of CWA in the Secretary Gen-
d Bacteriological (Biological)
ible Use", United Nations, New
orking paper CCD/420 [427?],
tances, whether gaseous, liquid
ause of their direct toxic effect

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r CCD/375 of 5 July 1972,[4] and
ry components in BCW, account
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none have peaceful application
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, in the sense of the Swedish
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t of chemical compounds men-
CCD/483 of 8 April 1976.[6] It
ly a larger number of chemical
num the chance of their being
ssibility of rectifications in the

ibid., 1969, pp. 264–298.
449.

Yugoslav Working Paper Submitted to the Conference of the Committee on Disarmament: Definition of Chemical Warfare Agents, July 5, 1976 [1]

In view of the development of new chemical weapons such as binary chemical weapons (BCW) and Multi-Purpose Chemical Weapons (MPCW), it is our desire to provide in this working paper a definition which would include the existing chemical warfare agents (CWA) and compounds in BCW and MPCW.

We consider the MPCW to be such weapons which, in addition to their mechanical and thermal effects, act in the manner characteristic of CW effects.

The Geneva Protocol of 17 July 1925, forbids *inter alia*, also "the use in war of asphyxiating, poisonous or other gases and of all analogous liquids, materials or devices",[2] and according to United Nations General Assembly resolution 2603 A of 16 December 1969, "any chemical agents of warfare—chemical substances, whether gaseous, liquid or solid—which might be employed because of their direct toxic effects on man, animals or plants" is contrary to the generally recognized rules of international law.[3]

There exists also a working definition of CWA given in the Report of a WHO Group of Consultants in "Health Aspects of Chemical and Biological Weapons", WHO, Geneva 1970:

> Chemical agents of warfare include all substances employed for their toxic effects on man, animals and plants.

This definition was intended to exclude chemicals employed in warfare such as high explosives, smokes and incendiary substances (e.g. napalm, magnesium and white phosphorus) that exert their primary effects through physical force, fire, air-deprivation or reduced visibility.

The above mentioned definitions of CWA proceeded from the point of view of *application* and covered chemical compounds only which have direct but not also indirect toxic effects on man, animals and plants.

Binary technology, for its part, also points to the deficiencies of such an approach. Through binary technology it is possible under certain conditions to generate the existing CWA from relatively low toxic components which are not covered by the mentioned definitions. In addition, binary technology also makes possible the use of so [some?] highly toxic substances which due to their tactical properties (such as stability) could not be used as CWA.

In this connexion, it seems to us that it would be necessary to re-evaluate the criteria from the very interesting working paper of the Federal Republic of Germany (CCD/458).[4]

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[1] CCD/505, July 5, 1976.
[2] For text see *Documents on Disarmament, 1969*, pp. 764–765.
[3] *Ibid.*, p. 271.
[4] *Ibid., 1975*, pp. 269–274.

Since the last informal meeting with the experts in Geneva (1974), when *inter alia*, also the definition of CWA was discussed, information was published about the use of a new type of weapon, the classification of which, as far as we know, the CCD has not discussed as yet. The weapon involved is a "fuel air explosive" bomb intended for the preparation of helicopter-landing sites. The application of this weapon in the field produces massive death casualties due to its "ultra-lethal" asphyxiating effect. This asphyxiating effect is based on the reaction of ethylene oxide (the basic bomb component) and oxygen from the environmental air. When exploding, ethylene oxide instantly consumes the surrounding oxygen and thereby causes its shortage in the air. This results in sudden death due to asphyxiation.

Bearing in mind asphyxiation as the cause of death, which, in addition to mechanical and thermal effects, is one of the consequences of employment of this weapon, we are of the opinion that also this type of weapon should be classified, perhaps as "multi-purpose chemical weapons" (MPCW) or under some other name. It is quite clear that due to the effect of this weapon disturbances of physiological functions (anoxy and suffocation) is caused, being the result of the chemical reaction taking place between ethylene oxide and oxygen from the atmosphere.

In our view, this type of weapon differs from the other weapons which are not classified as CW (such as high explosives, smokes and incendiary weapons) because one of its main effects is death caused by immediate suffocation.

The Geneva Protocol is quite specific as far as this bomb is concerned because it prohibits "agents liable to cause asphyxiation", while United Nations General Assembly resolution 2603 A leaves possibility for discussion on account of the expression "direct toxic effect".

In order to reduce in the future any ambiguity to the minimum, we have tried to modify to some extent the existing proposal for the definition of the CWA in the working paper of the Yugoslav delegation of July 1972:

> All chemical compounds *intentionally* used in quantities which directly or indirectly, immediately or after some time, can produce physiological disturbances or cessation of physiological functions in man and animals, should be considered as chemical agents.[5]

The new definition should be sufficiently comprehensive and should provide for further elaboration of the definition of chemical warfare agents in a more explicit manner as for example:

(a) Classification of the CWA according to application and their poisonous intensity grades,

(b) Differentiation between single-purpose and dual-purpose agents,

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[5] *Ibid., 1972*, p. 439.

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(c) Differential treatment of intermediaries in a synthesis and the binary components in munitions,

(d) Inclusion in the chemical weapons also of those with "mixed" effects, one of them being also toxic (direct or indirect), so as to cover also such weapons as the above mentioned bombs.

In view of the aforementioned it seems to us appropriate to propose the following definition:

> All chemical compounds *intentionally* used in quantities and *manner* which directly or indirectly, immediately or after some time, can produce physiological disturbances or cessation of physiological functions in man, animals and plants, should be considered as chemical warfare agents.

We hope that this proposal of the definition contains relevant elements which might serve as a useful basis of the formulation of the final text of the definition.

Statement by the British Representative (Allen) to the Conference of the Committee on Disarmament: Chemical Weapons, July 6, 1976 [1]

This morning I would like to introduce the United Kingdom working paper CCD/502 on the feasibility of extra-territorial surveillance of chemical weapon tests by air monitoring at the border.[2]

A major difficulty standing in the way of international agreement on disarmament and control of chemical agents and weapons is the problem of verification. Two possible ways of verifying that proscribed field tests of chemical weapons are being carried out would be:

(a) Surveillance by a satellite which monitored chosen areas of the earth's surface for the presence of chemicals of known military significance. This has already been discussed in United Kingdom working paper CCD/371; [3]

(b) Surveillance, by ground stations sited outside national boundaries and equipped to detect the same chemicals, of air masses which had passed over areas where chemical weapons were thought to be produced or tested.

Once a reliable indication of an infringement of a convention had been obtained by one of these surveillance techniques, then a case for on-site inspection would be greatly strengthened. Techniques are already available that would enable evidence of the production or testing of chemical weapons to be obtained by examination of soil, water and vegetation taken either from the suspect site or from its immediate environs if the site itself was inaccessible.

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[1] CCD/PV.709, pp. 15–16.
[2] Not printed here.
[3] *Documents on Disarmament, 1972*, pp. 408–415.