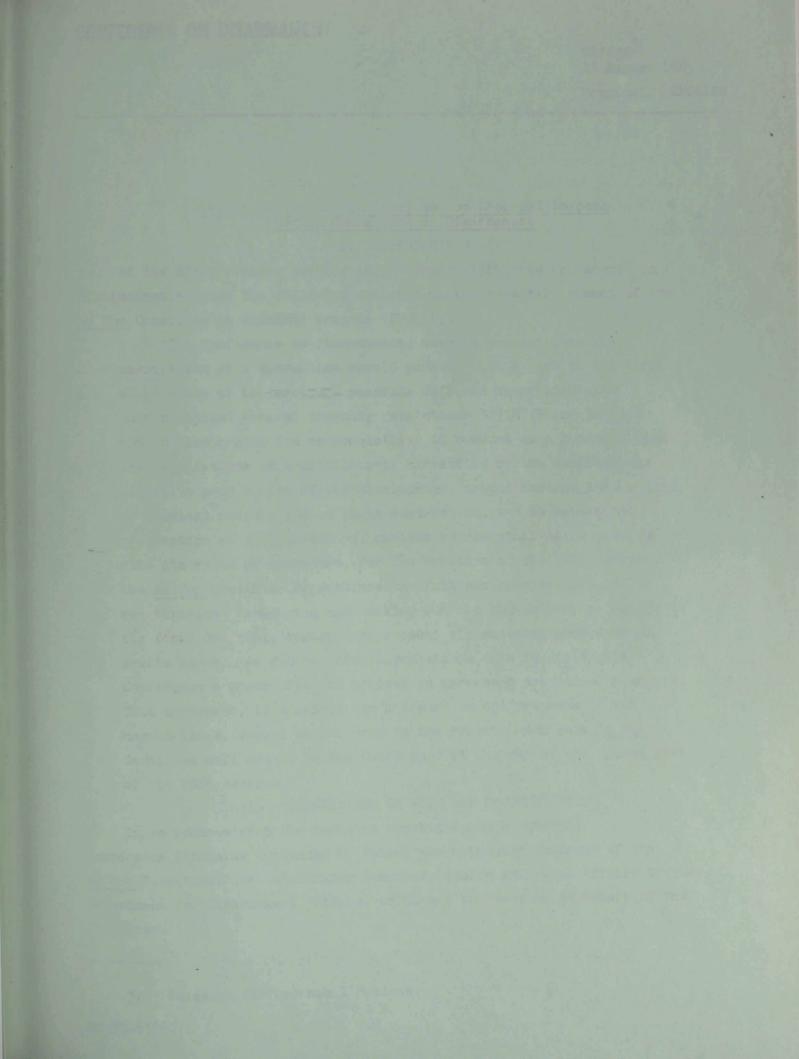
Declarations of Group III chemicals should encompass all the chemicals in chemical weapons stocks as under Régime I as well as stocks for permitted purposes and aggregate annual production of each of the Group III chemicals, stating also their respective end uses. Facilities for production of Group III chemicals should be declared as under Régime I if the production has been for chemical weapons purposes or exceeds certain quantities, stating the aggregate capacity for each compound as well as the locations of the facilities.

Elimination. The elimination of the Group III chemicals in chemical weapon stocks could be carried out through destruction or diversion for permitted purposes. Elimination of facilities having produced these chemicals for chemical weapons purposes shall take place through destruction or dismantling if the total production capacity exceeds what is consistent with production for permitted purposes.

Production. No limitations in amount or place of production is envisaged.

Verification. The verification measures applicable under Régime III would comprise data-reporting on each individual chemical and systematic international on-site inspection.

	GROUP I	ROUP II	GROUP III
GROUPS OF CHEMICALS	developed, produced or stock- piled for chemical weapons purposes	uper-toxic lethal chemicals resently developed, produced or stockpiled only for permitted purposes but whose returne development and production warrants special attention	Other lethal and harmful chemicals used for permitted purposes but which have also been produced for chemical weapons purposes
	found to be presumptive	Key precursors used for permitted purpose but which have also been produced for chemical weapons purposes	Precursors
	Other lethal and harmful chemicals developed, produced or stockpiled only for chemical weapons purposes		
	Key precursors with no or very limited use for permitted purposes, key components for binary and/or multicomponent chemical weapons		-4
	RÉGIME I	RÉGIME II .	RÉGIME III
ECLARATIONS of chemicals in chemical reapons stocks	Aggregate quantity of each compound within 30 days Detailed declarations at each stock before each elimination period	Key precursors: As Régime I	As Régime I
of stocks for permitted purposes/annual production	Aggregate quantity of each compound within 30 days	Aggregate quantity within 30 days and then aggregate annual production	
of production facilities for themical weapons purposes	- compounds - location of facilities - facilities' production capacity	As Régime I	As Régime I
- of production facilities for chemical weapons purposes	- compounds - location of facilities - facilities' production capacity	As Régime I if production exceeds certain quantities	If production exceeds certa quantities: Aggregate capacity and locations
verification of declarations	To be elaborated	To be elaborated	To be elaborated
ELIMINATION - of chemicals in chemical weapons stocks	Destruction Exceptions: maximum 1 ton annually may be retained for protective purposes	Destruction or diversion of the key precursors	Destruction or diversion
- of chemical weapons production facilities	Destruction	Destruction or dismantling is capacity not consistent with production for permitted purpo	oses
verification of elimination - of chemical weapons	Permanent presence of international inspectors during the elimination	Data reporting, systematic international on-site inspect	Data reporting, systematic
- of chemical weapons production facilities	To be elaborated	To be elaborated	To be elaborated
PRODUCTION - for protective purposes	No production. Exceptions: Aggregate annual quantity 1 to (including the amounts otherwise acquired), at a	n Production at a small-scale facility or requisition from industry	n
- for other permitted purposes	small-scale facility At a laboratory scale grams/year	Single small-scale or especially approved faciliti Possibly quantity-limits	
- transfer	To States Parties in limited		To be elaborated
Verification - of production	Monitoring and systematic international on-site inspection	Data reporting systematic international on- site inspection	Data reporting, systemating international on-site inspection
		Challenge	Challenge





CD/636^{*}/
23 August 1985

Original: ENGLISH

Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Disarmament

I. INTRODUCTION

1. At its 289th plenary meeting on 7 February 1985, the Conference on Disarmament adopted the following decision on the re-establishment of the Ad Hoc Committee on Chemical Weapons (CD/551):

"The Conference on Disarmament, keeping in mind that the negotiation of a Convention should proceed with a view to its final elaboration at the earliest possible date, in accordance with United Nations General Assembly resolutions 38/187/B and 39/65 C, and in discharging its responsibility to conduct as a priority task the negotiations on a multilateral convention on the complete and effective prohibition of the development, production and stockpiling of chemical weapons and on their destruction, and to ensure the preparation of the convention, decides to re-establish, in accordance with its rules of procedure, for the duration of its 1985 session, the Ad Hoc Committee to continue the full and complete process of negotiations, developing and working out the convention, except for its final drafting, taking into account all existing proposals and drafts as well as future initiatives with a view to giving the Conference a possibility to achieve an agreement as soon as possible. This agreement, if possible, or a Report on the progress of the negotiations, should be recorded in the report which this Ad Hoc Committee will submit to the Conference at the end of the second part of its 1985 session."

II. ORGANIZATION OF WORK AND DOCUMENTATION

2. In accordance with the decision mentioned above (CD/551),
Ambassador Stanislaw Turbanski of Poland was appointed Chairman of the

Ad Hoc Committee. Mr. Abdelkader Bensmail, Senior Political Affairs Officer,
Department for Disarmament Affairs, continued to serve as Secretary of the

Committee.

^{*/} Reissued for technical reasons.

- The Ad Hoc Committee held 12 meetings from 27 February to 19 August 1985. The Ad Hoc Committee benefited from the inclusion in delegations of national experts. In addition, the Chairman held a number of informal consultations with delegations.
- 4. At its 310th plenary meeting on 23 April 1985 of the Conference on Disarmament, the Chairman of the Ad Hoc Committee reported on the progress of its work.
- 5. At their request, the Conference on Disarmament decided to invite the representatives of the following States not members of the Conference to participate in the work of the Ad Hoc Committee: Austria, Burundi, Denmark, Finland, Greece, New Zealand, Norway, Portugal, Senegal, Spain, Switzerland, Turkey, United Republic of Cameroon.
- 6. During the 1985 session, the following official documents dealing with chemical weapons were presented to the Conference on Disarmament:
- CD/541, dated 9 October 1984, submitted by Australia, entitled "Verification of Non-Production of Chemical Weapons" (also issued as CD/CW/WP.87)
- CD/546, dated 1 February 1985, entitled "Report of the Ad Hoc Committee on Chemical Weapons on its work during the period 14 January-1 February 1985" (also issued as CD/CW/WP.97)
- CD/551, dated 8 February 1985, entitled "Decision on the re-establishment of the Ad Hoc Committee on Chemical Weapons"
- CD/575, dated 6 March 1985, submitted by the United Kingdom of Great Britain and Northern Ireland, entitled "Verification of Non-Production of Chemical Weapons: Proposals for Inspection Procedures and Data Exchange" (also issued as CD/CW/WP.100)
- CD/585, dated 2 April 1985, submitted by Spain, entitled "Letter dated 25 March 1985 from the Permanent Representative of Spain addressed to the President of the Conference on Disarmament transmitting a document entitled 'Verification of Non-Production of Chemical Weapons'"
- CD/589, dated 11 April 1985, submitted by the United Kingdom of Great Britain and Northern Ireland, entitled "Chemical Weapons Convention: The Organs and Constitution of the Organization"
- CD/598, dated 20 June 1985, submitted by Norway, entitled "Letter dated 19 June 1985 addressed to the President of the Conference on Disarmament from the Permanent Representative of Norway transmitting a Research Report entitled 'Verification of a Chemical Weapons Convention. Sampling and Analysis of Chemical Warfare Agents under Winter Conditions. Part IV'"
- CD/600, dated 20 June 1985, submitted by Norway, entitled "Verification of a Chemical Weapons Convention. Sampling and Analysis of Chemical Warfare Agents under Winter Conditions"

- CD/601, dated 20 June 1985, submitted by Norway, entitled "Verification of Alleged Use of Chemical Warfare Agents under Winter Conditions"
- CD/605, dated 4 July 1985, submitted by China, entitled "Destruction of Chemical Weapons" (also issued as CD/CW/WP.114)
- CD/613, dated 10 July 1985, submitted by Yugoslavia, entitled "Permitted Activities: Verification Measures" (also issued as CD/CW/WP.115)
- CD/614, dated 12 July 1985, submitted by Finland, entitled "Letter dated 12 July 1985 addressed to the President of the Conference on Disarmament from the Chargé d'Affaires a.i. of the Permanent Mission of Finland, transmitting a document entitled 'Air Monitoring as a Means for Verification of Chemical Disarmament; C.2. Development and Evaluation of Basic Techniques, Part I'"
- CD/615, dated 15 July 1985, submitted by the Union of Soviet Socialist Republics, entitled "Letter dated 15 July 1985 addressed to the President of the Conference on Disarmament from the Representative of the Union of Soviet Socialist Republics transmitting the text of the Tass statement published on 11 July 1985"
- CD/617, dated 22 July, submitted by the Islamic Republic of Iran, entitled "Letter dated 19 July addressed to the President of the Conference on Disarmament from the Chargé d'Affaires a.i. of the Permanent Mission of the Islamic Republic of Iran transmitting the 'Report of the Specialists appointed by the Secretary-General to Investigate Allegations by the Islamic Republic of Iran concerning the Use of Chemical Weapons'"
- CD/619, dated 23 July 1985, submitted by Japan, entitled "Application of (Nuclear) Safeguards Remote Verification Technology to verification of a chemical weapons convention"
- CD/620, dated 23 July, submitted by the German Democratic Republic, entitled "National Verification Measures to Implement the Convention on the Prohibition of Chemical Weapons" (also issued as CD/CW/WP.119)
- CD/623, dated 26 July 1985, submitted by the Islamic Republic of Iran, entitled "Letter dated 18 July 1985 addressed to the President of the Conference on Disarmament from the Chargé d'Affaires of the Permanent Mission of the Islamic Republic of Iran"
- CD/627, dated 1 August 1985, submitted by the Federal Republic of Germany, entitled "Verification of the Non-Production of Chemical Warfare Agents by means of Inspections in the Civilian Chemical Industry"
- CD/630, dated 5 August 1985, submitted by France, entitled "Elimination of Stocks of Chemical Weapons: Irreversible Neutralization of Means of Production"
- CD/632, dated 20 August 1985, submitted by Sweden, entitled "A comprehensive approach for elaborating régimes for chemicals in a future chemical weapons convention"
- 7. In addition, the following Working Papers were presented to the Ad Hoc Committee:

- CD/CW/WP.98, dated 27 February 1985, submitted by the Chairman of the Ad Hoc Committee on Chemical Weapons, entitled "Outline for the organization of work during the 1985 session"
- CD/CW/WP.99, dated 4 March 1985, submitted by the Chairman of Working Group A, entitled "Chairman's Basic Working Paper"
- CD/CW/WP.100, dated 6 March 1985, submitted by the United Kingdom of Great Britain and Northern Ireland, entitled "Verification of Non-Production of Chemical Weapons: Proposals for Inspection Procedures and Data Exchange" (also issued as CD/575)
- CD/CW/WP.101, dated 13 March 1985, submitted by the Chairman of Working Group C, entitled "Chairman's Working Paper on the programme of work; exploration of problems through identification of various positions and viewpoints relating to compliance"
- CD/CW/WP.102, dated 20 March 1985, submitted by the Chairman of Working Group B, entitled "Chairman's Working Paper on the Agenda for the meetings on 20 March and 27 March"
- CD/CW/WP.103, dated 22 March 1985, submitted by the Chairman of Working Group A entitled "Chairman's basic document"
- CD/CW/WP.104, dated 4 April 1985, submitted by the Chairman of Working Group A, entitled "Chairman's basic document"
- CD/CW/WP.105, dated 12 April 1985, submitted by the Chairman of Working Group A, entitled "Chairman's Basic Working Paper"
- CD/CW/WP.106, dated 12 April 1985, submitted by the Chairman of Working Group C
- CD/CW/WP.107, dated 22 April 1985, entitled "Report of the Chairman of the Open-ended Consultations of the Ad Hoc Committee on Chemical Weapons"
- CD/CW/WP.108, dated 22 April 1985, entitled "Report of the Chairman of Working Group B"
- CD/CW/WP.109, dated 22 April 1985, entitled "Report of the Chairman of Working Group A"
- CD/CW/WP.110, dated 22 April 1985, entitled "Report of the Chairman of Working Group C"
- CD/CW/WP.111, dated 14 June 1985, entitled "Indicative Programme of Work for the second part of the 1985 session"
- CD/CW/WP.112, dated 19 June 1985, submitted by Pakistan, entitled "Chemical Weapons Convention: The Question of Decision-taking"
- CD/CW/WP.113, dated 25 June 1985, submitted by the Federal Republic of Germany, entitled "Verification of Non-Production of Chemical Weapons"
- CD/CW/WP.114, dated 4 July 1985, submitted by China, entitled "Destruction of Chemical Weapons" (also issued as CD/605)

- CD/CW/WP.115, dated 10 July 1985, submitted by Yugoslavia, entitled "Permitted Activities: Verification Measures" (also issued as CD/613)
- CD/CW/WP.116, dated 12 July 1985, submitted by the Chairman of Working Group C, entitled "Article VII: National Implementation Measures"
- CD/CW/WP.116/Rev.1, dated 2 August 1985, submitted by the Chairman of Working Group C, entitled "Article VII: National Implementation Measures"
- CD/CW/WP.117, dated 16 July 1985, submitted by China, entitled "Explanations on Document CD/605 (CD/CW/WP.114)"
- CD/CW/WP.118, dated 22 July 1985, submitted by Pakistan, entitled "Prohibition on the Use of Herbicides"
- CD/CW/WP.119, dated 23 July 1985, submitted by the German Democratic Republic, entitled "National Verification Measures to Implement the Convention on the Prohibition of Chemical Weapons (also issued as CD/620)
- CD/CW/WP.120, dated 31 July 1985, submitted by Poland, entitled "Criteria for a request for on-site verification and for the explanation of a refusal of the request (to be considered as part of Article IX)"
- CD/CW/WP.121, dated 31 July 1985, submitted by Australia, entitled "Verification of Non-Production Development of Criteria for Monitoring Non-Diversion"
- CD/CW/WP.122, dated 2 August 1985, submitted by the Chairman of Working Group C, entitled "Article VIII: Consultative Committee"
- CD/CW/WP.123, dated 5 August 1985, entitled "Report of the Chairman of the Open-ended Consultations of the Ad Hoc Committee on Chemical Weapons"
- CD/CW/WP.123/Corr.1, dated 12 August 1985, entitled "Report of the Chairman of the Open-ended Consultations of the Ad Hoc Committee on Chemical Weapons"
- CD/CW/WP.124, dated 7 August 1985, entitled "Report of Working Group B"
- CD/CW/WP.125, dated 7 August 1985, entitled "Report of Working Group A"
- CD/CW/WP.126, dated 9 August 1985, entitled "Report of Working Group C"
- CD/CW/WP.127, dated 12 August 1985, entitled "Draft Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Disarmament"

III. SUBSTANTIVE WORK DURING THE 1985 SESSION

8. In accordance with its mandate, the Ad Hoc Committee continued the negotiation and further elaboration of the Convention, utilizing Annex I and

Annex II of CD/539 as well as other existing and new proposals presented by delegations. To this effect, it retained the basic structure that was established by the Committee in 1984, and accepted the Chairman's proposal to set up three Working Groups which dealt with specific aspects of the Convention as follows:

- (a) Working Group A: Scope, Definitions, Non-Production, Permitted Activities (Chairman: Mr. Petar Poptchev, Bulgaria)
- (b) Working Group B: Elimination of stocks and production facilities (Chairman: Mrs. Elisabet Bonnier, Sweden)
- (c) Working Group C: Compliance (Chairman: Mr. Frank Elbe, Federal Republic of Germany)

In addition, the prohibition of use of chemical weapons and the problem of herbicides were considered at Open-ended Consultations of the Ad Hoc Committee under the chairmanship of Mr. Noegroho Wisnoemoerti (Indonesia).

9. In accordance with the outline for the organization of work during the 1985 session (CD/CW/WP.98) and on the basis of the results achieved in the Working Groups, at the Open-ended Consultations as well as in some cases on proposals put forward by the Chairman, preliminary formulations of provisions of the future Convention were assembled in Appendix I, following the preliminary structure of the Convention.

The reports of the Working Groups and of the Chairman of the Open-ended Consultations constitute Appendix II.

IV. CONCLUSIONS AND RECOMMENDATIONS

- 10. Appendix I reflects the present stage of negotiations on a Chemical Weapons Convention; however the draft texts contained therein do not bind delegations who retain the right to revert to these texts.
- 11. The Ad Hoc Committee recommends to the Conference on Disarmament:
- (a) that Appendix I be used as a basis for further negotiation and drafting of the Convention;
- (b) that the reports of the Working Groups and of the Chairman of the Open-ended Consultations as contained in Appendix II, including the proposed draft formulations, together with other relevant existing and future documents of the Conference be equally utilized in the further elaboration of the Convention;

- (c) that the Ad Hoc Committee resume its work under the Chairmanship of Ambassador Stanislaw Turbanski (Poland) and under its present mandate, for a session of limited duration during the period 13-31 January 1986; that the work cover issues under Articles IV, VI, including the relevant parts of Article II, and Article IX; furthermore that informal consultations be undertaken on these issues by the Chairman in the meantime in preparation for the resumed session and that the Committee present to the Conference on Disarmament a report on its work during that period;
- (d) that the Ad Hoc Committee be re-established before the end of the second week of the 1986 session with its 1985 mandate, and that Ambassador R.I.T. Cromartie (United Kingdom) be appointed as its Chairman.

APPENDIX I

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Preliminary structure of a Convention on chemical weapons */

Preamble

- I. General provisions on scope
- II. Definitions and Criteria
- III. Declarations
 - IV. Measures on chemical weapons
 - V. Measures on chemical weapons production facilities
 - VI. Permitted activities
- VII. National implementation measures
- VIII. Consultative Committee
 - IX. Consultations, co-operation and fact finding
 - X. Assistance
 - XI. Economic and technological development
- XII. Relation to other international agreements
- XIII. Amendments
 - XIV. Duration, withdrawal
 - XV. Signature, ratification, entry into force
 - XVI. Languages

Annexes and other documents

^{*/} Discussions are still continuing on where different issues like verification measures are to be placed under this structure.

Preamble */

The States Parties to this Convention

<u>Determined</u> to act with a view to achieving effective progress towards general and complete disarmament under strict and effective international control, including the prohibition and elimination of all types of weapons of mass destruction,

Desiring to contribute to the realization of the purposes and principles of the Charter of the United Nations,

Recalling that the General Assembly of the United Nations Organization has repeatedly condemned all actions contrary to the principles and objectives of the Protocol for 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 that the Convention reaffirms principles and objectives of and obligations assumed under the Geneva Protocol of 17 June 1925, and the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction signed at London, Moscow and Washington on 10 April 1972,

Bearing in mind the objective contained in Article IX of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction,

<u>Determined</u> for the sake of all mankind, to completely exclude the possibility of the use of chemical weapons, through the implementation of the provisions of this Convention, thereby complementing the obligations assumed under the Geneva Protocol of June 1925,

Considering that the achievements in the field of chemistry should be used exclusively for the benefit of mankind,

Convinced that the complete and effective prohibition of the development, production and stockpiling of chemical weapons, and their destruction, represents a necessary step towards the achievement of these common objectives.

Have agreed as follows:

^{*/} Some delegations consider that the texts contained in the Premable require further consideration.

CD/636 Appendix I page 4

- I. GENERAL PROVISIONS ON SCOPE
- 1. Each State Party undertakes not to:
 - develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone.
- 2. Each State Party undertakes not to:
 - assist, encourage or induce, in any way, anyone to engage in activities prohibited to Parties under this Convention.
- 3. Each State Party undertakes not to use chemical weapons.*/ **/
- 4. [Each State Party undertakes not to [conduct other activities in preparation for use of chemical weapons] [engage in any military preparations for use of chemical weapons].]
- 5. Each State Party undertakes to [destroy] [destroy or divert for permitted purposes] chemical weapons which are in its possession or under its [jurisdiction or] control. ***/
- 6. Each State Party undertakes to [destroy] [destroy or dismantle] chemical weapons production facilities which are in its possession or under its [jurisdiction or] control.

^{*/} It is understood that this provision is closely linked to the definition of chemical weapons in another part of the Convention, the final formulation of which is yet to be agreed upon. It is also understood that this provision does not apply to the use of toxic chemicals and their precursors for permitted purposes still to be defined and to be provided for in the Convention. This provision is also closely linked to a provision in the Convention to be agreed upon relating to reservations.

^{**/} The question of herbicides is subject to ongoing consultations. The Chairman of these open-ended consultations has suggested the following formulation for a provision on herbicides: "Each State Party undertakes not to use herbicides as a method of warfare, such a prohibition should not preclude any other use of herbicides".

^{***/} An alternative formulation and placement of this undertaking is given under "Measures on chemical weapons".

^{****/} An alternative formulation and placement of this undertaking is given under "Measures on chemical weapons production facilities".

II. DEFINITIONS AND CRITERIA

For the purposes of this Convention:

1. */ The term "chemical weapons" shall apply to the following, together or separately: **/

- (i) toxic chemicals, including super-toxic lethal chemicals, other lethal chemicals, other harmful chemicals and their precursors, including key precursors [and key components of binary and/or multicomponent chemical systems for chemical weapons], ***/

 except such chemicals intended for permitted purposes as long as the types and quantities involved are consistent with such purposes; ****/
- (ii) munitions and devices, specifically designed to cause death or other harm through the toxic properties of those toxic chemicals, as referred to above, which would be released as a result of the employment of such munitions and devices;
- (iii) any equipment specifically designed for use directly in connection with the employment of such munitions or devices;
- [The term "chemical weapons" shall not apply to those chemicals which are not super-toxic lethal, or other lethal chemicals and which are approved by the Consultative Committee for use by a Party for domestic law enforcement and domestic riot control purposes.]

^{*/} The definitions of chemical weapons are presented on the understanding that problems related to irritants used for law enforcement and riot control, and also to chemicals intended to enhance the effect of the use of chemical weapons if their inclusion in the Convention is agreed could be handled outside, the definitions of chemical weapons if this will result in a more clear and understandable definition. Preliminary suggestions to solve these problems are given below and consultations on them will be continued.

^{**/} One delegation expressed its reservation on the present formulation of the definition of chemical weapons and on the terminology used in (i) that failed to reflect the general purpose criterion.

^{***/} Some delegations consider that further deliberation is required in order to clarify at a later stage of the negotiations the implications of this definition for other parts of the Convention. This applies to other relevant parts of Appendix I. Other delegations consider that key component of binary and/or multicomponent chemical system for chemical weapons means: a component which poses a special risk to the objectives of the Convention as it can be an integral part in a chemical weapons munition or device and can form toxic chemicals at the moment of their employment and possesses the following characteristics: (a) reacts (interacts) rapidly with other component(s) of binary and/or multicomponent chemical system during the munition's flight to the target and gives a high yield of final toxic chemical; (b) plays an important role in determining the toxic properties of the final product; (c) may not be used, or be used only in minimal quantities, for permitted purposes; (d) possesses the stability necessary for long-term storage.

^{****/} One delegation suggests that the term "permitted purposes" should be substituted, where it occurs throughout the Convention, with the term "purposes not prohibited by the Convention".

- [State Parties agree not to [develop, produce, stockpile or] utilize for chemical weapons chemicals intended to enhance the effect of the use of such weapons.]
- [2. "Toxic chemicals" means:

chemicals [however or wherever they are produced], [whether produced in plants, munitions or elsewhere] [regardless of the method and pattern of production] whose toxic properties can be utilized to cause death or temporary or permanent harm, to man or animals involving:]

[2. "Toxic chemicals" means:

any chemical, regardless of its origin or method of production which through its chemical action on life processes can cause death, temporary incapacitation, or permanent harm to man or animals

Toxic chemicals are divided into the following categories:]

- (a) "super-toxic lethal chemicals", which have a median lethal dose which is less than or equal to 0.5 mg/kg (subcutaneous administration) or 2,000 mg-min/m³ (by inhalation) when measured by an agreed method set
- (b) "other lethal chemicals", which have a median lethal dose which is greater than 0.5 mg/kg (subcutaneous administration) or 2,000 mg-min/m 3 (by inhalation) and less than or equal to 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m 3 (by inhalation) when measured by an agreed method set forth in ...
- [(c) "other harmful chemicals", being any [toxic] chemicals not covered by
 (a) or (b) above, [including toxic chemicals which normally cause temporary
 incapacitation rather than death] [at similar doses to those at which
 super-toxic lethal chemicals cause death].]

[and "other harmful chemicals" has a median lethal dose which is greater than 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m³ (by inhalation).]

^{*/} It was noted that after such measurements had actually been performed, the figures mentioned in this and the following section might be subject to slight changes in order to cover sulphur mustard gas under the first category.

- 7. [Permitted purposes] [Purposes not prohibited by the Convention]
 [Non-hostile purposes] means:
- (a) industrial, agricultural, research, medical or other peaceful purposes, domestic law enforcement purposes; and military purposes not connected with the use of chemical weapons.
- (b) protective purposes, namely those purposes directly related to protection against chemical weapons;*/
- 4. "Precursor" means:
 - a chemical reagent which takes part in the production of a toxic chemical.
 - (a) "Key Precursor" means:

a precursor which poses a significant risk to the objectives of the Convention by virtue of its importance in the production of a toxic chemical.

It may possess [possesses] the following characteristics:

- (i) it may play [plays] an important role in determining the toxic properties of a [toxic chemicals prohibited by the Convention] [super-toxic lethal chemical].
- (ii) it may be used in one of the chemical reactions at the final stage of formation of the [toxic chemicals prohibited by the Convention] [super-toxic lethal chemical].
- [(iii) it may [is] not be used, or [is] used only in minimal quantities, for permitted purposes.]**/

Key precursors are listed in ...

For the purpose of the relevant provisions in a Chemical Weapons Convention key precursors should be listed and subject to revisions according to [characteristics] [guidelines].

^{*/} The suggestion that such permitted protective purposes should relate only to "an adversary's use of" chemical weapons was removed pending a decision on whether in the Convention the question of prohibiting other military preparations for use of chemical weapons than those mentioned under scope should be dealt with.

^{**/} One delegation considers that this particular characteristic has primary importance and should be placed first.

Chemicals which are not key precursors but are deemed to pose a [threat] [particular risk] with regard to a Chemical Weapons Convention should be included in a list.

[(b) Key component of binary and/or multicomponent chemical systems for chemical weapons means:]

[a key precursor which forms a toxic chemical in the binary or multicomponent weapons munition or device and which has the following additional characteristics (to be elaborated):]

- 5. "Chemical weapons production facility" means:
- Chemical weapons production facility means [any building or equipment designed, constructed or used [in any degree] for the production of chemical weapons] or for filling chemical weapons.
- Chemical weapons production facility means [any building or any equipment which in any degree was designed, constructed or used since 1 January 1946, for:
- (a) the production for chemical weapons of any toxic chemical, except for those listed in (schedule B), or the production for chemical weapons of any key precursors;] or
 - (b) the filling of chemical weapons.

III. DECLARATIONS

Declarations of chemical weapons and plans for their elimination 2/3/ Each State Party undertakes to submit to the Consultative Committee, not later than 30 days after the Convention enters into force for it, declarations stating

- (a) whether it possesses or does not possess any chemical weapons on its territory or elsewhere under its jurisdiction or control,
- (b) whether it has on its territory any chemical weapons under the jurisdiction or control of anyone else,
- (c) whether it has transferred control of chemical weapons since ... or has received such weapons since that date.4/
- Each State Party possessing chemical weapons undertakes to submit to the Consultative Committee, not later than 30 days after the Convention enters into force for it, declarations stating the aggregate quantity and detailed composition of its chemical weapons.
- Each State Party possessing chemical weapons undertakes to submit to the Consultative Committee not later than ... months after the Convention's entry into force for it, general plans for the elimination of its chemical weapons based on the Principles for the Order of Elimination laid down in Annex IV.

^{1/} In accordance with agreed definitions.

^{2/} In accordance with the provisions in Article IV.

^{3/} The question of old unknown weapons or stocks which have been left by others without the knowledge of the State Party is not addressed in this Article. It is understood that this question will be dealt with at a later stage of the negotiations at which time the placement in the Convention of the relevant provisions will also be decided.

^{4/} The view was expressed that past transfers should not be included in the Convention.

³ and 6 months have been proposed.

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- 4. Each State Party possessing chemical weapons undertakes to submit to the Consultative Committee declarations stating the locations and detailed inventories of their chemical weapons stocks as well as detailed plans for their elimination. These declarations and plans shall be submitted not later than 3 months before the commencement of each elimination period specified in the Principles for the Order of Elimination in Annex IV, and shall encompass all stocks to be eliminated during the next coming such period.
- 5. State Parties shall consult among themselves and through the Consultative Committee, as soon as possible after the declarations made in accordance with paragraph 2 of this Article, with the view to co-ordinating their plans.
- 6. The declarations and plans under Article III, paragraphs 1 through 4, shall be made in accordance with Annex III.
- 7. Each State Party undertakes to submit to the Consultative Committee annual progress reports on the implementation of the plans for the elimination of chemical weapons and a notification of the completion of the elimination within 30 days thereafter.
- 8. Annex III and Annex IV constitute integral parts of the Convention.

Declarations of chemicals which could be used for chemical weapons purposes but which are intended for permitted purposes 2/

Declarations of chemical weapons production facilities
(To be elaborated)

Verification of declarations
(To be elaborated)

¹/ Some delegations held the view that overall declarations should be made within 30 days after the Convention's entry into force for a State Party.

^{2/} In accordance with the organization of work (WP.98) these provisions are to be elaborated in the context of Article VI taking into account <u>inter alia</u> some harmful chemicals, to be elaborated.

ANNEX III

- I. DECLARATIONS OF CHEMICAL WEAPONS
- A. Possession or non-possession
- 1. Possession of chemical weapons on own territory.

Yes

No

2. Possession, jurisdiction or control over chemical weapons elsewhere.

Yes

No

If yes, information about location(s), expressed by name(s) of State(s).

B. Existence on the territory of any chemical weapons under the jurisdiction or control of anyone else

Yes

No

If yes, information about ownership, expressed by name(s) of State(s).

C. Past transfers 1/

If there has been transfer of control of chemical weapons since, or reception of such weapons since that date, the following information shall be provided. To be elaborated.

- D. Aggregate quantity and detailed composition of chemical weapons
- 1. Chemicals
- 1.1 Toxic chemicals 2/

In cases involving mixtures of two or more toxic chemicals all such components should be specified as well as the percentage of the mixtures.

¹/ The view was expressed that past transfers should not be included in the Convention.

^{2/} In accordance with agreed definition.

1.1.1 Super-toxic lethal chemicals $\frac{1}{2}$

Scientific chemical name $\frac{2}{I}$	adlow or	Bulk		Filled in munition	
3/	Purity4/%	Quantity (metric tons)	Number and size of containers	Quantity (metric	quantity (metric tons)
Chemical A	15.65 EV	14 CO. 1 1800	D. ANDERS EV.	107 78 H	State of the last
Chemical B	Drive also	ERIC COM	A STATE TO	-	DOX"
etc.	COLUMN TO	themselve	F Man Japan	The street of	DH I

1.1.2 Other lethal chemicals 1/

Scientific chemical name2/		Bulk	In Despite	Filled in munition	Total
. 3/	Purity4/%	Quantity (metric tons)	Number and size of containers	Quantity (metric	quantity (metric tons)
The state of the s	643 35	A SENTERL	and and and	TOTAL TOTAL	Locates -

1.1.3 Other harmful chemicals 5/

Scientific chemical name2//	o see see	Bulk	A DO THE	Filled in munition	Total
3/	Purity4/%	Quantity (metric tons)	Number and size of containers	Quantity (metric	quantity (metric tons)
Trefactured a belief	Lineau.				

^{1/} In accordance with agreed definition.

^{2/} In accordance with the IUPAC (International Union of Pure and Applied Chemistry) Nomenclature.

^{3/} Different views exist whether it is necessary to state both the scientific chemical name and the structural formula in order for the declarations to be unambiguous.

^{4/} Three different approaches were taken by delegations: 1) Initial purity, 2) Purity of the compound as stored with an approximation of some 10 per cent.

³⁾ That declaration of purity was not necessary.

⁵/ In accordance with agreed definition, but pending such a definition it is unclear which chemicals to declare in this table.

Scientific chemical name ² / Structural formula ³ /	Quantity (metric tons)	Number and size of containers
Key precursors for unitary systems 4/	A STORTEROLD	Components for multi-

ntific chemical name $\frac{2}{}$	Bu	lk	Filled in munition/	Total
ctural formula ³ /	Quantity (metric tons)	Number and size of containers	submunition (metric tons)	quantity (metric tons)
components] [Key ursors] for multi-onent systems 4/5/6/				
BE TO DEAL				

^{1/} The view was expressed that these two tables were not necessary and the key precursors and key components could be declared under points 1.1.1, 1.1.2 and 1.1.3 as applicable.

^{2/} In accordance with the IUPAC (International Union of Pure and Applied Chemistry) Nomenclature.

 $[\]underline{3}/$ Different views exist whether it is necessary to state both the scientific chemical name and the structural formula in order for the declarations to be unambiguous.

^{4/} To be declared separately for super-toxic lethal, other lethal and other harmful chemicals.

^{5/} Identified in accordance with approaches to be worked out in the context of Article II.

^{6/} Some delegations suggested that multicomponent chemical weapons should not be declared as a special category in a separate table.

1.3 Precursors $\frac{1}{2}$ in bulk $\frac{2}{2}$

Scientific chemical name $\frac{3}{2}$ Structural formula $\frac{4}{7}$	/ delication	Quantit (metric to		Number and s	
Precursors for unitary systems 5/		matty in	ster and	To Tenganion	Paris Name
taner of telling		estamon cantain bulance	Samon	Common office of the office of the office	
		mot (la (la complete de la complete			

¹/ Identified in accordance with approaches to be worked out in the context of Article II.

^{2/} Some delegations did not consider this table necessary.

 $[\]underline{\mathbf{3}}/$ In accordance with the IUPAC (International Union of Pure and Applied Chemistry) Nomenclature.

⁴/ Different views exist whether it is necessary to state both the scientific chemical name and the structural formula in order for the declarations to be unambiguous.

^{5/} Some delegations suggested that multicomponent chemical weapons should not be declared as a special category in a separate table.

hmunition	Quantity (number of pieces) (in kg per piece of munition/submunition)	Plants of the last	2.82 kg of chemical x 1.12 kg of chemical y 50 kg of chemical Z (50 x 1 kg submunitions)	TING THE PARTY OF	The f	3 kg chemical A + B	2 kg chemical A 1 kg chemical G	and the state of t
	Quantity (number of pieces)	Veryone	13.000 8.000 1.000 warheads	100 submunitions	in Am	500 (completed shells, components	150 cannisters B	works "to
	Quantity of unfilled munition/submunition (number of pieces) 1/	and the second	22.000 500 warhead bodies	1.500 submunitions	Tile of the second of the seco	100 shell bodies	200 cannisters A 300 cannisters B	poly and a second
	Calibre (if applicable)	cicons o	155 mm 120 mm	Lines: Lines cons.	o to i	155 mm	iv atta	bien C es Lans
2. Munitions	Type	Unitary chemical Lype	Examples: Shell Cartridge		Multicomponent chemical type	Examples: Binary	-	

	o Libra of unfilled	Filled	Filled devices
Type	devices (number of pieces)	Quantity (number of pieces)	Chemical fill (in kg/piece)
Example: spraytanks)	The second secon		

1/ Some delegations did not consider this column necessary.

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- 4. Equipment specifically designed for use directly in connection with the employment of munitions and other devices under points D:2 and 3. (Example: single purpose rocket launchers).
- 5. Chemicals specifically designed for use directly in connection with the employment of munitions and other devices under points D:2 and 3. (Example: thickeners). $\frac{1}{}$
- E. Locations and detailed inventories of chemical weapons stocks to be declared before the commencement of each elimination period 2/

 For each stock the following shall be declared:
- Location
 Geographical location expressed by ...
- 2. <u>Detailed inventory</u> Composition and quantities of the chemical weapons shall be declared in accordance with paragraph D of this Annex.
- II. PLANS FOR THE ELIMINATION OF CHEMICAL WEAPONS
- A. General plans

The following chemical weapons shall be eliminated during Elimination Period I: $\frac{2}{3}$

The following chemical weapons shall be eliminated during Elimination Period II: $\frac{2}{3}$

^{1/} Different views exist concerning, if or to what extent such chemicals should be declared. Furthermore, it appears that this question will have to be decided in the light of the final definition of chemical weapons.

^{2/} Some delegations held the view that overall declarations should be made within 30 days after the Convention's entry into force for a State Party.

^{3/} Chemical weapons shall be described and amounts indicated in a manner identical to that of the declarations.

B. Detailed plans

They shall include:

- schedules indicating detailed timeframes, quantities and types of chemical weapons to be destroyed or diverted to permitted purposes in accordance with the Principles for the Elimination laid down in Annex IV,
- location of facilities to be used for destruction or diversion and information confirming that the facilities can consume the quantities to be eliminated within the elimination period,
- methods to be used for the destruction or diversion, $\frac{1}{2}$ as well as the end products,
- plans for verification of the destruction and diversion $\frac{1}{}$ processes based on the Principles and Methods for the Verification of the Elimination of Chemical Weapons laid down in Annex IV.

^{1/} One delegation stated that it was unconvinced that diversion was either a practical or economical method for elimination. It may be prepared, however, to review its position in the event a practical system for diversion can be devised, preserving the requirement for effective verification.

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- IV. MEASURES ON CHEMICAL WEAPONS ELIMINATION OF CHEMICAL WEAPONS 1/
- 1. Each State Party possessing chemical weapons undertakes to eliminate through destruction or diversion, 2/ as rapidly as possible, all chemical weapons under its jurisdiction or control in accordance with the Principles for the Elimination of Chemical Weapons laid down in Annex IV.
- 2. The elimination shall commence within ... 2/ months and be completed within 10 years after the Convention's entry into force for a State Party, and shall be carried out in accordance with the Principles for the Order of Elimination laid down in Annex IV and the plans submitted under Article III.
- 3. The elimination process shall be carried out in such a way that the end products are unsuitable for chemical weapons purposes.
- 4. Each State Party possessing chemical weapons undertakes to facilitate and not to hinder in any way the application of the Principles and Methods for the Verification of the Elimination of Chemical Weapons, laid down in Annex IV.
- 5. In implementing the provisions of this article all necessary safety precautions shall be observed to protect populations and the environment.

I/ The question of old unknown weapons or stocks which have been left by others without the knowledge of the State Party, is not addressed in this / Article. It is understood that this question will be dealt with at a later stage of the negotiations at which time the placement in the Convention of the relevant provisions will also be decided.

^{2/} One delegation stated that it was unconvinced that diversion was either a practical or economical method for elimination. It may be prepared, however, to review its position in the event a practical system for diversion can be devised, preserving the requirement for effective verification.

^{3/} The figure to be inserted here depends on a later decision as regards the Principles for the Order of Elimination in Annex IV.

ANNEX IV

A State Party shall decide for itself which methods, processes and techniques to use for the elimination of its chemical weapon, if any, in accordance with the principles laid down in this Annex.

I. PRINCIPLES FOR THE ELIMINATION OF CHEMICAL WEAPONS

All chemical weapons shall be eliminated through destruction or diversion. Limited quantities of chemicals may be retained as specified in Article VI.

A. Destruction of chemical weapons

Destruction of chemical weapons means a process by which chemicals are converted in an essentially irreversible way to a form unsuitable for production of chemical weapons, and which in an irreversible manner renders munitions and other devices unusable as such.

. Elimination through destruction shall apply to all chemical weapons except those which may be diverted.

B. Diversion of chemical weapons

Diversion of chemical weapons means a process by which chemical weapons are converted in an essentially irreversible way into end products that may only be used for purposes other than those related to chemical weapons.

Elimination through diversion may not apply to supertoxic lethal chemicals or key components of multi-component systems (as well as other types of chemicals to be agreed upon).

- II. PRINCPLES FOR THE ORDER OF ELIMINATION
- A. The elaboration of Principles for the Order of Elimination could build on the following:
 - undiminished security for all States during the entire elimination stage,
 - confidence building in the early part of the elimination stage,
 - applicability irrespective of the actual composition of the stockpiles, and
 - applicability irrespective of the methods chosen for the elimination of the chemical weapons.
- B. The elaboration of Princples for the Order of Elimination is in a very early stage of the negotiations. The preliminary approach has so far been based on the following:
 - that the entire elimination stage be divided into x number of elimination periods,
 - that the chemical weapons to be eliminated be divided into groups,

- that certain percentages of the initial aggregate amount of each group of chemical weapons be eliminated during each elimination period, and
- that methods for comparing stockpiles of different composition be elaborated.

 This approach could be illustrated as follows:

Group of chemical weapons	Elimination period I II III		III
	1-4 years after entry into force	4-7 years after entry into force	7-10 years after entry into force
Group A	40%	30%	30%
Group B	40%	30%	30%
Group C	100%	0%	0%
Group D	30%	40%	30%
Group E	30%	30%	40%

(It should be noted that the number and length of the elimination periods, the various percentages and the number of Groups are intended only as examples).

III. PRINCIPLES AND METHODS FOR THE VERIFICATION OF THE ELIMINATION OF CHEMICAL WEAPONS

The detailed arrangements for the actual verification of the elimination shall be worked out in collaboration between the State Party and the Consultative Committee (or its subsidiary organs, as appropriate) in accordance with the following principles:

A. Principles and methods for the verification of destruction of chemical weapons

The principles summarized in CD/CW/WP.108 are to be further elaborated. They read:

- "- that the aim of the verification procedures should be
 - -- to confirm the identity and quantity of the materials to be destroyed, and
 - -- to confirm that the materials have actually and completely been destroyed,
 - that a combination of human inspection and monitoring with instruments would be necessary for effective verification, but that the exact combination of instruments and inspectors would have to be tailored after the specific destruction processes to be monitored,

- that inspection would be continuous during periods in which destruction operations are under way for destruction of supertoxic lethal chemicals, draining of filled munitions as well as during destruction of filled and drained munition. As regards other chemicals there were different views on whether inspection should be continuous or on a quota basis or limited to certain key stages,
- that international inspectors would have to be qualified and impartial personnel, and that they should be able to make independent judgements,
- that the inspectors should have an up-to-date knowledge of
 the design and operation of the destruction facility and that they would
 need to make a detailed engineering review of the facility, including
 on-site inspection, before the destruction operations begin,
- that in order to minimize intrusion and ensure confidence, the data used for verification should be as closely linked as possible to the actual destruction step and the verification procedures designed so that they do not unnecessarily interfere with the operations of the facility,
- that, to the extent consistent with the needs, the verification procedures should make use of information from routine facility operations, and that the same verification procedures should, to the extent possible, be used for different processes within one and the same facility,
- that close co-operation between international verification personnel and host State operating personnel was important for effective international verification, and
- that, while the decisions as regards destruction methods etc. lies with the sovereign State Party, the Technical Secretariat could have some role to play. It could, inter alia, assist States Parties with experts for the designing of destruction facilities, and give suggestions on how to facilitate the verification tasks. It seemed, however, to be agreed that such assistance should be given by the Technical Secretariat, only upon request from a State Party."
- B. Principles and methods for the verification of diversion of chemical weapons for permitted purposes

 (To be elaborated).

V. MEASURES ON CHEMICAL WEAPONS PRODUCTION FACILITIES $\frac{1}{2}$ DECLARATIONS $\frac{3}{4}$

Declarations of chemical weapons production facilities and plans for their elimination

- 1. (An undertaking by States Parties) to submit to the Consultative Committee, not later than 30 days after the Convention enters into force for it, declarations stating:
- (a) whether it possesses or does not possess any chemical weapons production facilities on its territory or elsewhere under its jurisdiction or control,
- (b) whether it has on its territory any chemical weapons production facilities under the jurisdiction or control of anyone else,
- (c) whether it has transferred equipment or technical documentation $\frac{5}{}$ relevant for production of chemical weapons since ... or has received such equipment or documentation $\frac{5}{}$ since that date.

¹/ The text of this Article and its Annex is in an early stage of negotiations.

^{2/} In accordance with definitions still to be worked out in the context of Article II. It is understood that the definition will encompass also filling facilities.

^{3/} The provisions on Declarations (plus relevant part of Annex V) will presumably be moved to Article III and its Annex, once they have been further negotiated.

^{4/} Some delegations stressed that overall declarations should encompass not only production facilities with a production for chemical weapons purposes but also other facilities producing chemicals which can be used for chemical weapons purposes. It is understood that for the time being the paragraphs under the heading "Declarations of chemical weapons production facilities and plans for their elimination" refers only to production facilities with a production for chemical weapons purposes. A separate heading "Declarations of other facilities producing chemicals which can be used for chemical weapons purposes" has been inserted to indicate that the question of declaration of such facilities will need to be worked on.

^{5/} The view was expressed that technical documentation should not be included.

^{6/} The view was expressed that past transfers should not be included in the Convention.

- 2. (An undertaking by State Parties possessing chemical weapons production facilities) to submit to the Consultative Committee, not later than 30 days after the Convention enters into force for it, initial declarations stating their total production capacity. $\frac{1/2}{}$
- 3. (An undertaking by States Parties possessing chemical weapons production facilities) to submit to the Consultative Committee, not later than 30 days after the Convention enters into force for it, a declaration that all activities related to production of chemical weapons have ceased. 3/
- 4. (An undertaking by States Parties possessing chemical weapons production facilities) to submit not later than $...\frac{4}{}$ plans for the closure, $\frac{3}{}$ plans for temporary conversion into chemical weapons destruction facilities, if any, and general plans for the elimination of their production facilities, as well as plans, if any, for conversion into facilities for production for permitted purposes. $\frac{5}{}$

^{2/} Some delegations held the view that all States Parties should declare their total production capacity. Other delegations felt that it was not necessary in this context to declare the total production capacity, and therefore that the entire paragraph was not necessary.

^{3/} Some delegations expressed the view that ceasing of production and closing of production facilities should be simultaneous. However, other delegations had doubts about the feasibility of this from the point of view of verification of the closure as well as from the point of view of possible temporary conversions of such facilities into facilities for destruction of chemical weapons.

^{4/} The view was expressed that an early date should be set.

^{5/} Some delegations held the view that conversion of chemical weapons production facilities into facilities for production for permitted purposes should not take place.

- 5. (An undertaking by State Parties possessing chemical weapons production facilities) to submit to the Consultative Committee detailed declarations stating the locations and detailed information on their chemical weapons production facilities as well as detailed plans for the elimination. These declarations and plans shall be submitted not later than three months before the commencement of the elimination, $\frac{1}{}$ as specified in the Principles for the Order of Elimination of Chemical Weapons Production Facilities laid down in Annex V.
- 6. The declarations and plans to be submitted under paragraphs 1 through 5 shall be made in accordance with Annex V.
- 7. State Parties shall consult among themselves and through the Consultative Committee, as soon as possible after the declarations made in accordance with paragraph 2 with the view to co-ordinating their elimination plans.
- 8. (An undertaking by each State Party possessing chemical weapons production facilities) to submit to the Consultative Committee annual progress reports on the implementation of the plans for the elimination of chemical weapons production facilities and a notification of the completion of the elimination within 30 days thereafter.

Declarations of other facilities producing chemicals which can be used for chemical weapons purposes 3/

^{1/} The view was expressed that declaration of location should be made in the context of declarations that production have ceased.

^{2/} The view was expressed that as regards elimination of chemical weapons production facilities such an obligation was not necessary.

^{3/} Some delegations stressed that overall declarations should encompass not only production facilities with a production for chemical weapons purposes but also other facilities producing chemicals which can be used for chemical weapons purposes. It is understood that for the time being the paragraphs under the heading "Declarations of chemical weapons production facilities and plans for their elimination" refers only to production facilities with a production for chemical weapons purposes. A separate heading "Declarations of other facilities producing chemicals which can be used for chemical weapons purposes" has been inserted to indicate that the question of declaration of such facilities will need to be worked on.

ELIMINATION OF CHEMICAL WEAPONS PRODUCTION FACILITIES

- 9. (An undertaking by each State Party possessing chemical weapons production facilities) to cease all activities at its chemical weapons production facilities relating to the production of chemical weapons, immediately after the Convention's entry into force for it, and to close each production facility not later than ... 1/ after the Convention's entry into force for it, in a manner that renders it inoperable for chemical weapons production.
- 10. (An undertaking by each State Party possessing chemical weapons production facilities) to eliminate through destruction or dismantling,— the chemical weapons production facilities under its jurisdiction or control in accordance with the Principles for the Elimination of Chemical Weapons Production Facilities laid down in Annex V.
- 11. The elimination shall commence within ... months and be completed as soon as possible and in any case not later than 10 years after the Convention's entry into force for a State Party.
- 12. In implementing the provisions of this article all necessary safety precautions shall be observed to protect populations and the environment.
- 13. (An undertaking by State Parties) not in any way to acquire any new chemical weapons production facilities. $\underline{3}$
- 14. (An undertaking by States Parties possessing chemical weapons production facilities) to facilitate and not to hinder in any way the application of the Principles and Methods for the Verification of the Closure and Elimination of Chemical Weapons Production Facilities, laid down in Annex V.

^{1/} Some delegations expressed the view that ceasing of production and closing of production facilities should be simultaneous. However, other delegations had doubts about the feasibility of this from the point of view of verification of the closure as well as from the point of view of possible temporary conversions of such facilities into facilities for destruction of chemical weapons.

^{2/} The view was expressed that pending the definition of chemical weapons production facilities, the possibility for other ways of elimination should be kept open.

^{3/} Some delegations did not consider this paragraph necessary.

ANNEX V

- A. Possession or non-possession²
- Possession of chemical weapons production facilities on own territory.
 Yes
 No
- 2. Possession, jurisdiction or control over chemical weapons production facilities elsewhere.

Yes

No

If yes, information about location(s), expressed by name(s) of State(s).

B. Existence on the territory of any chemical weapons production facilities under the jursidiction or control of anyone else

Yes

No

If yes, information about ownership, expressed by name(s) of State(s).

^{2/} Some delegations held the view that all States Parties should declare their total production capacity. Other delegations felt that it was not necessary in this context to declare the total production capacity, and therefore that the entire paragraph was not necessary.

C. Past transfers

If there has been transfer of equipment or technical documentation relevant for production of chemical weapons since ..., or reception of such equipment or documentation since that date, the following information shall be provided.

(To be elaborated.)

- D. Initial declarations of chemical weapons production facilities
 They shall contain the following information:
 - (1) production, stating products by ...
 - (2) capacity expressed as ...3/
 - (3)
 - (4)
- E. Declarations that all activities related to production of chemical weapons have ceased
- F. Detailed declarations of chemical weapons production facilities
 They shall contain the following information:
 - (1) Geographical location expressed by ...4/
 - (2) Chemical names of products produced
 - (3) Manufacturing/filling capacity for each substance expressed as ...3/
 - (4)
 - (5)

¹/ The view was expressed that past transfers should not be included in the Convention.

^{2/} The view was expressed that technical documentation should not be included.

^{3/} It was suggested that capacity be expressed as maximum hourly capacity.

^{4/} The view was expressed that declaration of location should be made in the context of declarations that production have ceased.

- II. PLANS FOR THE CLOSURE, ELIMINATION AND CONVERSION OF CHEMICAL WEAPONS PRODUCTION FACILITIES
- A. Plans for closure of chemical weapons production facilities
- B. Plans for temporary conversion of chemical weapons production facilities into chemical weapons destruction facilities
- C. Plans for the elimination of chemical weapons production capacities
- 1. General plans
 They shall include:
- 2. <u>Detailed plans</u>
 They shall include:
- D. Plans for elimination of chemical weapons production facilities which have temporarily been converted into chemical weapons destruction facilities
- E. Plans for conversion of chemical weapons production facilities into facilities for production for permitted purposes 2/
- III. DECLARATIONS OF OTHER FACILITIES PRODUCING CHEMICALS WHICH CAN BE USED FOR CHEMICAL WEAPONS PURPOSES 3/

Nome delegations expressed the view that ceasing of production and closing of production facilities should be simultaneous. However, other delegations had doubts about the feasibility of this from the point of view of verification of the closure as well as from the point, of view of possible temporary conversions of such facilities into facilities for destruction of chemical weapons.

^{2/} Some delegations held the view that conversion of chemical weapons production facilities into facilities for production for permitted purposes should not take place.

^{3/} Some delegations stressed that overall declarations should encompass not only production facilities with a production for chemical weapons purposes but also other facilities producing chemicals which can be used for chemical weapons purposes. It is understood that for the time being the paragraphs under the heading "Declarations of chemical weapons production facilities and plans for their elimination" refers only to production facilities with a production for chemical weapons purposes. A separate heading "Declarations of other facilities producing chemicals which can be used for chemical weapons purposes" has been inserted to indicate that the question of declaration of such facilities will need to be worked on.

IV. ELIMINATION OF CHEMICAL WEAPONS PRODUCTION FACILITIES

A State Party shall decide for itself which methods, processes and techniques to use for the elimination of its chemical weapons production facility, if any, in accordance with the principles laid down in this Annex.

A. PRINCIPLES FOR THE ELIMINATION OF CHEMICAL WEAPONS PRODUCTION FACILITIES

All chemical weapons production facilities shall be eliminated through destruction or dismantling. Chemical weapons production facilities may be temporarily converted into chemical weapons destruction facilities.

- Destruction of chemical weapons production facilities
 Destruction of chemical weapons production facilities means ...
 Elimination through destruction shall apply to ...
- 2. Dismantling of chemical weapons production facilities

 Dismantling of chemical weapons production facilities means ...

 Elimination through dismantling may apply to ...
- 3. Elimination of chemical weapons production facilities temporarily converted into chemical weapons destruction facilities
- 4. Elimination of chemical weapons production facilities through conversion into facilities for production for permitted purposes 2/
- B. PRINCIPLES FOR THE ORDER OF ELIMINATION OF CHEMICAL WEAPONS PRODUCTION FACILITIES

 (To be elaborated.)
- C. PRINCIPLES AND METHODS FOR THE VERIFICATION OF THE CLOSURE AND ELIMINATION OF CHEMICAL WEAPONS PRODUCTION FACILITIES

The detailed arrangements for the actual verification of the elimination shall be worked out in collaboration between the State Party and the Consultative Committee (or its subsidiary organs, as appropriate) in accordance with the following principles:

Principles and methods for the verification of closure of chemical weapons production facilities

(To be elaborated.)

^{1/} The view was expressed that pending the definition of chemical weapons production facilities, the possibility for other ways of elimination should be kept open.

^{2/} Some delegations held the view that conversion of chemical weapons production facilities into facilities for production for permitted purposes should not take place.

- 2. Principles and methods for the verification of destruction of chemical weapons production facilities

 (To be elaborated.)
- 3. Principles and methods for the verification of dismantling of chemical weapons production facilities
 (To be elaborated.)
- 4. Principles and methods for the verification of elimination of chemical weapons production facilities which have temporarily been converted into chemical weapons destruction facilities
- 5. Principles and methods for the verification of elimination of chemical weapons production facilities through conversion into facilities for production for permitted purposes 1/

^{1/} Some delegations held the view that conversion of chemical weapons production facilities into facilities for production for permitted purposes should not take place.

VI. PERMITTED ACTIVITIES*/**/

Each State Party has the right, in accordance with the provisions of this Convention, to develop, ****/ produce, otherwise acquire, retain, transfer and use toxic chemicals and their precursors for permitted purposes, in types and quantities consistent with such purposes, subject to the following:

- 1. Each State Party shall, within 30 days of the entry into force of the Convention, for itself, declare the possession for permitted purposes of chemicals, posing a special danger from the viewpoint of their possible diversion to chemical weapons purposes, within its territory and anywhere under its jurisdiction or control, indicating the scientific names, [the structural formula] and the quantities for each individual category:
 - (a) supertoxic lethal chemicals;
- (b) [key components of binary and/or multicomponent chemical systems for chemical weapons], listed in ...;
 - (c) other lethal chemicals, listed in ...;
 - (d) harmful chemicals, listed in ...;
 - (e) key precursors, listed in ...;
 - (f) other chemicals posing special risk, listed in
- 2. Each State Party shall declare annually, for its territory, anywhere under its jurisdiction or control, **** the quantity of:

^{*/} One delegation suggests that the title be changed to read "Activities not prohibited by the Convention", and the term "permitted purposes" be changed to read "purposes not prohibited by the Convention".

^{**/} Some delegations stated that Article VI was elaborated on the basis of the understanding that the key components of binary chemical systems should be especially singled out. But, because of the fact that this basis has been breached, Article VI, as a whole, requires radical revision. The division of chemicals into chemicals with use as chemical weapons and with no use as chemical weapons is of a preliminary character since the criteria for such a division have not been found yet. Some delegations believe that the aggregate quantity of supertoxic lethal chemicals for permitted purposes should not exceed 1 tonne per year for each State Party and that the production of such chemicals for permitted purposes should be concentrated at a single small-scale facility.

^{***/} One delegation considers that the languages in regard to this term should be further elaborated.

^{****/} It was understood that this formulation covers the operations of transnational corporations.

^{*****/} The level of quantity to be declared and the question of the necessity to declare the location of facilities in regard to paragraphs 1 and 2 will be agreed upon for each category at a later stage.

- (a) supertoxic lethal chemicals, chemicals with use as [key components of binary and/or multicomponent chemical systems for chemical weapons], other lethal chemicals and other harmful chemicals, [key precursors], produced, otherwise acquired, possessed or retained from chemical weapon stocks for protective purposes, indicating the scientific chemical names [and structural formula] of such chemicals.
- (b) supertoxic lethal chemicals, as well as chemicals with use as [key components of binary and/or multicomponent chemical systems for chemical weapons], other lethal chemicals, other harmful chemicals key precursors and other chemicals posing special risk, listed in ..., produced, retained, otherwise acquired or possessed for industrial, agricultural, research, medical and/or other peaceful purposes, indicating the scientific chemical names [structural formula] of such chemicals.
- 3. Each State Party undertakes to apply and accept, in regard to supertoxic lethal chemicals and [key components of binary and/or multicomponent chemical systems for chemical weapons], the following measures:

A. Supertoxic lethal chemicals with use as chemical weapons

- (i) The restriction and requirements of this paragraph shall be applicable to the supertoxic lethal chemicals with use as chemical weapons [and other toxic chemicals, as listed in ... Chemicals can be added to or removed from this list according to procedure].*
- (ii) Each State Party shall prohibit all production and use of such chemicals, except for production and use for protective purposes [or in laboratory quantities for research or medical purposes].
 - (iii) Each State Party may retain, produce, acquire, transfer to another State Party or use such chemicals for protective, [research and medical] purposes, subject to the following:
 - the retention, production, acquisition and use of such chemicals for protective purposes shall be strictly limited to those amounts which can be justified for such purposes.

^{*/} The ways for chemicals to be included in or excluded from this category remains to be elaborated.

- the amount of supertoxic lethal chemicals possessed by a Party for protective purposes or acquired for protective purposes by any Party in any calendar year shall be included in the 1 tonne aggregate limit [for all permitted purposes] for the following chemicals:
 - supertoxic lethal chemicals
 - [key component of binary and/or multicomponent chemical systems for chemical weapons]*/
 - key precursors-*/
- Each State Party which produces such chemicals for protective purposes shall carry out the production at a single small-scale production facility, **/ the capacity of which shall not exceed ... metric tonne per year. The location and a detailed description of the facility shall be provided to the Consultative Committee no less than 30 days before operations commence, and the facility shall be subject to monitoring by the National Authority and the Consultative Committee through annual submission of data, on-site instruments, on-site national inspections and systematic international on-site inspections. Further information on the facility, its monitoring and operations is provided in ...
 - [- Any establishment possessing, producing or using laboratory quantities of such chemicals shall be approved by the State Party.

 The establishments will be monitored by the National Authority and by the Consultative Committee through annual data reporting.]
 - Each State Party may transfer such chemicals only to another State
 Party for protective purposes, subject to the quantity limitations
 specified in paragraph 3 A (iii) above, [or for research or medical
 purposes]. Thirty days prior to any transfer or reception greater
 than ... the transferring Party shall report the transfer or reception
 to the Consultative Committee, as specified in Items transferred
 may not be retransferred to another State.

^{*/} The amounts of key component of binary and/or multicomponent chemical systems for chemical weapons and key precursors will be measured in accordance with the amount of final supertoxic lethal chemicals produced by these compounds.

^{**/} This does not prejudge the position of one group of delegations about the functions of the single small-scale production facility.

B. Super-toxic lethal chemicals with no use as chemical weapons-

- (i) The restrictions and requirements of this paragraph shall be applicable to the super-toxic lethal chemicals with no use as chemical weapons. $\frac{**}{}$
 - The retention, production, acquisition and use of these chemicals shall be strictly limited to those amounts which can be justified for such purposes;
 - The amount of super-toxic lethal chemicals possessed by a Party for protective purposes or acquired for protective purposes by any Party in any calendar year shall be included in the one tonne aggregate limit [for all permitted purposes] for the following chemicals:
 - super-toxic lethal chemicals
 - [key component of binary and/or multicomponent chemical systems for chemical weapons] ****/
 - key precursors ***/
 - Each State Party which produces these chemicals shall carry the production at [a single small-scale production facility] [facilities approved by the State Party in quantities consistent with such purposes] the capacity of which shall not exceed ... metric tonne per year.
 - The location and a detailed description of the facility [facilities] shall be provided to the Consultative Committee not later than 30 days before operations commence, and the facility [facilities] shall be subject to monitoring by the National Authority and the Consultative Committee through annual submission of data, [on-site instruments,] on-site national inspections and systematic international on-site inspections. Further information on the facility, [facilities] its monitoring and operations is provided in ...

^{*/} One delegation considers that the title of this paragraph and the concept contained below is subject to further clarification.

 $[\]star\star$ / The ways for chemicals to be included in or excluded from this category remains to be elaborated.

^{***/} The amounts of key component of binary and/or multicomponent chemical systems for chemical weapons and key precursors will be measured in accordance with the amount of final super-toxic lethal chemicals produced by these compounds.

- Each State Party may transfer these chemicals only to another Party in quantities consistent with permitted purposes [subject to the limitations specified in ...]. [These chemicals may be transferred to a State not Party to the Convention for research and medical purposes.] Thirty days prior to any transfer or reception greater than ... the transferring Party shall report the transfer or reception to the Consultative Committee, as specified in ... Items transferred may not be retransferred to another State.
- C. Chemicals with use as [key components of binary and/or multicomponent chemical systems for chemical weapons]
- (i) The restrictions and requirements of this paragraph shall be applicable to chemicals with use as [key components of binary and/or multicomponent systems for chemical weapons], listed in ... Chemicals may be added to this list according to ... procedure.
- (ii) Each State Party shall prohibit all production and use of such chemicals except [for production of super-toxic lethal chemicals as end products for use for protective purposes] [research and medical purposes].
- (iii) Each State Party may retain, produce or use such chemicals [for protective] [research and medical] purposes subject to the following:
 - At no time shall the aggregate amount of such (in terms of the weight of end products) chemicals possessed, produced or retained for protective purposes [together with chemicals for all permitted purposes] shall, by all means, by any Party in any calendar year, exceed one metric tonne as a general quantity limitation [laboratory quantities].
 - Each State Party which produces such chemicals for protective purposes shall carry out the production at a single small-scale production facility, the capacity of which shall not exceed ... metric tonne per year. The location and a detailed description of the facility shall be provided to the Consultative Committee no less than 30 days before operations commence. and the facility shall be subject to monitoring by the National Authority and the Consultative Committee through annual submission of data, on-site instruments, on-site national inspections and systematic international on-site inspections. Further information on the facility and its operations is provided in ...

[Any establishment possessing, producing or using laboratory quantities of such chemicals shall be approved by the State Party. The establishments will be monitored by the National Authority and by the Consultative Committee through annual data reporting.]

- */- Each State Party undertakes not to transfer such chemicals, directly or indirectly, to anyone.
- */- Each State Party may transfer such chemicals only to another
 Party for protective purposes, subject to the quantity limitations
 specified in paragraph 3 A (iii) above, [or for research or medical
 purposes]. Thirty days prior to any transfer or reception greater
 than ... the transferring Party shall report the transfer to the
 Consultative Committee, as specified in ... Items transferred may
 not be retransferred to another State.
- 4. Other lethal chemicals with use as chemical weapons and with no use as chemical weapons.

(to be elaborated)

- 5. Other harmful chemicals (to be elaborated)
- Key precursors(to be elaborated)
- Other chemicals posing special risk (to be elaborated)
- 8. Precursors
 (to be elaborated)**/

^{*/} These two texts represent two different alternatives in regard to the transfer régime.

 $[\]star\star$ / The régimes under paragraphs 3 - 8 are of a preliminary character and are subject to further simplification and elaboration.

VII. NATIONAL IMPLEMENTATION MEASURES

Each State Party to this Convention shall adopt any measures it considers necessary in accordance with its constitutional processes to implement this Convention and, in particular, to prohibit and prevent anywhere under its jurisdiction or control any activity that a State Party to this Convention is prohibited from conducting by this Convention.

In order to implement these obligations, each State Party shall, according to its needs and specific conditions, designate or establish a national authority.*

Each State Party undertakes to inform the Consultative Committee concerning the national authority and other legislative and administrative measures taken to implement the Convention.

Each State Party undertakes to co-operate with the Consultative Committee in the exercise of all its functions and in particular to provide assistance to the Consultative Committee including data reporting, assistance for international on-site inspections, provided for in this Convention, and a response to all its requests for the provision of expertise, information and laboratory support.

National Technical Means

^{*/} It was suggested that guidelines for the functioning of the national authority for the implementation of the Convention be elaborated.

^{**/} It was suggested that no reference to National Technical Means is needed in a future Convention.

VIII. CONSULTATIVE COMMITTEE

- 1. The State Parties to this Convention shall establish a Consultative Committee [upon] [within 30 days after the] entry into force of this Convention. Each State Party to this Convention shall be entitled to appoint a representative to the Consultative Committee.
- 2. The first session of the Consultative Committee shall be convened by the Depositary at [venue] not later than 30 days after the entry into force of the Convention.
- 3. The Consultative Committee shall [oversee] [review] the implementation of the Convention, consider any questions or matters relevant to the Convention or relating to the powers and functions of any organs established under the Convention, foster international consultations and co-operation among States Parties to the Convention, and promote the verification of compliance with this Convention.
- 4. For the purposes of this Convention the Consultative Committee shall be responsible for:
- (a) establishing, and revising as necessary, procedures for exchange of information, for declarations and for technical matters related to the implementation of this Convention;
- (b) receiving, keeping [and making available to States Parties] declarations, plans and notifications presented by States Parties in accordance with Articles ..;
- (c) carrying out all activities relating to the execution of measures of verification as specified in this Convention; further specifying procedures for the conduct of systematic international on-site inspection; overseeing and carrying out systematic international on-site verification in accordance with Articles ..; receiving and considering requests for fact-finding procedures and to conduct such procedures in accordance with Article ..;

^{*/} The enumeration of responsibilities listed in paragraph 3 was not considered to be exhausted.

- (d) co-operating with the national authorities of States Parties in the implementation of the Convention;
- (e) facilitating consultations and co-operation among States Parties at their request by means of rendering services to them;
- (f) reviewing scientific and technical developments which could affect the operation of this Convention;
- (g) encouraging international scientific and technical co-operation in the chemical field for peaceful purposes.
- 5. The Consultative Committee shall establish an Executive Council [within 45 days after entry into force of the Convention]. The Council shall be composed of representatives of [15] States Parties on the basis of an appropriate geographic [and political] balance. [In addition, those permanent members of the Security Council of the United Nations who are Parties to the Convention should be represented.] The [elected] members of the Executive Council shall serve for [two] [three] year period, with [five] of the members replaced or re-elected each year.
- 6. [The Executive Council shall have delegated authority to carry out the functions of the Consultative Committee when it is not in session.]*/ The Executive Council shall report to the Consultative Committee about the exercise of the functions delegated to it.
- 7. The Consultative Committee shall meet in regular session annually; it shall hold extraordinary sessions at the request of the majority of States Parties to this Convention.
- 8. Any decision of substance of the Consultative Committee and the Executive Council requires a [two-third majority] [consensus], any other decision requires a simple majority. *** [All decisions in the Consultative Committee and in the Executive Council shall be taken by a two-third majority.]
- 9. The States Parties to this Convention shall establish a Technical Secretariat that shall provide administrative support to the Consultative Committee and the Executive Council and render technical assistance to States Parties and the Executive Council.
- 10. Further functions and the organization of the Consultative Committee and its subsidiary organs are specified in Annex ...

^{*/} The division of responsibility between the Consultative Committee and the Executive Council and the detailed functions of the latter remain to be elaborated.

^{**/} An opinion was expressed that the concept of consensus encompasses that in case the Executive Council is unable to reach a consensus on a given subject matter, all views expressed should be made known to the States Parties of the Convention.

IX. CONSULTATION, CO-OPERATION AND FACT-FINDING

- 1. State Parties shall consult and co-operate, directly among themselves, or through the Consultative Committee or other appropriate international procedures, including procedures within the framework of the United Nations and in accordance with its Charter, on any matter which may be raised relating to the objectives or the implementation of the provisions of this Convention.
- States Parties to the Convention shall make every possible effort to clarify and resolve, through exchange of information and consultations among them, any matter which may cause doubt about compliance with this Convention, or which gives rise to concerns about a related matter which may be considered ambiguous. [A Party which receives a request from another Party for clarification of any matter which the requesting Party believes causes such doubts or concerns shall provide the requesting Party, within ... days of the request, with information sufficient to answer the doubts or concerns raised along with an explanation on how the information provided resolves the matter.] Nothing in this Convention affects the right of any two or more States Parties to this Convention to arrange by mutual consent for inspections or any other procedures among themselves to clarify and resolve any matter which may cause doubts about compliance or gives rise to concerns about a related matter which may be considered ambiguous. Such arrangements shall not affect the rights and obligations of any State Party under other provisions of this Convention.

The further contents of Article IX remain to be elaborated.

X. ASSISTANCE

XI. ECONOMIC AND TECHNOLOGICAL DEVELOPMENT

^{*/} Some delegations expressed the opinion that material on fact-finding and challenge inspection can be found in documents CD/294, CD/334, CD/416, CD/443, CD/500, CD/539, CD/CW/WP.106 and CD/CW/WP.120. Some delegations expressed their support for the approach for Article IX contained in Alternative I of CD/CW/WP.106 of 12 April 1985 and suggested that it be taken as the basis for further work on this Article. Other delegations consider that on-challenge on-site inspections should be carried out only with the consent of a State Party in regard to which the request is made.

XII. RELATION TO OTHER INTERNATIONAL AGREEMENTS*

Nothing in this Convention will be interpreted as in any way impairing the obligations assumed 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 and in the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, signed at London, Moscow and Washington on 10 April 1972.

XIII. AMENDMENTS

XIV. DURATION, WITHDRAWAL*

The withdrawal of a State Party from this Convention shall not in any way affect the duty of States to continue fulfilling the obligations assumed under any relevant rules of international law, particularly the Geneva Protocol of 17 June 1925.

XV. SIGNATURE, RATIFICATION, ENTRY INTO FORCE

XVI. LANGUAGES

Annexes and other documents
Preparatory Commission

 $[\]star$ / Some delegations consider that the texts contained above require further consideration.

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APPENDIX II

Contents

Report of Working Group A

Report of Working Group B

Report of Working Group C

Report of the Chairman of the Open-ended Consultations of the Ad Hoc Committee on Chemical Weapons

Report of Working Group A

Working Group A held 17 meetings between 4 March and 7 August 1985.

In accordance with the terms of reference for this Working Group, as indicated in document CD/CW/WP.98 of 27 February 1985, the Group dealt with

the following broad topics:

- 1. Permitted activities regarding various categories of chemicals.
- 2. Laboratories, small-scale production facilities, industrial production facilities, their role in the permitted activities.
- 3. Definitions to be included in the Convention.
- 4. Principles and methods of declarations and verification with regard to the activities of the small-scale production facility.
- .5. Principles and methods of declarations and verification with regard to the activities of the industrial production facilities.

The consideration of the most important aspects of these five issues was scheduled on the basis of an adopted programme of work. The negotiations were based on document CD/539 and other relevant documents. To structure the work the Chairman introduced in addition a number of basic working papers: CD/CW/WP.99; WP.103, WP.104, WP.105, and papers on the régimes for various categories of chemicals, including the definitions of chemical weapons, key components of binary and/or multicomponent weapons and key precursors.

The Chairman also held a number of consultations, including with technical experts, which proved very useful for creating the basis for the understandings reached at the end of the session.

The issue of Scope, though appearing in the title of the terms of reference, was not among the five main topics and therefore was not given particular attention.

- The Group succeeded in significantly improving the definition on chemical weapons, agreeing on all elements which constitute toxic chemicals (reference: Article II, 1 (i)). Agreement was also reached in regard to the contents of the definition of "Permitted Activities", though differences remain as to the title of that paragraph (reference: Article II, 3).

The Group failed to agree completely on one of the fundamental issues — the approach for identifying the various categories of chemicals. Nevertheless, due to the in-depth exchange of views on this subject and other relevant issues, it was possible to enlarge the general idea on the restrictions, the place of production and the monitoring procedures in regard to the permitted activities. This new development is reflected in Article VI, paragraphs 1, 2 and 3, where an understanding about the contents and the structure of régimes in regard to the super-toxic lethal chemicals and key components of binary and/or multicomponent chemical systems for chemical weapons is contained.

In accordance with the mandate for the Ad Hoc Committee on Chemical Weapons (CD/551) the texts agreed upon are of a preliminary nature and not binding any delegation at this stage of the negotiations.

The contribution of the Working Group is reflected in the attached two draft articles:

- Article II: Definitions and Criteria;
- Article VI: Permitted Activities.

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Article II

DEFINITIONS AND CRITERIA

For the purposes of this Convention:

1.**/ The term "chemical weapons" shall apply to the following, together or separately:**/

- (i) toxic chemicals, including super-toxic lethal chemicals, other lethal chemicals, other harmful chemicals and their precursors, including key precursors and key components of binary and/or multicomponent chemical systems for chemical weapons, except such chemicals intended for permitted purposes as long as the types and quantities involved are consistent with such purposes;
 - (ii) munitions and devices, specifically designed to cause death or other harm through the toxic properties of those toxic chemicals, as referred to above, which would be released as a result of the employment of such munitions and devices;
- (iii) any equipment specifically designed for use directly in connection with the employment of such munitions or devices;
- [The term "chemical weapons" shall not apply to those chemicals which are not super-toxic lethal, or other lethal chemicals and which are approved by the Consultative Committee for use by a Party for domestic law enforcement and domestic riot control purposes.]

^{*/} The definitions of chemical weapons are presented on the understanding that problems related to irritants used for law enforcement and riot control, and also to chemicals intended to enhance the effect of the use of chemical weapons if their inclusion in the Convention is agreed could be handled outside the definitions of chemical weapons if this will result in a more clear and understandable definition. Preliminary suggestions to solve these problems are given below and consultations on them will be continued.

^{**/} One delegation expressed its reservation on the present formulation of the definition of chemical weapons and on the terminology used in (i) that failed to reflect the general purpose criterion.

^{***/} One delegation suggests that the term "permitted purposes" should be substituted, where it occurs throughout the Convention, with the term "purposes not prohibited by the Convention".

- [State Parties agree not to [develop, produce, stockpile or] utilize for chemical weapons chemicals intended to enhance the effect of the use of such weapons.]
- [2. "Toxic chemicals" means:

chemicals [however or wherever they are produced], [whether produced in plants, munitions or elsewhere] [regardless of the method and pattern of production] whose toxic properties can be utilized to cause death or temporary or permanent harm, to man or animals involving:]

[2. "Toxic chemicals" means:

any chemical, regardless of its origin or method of production which through its chemical action on life processes can cause death, temporary incapacitation, or permanent harm to man or animals

Toxic chemicals are divided into the following categories:]

- (a) "super-toxic lethal chemicals", which have a median lethal dose which is less than or equal to 0.5 mg/kg (subcutaneous administration) or 2,000 mg-min/m³ (by inhalation) when measured by an agreed method— set forth in ...
- (b) "other lethal chemicals", which have a median lethal dose which is greater than 0.5 mg/kg (subcutaneous administration) or 2,000 mg-min/m 3 (by inhalation) and less than or equal to 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m 3 (by inhalation) when measured by an agreed method set forth in ...
- [(c) "other harmful chemicals", being any [toxic] chemicals not covered by (a) or (b) above, [including toxic chemicals which normally cause temporary incapacitation rather than death] [at similar doses to those at which super-toxic lethal chemicals cause death].]

[and "other harmful chemicals" has a median lethal dose which is greater than 10 mg/kg (subcutaneous administration) or 20,000 mg-min/m 3 (by inhalation).]

^{*/} It was noted that after such measurements had actually been performed, the figures mentioned in this and the following section might be subject to slight changes in order to cover sulphur mustard gas under the first category.

- 3. [Permitted purposes] [Purposes not prohibited by the Convention]
 [Non-hostile purposes] means:
- (a) industrial, agricultural, research, medical or other peaceful purposes, domestic law enforcement purposes; and military purposes not connected with the use of chemical weapons.
- (b) protective purposes, namely those purposes directly related to protection against chemical weapons; */
- 4. "Precursor" means:
 - a chemical reagent which takes part in the production of a toxic chemical.
 - (a) "Key Precursor" means:
- a precursor which poses a significant risk to the objectives of the Convention by virtue of its importance in the production of a toxic chemical.

It may possess [possesses] the following characteristics:

- (i) it may play [plays] an important role in determining the toxic properties of a [toxic chemicals prohibited by the Convention] [super-toxic lethal chemical].
- (ii) it may be used in one of the chemical reactions at the final stage of formation of the [toxic chemicals prohibited by the Convention] [super-toxic lethal chemical].
- [(iii) it may [is] not be used, or [is] used only in minimal quantities, for permitted purposes.]**/

^{*/} The suggestion that such permitted protective purposes should relate only to "an adversary's use of" chemical weapons was removed pending a decision on whether in the Convention the question of prohibiting other military preparations for use of chemical weapons than those mentioned under scope should be dealt with.

 $[\]frac{**}{}$ One delegation considers that this particular characteristic has primary importance and should be placed first.

Key precursors are listed in ...

For the purpose of the relevant provisions in a Chemical Weapons Convention key precursors should be listed and subject to revisions according to [characteristics] [guidelines].

Chemicals which are not key precursors but are deemed to pose a [threat] [particular risk] with regard to a Chemical Weapons Convention should be included in a list.

(b) Key component of binary and/or multicomponent chemical systems for chemical weapons means:

[a key precursor which forms a toxic chemical in the binary or multicomponent weapons munition or device and which has the following additional characteristics (to be elaborated):]

- 5. "Chemical weapons production facility" means:
 - Chemical weapons production facility means [any building or equipment designed, constructed or used [in any degree] for the production of chemical weapons] or for filling chemical weapons.
 - Chemical weapons production facility means [any building or any equipment which in any degree was designed, constructed or used since 1 January 1946, for:
- (a) the production for chemical weapons of any toxic chemical, except for those listed in (schedule B), or the production for chemical weapons of any key precursors;] or
 - (b) the filling of chemical weapons.

Article VI

PERMITTED ACTIVITIES*

Each State Party has the right, in accordance with the provisions of this Convention, to develop, produce, otherwise acquire, retain, transfer and use toxic chemicals and their precursors for permitted purposes, in types and quantities consistent with such purposes, subject to the following:

- 1. Each State Party shall, within 30 days of the entry into force of the Convention for itself, declare the possession for permitted purposes of chemicals, posing a special danger from the viewpoint of their possible diversion to chemical weapons purposes, within its territory and anywhere under its jurisdiction or control, indicating the scientific names, [the structural formula] and the quantities for each individual category:
 - (a) super-toxic lethal chemicals;
- (b) key components of binary and/or multicomponent chemical systems for chemical weapons, listed in ...;
 - (c) other lethal chemicals, listed in ...;
 - (d) harmful chemicals, listed in ...;
 - (e) key precursors, listed in ...;
- (f) other chemicals posing special risk, listed in
- 2. Each State Party shall declare annually, for its territory, anywhere under its jurisdiction or control, the quantity of:

^{*/} One delegation suggests that the title be changed to read "Activities not prohibited by the Convention", and the term "permitted purposes" be changed to read "purposes not prohibited by the Convention".

^{**/} One delegation considers that the language in regard to this term should be further elaborated.

^{***/} It was understood that this formulation covers the operations of transnational corporations.

^{****/} The level of quantity to be declared and the question of the necessity to declare the location of facilities in regard to paragraphs 1 and 2 will be agreed upon for each category at a later stage.

- (a) super-toxic lethal chemicals, chemicals with use as key components of binary and/or multicomponent chemical systems for chemical weapons, other lethal chemicals and other harmful chemicals, [key precursors], produced, otherwise acquired, possessed or retained from chemical weapon stocks for protective purposes, indicating the scientific chemical names [and structural formula] of such chemicals.
- (b) super-toxic lethal chemicals, as well as chemicals with use as key components of binary and/or multicomponent chemical systems for chemical weapons, other lethal chemicals, other harmful chemicals key precursors and other chemicals posing special risk, listed in ..., produced retained, otherwise acquired or possessed for industrial, agricultural, research, medical and/or other peaceful purposes, indicating the scientific chemical names [structural formula] of such chemicals.
- 3. Each State Party undertakes to apply and accept, in regard to super-toxic lethal chemicals and key components of binary and/or multicomponent chemical systems for chemical weapons, the following measures:

A. Super-toxic lethal chemicals with use as chemical weapons

- (i) The restrictions and requirements of this paragraph shall be applicable to the super-toxic lethal chemicals with use as chemical weapons

 [and other toxic chemicals, as listed in ... Chemicals can be added to or removed from this list according to procedure.]*/
 - (ii) Each State Party shall prohibit all production and use of such chemicals, except for production and use for protective purposes [or in laboratory quantities for research or medical purposes].
 - (iii) Each State Party may retain, produce, acquire, transfer to another State Party or use such chemicals for protective, [research and medical] purposes, subject to the following:
 - the retention, production, acquisition and use of such chemicals for protective purposes shall be strictly limited to those amounts which can be justified for such purposes.

^{*/} The ways for chemicals to be included in or excluded from this category remains to be elaborated.

- the amount of super-toxic lethal chemicals possessed by a Party for protective purposes or acquired for protective purposes by any Party in any calendar year shall be included in the one tonne aggregate [for all permitted purposes] for the following chemicals:
 - super-toxic lethal chemicals
 - key component of binary and/or multicomponent chemical systems for chemical weapons*/
 - key precursors-/
- Each State Party which produces such chemicals for protective purposes shall carry out the production at a single small-scale production facility, **/ the capacity of which shall not exceed ... metric tonne per year. The location and a detailed description of the facility shall be provided to the Consultative Committee no less than 30 days before operations commence, and the facility shall be subject to monitoring by the National Authority and the Consultative Committee through annual submission of data, on-site instruments, on-site national inspections and systematic international on-site inspections. Further information on the facility, its monitoring and operations is provided in ...
- [- Any establishment possessing, producing or using laboratory quantities of such chemicals shall be approved by the State Party. The establishments will be monitored by the National Authority and by the Consultative Committee through annual data reporting.]
- Each State Party may transfer such chemicals only to another
 State Party for protective purposes, subject to the quantity
 limitations specified in paragraph 3 A (iii) above, [or for
 research or medical purposes]. Thirty days prior to any transfer or
 reception greater than ... the transferring Party shall report the
 transfer or reception to the Consutlative Committee, as specified
 in ... Items transferred may not be retransferred to another State.

^{*/} The amounts of key component of binary and/or multicomponent chemical systems for chemical weapons and key precursors will be measured in accordance with the amount of final super-toxic lethal chemicals produced by these compounds.

^{**/} This does not prejudge the position of one group of delegations about the functions of the single small-scale production facility.

B. Super-toxic lethal chemicals with no use as chemical weapons*

- (i) The restrictions and requirements of this paragraph shall be applicable to the super-toxic lethal chemicals with no use as chemical weapons.
 - The retention, production, acquisition and use of these chemicals shall be strictly limited to those amounts which can be justified for such purposes;
 - The amount of super-toxic lethal chemicals possessed by a Party for protective purposes or acquired for protective purposes by any Party in any calendar year shall be included in the one tonne aggregate limit [for all permitted purposes] for the following chemicals:
 - super-toxic lethal chemicals
 - key component of binary and/or multicomponent chemical systems for chemical weapons ***/
 - key precursors
 - Each State Party which produces these chemicals shall carry out the production at [a single small-scale production facility] [facilities approved by the State Party in quantities consistent with such purposes] the capacity of which shall not exceed ... metric tonne per year.
 - The location and a detailed description of the facility [facilities] shall be provided to the Consultative Committee not later than 30 days before operations commence, and the facility [facilities] shall be subject to monitoring by the National Authority and the Consultative Committee through annual submission of data, [on-site instruments], on-site national inspections and systematic international on-site inspections. Further information on the facility, [facilities] its monitoring and operations is provided in ...

 $[\]star$ / One delegation considers that the title of this paragraph and the concept contained below is subject to further clarification.

^{**/} The ways for chemicals to be included in or excluded from this category remain to be elaborated.

^{***/} The amounts of key component of binary and/or multicomponent chemical systems for chemical weapons and key precursors will be measured in accordance with the amount of final super-toxic lethal chemicals produced by these compounds.

- Each State Party may transfer these chemicals only to another Party in quantities consistent with permitted purposes [subject to the limitations specified in ...]. [These chemicals may be transferred to a State not Party to the Convention for research and medical purposes.] Thirty days prior to any transfer or reception greater than ... the transferring Party shall report the transfer or reception to the Consultative Committee, as specified in ... Items transferred may not be retransferred to another State.
- C. Chemicals with use as key components of binary and/or multicomponent chemical systems for chemical weapons
 - (i) The restrictions and requirements of this paragraph shall be applicable to chemicals with use as key components of binary and/or multicomponent systems for chemical weapons, listed in ... Chemicals may be added to this list according to ... procedure.
 - (ii) Each State Party shall prohibit all production and use of such chemicals except [for production of super-toxic lethal chemicals as end products for use for protective purposes] [research and medical purposes].
 - (iii) Each State Party may retain, produce or use such chemicals [for protective] [research and medical] purposes subject to the following:
 - At no time shall the aggregate amount of such (in terms of the weight of end products) chemicals possessed, produced or retained for protective purposes [together with chemicals for all permitted purposes] shall, by all means, by any Party in any calendar year, exceed one metric tonne as a general quantity limitation [haboratory quantities].
 - Each State Party which produces such chemicals for protective purposes shall carry out the production at a single small-scale production facility, the capacity of which shall not exceed ... metric tonne per year. The location and a detailed description of the facility shall be provided to the Consultative Committee no less than 30 days before operations commence, and the facility

shall be subject to monitoring by the National Authority and the Consultative Committee through annual submission of data, on-site instruments, on-site national inspections and systematic international on-site inspections. Further information on the facility and its operations is provided in ...

[Any establishment possessing, producing or using laboratory quantities of such chemicals shall be approved by the State Party. The establishments will be monitored by the National Authority and by the Consultative Committee through annual data reporting.]

- */- Each State Party undertakes not to transfer such chemicals, directly or indirectly, to anyone.
- */- Each State Party may transfer such chemicals only to another
 Party for protective purposes, subject to the quantity limitations
 specified in paragraph 3 A (iii) above, [or for research or
 medical purposes]. Thirty days prior to any transfer or reception
 greater than ... the transferring Party shall report the transfer
 to the Consultative Committee, as specified in ... Items
 transferred may not be retransferred to another State.
- 4. Other lethal chemicals with use as chemical weapons and with no use as chemical weapons.
 (to be elaborated).
- Other harmful chemicals (to be elaborated).
- Key precursors(to be elaborated).
- 7. Other chemicals posing special risk (to be elaborated).
- 8. Precursors
 (to be elaborated).**/

^{*/} These two texts represent two different alternatives in regard to the transfer régime.

^{**/} The régimes under paragraphs 3-8 are of a preliminary character and are subject to further simplification and elaboration.

REPORT OF WORKING GROUP B

- 1. Working Group B held 12 meetings from 15 March to 7 August 1985. In addition the Chairman held a number of informal consultations with delegations.
- 2. In accordance with the terms of reference (CD/CW/WP.98), the Working Group dealt with the questions of declarations and elimination of chemical weapons and chemical weapons production facilities.
- 3. The result of the work is presented below in the form of draft texts for
 - Article III on Declarations, and its Annex (Annex III),
 - Article IV on Elimination of Chemical Weapons, and its Annex (Annex IV), and
 - Article V on Measures on Chemical Weapons Production Facilities, and its Annex (Annex V).
- 4. In accordance with the mandate for the Ad Hoc Committee on Chemical Weapons (CD/551) the texts are not binding for any delegation at this stage of the negotiations. Bearing this in mind, Working Group B recommends that the texts presented in this report be used as the basis for future work on these issues.

ARTICLE III

DECLARATIONS

Declarations of chemical weapons and plans for their elimination 2/3/

1. Each State Party undertakes to submit to the Consultative Committee, not later than 30 days after the Convention enters into force for it, declarations stating

- (a) whether it possesses or does not possess any chemical weapons on its territory or elsewhere under its jurisdiction or control,
- (b) whether it has on its territory any chemical weapons under the jurisdiction or control of anyone else,
- (c) whether it has transferred control of chemical weapons since ... or has received such weapons since that date. 4
- 2. Each State Party possessing chemical weapons undertakes to submit to the Consultative Committee, not later than 30 days after the Convention enters into force for it, declarations stating the aggregate quantity and detailed composition of its chemical weapons.
- 3. Each State Party possessing chemical weapons undertakes to submit to the Consultative Committee not later than ... months after the Convention's entry into force for it, general plans for the elimination of its chemical weapons based on the Principles for the Order of Elimination laid down in Annex IV.

^{1/} In accordance with agreed definitions.

^{2/} In accordance with the provisions in Article IV.

^{3/} The question of old unknown weapons or stocks which have been left by others without the knowledge of the State Party is not addressed in this Article. It is understood that this question will be dealt with at a later stage of the negotiations at which time the placement in the Convention of the relevant provisions will also be decided.

^{4/} The view was expressed that past transfers should not be included in the Convention.

^{5/ 3} and 6 months have been proposed.

- 4. Each State Party possessing chemical weapons undertakes to submit to the Consultative Committee declarations stating the locations and detailed inventories of their chemical weapons stocks as well as detailed plans for their elimination. These declarations and plans shall be submitted not later than 3 months before the commencement of each elimination period specified in the Principles for the Order of Elimination in Annex IV, and shall encompass all stocks to be eliminated during the next coming such period.
- 5. State Parties shall consult among themselves and through the Consultative Committee, as soon as possible after the declarations made in accordance with paragraph 2 of this Article, with the view to co-ordinating their plans.
- 6. The declarations and plans under Article III, paragraphs 1 through 4, shall be made in accordance with Annex III.
- 7. Each State Party undertakes to submit to the Consultative Committee annual progress reports on the implementation of the plans for the elimination of chemical weapons and a notification of the completion of the elimination within 30 days thereafter.
- 8. Annex III and Annex IV constitute integral parts of the Convention.

Declarations of chemicals which could be used for chemical weapons purposes but which are intended for permitted purposes 2/

Declarations of chemical weapons production facilities (To be elaborated)

Verification of declarations
(To be elaborated)

Some delegations held the view that overall declarations should be made within 30 days after the Convention's entry into force for a State Party.

^{2/} In accordance with the organization of work (WP.98) these provisions are to be elaborated in the context of Article VI taking into account <u>inter alia</u> some harmful chemicals, to be elaborated.

ANNEX III

- I. DECLARATIONS OF CHEMICAL WEAPONS
- A. Possession or non-possession
- 1. Possession of chemical weapons on own territory.

Yes

No

2. Possession, jurisdiction or control over chemical weapons elsewhere.

Yes

No

If yes, information about location(s), expressed by name(s) of State(s).

B. Existence on the territory of any chemical weapons under the jurisdiction or control of anyone else

Yes

· No

If yes, information about ownership, expressed by name(s) of State(s).

C. Past transfers 1/

If there has been transfer of control of chemical weapons since, or reception of such weapons since that date, the following information shall be provided. To be elaborated.

- D. Aggregate quantity and detailed composition of chemical weapons
- 1. Chemicals
- 1.1 Toxic chemicals 2/

In cases involving mixtures of two or more toxic chemicals all such components should be specified as well as the percentage of the mixtures.

¹/ The view was expressed that past transfers should not be included in the Convention.

^{2/} In accordance with agreed definition.

1.1.1 Super-toxic lethal chemicals $\frac{1}{2}$

Scientific chemical name ² /	LANGUE TO	Bulk	Filled in	Total	
- 3/	Purity4/ %	Quantity (metric tons)	Number and	Quantity (metric	quantity (metric tons)
Chemical A		Lordnon T	to lanta de la	TO THE SALE	atot
Chemical B	The second second	Chur Shakesto	3 3	1000	Tes
etc.	LOVE SU	2001354 9	ter un de	a line and the	1000

1.1.2 Other lethal chemicals $\frac{1}{2}$

Scientific chemical name2/	Bulk			Filled in munition	Total
3/	Purity4/%		Number and size of containers	Quantity (metric	quantity (metric tons)
Harte no bine that have been	ges leigh		e emegada e	cus de ros cus de ros	rai

1.1.3 Other harmful chemicals 5/

Scientific chemical name2//	Bulk			Filled in munition	Total
Structural formula and Toxicity (of pure substance) if applicable	Purity4/%	Quantity (metric tons)	Number and size of containers	Quantity (metric	quantity (metric tons)
Technologica con	dil mino	a residual	Lisa to make		

^{1/} In accordance with agreed definition.

^{2/} In accordance with the IUPAC (International Union of Pure and Applied Chemistry) Nomenclature.

^{3/} Different views exist whether it is necessary to state both the scientific chemical name and the structural formula in order for the declarations to be unambiguous.

^{4/} Three different approaches were taken by delegations: 1) Initial purity,

²⁾ Purity of the compound as stored with an approximation of some 10 per cent.

³⁾ That declaration of purity was not necessary.

⁵/ In accordance with agreed definition, but pending such a definition it is unclear which chemicals to declare in this table.

Scientific chemical name ^{2/} / Structural formula ^{3/}	Quantity (metric tons)	Number and size of containers
Key precursors for unitary		Marine for mile
systems 4/		Companies for multi-

Scientific chemical name2//	Bu:	lk	Filled in munition/	Total
Structural formula 3/	Quantity (metric tons)	Number and size of containers	submunition (metric tons)	quantity (metric tons)
[Key components] [Key precursors] for multi-component systems 4/5/6/	100 Tes			

 $[\]frac{1}{1}$ The view was expressed that these two tables were not necessary and the key precursors and key components could be declared under points 1.1.1, 1.1.2 and 1.1.3 as applicable.

²/ In accordance with the IUPAC (International Union of Pure and Applied Chemistry) Nomenclature.

^{3/} Different views exist whether it is necessary to state both the scientific chemical name and the structural formula in order for the declarations to be unambiguous.

⁴/ To be declared separately for super-toxic lethal, other lethal and other harmful chemicals.

^{5/} Identified in accordance with approaches to be worked out in the context of Article II.

 $[\]underline{6}$ / Some delegations suggested that multicomponent chemical weapons should not be declared as a special category in a separate table.

1.3 Precursors $\frac{1}{2}$ in bulk $\frac{2}{2}$

Scientific chemical $name^{3/2}$ Structural formula $4/2$	Quantity (metric tons)	Number and size of containers
Precursors for unitary systems Components for multicomponent systems 5/	and ton-pasta	Ping language and the same and
	d Samen vilianum ofmicent	estimos litimosos

^{1/} Identified in accordance with approaches to be worked out in the context of Article II.

^{2/} Some delegations did not consider this table necessary.

^{3/} In accordance with the IUPAC (International Union of Pure and Applied Chemistry) Nomenclature.

^{4/} Different views exist whether it is necessary to state both the scientific chemical name and the structural formula in order for the declarations to be unambiguous.

^{5/} Some delegations suggested that multicomponent chemical weapons should not be declared as a special category in a separate table.

I something the second	Filled municion/submunical fill Quantity (number of pieces) (in kg per piece of munition/submunicion)	The control of Foreign Control o	13,000 1,12 kg of chemical y 8,000 1,12 kg of chemical y 50 kg of chemical z (50 x 1 kg submunitions)	100 submunitions	The same of the sa	500 (completed 3 kg chemical A + B shells, components components	100 cannisters A 2 kg chemical A 150 cannisters B 1 kg chemical C	
S	Quantity of unfilled munition/submunition (number of pieces) 1/	to a lead of the stand of the s	22.000 500 warhead bodies	1.500 submunitions	time to the total and the tota	100 shell bodies	200 cannisters A 300 cannisters B	THE RESERVE OF THE PARTY OF THE
ac Trans	calibre (if applicable)	enolfar e vol	155 mm 120 mm	one one of o	to hold	155 мм	ed links of links of links	13
2. Munitions	Type	Unitary chemical type	Examples: Shell Cartridge Rocket varhead		Multicomponent chemical type	Examples: Binary	("name of final reactive product)	

	ballian ac i.	Filled devices	evices
Type	devices (number of pieces)	Quantity (number of pieces)	Chemical fill (in kg/piece)
(Example:	DELOTION AND ADDRESS OF THE PARTY OF THE PAR	ETROPO TEM O RDE S	rota Table

- 4. Equipment specifically designed for use directly in connection with the employment of munitions and other devices under points D:2 and 3. (Example: single purpose rocket launchers).
- 5. Chemicals specifically designed for use directly in connection with the employment of munitions and other devices under points D:2 and 3. (Example: thickeners). $\frac{1}{2}$
- E. Locations and detailed inventories of chemical weapons stocks to be declared before the commencement of each elimination period 2/
 For each stock the following shall be declared:
- 1. Location

 Geographical location expressed by ...
- 2. Detailed inventory

 Composition and quantities of the chemical weapons shall be declared in accordance with paragraph D of this Annex.
- II. PLANS FOR THE ELIMINATION OF CHEMICAL WEAPONS
- A. General plans
 The following chemical weapons shall be eliminated during Elimination
 Period I: $\frac{2}{3}$

The following chemical weapons shall be eliminated during Elimination Period II: $\frac{2}{3}$

¹/ Different views exist concerning, if or to what extent such chemicals should be declared. Furthermore, it appears that this question will have to be decided in the light of the final definition of chemical weapons.

^{2/} Some delegations held the view that overall declarations should be made within 30 days after the Convention's entry into force for a State Party.

^{3/} Chemical weapons shall be described and amounts indicated in a manner identical to that of the declarations.

B. Detailed plans

They shall include:

- schedules indicating detailed timeframes, quantities and types of chemical weapons to be destroyed or diverted to permitted purposes in accordance with the Principles for the Elimination laid down in Annex IV,
- location of facilities to be used for destruction or diversion and information confirming that the facilities can consume the quantities to be eliminated within the elimination period,
- methods to be used for the destruction or diversion, $\frac{1}{}$ as well as the end products,
- plans for verification of the destruction and diversion processes based on the Principles and Methods for the Verification of the Elimination of Chemical Weapons laid down in Annex IV.

^{1/} One delegation stated that it was unconvinced that diversion was either a practical or economical method for elimination. It may be prepared, however, to review its position in the event a practical system for diversion can be devised, preserving the requirement for effective verification.

ARTICLE IV ELIMINATION OF CHEMICAL WEAPONS 1

- 1. Each State Party possessing chemical weapons undertakes to eliminate through destruction or diversion, ²/ as rapidly as possible, all chemical weapons under its jurisdiction or control in accordance with the Principles for the Elimination of Chemical Weapons laid down in Annex IV.
- 2. The elimination shall commence within ... 2/ months and be completed within 10 years after the Convention's entry into force for a State Party, and shall be carried out in accordance with the Principles for the Order of Elimination laid down in Annex IV and the plans submitted under Article III.
- 3. The elimination process shall be carried out in such a way that the end products are unsuitable for chemical weapons purposes.
- 4. Each State Party possessing chemical weapons undertakes to facilitate and not to hinder in any way the application of the Principles and Methods for the Verification of the Elimination of Chemical Weapons, laid down in Annex IV.
- 5. In implementing the provisions of this article all necessary safety precautions shall be observed to protect populations and the environment.

The question of old unknown weapons or stocks which have been left by others without the knowledge of the State Party, is not addressed in this / Article. It is understood that this question will be dealt with at a later stage of the negotiations at which time the placement in the Convention of the relevant provisions will also be decided.

^{2/} One delegation stated that it was unconvinced that diversion was either a practical or economical method for elimination. It may be prepared, however, to review its position in the event a practical system for diversion can be devised, preserving the requirement for effective verification.

^{3/} The figure to be inserted here depends on a later decision as regards the Principles for the Order of Elimination in Annex IV.

ANNEX IV

A State Party shall decide for itself which methods, processes and techniques to use for the elimination of its chemical weapon, if any, in accordance with the principles laid down in this Annex.

I. PRINCIPLES FOR THE ELIMINATION OF CHEMICAL WEAPONS

All chemical weapons shall be eliminated through destruction or diversion. Limited quantities of chemicals may be retained as specified in Article VI.

A. Destruction of chemical weapons

Destruction of chemical weapons means a process by which chemicals are converted in an essentially irreversible way to a form unsuitable for production of chemical weapons, and which in an irreversible manner renders munitions and other devices unusable as such.

Elimination through destruction shall apply to all chemical weapons except those which may be diverted.

B. Diversion of chemical weapons

Diversion of chemical weapons means a process by which chemical weapons are converted in an essentially irreversible way into end products that may only be used for purposes other than those related to chemical weapons.

Elimination through diversion may not apply to supertoxic lethal chemicals or key components of multi-component systems.

Elimination through diversion may apply to ... (To be elaborated.)

- II. PRINCIPLES FOR THE ORDER OF ELIMINATION
- A. The elaboration of Principles for the Order of Elimination could build on the following:
 - undiminished security for all States during the entire elimination stage,
 - confidence building in the early part of the elimination stage,
 - applicability irrespective of the actual composition of the stockpiles, and
 - applicability irrespective of the methods chosen for the elimination of the chemical weapons.
- B. The elaboration of Princples for the Order of Elimination is in a very early stage of the negotiations. The preliminary approach has so far been based on the following:
 - that the entire elimination stage be divided into x number of elimination periods,
 - that the chemical weapons to be eliminated be divided into groups,

- that certain percentages of the initial aggregate amount of each group of chemical weapons be eliminated during each elimination period, and
- that methods for comparing stockpiles of different composition be elaborated.

 This approach could be illustrated as follows:

Danie Blancy Com	I I	Elimination period II		
Group of chemical weapons	1-4 years after entry into force	4-7 years after entry into force	7-10 years after entry into force	
Group A	40%	30%	30%	
Group B	40%	30%	30%	
Group C	100%	0%	0%	
Group D	30%	40%	30%	
Group E	30%	30%	40%	

(It should be noted that the number and length of the elimination periods, the various percentages and the number of Groups are intended only as examples).

III. PRINCIPLES AND METHODS FOR THE VERIFICATION OF THE ELIMINATION OF CHEMICAL WEAPONS

The detailed arrangements for the actual verification of the elimination shall be worked out in collaboration between the State Party and the Consultative Committee (or its subsidiary organs, as appropriate) in accordance with the following principles:

A. Principles and methods for the verification of destruction of chemical weapons

The principles summarized in CD/CW/WP.108 are to be further elaborated. They read:

- "- that the aim of the verification procedures should be
 - -- to confirm the identity and quantity of the materials to be destroyed, and
- -- to confirm that the materials have actually and completely been destroyed,
 - that a combination of human inspection and monitoring with instruments would be necessary for effective verification, but that the exact combination of instruments and inspectors would have to be tailored after the specific destruction processes to be monitored,

- that inspection would be continuous during periods in which destruction operations are under way for destruction of supertoxic lethal chemicals, draining of filled munitions as well as during destruction of filled and drained munition. As regards other chemicals there were different views on whether inspection should be continuous or on a quota basis or limited to certain key stages,
- that international inspectors would have to be qualified and impartial personnel, and that they should be able to make independent judgements,
- that the inspectors should have an up-to-date knowledge of
 the design and operation of the destruction facility and that they would
 need to make a detailed engineering review of the facility, including
 on-site inspection, before the destruction operations begin,
- that in order to minimize intrusion and ensure confidence, the data used for verification should be as closely linked as possible to the actual destruction step and the verification procedures designed so that they do not unnecessarily interfere with the operations of the facility,
- that, to the extent consistent with the needs, the verification procedures should make use of information from routine facility operations, and that the same verification procedures should, to the extent possible, be used for different processes within one and the same facility,
- that close co-operation between international verification personnel and host State operating personnel was important for effective international verification, and
- that, while the decisions as regards destruction methods etc. lies with the sovereign State Party, the Technical Secretariat could have some role to play. It could, inter alia, assist States Parties with experts for the designing of destruction facilities, and give suggestions on how to facilitate the verification tasks. It seemed, however, to be agreed that such assistance should be given by the Technical Secretariat, only upon request from a State Party."
- B. Principles and methods for the verification of diversion of chemical weapons for permitted purposes

(To be elaborated).

ARTICLE V1/

MEASURES ON CHEMICAL WEAPONS PRODUCTION FACILITIES²/

Declarations of chemical weapons production facilities and plans for their elimination

- 1. (An undertaking by States Parties) to submit to the Consultative Committee, not later than 30 days after the Convention enters into force for it, declarations stating:
- (a) whether it possesses or does not possess any chemical weapons production facilities on its territory or elsewhere under its jurisdiction or control,
- (b) whether it has on its territory any chemical weapons production facilities under the jurisdiction or control of anyone else,
- (c) whether it has transferred equipment or technical documentation $\frac{5}{}$ relevant for production of chemical weapons since ... or has received such equipment or documentation $\frac{5}{}$ since that date. $\frac{6}{}$

^{1/} The text of this Article and its Annex is in an early stage of negotiations.

^{2/} In accordance with definitions still to be worked out in the context of Article II. It is understood that the definition will encompass also filling facilities.

 $[\]underline{3}/$ The provisions on Declarations (plus relevant part of Annex V) will presumably be moved to Article III and its Annex, once they have been further negotiated.

^{4/} Some delegations stressed that overall declarations should encompass not only production facilities with a production for chemical weapons purposes but also other facilities producing chemicals which can be used for chemical weapons purposes. It is understood that for the time being the paragraphs under the heading "Declarations of chemical weapons production facilities and plans for their elimination" refers only to production facilities with a production for chemical weapons purposes. A separate heading "Declarations of other facilities producing chemicals which can be used for chemical weapons purposes" has been inserted to indicate that the question of declaration of such facilities will need to be worked on.

⁵/ The view was expressed that technical documentation should not be included.

 $[\]underline{6}$ / The view was expressed that past transfers should not be included in the Convention.

- 2. (An undertaking by State Parties possessing chemical weapons production facilities) to submit to the Consultative Committee, not later than 30 days after the Convention enters into force for it, initial declarations stating their total production capacity. $\frac{1}{2}$
- 3. (An undertaking by States Parties possessing chemical weapons production facilities) to submit to the Consultative Committee, not later than 30 days after the Convention enters into force for it, a declaration that all activities related to production of chemical weapons have ceased. 3/
- 4. (An undertaking by States Parties possessing chemical weapons production facilities) to submit not later than $...\frac{4}{}$ plans for the closure, $\frac{3}{}$ plans for temporary conversion into chemical weapons destruction facilities, if any, and general plans for the elimination of their production facilities, as well as plans, if any, for conversion into facilities for production for permitted purposes. $\frac{5}{}$

^{1/} Some delegations stressed that overall declarations should encompass not only production facilities with a production for chemical weapons purposes but also other facilities producing chemicals which can be used for chemical weapons purposes. It us understood that for the time being the paragraphs under the heading "Declarations of chemical weapons production facilities and plans for their elimination" refers only to production facilities with a production for chemical weapons purposes. A separate heading "Declarations of other facilities producing chemicals which can be used for chemical weapons purposes" has been inserted to indicate that the question of declaration of such facilities will need to be worked on.

^{2/} Some delegations held the view that all States Parties should declare their total production capacity. Other delegations felt that it was not necessary in this context to declare the total production capacity, and therefore that the entire paragraph was not necessary.

^{3/} Some delegations expressed the view that ceasing of production and closing of production facilities should be simultaneous. However, other delegations had doubts about the feasibility of this from the point of view of verification of the closure as well as from the point of view of possible temporary conversions of such facilities into facilities for destruction of chemical weapons.

^{4/} The view was expressed that an early date should be set.

^{5/} Some delegations held the view that conversion of chemical weapons production facilities into facilities for production for permitted purposes should not take place.

- 5. (An undertaking by State Parties possessing chemical weapons production facilities) to submit to the Consultative Committee detailed declarations stating the locations and detailed information on their chemical weapons production facilities as well as detailed plans for the elimination. These declarations and plans shall be submitted not later than three months before the commencement of the elimination, $\frac{1}{2}$ as specified in the Principles for the Order of Elimination of Chemical Weapons Production Facilities laid down in Annex V.
- 6. The declarations and plans to be submitted under paragraphs 1 through 5 shall be made in accordance with Annex V.
- 7. State Parties shall consult among themselves and through the Consultative Committee, as soon as possible after the declarations made in accordance with paragraph 2 with the view to co-ordinating their elimination plans. $\frac{2}{}$
- 8. (An undertaking by each State Party possessing chemical weapons production facilities) to submit to the Consultative Committee annual progress reports on the implementation of the plans for the elimination of chemical weapons production facilities and a notification of the completion of the elimination within 30 days thereafter.

Declarations of other facilities producing chemicals which can be used for chemical weapons purposes 3/

¹/ The view was expressed that declaration of location should be made in the context of declarations that production have ceased.

^{2/} The view was expressed that as regards elimination of chemical weapons production facilities such an obligation was not necessary.

^{3/} Some delegations stressed that overall declarations should encompass not only production facilities with a production for chemical weapons purposes but also other facilities producing chemicals which can be used for chemical weapons purposes. It is understood that for the time being the paragraphs under the heading "Declarations of chemical weapons production facilities and plans for their elimination" refers only to production facilities with a production for chemical weapons purposes. A separate heading "Declarations of other facilities producing chemicals which can be used for chemical weapons purposes" has been inserted to indicate that the question of declaration of such facilities will need to be worked on.

ELIMINATION OF CHEMICAL WEAPONS PRODUCTION FACILITIES

- 9. (An undertaking by each State Party possessing chemical weapons production facilities) to cease all activities at its chemical weapons production facilities relating to the production of chemical weapons, immediately after the Convention's entry into force for it, and to close each production facility not later than $\frac{1}{2} = \frac{1}{2}$ after the Convention's entry into force for it, in a manner that renders it inoperable for chemical weapons production.
- 10. (An undertaking by each State Party possessing chemical weapons production facilities) to eliminate through destruction or dismantling, $\frac{2}{}$ the chemical weapons production facilities under its jurisdiction or control in accordance with the Principles for the Elimination of Chemical Weapons Production Facilities laid down in Annex V.
- 11. The elimination shall commence within ... months and be completed as soon as possible and in any case not later than 10 years after the Convention's entry into force for a State Party.
- 12. In implementing the provisions of th's article all necessary safety precautions shall be observed to protect populations and the environment.
- 13. (An undertaking by State Parties) not in any way to acquire any new chemical weapons production facilities. $\frac{3}{}$
- 14. (An undertaking by States Parties possessing chemical weapons production facilities) to facilitate and not to hinder in any way the application of the Principles and Methods for the Verification of the Closure and Elimination of Chemical Weapons Production Facilities, laid down in Annex V.

^{1/} Some delegations expressed the view that ceasing of production and closing of production facilities should be simultaneous. However, other delegations had doubts about the feasibility of this from the point of view of verification of the closure as well as from the point of view of possible temporary conversions of such facilities into facilities for destruction of chemical weapons.

^{2/} The view was expressed that pending the definition of chemical weapons production facilities, the possibility for other ways of elimination should be kept open.

^{3/} Some delegations did not consider this paragraph necessary.

ANNEX V

- I. DECLARATIONS OF CHEMICAL WEAPONS PRODUCTION FACILITIES 1
- A. Possession or non-possession $\frac{2}{}$
- Possession of chemical weapons production facilities on own territory.
 Yes

No

2. Possession, jurisdiction or control over chemical weapons production facilities elsewhere.

Yes

No

If yes, information about location(s), expressed by name(s) of State(s).

B. Existence on the territory of any chemical weapons production facilities under the jursidiction or control of anyone else

Yes

No

If yes, information about ownership, expressed by name(s) of State(s).

^{2/} Some delegations held the view that all States Parties should declare their total production capacity. Other delegations felt that it was not necessary in this context to declare the total production capacity, and therefore that the entire paragraph was not necessary.

C. Past transfers

If there has been transfer of equipment or technical documentation $\frac{2}{}$ relevant for production of chemical weapons since ..., or reception of such equipment or documentation $\frac{2}{}$ since that date, the following information shall be provided.

(To be elaborated.)

- D. Initial declarations of chemical weapons production facilities
 They shall contain the following information:
 - (1) production, stating products by ...
 - (2) capacity expressed as ...3/
 - (3)
 - (4)
- E. Declarations that all activities related to production of chemical weapons have ceased
- F. Detailed declarations of chemical weapons production facilities

 They shall contain the following information:
 - (1) Geographical location expressed by ...4/
 - (2) Chemical names of products produced
 - (3) Manufacturing/filling capacity for each substance expressed as ...3/
 - (4)
 - (5)

^{1/} The view was expressed that past transfers should not be included in the Convention.

^{2/} The view was expressed that technical documentation should not be included.

^{3/} It was suggested that capacity be expressed as maximum hourly capacity.

^{4/} The view was expressed that declaration of location should be made in the context of declarations that production have ceased.

- II. PLANS FOR THE CLOSURE, ELIMINATION AND CONVERSION OF CHEMICAL WEAPONS PRODUCTION FACILITIES
- A. Plans for closure of chemical weapons production facilities
- B. Plans for temporary conversion of chemical weapons production facilities into chemical weapons destruction facilities
- C. Plans for the elimination of chemical weapons production capacities
- 1. General plans
 They shall include:
- 2. <u>Detailed plans</u>
 They shall include:
- D. Plans for elimination of chemical weapons production facilities which have temporarily been converted into chemical weapons destruction facilities
- E. Plans for conversion of chemical weapons production facilities into facilities for production for permitted purposes 2/
- III. DECLARATIONS OF OTHER FACILITIES PRODUCING CHEMICALS WHICH CAN BE USED FOR CHEMICAL WEAPONS PURPOSES 3/

<u>l</u>/ Some delegations expressed the view that ceasing of production
and closing of production facilities should be simultaneous. However,
other delegations had doubts about the feasibility of this from the point
of view of verification of the closure as well as from the point of view
of possible temporary conversions of such facilities into facilities for
destruction of chemical weapons.

^{2/} Some delegations held the view that conversion of chemical weapons production facilities into facilities for production for permitted purposes should not take place.

^{3/} Some delegations stressed that overall declarations should encompass not only production facilities with a production for chemical weapons purposes but also other facilities producing chemicals which can be used for chemical weapons purposes. It is understood that for the time being the paragraphs under the heading "Declarations of chemical weapons production facilities and plans for their elimination" refers only to production facilities with a production for chemical weapons purposes. A separate heading 'Declarations of other facilities producing chemicals which can be used for chemical weapons purposes" has been inserted to indicate that the question of declaration of such facilities will need to be worked on.

IV. ELIMINATION OF CHEMICAL WEAPONS PRODUCTION FACILITIES

A State Party shall decide for itself which methods, processes and techniques to use for the elimination of its chemical weapons production facility, if any, in accordance with the principles laid down in this Annex.

A. PRINCIPLES FOR THE ELIMINATION OF CHEMICAL WEAPONS PRODUCTION FACILITIES

All chemical weapons production facilities shall be eliminated through destruction or dismantling. $\frac{1}{}$ Chemical weapons production facilities may be temporarily converted into chemical weapons destruction facilities.

- Destruction of chemical weapons production facilities
 Destruction of chemical weapons production facilities means ...
 Elimination through destruction shall apply to ...
- 2. <u>Dismantling of chemical weapons production facilities</u>
 Dismantling of chemical weapons production facilities means ...
 Elimination through dismantling may apply to ...
- 3. Elimination of chemical weapons production facilities temporarily converted into chemical weapons destruction facilities
- 4. Elimination of chemical weapons production facilities through conversion into facilities for production for permitted purposes 2/
- B. PRINCIPLES FOR THE ORDER OF ELIMINATION OF CHEMICAL WEAPONS PRODUCTION FACILITIES

 (To be elaborated.)
- C. PRINCIPLES AND METHODS FOR THE VERIFICATION OF THE CLOSURE AND ELIMINATION OF CHEMICAL WEAPONS PRODUCTION FACILITIES

The detailed arrangements for the actual verification of the elimination shall be worked out in collaboration between the State Party and the Consultative Committee (or its subsidiary organs, as appropriate) in accordance with the following principles:

Principles and methods for the verification of closure of chemical weapons production facilities

(To be elaborated.)

¹/ The view was expressed that pending the definition of chemical weapons production facilities, the possibility for other ways of elimination should be kept open.

^{2/} Some delegations held the view that conversion of chemical weapons production facilities into facilities for production for permitted purposes should not take place.

- 2. Principles and methods for the verification of destruction of chemical weapons production facilities

 (To be elaborated.)
- 3. Principles and methods for the verification of dismantling of chemical weapons production facilities
 (To be elaborated.)
- 4. Principles and methods for the verification of elimination of chemical weapons production facilities which have temporarily been converted into chemical weapons destruction facilities
- 5. Principles and methods for the verification of elimination of chemical weapons production facilities through conversion into facilities for production for permitted purposes 1

Some delegations held the view that conversion of chemical weapons production facilities into facilities for production for permitted purposes should not take place.

Report of Working Group C

- 1. Working Group C held 14 meetings from 6 March to 9 August 1985. In addition the Chairman held five open-ended consultations with delegations.
- 2. In accordance with the terms of reference for Working Group C (CD/CW/WP.98) it attempted to draft the following articles:

Article VII - National Implementation Measures

Article VIII - Consultative Committee

Article IX - Consultation, Co-operation and Fact-finding
Working Group C used document CD/CW/WP.106, Alternative I, tabled by the
Chairman on 12 April 1985, as a technical basis for the drafting exercise.

3. Working Group C was able to agree on texts of drafts of Article VII and
Article VIII, the texts of which are attached to this report. In the context
of Article VII it was suggested that guidelines for the functioning of the
national authority for the implementation of the Convention be elaborated.
Working Group C was only able to agree on paragraphs 1 and 2 of Article IX.
Further work is required to bring Article IX to the same stage of development
as Article VII and Article VIII.

4. In accordance with the mandate for the Ad Hoc Committee on Chemical Weapons (CD/551) the texts agreed upon are of a preliminary nature and not binding on any delegation at this stage of the negotiations.

Article VII

National Implementation Measures

Each State Party to this Convention shall adopt any measures it considers necessary in accordance with its constitutional processes to implement this Convention and, in particular, to prohibit and prevent anywhere under its jurisdiction or control any activity that a State Party to this Convention is prohibited from conducting by this Convention.

In order to implement these obligations, each State Party shall, according to its needs and specific conditions, designate or establish a national authority.*

Each State Party undertakes to inform the Consultative Committee concerning the national authority and other legislative and administrative measures taken to implement the Convention.

Each State Party undertakes to co-operate with the Consultative . Committee in the exercise of all its functions and in particular to provide assistance to the Consultative Committee including data reporting, assistance for international on-site inspections, provided for in this Convention, and a response to all its requests for the provision of expertise, information and laboratory support.

National Technical Means

^{*/} It was suggested that guidelines for the functioning of the national authority for the implementation of the Convention be elaborated.

^{**/} It was suggested that no reference to National Technical Means is needed in a future Convention.

Article VIII Consultative Committee

- 1. The States Parties to this Convention shall establish a Consultative Committee [upon] [within 30 days after the] entry into force of this Convention. Each State Party to this Convention shall be entitled to appoint a representative to the Consultative Committee.
- 2. The first session of the Consultative Committee shall be convened by the Depositary at [venue] not later than 30 days after the entry into force of the Convention.
- 3. The Consultative Committee shall [oversee] [review] the implementation of the Convention, consider any questions or matters relevant to the Convention or relating to the powers and functions of any organs established under the Convention, foster international consultations and co-operation among States Parties to the Convention, and promote the verification of compliance with this Convention.
- 4. For the purposes of this Convention the Consultative Committee shall be responsible for:*/
- (a) establishing, and revising as necessary, procedures for exchange of information, for declarations and for technical matters related to the implementation of this Convention;
- (b) receiving, keeping [and making available to States Parties] declarations, plans and notifications presented by States Parties in accordance with Articles ...;

^{*/} The enumeration of responsibilities listed in paragraph 3 was not considered to be exhausted.

- (c) carrying out all activities relating to the execution of measures of verification as specified in this Convention; further specifying procedures for the conduct of systematic international on-site inspection; overseeing and carrying out systematic international on-site verification in accordance with Articles ...; receiving and considering requests for fact-finding procedures and to conduct such procedures in accordance with Article ...;
- (d) co-operating with the national authorities of States Parties in the implementation of the Convention;
- (e) facilitating consultations and co-operation among States Parties at their request by means of rendering services to them;
- (f) reviewing scientific and technical developments which could affect the operation of this Convention;
- (g) encouraging international scientific and technical co-operation in the chemical field for peaceful purposes.
- 5. The Consultative Committee shall establish an Executive Council [within 45 days after entry into force of the Convention]. The Council shall be composed of representatives of [15] States Parties on the basis of an appropriate geographic [and political] balance. [In addition, those permanent members of the Security Council of the United Nations who are Parties to the Convention should be represented.] The [elected] members of the Executive Council shall serve for [two] [three] year period, with [five] of the members replaced or re-elected each year.
- 6. [The Executive Council shall have delegated authority to carry out the functions of the Consultative Committee when it is not in session.]*/ The Executive Council shall report to the Consultative Committee about the exercise of the functions delegated to it.
- 7. The Consultative Committee shall meet in regular session annually; it shall hold extraordinary sessions at the request of the majority of States Parties to this Convention.

^{*/} The division of responsibility between the Consultative Committee and the Executive Council and the detailed functions of the latter remain to be elaborated.

- 8. Any decision of substance of the Consultative Committee and the Executive Council requires a [two-third majority] [consensus], any other decision requires a simple majority. */ [All decisions in the Consultative Committee and in the Executive Council shall be taken by a two-third majority.]
- 9. The States Parties to this Convention shall establish a Technical Secretariat that shall provide administrative support to the Consultative Committee and the Executive Council and render technical assistance to States Parties and the Executive Council.
- 10. Further functions and the organization of the Consultative Committee and its subsidiary organs are specified in Annex ...

^{*/} An opinion was expressed that the concept of consensus encompasses that in case the Executive Council is unable to reach a consensus on a given subject matter, all views expressed should be made known to the States Parties of the Convention.

Article IX

Consultation, Co-operation and Fact-Finding

- 1. States Parties shall consult and co-operate, directly among themselves, or through the Consultative Committee or other appropriate international procedures, including procedures within the framework of the United Nations and in accordance with its Charter, on any matter which may be raised relating to the objectives or the implementation of the provisions of this Convention.
- 2. States Parties to the Convention shall make every possible effort to clarify and resolve, through exchange of information and consultations among them, any matter which may cause doubt about compliance with this Convention, or which gives rise to concerns about a related matter which may be considered ambiguous. [A Party which receives a request from another Party for clarification of any matter which the requesting Party believes causes such doubts or concerns shall provide the requesting Party, within ... days of the request, with information sufficient to answer the doubts or concerns raised along with an explanation on how the information provided resolves the matter.] Nothing in this Convention affects the right of any two or more States Parties to this Convention to arrange by mutual consent for inspections or any other procedures among themselves to clarify and resolve any matter which may cause doubts about compliance or gives rise to concerns about a related matter which may be considered ambiguous. Such arrangements shall not affect the rights and obligations of any State Party under other provisions of this Convention.

The further contents of Article IX remain to be elaborated.

Report of the Chairman of the Open-ended Consultations of the Ad Hoc Committee on Chemical Weapons

- 1. In accordance with the terms of reference outlined by the Chairman of the $\frac{Ad\ Hoc}{27}$ Committee on Chemical Weapons in document CD/CW/WP.98 dated $\frac{Ad\ Hoc}{27}$ February 1985, the Open-ended Consultations considered the question of the prohibition of the use of chemical weapons and the question of herbicides.
- 2. It was agreed at the first Open-ended Consultations in spring that within the terms of reference, the Open-ended Consultations would deal with the following four elements:
 - (a) the prohibition of the use of chemical weapons;
- (b) the link of the prohibition of the use of chemical weapons to the 1925 Geneva Protocol for the Prohibition of the Use of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare;
 - (c) the prohibition of the use of herbicides as a method of warfare;
- (d) the verification of the prohibition of the use of chemical weapons and of the prohibition of the use of herbicides as a method of warfare.
- 3. As reported in document CD/CW/WP.107 dated 22 April 1985, in the spring session of the Conference on Disarmament the Open-ended Consultations dealt with the first two elements, i.e. the prohibition of the use of chemical weapons and the link of the prohibition of the use of chemical weapons to the 1925 Geneva Protocol. A convergence of views has emerged from the consultations on a set of provisions dealing with the two elements as contained in the Annex of document CD/CW/WP.107, which in the view of the Chairman constitutes a basis for consensus to be reached after further consultations.
- 4. In the second part of the session, the Open-ended Consultations considered the two remaining elements, i.e. the question of the prohibition of the use of herbicides as a method of warfare and the question of verification of the use of chemical weapons and of the prohibition of the use of herbicides.
- 5. Seven meetings of the Open-ended Consultations were held from 18 June to 5 August 1985.

Prohibition of the use of herbicides as a method of warfare and its verification

- 6. The Open-ended Consultations discussed the problem concerning the prohibition of the use of herbicides as a method of warfare and had considered the formulation of such a prohibition contained in the annex of document CD/539 and the informal proposal of the Delegation of Sweden submitted in January 1985.
- 7. In the course of the discussions, the Open-ended Consultations also considered the informal proposals on the prohibition of the use of herbicides submitted by the delegations of China, Iran, Pakistan, Sri Lanka and USSR, as well as the informal working papers submitted by the delegation of the Netherlands and by the delegation of Sweden on 15 July 1985 and the working paper submitted by the delegation of Pakistan in document CD/CW/WP.118 dated 22 July 1985.
- 8. There is a general understanding that the use of herbicides as a method of warfare should be prohibited; obviously such a prohibition should not preclude any other use of herbicides. It is also generally understood that herbicides are not to be considered as chemical weapons.
- 9. Several delegations were of the view that such a prohibition should be provided in the convention banning chemical weapons, while several other delegations took the view that it could be incorporated in a separate legal instrument such as a protocol to be attached to the convention. Some delegations who considered the possibility of a separate instrument dealing specifically with the prohibition of the use of herbicides attached to the convention were of the opinion that the convention must expressly provide that the separate instrument constitutes an integral part of the convention. Suggestion was also made that the separate instrument would not be attached to the convention; there could be provisions in both instruments providing for their simultaneous signature and ratification.
- 10. Delegations were generally of the view that a provision banning the use of herbicides as a method of warfare should be complemented with a clear understanding that herbicides mean chemical substances which, due to their purpose and direct effects, interfere with life processes of plants.
- 11. Delegations felt that future provisions prohibiting the use of herbicides as a method of warfare should not be interpreted as in any way impairing the applicable rules of international law pertaining to the use of herbicides.
- 12. In this connection, certain delegations were of the view that the existing legal instruments relating to the use of herbicides should be examined to determine their adequacy in prohibiting the use of herbicides. Several other delegations took the view that those existing legal instruments do not adequately deal with the use of herbicides.
- 13. A few delegations referred to another important aspect of the problem, namely the question of verification of the prohibition of the use of herbicides. However, the question was not discussed for lack of time and needs to be fully addressed at the next session.

14. Chairman's informal suggestions on a possible wording:

In view of the progress made in the discussions in the Open-ended Consultations, the Chairman believes that in order to facilitate further progress, an attempt should be made to reflect the main trends of the discussions so far in a set of wording which does not constitute a final draft. For that purpose, and without prejudice to the position of delegations, the Chairman suggested the following wording which shall not bind any delegations:

- (1) Each State party undertakes not to use herbicides as a method of warfare; such a prohibition should not preclude any other use of herbicides.
- (2) For the purpose of this Convention, herbicides mean chemical substances which, due to their purpose and direct effects, interfere with life processes of plants.
- (3) The provision of paragraph (1) shall not be interpreted as in any way impairing the applicable rules of international law pertaining to the use of herbicides.

Verification of the prohibition of the use of chemical weapons

- 15. Open-ended consultations on the question of verification of the prohibition of the use of chemical weapons were held, in which the report of the Co-ordinator of the consultations on the prohibition of the use of chemical weapons on the criteria for the objective and impartial verification of a prohibition of use of chemical weapons contained in annex II of CD/416 dated 22 August 1983 and the informal Working Paper of the Chairman of the Open-ended Consultations dated 8 July 1985 were used as basis for discussions.
- 16. There was an exchange of general views on certain aspects relating to the subject. In the course of the discussions, the Observer Delegation of Norway made a statement on its Working Paper contained in document CD/601 dated 20 June 1985. Substantive discussions had, however, hardly begun.
- 17. It is generally understood that provisions in the Convention for international verification by means of challenge procedure shall apply equally to complaints of the use of chemical weapons in violation of the Convention.
- 18. In view of the specific nature of the situations where chemical weapons are alleged to be or to have been used, several delegations were of the view that specific provisions in the Convention dealing with international verification of complaints on the use of chemical weapons were deemed appropriate. Such specific provisions should however be elaborated in close conjunction with the elaboration of provisions on verification as a whole, as some of those provisions might be equally applicable to the verification of the prohibition of the use of chemical weapons.
- 19. In discussing such specific provisions on verification of the prohibition of the use of chemical weapons to constitute a part of a general régime of verification several elements were mentioned:
- (a) the need for a short time limit for the commencement of an on-site investigation requested by a State Party, carried out by the Consultative Committee.

- (b) the need for the State Party lodging the complaint and requesting an on-site investigation to provide relevant information concerning the alleged use of chemical weapons.
- (c) the need for all States Parties to give access to the team of experts assigned by the appropriate organ of the Consultative Committee to conduct an on-site investigation.
- (d) the need for the State Party in whose territory the team of experts is to conduct its activities to endeavour to ensure the safety of the members of the team of experts.
 - (e) the need for the Consultative Committee to draw up inter alia:
 - a list of experts;
 - a list of laboratories;
 - a list of equipment needed;
 - a guideline for the collection and analysis of information and samples.
- 20. In-depth discussions on the question of verification of the prohibition of the use of chemical weapons, and in particular discussions on the possible elements of specific provisions on the subject, are required.

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DOCS
CA1 EA360 C45 ENG
1983/1985
Conference on Disarmament (1987:
Geneva, Switzerland)
Chemical weapons -- working papers
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