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SWITZERLAND

RIOT CONTROL AND INCAPACITATING AGENTS UNDER THE CHEMICAL WEAPONS CONVENTION

Switzerland considers the Second Review Conference to be an opportune time to launch a discussion of the ambiguities of the Chemical Weapons Convention (hereinafter “the Convention”) regarding riot control agents, and the lack of provisions pertaining to incapacitating agents. In order to foster such dialogue, Switzerland would like to submit the following paper, which contains nine theses, for consideration by States Parties. Switzerland feels that uncertainty concerning the status of incapacitating agents under the Convention risks undermining the Convention.



The Convention bases its definition of “chemical weapons” on the notion of “toxic chemicals”, which it defines as follows:

A “toxic chemical” is:

Any chemical which through its chemical action on life processes can cause death, temporary incapacitation or permanent harm to humans or animals. (Article II.2)

Conversely, a “chemical weapon” is defined as any “toxic chemical” that is used for purposes other than those not prohibited by the Convention. Hence, “chemical weapons” are:

Toxic chemicals and their precursors, except where intended for purposes not prohibited under this Convention, as long as the types and quantities are consistent with such purposes. (Article II.1 a)

In other words, this article, otherwise known as the “General Purpose Criterion”, states that any “toxic chemical” is by definition a “chemical weapon”, unless it is used in a manner not prohibited by the Convention.

Thesis 1: Under the Convention, any “toxic chemical” is by definition a “chemical weapon” unless it is intended for purposes not prohibited under the Convention and acquired in appropriate types and quantities.



The definition of “toxic chemical” as cited above, includes chemicals which result in temporary incapacitation only, without inflicting permanent harm. Two groups of “toxic chemicals” whose adverse effects are considered reversible under normal circumstances are riot control agents and incapacitating agents.

Thesis 2: Riot control agents and incapacitating agents are “toxic chemicals” as defined by the Convention. Hence they are by definition “chemical weapons” unless they are intended for purposes not prohibited under the Convention.

Riot control agents are further defined under the Convention to include:

Any chemical not listed in a Schedule, which can produce rapidly in humans sensory irritation or disabling physical effects which disappear within a short time following termination of exposure (Article II.7)

In contrast to riot control agents, incapacitating agents are not defined by the Convention. Incapacitants aim at rendering individuals incapable of normal concerted physical and/or mental effort for a significant period of time after exposure. Although the adverse effects of both riot control agents and incapacitating agents are intended to be reversible under normal circumstances, there are clear differences in their action on life processes. Riot control agents are irritants that produce local sensory irritant effects. Incapacitants are chemical agents which act on the central nervous system and impair cognition, perception and consciousness.

Therefore, Switzerland considers that incapacitants distinguish themselves from riot control agents chiefly in two ways: firstly, they induce crippling physical effects which do not disappear within a short time following termination of exposure. Secondly, their effects would generally be more severe than the effects of those kinds of riot control agents which are regarded as sufficiently safe for use by domestic law-enforcement authorities. In addition, some incapacitants may require treatment by an antidote. One incapacitant, which is in fact included in Schedule 2A* of the Convention, is BZ (3-quinuclidinyl benzilate). Although incapacitants may usually be distinguished from riot control agents, Switzerland considers the boundary between riot control agents and incapacitants to be fluid.

Thesis 3: Incapacitating agents are “toxic chemicals” whose action on life processes differs from that of riot control agents insofar as they act on the central nervous system.

In accordance with the “general purpose criterion”, all “toxic chemicals” have limits to their use. For incapacitating agents, the limits as set by the “general purpose criterion” apply. For riot control agents, there are special provisions which go beyond the “general purpose criterion”. They elaborate both on the conditions under which the use of riot control agents is expressly permitted, and on the conditions under which such use is prohibited. Article I.5, for example, prohibits the use of riot control agents as a method of warfare:

Each State Party undertakes not to use riot control agents as a method of warfare. (Article I.5)

On the other hand, the Convention allows the use of “toxic chemicals” inter alia for:

Law enforcement including domestic riot control purposes. (Article II.9 d)

In view of this article, it stands to reason that the use of riot control agents for “domestic riot control purposes” is not prohibited under the Convention. This article is interesting, however, insofar as it identifies domestic “riot control purposes” as a sub-group of “law enforcement”, implying that there exist law enforcement situations other than domestic riot control which may warrant the use of “toxic chemicals”.

Thesis 4: “Toxic chemicals” may be used for law enforcement other than riot control by governmental authorities.

The Convention does not elaborate further on the kinds of “toxic chemicals” that may be used for law enforcement. The term “law enforcement” itself is not defined in the Convention and has been interpreted to include the administering of the death penalty. However, Schedule 1 chemicals may clearly not be used for this purpose, because the Convention contains an exhaustive list of purposes to which Schedule 1 chemicals may be applied. (VA, Part VI, Art. 2a).

It has been noted that in Article II.9(d), which lists “law enforcement including domestic riot control purposes” as one of the “purposes not prohibited” under the Convention, the term “law enforcement” is not preceded by the attribute “domestic”. Hence the Convention would seem to make allusion to law enforcement outside the domestic context. Switzerland maintains, however, that under international law, the power to enforce law is generally only vested in a subject under international law which exercises effective authority over a certain territory. Hence, law enforcement would normally be considered to take place in a domestic context. Exceptions which go beyond the obligations of occupying powers under the Fourth Geneva Convention to keep law and order in occupied territory should be considered very carefully.

Thesis 5: In the context of the Convention, the term “law enforcement” is not necessarily limited to domestic “law enforcement”. Circumstances in which law enforcement, including the use of riot control agents, may occur outside a State’s own territory must be carefully weighed, however.

Before discussing the possibility of law enforcement or riot control occurring in an international context, it must be repeated that the Convention clearly prohibits the use of riot control agents as a method of warfare:

Each State Party undertakes not to use riot control agents as a method of warfare. (Article I.5)

Switzerland maintains the inviolability of this provision. It was included in the Convention due to the recognition that history is replete with incidents in which riot control agents were used as a preliminary to lethal force – be it to mask the use of lethal force, to simplify its application, or to multiply its effects. In view of the historical experience, any arguments which support the use of riot control agents in order to avoid recourse to lethal force in the context of armed conflict are not admissible.

Switzerland contends, however, that certain actions undertaken by armed military personnel in the context of peace operations may not be characterized as a “method of warfare”,

especially if they are designed to ensure public safety. Possibly, such actions may be considered to constitute “law enforcement” if they are recognized as legitimate under international law.

Nevertheless, extreme care must be taken to ensure that the types and quantities of riot control agents, as well as the rules of engagement, remain consistent with the object and purpose of the Convention at all times. Riot control agents may not be used against combatants at any time.

Thesis 6: The use of riot control agents for “law enforcement” by armed military personnel may be in accordance with the object and purpose of the Convention in the context of peace operations, which are considered legitimate under international law. Riot control agents may not be used against combatants at any time, however.

While the Convention provides certain indications on the use of riot control agents, there are no provisions specific to incapacitating agents. Since there is little or no industrial use or therapeutic application for incapacitants – especially not in large quantities – Switzerland urges States Parties to consider their employment by police forces with utmost caution.

Switzerland is of the view that the development of substances that will incapacitate a wide range of people with a varying degree of susceptibility, but not endanger their health, is technically close to impossible. The search for incapacitating agents which take instant effect and have a high therapeutic index is similar to a search for new “toxic chemicals” which could be used as chemical weapons. The same applies to the development of new delivery means that will allow incapacitating agents to be administered over a whole range of distances to crowds of various sizes. Switzerland is therefore concerned that such activities could undermine the object and purpose of the Convention.

Thesis 7: The development of incapacitants and certain related means of delivery has parallels to the development of new “chemical weapons” and could undermine the object and purpose of the Convention.

Because of their toxicity and their severe effects on life processes, Switzerland does not believe that the use of incapacitating agents for “law enforcement” purposes in an international context can be brought in line with the object and purpose of the Convention. The use of incapacitating agents should therefore not be admissible.

Thesis 8: The use of incapacitating agents by military personnel in an international context is not admissible. In view of the potentially severe physiological effects, and the possibility that toxic chemicals may be used in retaliation, it cannot be brought in line with the object and purpose of the Convention.

Under Article III.1(e) of the Convention, each State party is required to specify each chemical which “it holds for riot control purposes”. In this context, it must be reiterated that according to Article II.1(a) of the Convention, the type and quantity of each “toxic chemical” which a States Party stockpiles for law enforcement purposes must be in accordance with that purpose.

In view of the fact that the Convention requires transparency measures for riot control agents, it would seem appropriate to equally discuss the adoption of transparency measures for incapacitating agents, which are, after all, considered “toxic chemicals”, and which have, in the case of BZ, been included in the Schedules of the Convention.

Thesis 9: Incapacitating agents are “toxic chemicals” and in their application comparable to riot control agents, although their effects are more severe. This warrants transparency measures that are comparable to those which are in force for riot control agents.

In conclusion, Switzerland calls upon States Parties to consider adopting during the Second Review Conference a mandate for a discussion of, inter alia, an agreed definition of incapacitating agents, the status of incapacitating agents under the Convention, and possible transparency measures for incapacitating agents.

Appendix

1. Advances in Science and Technology

In 1985 it was considered adequate to be able to test 10,000 compounds per year for biological activity. Today it is possible to test that amount in a week or, depending on the use of the most sophisticated techniques, even in one hour¹.

The advances in science and technology have led and will lead to the development of new, highly potent, active ingredients which could be applied for the benefit of society, but could also be abused for purposes prohibited under the Convention.

2. Development of a "Magic" Compound

Many of the supporting arguments for research into and the possible use of incapacitating agents, cite scenarios such as a hostage-taking situation in which the storming of the building by police or special forces would endanger the hostages.

In such a situation, a chemical would be required which very quickly puts the target from its normal, pre-exposure condition into a state where it could no longer pose a threat, i.e. pull the trigger of a gun or push the switch of a bomb. As experience has shown, however, it might be very difficult in such a situation to administer a dose that is neither ineffective nor too toxic.

The therapeutic index (also known as therapeutic ratio), is the ratio between the amount of a therapeutic agent which causes the desired therapeutic effect and the amount which causes toxic effects. Quantitatively, it is the ratio given by the dose required to produce the toxic effect divided by the therapeutic dose. A commonly used measure of therapeutic index is the lethal dose of a drug for 50% of the population (LD₅₀) divided by the minimum effective dose for 50% of the population (ED₅₀):

$$\text{Therapeutic Index} = \frac{\text{LD}_{50}}{\text{ED}_{50}}$$

Typical anaesthetic or sedative agents have a therapeutic index of 5 to 10, rarely above 20². These agents are administered under medical supervision.

It has been argued that there is an exploitable range, the "desired 'non-lethal' effect envelope", within which authorities could operate. However, medical circles dispute that there is currently evidence of the existence of any chemical that has such a high therapeutic index that it could effectively, as well as safely, be applied in a tactical situation.

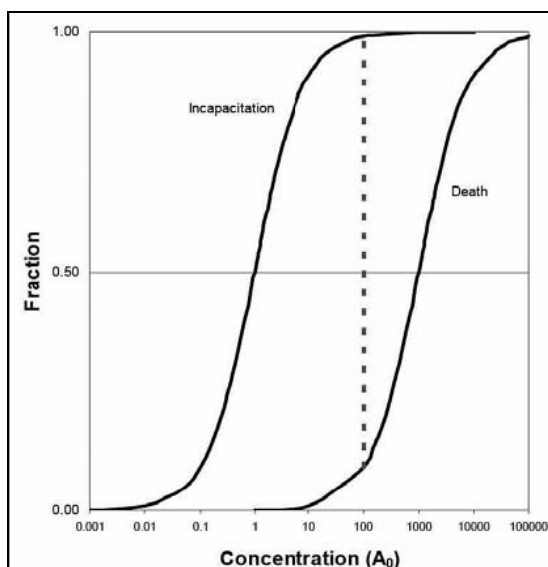
In order to be suitable for deployment in a conflict situation, the chemicals would have to have the following characteristics:

¹ Science and Technology Report No. 7, I. Rozas;
[https://external.opcw.org/Conference/Informal/2007/Informal2007en.NSF/WebView/3DBBB96342FF89A6C12572C6002A0F80/\\$File/St_Report_No_7.pdf](https://external.opcw.org/Conference/Informal/2007/Informal2007en.NSF/WebView/3DBBB96342FF89A6C12572C6002A0F80/$File/St_Report_No_7.pdf)

² BMA, Board of Science, May 2007.

1. highly potent (rapidity of expression of the effect, duration of the effect, degree of incapacitation, reliability of the effect)
2. high safety margin (overdose)
3. reversible effect
4. availability of an antidote
5. weaponisable, i.e. easy dispersible as respirable aerosol, easy to dose / to administer
6. unflavoured, tasteless

A model developed by Klotz et al³. suggested that no existing compound could possess the required characteristics. The advances of science and technology enable us to screen thousands of chemicals as to their biological potential in a reasonable timeframe, but most probably, new and highly potent agents will have very low safety margins, respectively very low therapeutic indices. In case of use of these agents, the number of fatalities would certainly exceed the acceptable level of mortality and morbidity if the dosage were not properly defined, and antidotes are not available within a reasonable time. Therefore, following the principle of Paracelsus, the so-called non-lethal agents can easily turn into lethal agents, if the applied dose is not appropriate.



Adapted from: Klotz, L., Furmanski, M. & Wheelis, M. (2003): *Beware the Siren's Song: Why 'Non-lethal' Incapacitating Chemical Agents are Lethal*. Federation of American Scientists.

The abscissa represents the ratio of affected persons out of the total population exposed, with 0 indicating that no person was affected and 100 indicating that all persons were affected. The ordinate indicates the relative 'influence or dose' of the chemical used. Useful chemicals should occupy an operating envelope between having almost no effect, represented by the dose C_{\min} , and with only a few persons with undesirable effects, represented by the dose C_{\max} .

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